274 CF experience for respiratory trainees in the UK

D. Nazareth[1], M.J. Walshaw[1]. [1]*British Thoracic Society, CF Specialist Advisory Group, London, United Kingdom*

Objectives: Since more CF patients are surviving into adulthood, the UK respiratory specialist training curriculum has been strengthened to reflect the need for an increased awareness of this condition. However, because the curriculum is already full we wished to assess whether the current training schemes in the UK can cope with this increased need.
Method: We surveyed all 523 adult respiratory trainees in the UK, asking about availability of CF experience and placement at recognised CF centres.
Results: There was a 78% response rate. 96% had access to a CF centre within their training region and 55% would rotate through this during their training (placement duration 3–6 months). Although 59% were routinely posted to a CF centre, 16% were required to make their own training arrangements and 5% felt that passing the specialist written exit examination would be sufficient to meet requirements. Only 56% of those posted to a CF centre indicated that the post helped them achieve curriculum requirements. As regards further training, 10% indicated that they have a special interest in CF, but only 12 are currently gaining CF-specific training. Overall, 66% wished further sub-specialty experience.
Conclusions: This survey highlights that a large proportion of trainees in the UK have limited exposure to CF during their training, despite alterations to the training curriculum. Further representations have been made to the training authorities to reinforce the need for increased CF training.

275 Cumulative exposure to ionising radiation in adults with cystic fibrosis

D. Nazareth[1], P. Milburn-McNulty[1], J. Gallagher[1], A. Nazir[1], M.J. Ledson[1], J. Greenwood[1], M.J. Walshaw[1]. [1]*Liverpool Adult CF Unit, Liverpool, United Kingdom*

Background: Now that most CF patients are expected to survive into their 5th decade, the cumulative exposure to potentially carcinogenic ionising radiation is important. We looked at the amount of ionising radiation given to our CF adults over an 18-month period.
Method: All ionising radiation studies were reviewed for their impact on management. Radiation was calculated using standard reference doses and expressed as milliSievert [mSv].
Results: See the table. The average radiation dose was 2.65 mSv, with 32% of studies changing management (but only 9% of chest X-rays). Those with more severe disease had a greater cumulative dose which was more likely to alter management.
Conclusion: CF patients receive significant medical radiation each year, but most impacts on their management. CFRD, DIOS and infection with transmissible *Pseudomonas* are associated with greater levels, in keeping with the more significant disease burden in these individuals. Care should be taken when ordering investigations associated with ionising radiation, to reduce the long term effects as life expectancy increases.

Table: Radiation exposure in CF.

	FEV1 % predicted, mean [SD]	Radiation dose (mSv), mean	% impacting care
All patients (n = 257)	76 [22]	2.65	32
CFRD (n = 101)	67 [21]	3.73	37
DIOS (n = 5)	88 [28]	9.14	44
Transmissible *Pseudomonas* (n = 107)	72 [22]	3.38	34
Other *Pseudomonas* (n = 78)	78 [26]	2.05	37
Burkholderia species (n = 18)	72 [16]	2.03	8

276 Current practice of HRCT scanning in a large UK CF centre with good clinical outcomes

N.J. Rowbotham[1,2], S.P. Conway[1], K. Brownlee[1], T. Lee[1,2]. [1]*Leeds General Infirmary, Leeds Regional Paediatric Cystic Fibrosis Centre, Leeds, United Kingdom;* [2]*University of Leeds, School of Medicine, Leeds, United Kingdom*

Objectives: Leeds Regional Paediatric CF Centre is a large UK centre with clinical outcomes (FEV1; BMI; Rate of chronic *Pseudomonas* infection) better than the UK average (UK CF Trust Registry 2010 data). There are no clear guidelines on when to HRCT scan in CF patients. We have assessed our current practice.
Methods: Retrospective data were collected on all 167 paediatric patients who were receiving full care at the Leeds CF Centre in November 2011. Patient notes, the hospital results server, and the patients' electronic records were accessed to determine which patients had had a chest HRCT scan, at what age and for what indication. For those over 10 who had never had an HRCT scan lung function (FEV1) and IV antibiotic treatments over the past five years were documented.
Results: Patient age ranged from 0 to 17 years (mean 8). 32% of patients had had an HRCT scan, 50% of these by their tenth birthday. The mean age at first scan was 9 years with two distinct peaks at the ages of 6 and 12 years. The most common indication was persistent cough (24%), followed by persistent x-ray changes (17%). Of those over 10 who had never had an HRCT scan the average FEV1 was 83%, and 45% had less than one course of intravenous antibiotics per year.
Conclusions: In our centre 68% of children had not had an HRCT scan. They had maintained on average an FEV1 % predicted >80% normal and had required minimal IV antibiotic courses. Some CF centres request 2-yearly HRCT scans. Our data suggest further research is needed to define the clinical benefit of routine scans before universal adoption, as the lifetime radiation risk given survival projections for today's children with CF cannot be discounted.

277 Health status of cystic fibrosis patients in British Columbia (BC): does proximity to clinic matter?

A.M. Gravelle[1], S. Jenkins[1], M. McIlwaine[1], Y. Lillquist[1], A.G.F. Davidson[1], C. Loong[1], M. Chilvers[1,2]. [1]*B.C. Children's Hospital, Cystic Fibrosis Clinic, Vancouver, Canada;* [2]*B.C. Children's Hospital, Division of Pediatric Respiratory Medicine, Vancouver, Canada*

Background: BC spans 944,735 km^2 with Cystic Fibrosis (CF) patients spread throughout. This poses a huge challenge for patients to attend clinic and meet CF Canada guidelines of a minimum of 4 reviews/year. To reduce this, outreach clinics are held to improve provision of care. However, access to BCCH CF clinic on health status in BC patients is unknown.
Aim: To evaluate if proximity to BCCH CF clinic impacts patient's health status.
Methods: Patients were divided into either Lower Mainland (LM) or outside (OLM). The latter was split into: Northern BC/Yukon; Interior; and Vancouver Island. Data were collected on: location; age of diagnosis; FEV_1; nutritional and bacterial status and admissions. Mann–Whitney tests were performed.
Results: 131 patients were reviewed. No significant difference was found for BMI, FEV_1, *Pseudomonas* status or admissions in children in LM or OLM, however the latter were diagnosed later (Median age LM: 0.4 yrs, OLM: 1.1 yrs $P < 0.05$). Table 1 shows regional data. Patients furthest from clinic had significant diagnostic delay, *Pseudomonas* colonization and lower BMI.

Table 1. Health status by region of BC

Variable	Lower Mainland BC (N = 82)	Interior BC (N = 26)	Northern BC (N = 11)	Vancouver Island (N = 11)
Median distance to BCCH (km)	30	425	786	79
Median FEV1%	89.5	93	91.5	88
Median BMI	17.1	18.2	15.2*	16.4
Median age @ diagnosis (years)	0.4	1.6	2.8#	2.8
% *Pseudomonas* @ diagnosis	7.3	0	27.3*	9.0
% *Pseudomonas* colonized	21.9	36	27.3	18.2

*$p < 0.05$, #$p = 0.1$.

Conclusions: A possible trend for reduced health status with increasing distance from clinic was observed. The study is limited by small numbers in the regional analysis. No change in FEV_1 was seen in children, however the impact in adulthood is unknown.