Receiver operating characteristics (ROC) curve analysis was performed separately for patients with low and intermediate probability, and the optimum cut-off value to exclude PE determined.

Results Of the 2139 patients, prevalence of PE was 3.2% (50/1535) in the low, 14.2% (63/443) in the intermediate and 26% (42/161) in the high probability group. No patients with a D-dimer of <0.5 ug/mL who were discharged without any radiological investigations have returned with a missed diagnosis of PE.

ROC curve analysis showed the optimum D-dimer cut off value in low risk patients was 0.52, and 0.57 in patients with an intermediate risk.

Abstract P270 Table 1

Criterion (low risk)	Sensitivity	Specificity	NPV
>0.52	100%	49%	100%
>0.8	92%	71%	
>1	84%	78%	99.4%
Criterion (int risk)	**Sensitivity**	**Specificity**	**NPV**
>0.57	100%	37%	100%
>0.8	83%	62%	
>1	76%	67%	94.7%

Conclusion The optimum D-dimer value must be chosen in the context of missed PEs versus scanning fewer people and thus avoiding unnecessary radiation and using resources more efficiently. A higher D-dimer of 1.0 ug/mL would have correctly avoided 161 scans and subsequently saved over £19,000.[2] This must be offset however against patients being incorrectly diagnosed and often ending up in hospital with complications. Using the same cut off of 1.0 ug/mL would have missed a total of 22 PE's during the study period. Based on this the conventional D-dimer cut off value of 0.5 ug/mL is most appropriate for patients attending the ambulatory PE clinic.

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P271 USING AGE-ADJUSTED D-DIMERS FOR RULING OUT PES IN AN AMBULATORY CARE SETTING

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Introduction Patients attending the ambulatory pulmonary embolism (PE) clinic at the Glenfield Hospital are risk stratified into low, intermediate and high risk based on the BTS scoring.[1] Those with a low or intermediate pre-test probability go on to have a microlatex D-dimer assay and if this is greater than 0.5 ug/mL, imaging in the form of CTPA or VQ scan is carried out.

It has been suggested recently that using age adjusted D-dimers (patient's age X 10) ug/L in patients above the age of fifty may improve the negative predictive value in ruling out a PE, whilst not affecting sensitivity.[2]

Methods Data was collected for 2139 consecutive patients who presented to the ambulatory PE clinic between June 2010 and Dec 2014. For each of these patients, age, BTS clinical probability, D-dimer results and final diagnosis was recorded.

For each patient above the age of 50, an age adjusted D-dimer was calculated by multiplying the age by 10. The patient's actual D-dimer was then compared against the age adjusted D-dimer to determine how many scans could have been avoided, and how many PE's may have been missed.

Results Above and including the age of 50, there were 660 patients in the low risk, 242 patients in the intermediate risk and 104 in the high-risk categories. Using an age adjusted D-dimer approach would have resulted in 123 scans being rightfully avoided (84 in the low risk and 39 in the intermediate risk), but 6 PE's would have been missed (2 in the low risk and 4 in the intermediate risk).

No patients with a D-dimer of <0.5 ug/mL who were discharged without any radiological investigations have returned with a missed diagnosis of PE.

Abstract P271 Table 1

Criterion	Sensitivity	Specificity	NPV
Age-adjusted D-dimers (low risk)	94%	48%	99%
Age adjusted D-dimers (int risk)	90%	37%	95%
Age adjusted (low and int risk)	91%	45%	98%
Conventional 0.5	100%	49%	100%

Conclusion The optimum D-dimer value must be chosen in the context of missed PEs versus scanning fewer people and thus avoiding unnecessary radiation and using resources more efficiently. An age-adjusted D-dimer in patients above the age of 50 would result in PEs being missed, and a conventional cut off value of 0.5 ug/mL is most appropriate for patients in an ambulatory care setting.

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P272 MANAGING SUSPECTED PULMONARY EMBOLISM IN AN AMBULATORY SETTING: THE BARKING HAVERING AND REDBRIDGE UNIVERSITY HOSPITALS EXPERIENCE

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Introduction and objectives There is an increasing national precedent for ambulatory care of selected patients with suspected pulmonary embolism (PE).[1] As part of our ambulatory services we established an ambulatory PE pathway in January 2012 with the intention to reduce hospitalizations and cost without any associated risk.

Methods We conducted a retrospective review of all 165 patients referred to the ambulatory service for suspected PE between January 2012 and May 2013. We included 122 patients and we reviewed all medical notes, laboratory and radiological investigations.

Results In 5 patients (4%), PE was confirmed after imaging. The mean age was 50 years with 68.5% female patients. The most common presenting complaint was chest pain followed by dyspnoea. In 59% of cases the Well's score was not documented. D-Dimer was checked in 94.5% of patients with unnecessary measurement in 11% of these. In 20% of patients who had radiological investigations for PE, D-dimer was negative. ECG and CXR were performed in most of cases with abnormal findings in 11% and 15% respectively. 77% of patients underwent CTPA, 21% had a V/Q scan, and 2% had V/Q scan followed by CTPA. The mean time to scan was 1.5 days with minimum of 1 day and maximum of 4 days. All confirmed PEs were identified by CTPA and were provoked by risk factors such as recent surgery, recent pregnancy, oral contraceptives, previous documented VTE. Domiciliary enoxoparin was administered in 89% of patients pending CTPA or VQ. All confirmed PEs were subsequently treated with warfarin. No complications occurred, including bleeding events, recurrent VTEs, readmissions for anticoagulation related events, or deaths related to PE.

Conclusions Our experience shows that selected patients with suspected PE can be safely managed as outpatients in our trust. Closer adherence to the pathway may prevent a number of unnecessary scans (i.e. PE can be safely excluded when Wells score low and D-Dimer negative without a scan). Our protocol and pathways are being updated to incorporate PESI criteria to safely identify ambulatory patients, and to use of rivaroxoban in preference to warfarin for confirmed PE.

REFERENCE

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P273 A RETROSPECTIVE SERVICE EVALUATION OF A 2 YEAR COHORT, ATTENDING A NEW, DEDICATED PULMONARY EMBOLISM CLINIC

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Introduction A service evaluation investigated the effect of follow-up in secondary care on the outcomes of patients who had suffered a Pulmonary Embolism (PE). Patients who attended the PE clinic received a tailored treatment plan specific to their PE event. Events were classified as provoked or unprovoked and their 2 year recurrence rates and complications assessed.

Method The 2012 cohort of 84 patients from a PE clinic was analysed retrospectively, allowing for a 2 year follow-up. Patients were classified as having sustained a provoked event if a transient provoking risk factor was identified, as per the European Society of Cardiology (ESC) 2014 guidelines.

Results Of the 84 patients (40 male, 44 female), 83 were available for follow-up at the 2 year mark. Fifty patients (59.5%) had a provoked event whilst 32 (38.1%) were unprovoked- 2 patients had inadequate history to assess. Patients with unprovoked events were investigated further to screen for an underlying malignancy. Three patients (9.38%) were diagnosed with malignancies within 6 months of their PE. Of the unprovoked, 26 underwent a thrombophilia screen with 4 (12.5%) testing positive. Of 83 patients followed to 2 years, 7 (8.4%) had a recurrence (median = 17 months). Two (2.4%) developed chronic thromboembolic pulmonary hypertension whilst 3 (3.6%) developed post-thrombotic syndrome.

Conclusion Compared to the ESC 2014 guidelines, recurrence rates and complications at 2 years are much lower. The classification of provoked and unprovoked events led to the diagnosis of unknown pathologies. Although only an initial study, this shows that secondary follow-up decreases adverse consequences.

Treatment options in cystic fibrosis

P274 MOVING FROM RESCUE TO PREVENTION: REAL WORLD EVIDENCE OF REDUCTION IN IV ANTIBIOTIC REQUIREMENT FOLLOWING IMPROVEMENT IN ADHERENCE TO MAINTENANCE NEBULISED TREATMENT IN AN ADULT CYSTIC FIBROSIS CENTRE

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Background Adherence to preventative nebulised therapy is associated with better health and lower costs for rescue treatment. However, adherence with nebulised treatment is generally poor and there is currently no systematic adherence intervention for people with CF. The Sheffield Adult CF centre has embarked on various pilot projects in this area, culminating in an NIHR programme grant awarded in 2014 to develop such a systematic adherence intervention. We hypothesised that the pilot projects would have improved the adherence levels and health outcomes among people with CF receiving care at the CF centre.

Objectives To determine overall change in nebuliser adherence and health outcomes among the cohort of people with CF in Sheffield from 2013 to 2014.

Methods Demographic data, spirometry, BMI, annual total intravenous antibiotics days and prescription details were obtained by reviewing patient notes. Adherence was measured with I-neb nebuliser and calculated as a percentage of the agreed regimen between clinicians and people with CF. People on ivacaftor or with previous lung transplantation were excluded from this analysis.

Abstract P274 Table 1

	2013 data (n = 166)	2014 data (n = 170)
People on I-neb (%)	92 (55%)	101 (59%)
People with ≥3 months of I-neb data (%)	83 (50%)	85 (50%)
Median % I-neb nebuliser adherence (IQR)	**40.5 (20.2–66.8)**	**49.5 (23.1–77.8)**
Median age in years (IQR)	25 (19–31)	26 (20–32)
Female (%)	75 (45%)	79 (46%)
Pancreatic insufficiency (%)	138 (83%)	136 (80%)
CF related diabetes (%)	38 (23%)	41 (24%)
Median % predicted FEV1 (IQR)	79 (56–95)	79 (56–93)
BMI (IQR)	22.0 (19.7–24.6)	22.7 (19.8–24.9)
Median IV days (IQR)	14 (0–41)	14 (0–28)
Total IV days	**3970**	**3313**