REFERENCE
1 Global surveillance of cancer survival 1995–2009: (CONCORD-2). *Lancet* 2015;**385**:977–1010.

P87 THE USE OF A VIRTUAL CLINIC TO SPEED UP AND IMPROVE THE CANCER DIAGNOSTIC PATHWAY – 2 YEAR EXPERIENCE

A McIver, N Maddock, J Dunbar, J Hughes, MJ Ledson, C Smyth, MJ Walshaw. *Liverpool Lung Cancer Unit, Liverpool, UK*

10.1136/thoraxjnl-2016-209333.230

In order to speed up the diagnostic pathway, in January 2014 we set up a "straight to CT" service for patients with suspected lung cancer from primary care, where positive scans undergo immediate chest physician review to decide the next diagnostic test and a lung cancer nurse specialist (CNS) offers the patient a telephone assessment to plan this. We have looked at the utility of this "virtual clinic" in the management of our patients with lung cancer over the first 2 years, in particular paying attention to patient uptake and satisfaction, and outcomes.

Of about 300 patients annually who have been triaged in this way, 82% have chosen the virtual clinic, 13% preferred or the CNS advised a outpatient appointment, 4% required immediate inpatient referral, and the remaining and 1% were referred back to the GP as outpatient intervention not felt appropriate (too unwell). Overall, 75% subsequently were diagnosed with lung cancer.

For those patients who chose the virtual clinic consultation, feedback has been overwhelmingly positive. This has been captured qualitatively at the time and at subsequent events e.g. patients report feeling well informed and supported, and quantitatively by an ongoing survey: 98% prefer the telephone clinic versus clinic appointment, 97% felt prepared for next test.

This study has shown that performing a number of diagnostic investigations using a telephone support is not only feasible but preferred by patients with suspected lung cancer. By avoiding unnecessary clinic attendances it improves patient convenience, speeds up the diagnostic pathway and reduces unnecessary costs. This early CNS assessment and interventions reduces the level/scope of patient concerns prior to the time of diagnosis, this has further significance to the team formalising the Holistic Needs Assessment process.

CNSs are best placed to do the consultations as they have the specialist skills and knowledge of the local clinical pathways, tests, disease symptomology and ultimately provide the continuity throughout the diagnostic pathway through to treatment and we recommend this to other cancer units.

P88 FOLLOW-UP AFTER SURGICAL TREATMENT OF LUNG CANCER: THE POTENTIAL IMPACT OF INTERNATIONAL GUIDELINES ON CURRENT UK PRACTICE

J Capps, V Grannon, S Baksi, S Khalid. *East Lancashire Hospitals NHS Trust, Blackburn, UK*

10.1136/thoraxjnl-2016-209333.231

Introduction and objectives International guidelines suggest regular CT scan follow-up for non-small-cell lung cancer (NSCLC) that is surgically treated with curative intent.[1,2] NICE guidance does not specify the type or frequency of imaging. Our aims were to assess current follow-up practice in such patients in our region, and estimate the potential impact of implementing international guidelines.

Methods We surveyed a majority of hospitals (six NHS trusts) in our region about their current follow-up practice. A retrospective study was performed of patients in our trust who underwent curative surgery for NSCLC between March 2013 and December 2014.

Results None of the surveyed trusts were following ESMO or ACCP guidelines. Only two had a local policy in place. The majority used chest X-ray (CXR) rather than CT follow-up, which reflected our practice.

We identified 79 patients who had undergone surgery with curative intent in our trust. 5 patients were excluded, as notes were unavailable for 2, and 3 died before any follow-up. Amongst the remaining 74 patients, follow-up was for a mean of 19 months. During this time the mean number of CTs and CXRs per patient was 1.3 and 2.7 respectively. Following ESMO guidelines would reduce the number of CT scans compared to our overall current practice, to 1.1 per patient,[1] whilst ACCP guidelines would result in an increase to 2.7 CTs per patient.[2]

Conclusions Most patients in our region are followed-up by CXR rather than CT. Most hospitals are not using follow-up guidelines, resulting in practice variation. Compared to current practice in our trust, following ESMO guidelines would not result in an increase in CT scans for this purpose, and no CXRs would be required for routine follow-up. Therefore it may be feasible to adopt this more uniform, evidence-based approach.

REFERENCES
1 Vansteenkiste J, Crino L, Dooms C, *et al*. 2nd ESMO Consensus Conference on Lung Cancer: early-stage non-small-cell lung cancer consensus on diagnosis, treatment and follow-up. *Annals of Oncology* 2014;**25**:1462–1474.
2 Colt H, Murgu S, Korst R, *et al*. Diagnosis and Management of Lung Cancer, 3rd ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest* 2013;**143**(5 Suppl):e437S–e454S.

Cystic Fibrosis

P89 MODELING NUTRITIONAL OUTCOMES FOR INFANTS DIAGNOSED WITH CYSTIC FIBROSIS BY NEWBORN SCREENING

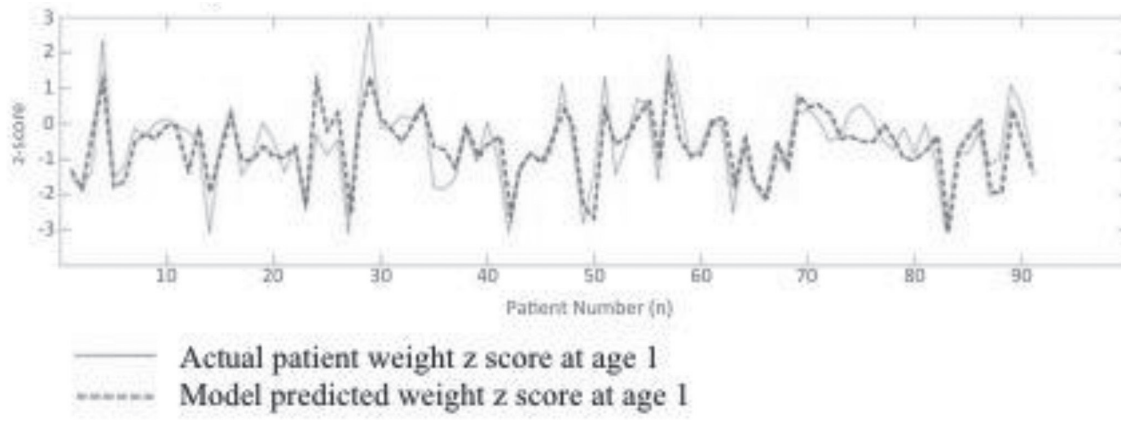
[1]KD Patterson, [2]T Kyriacou, [3]M Desai, [4]WD Carroll, [5]FJ Gilchrist. *[1]Research Institute of Science and Technology in Medicine, Keele University, Stoke-on-Trent, UK; [2]School of Computing and Mathematics, Keele University, Stoke-on-Trent, UK; [3]Department of Paediatric Respiratory Medicine, Birmingham Children's Hospital, Birmingham, UK; [4]Academic Department of Child Health, University Hospitals of North Midlands NHS Trust, Stoke-on-Trent, UK; [5]Institute of Applied Clinical Science, Keele University, Stoke-on-Trent, UK*

10.1136/thoraxjnl-2016-209333.232

Introduction Cystic Fibrosis (CF) newborn screening (NBS) was implemented across the UK in 2007. It has been associated with improved clinical outcomes particularly related to nutrition. We reviewed the nutritional progress of infants diagnosed with CF by NBS in the West Midlands. Our aim was to develop a model for predicting height and weight in the first 2 years of life based on information available at the first clinic visit.

Methods Anthropometric data is recorded at each outpatient visit for children with CF. This data was reviewed in conjunction with the CF NBS data for all children diagnosed with CF in the West Midlands between November 2007 and October 2014. Cluster analysis, classification and polynomial regression modelling were used to analyse these data. Models were validated using the 5-fold cross validation method.

Results 144 children were identified with CF at a mean age of 22 days. There was no difference in birth weight z scores between



Abstract P89 Figure 1 Schematic representation of the accuracy of the model predicting weight z score at age 1

pancreatic insufficient and pancreatic sufficient children (−0.05 vs −0.36, p = 0.29) however a significant difference was observed in rate of weight gain from birth to first clinic visit (−0.1 vs −0.33, p = 0.007). Time taken for children to reach a z score of 0 for weight was 65 weeks and length was 90 weeks. Cluster analysis identified two distinct groups of children. Faecal elastase (FE) being the main determinant of class, with a cut off of 212 μg/g. Our models can predict weight z score at 1 and 2 years with a mean absolute error of 0.51 and 0.67 and length z scores at 1 and 2 years with an accuracy of 0.7 and 0.85. The most important factor when predicting future nutritional parameters was birth weight z score.

Conclusions We have developed and validated models that can provide a good estimate of weight and height z scores in the first 2 years of life for children diagnosed with CF by NBS. These models only require data available at the first clinic visit. They can potentially be used by clinicians to identify children at risk of poor nutritional outcomes thus, encouraging closer monitoring and earlier intervention.

P90 THE NORTH-SOUTH DIVIDE: REGIONAL INEQUALITIES IN DEMOGRAPHIC CHARACTERISTICS AND CLINICAL OUTCOMES IN PATIENTS WITH CYSTIC FIBROSIS IN ENGLAND–A POPULATION BASED CROSS-SECTIONAL STUDY USING UK CF REGISTRY DATA

[1]S Nyangoma, [1]V Rajabzadeh-Heshejin, [1]P Cullinan, [2]J Samption. [1]*Imperial College, London, UK*; [2]*Staffordshire University, Stoke-on-Trent, UK*

10.1136/thoraxjnl-2016-209333.233

Background For many diseases including cancer, the inequalities in key clinical outcomes are known to be wider in the economically disadvantaged Northern England (NE) compared to the more affluent South England (SE) (Shack, *et al*, 2008). This study aimed to investigate the North-South divide in demographic characteristics and clinical outcomes in cystic fibrosis (CF) patients in England.

Methods This was a cross-sectional study of patients with CF living in the SE and NE and registered on the UK CF Registry in 2010. Clinical data from Annual Review Encounter (ARE) of that year included demographics, prescription records and clinical outcomes: FEV1%predicted and chronic infections.

Descriptive statistics were adopted to summarise categorical and continuous outcomes. Wilcoxon test and t-test was used to compare continuous outcomes, while two-sample test for equality of proportions was used to compare prevalence of infections and drug use.

Results The study cohort included 1265 children and 1752 adults from SE and 1483 children and 1917 adults from NE. For children: lung function (FEV1%), adjusted for age and sex was

Abstract P90 Table 1 Patient characteristics

Patient characteristics	Outcome/ Category	South of England N = 3017	North of England N = 3400	P-values
Sample size				
	0 – <16 (Children)	1265 (41.9)	1483 (43.62)	0.1805
	≥16 (Adults)	1752 (58.1)	1917 (56.38)	
Age (Years)	Mean ± SD	19.71 ± 13.24	18.81 ± 12.52	
Gender, n(%)				
	Female	1423 (47,17)	1578 (46.41)	0.5623
	Male	1594 (52.83)	1822 (53.59)	
Percent predicted FEV1, n(%)				
	<40	333 (11.04)	341 (10.03)	
	40–69	728 (24.13)	846 (24.88)	
	≥70	1335 (44.25)	1443 (42.44)	
Age at diagnosis, n(%)				
	<3 months; n (%)	1280 (42.43)	1590 (46.76)	<0.001
	3–12 months; n (%)	629 (20.85)	645 (18.97)	
	12 months–3 years; n (%)	416 (13.79)	474 (13.94)	
	≥3 years; n (%)	453 (15.01)	488 (14.35)	
FEV1 percent predicted				
All patients	Mean ± SD	70.98 ± 24.66	71.23 ± 24.23	0.9821
Children (Age < 16)	Mean ± SD	84.51 ± 17.99	81.57 ± 19.80	0.0061
adults (Age ≥ 16)	Mean ± SD	64.69 ± 24.81	66.73 ± 24.61	0.0422