and plan are documented, and the GP receives a same day fax. We now report our results for the calendar year.

Results 293 patients with suspicious scans were contacted through our virtual clinic, and of these 241 (82%) were triaged to the most appropriate next test as day cases (69 (29%) bronchoscopy, 50 (21%) EBUS, 69 (29%) PET scan, 26 (11%) CT biopsy, 4 (1%) FNA, 17 (7%) pleural aspiration, 6 (2%) bronchoscopy and pleural aspiration).

At these attendances, patients were reviewed by medical staff and the CNS who undertook the telephone assessment, and any relevant other assessments performed. Of the remainder, 38 (13%) were triaged to a clinic for assessment, 2 (6%) were admitted, and 2 (6%) referred back to their GP for best supportive care.

Using this service we have been successful in targeting cancer resources onto patients subsequently diagnosed with lung cancer (79%), we have improved our mean time to diagnosis to 19 days, with a histological rate of 89%. Our 62 day breach rate is 6%. The new process also provides a 42% cost saving for primary care.

Conclusions We have shown that the use of a virtual clinic can target and speed up the diagnostic pathway for patients with lung cancer. It also makes more efficient use of scarce NHS resources, by ensuring that patients only attend the hospital for necessary investigations.

We recommend the use of this innovative service to other clinicians charged with managing this common and distressing disease.

P176 EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) MUTATION TESTING AND TREATMENT CHOICE IN ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC): UK FINDINGS FROM A GLOBAL SURVEY

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Introduction International and UK guidelines recommend EGFR mutation testing should be performed for advanced non-squamous NSCLC and results should guide treatment decisions. This testing is an important component of standard care because matching mutations to specific TKI treatment can extend survival and improve quality of life compared to first-line chemotherapy.

Objectives To assess the prevalence of EGFR mutation testing, attitudes and barriers to testing, and how results affect choice of therapy among prescribers in the UK and internationally.

Methods We conducted an online representative survey of 562 prescribers in 10 countries (Canada, France, Germany, Italy, Japan, South Korea, Spain, Taiwan, UK and US) between December 2014 and January 2015, including 51 oncologists in the UK (Annals of Oncology, Volume 26, Supplement 1, 2015).

Results In the UK, prescribers stated that 77% of newly diagnosed patients with advanced NSCLC were tested for EGFR mutations, the same proportion as in Europe (77%) and North America (76%), but less than in Asia (92%). The stated reasons for not testing included: histology, insufficient tissue to perform the test, poor performance status, and long turnaround time for results. Despite the relatively high rate of EGFR testing claimed in the UK, respondents said that 21% of patients for whom a test was ordered were started on first-line treatment before

results were available, nearly double the rate in Asia (12%). Further, 67% of UK of oncologists, compared to 51% of all respondents, reported that treatment decisions were not affected by EGFR mutation subtype.

Conclusion Despite the high levels of EGFR mutation testing in the UK, the survey found that more than one in five patients with advanced NSCLC do not receive treatment personalised for cancer type and mutation subtype, even though evidence shows this improves survival and quality of life. These findings suggest there is incomplete implementation of UK guidelines. Further research is needed to discover what factors contribute to oncologists not following established guidelines in the UK. These data were originally presented at the European Lung Cancer Conference, 2015. Annals of Oncology, Volume 26, Supplement 1, 2015.

REFERENCE

- 1 Spicer J, Tischer B, Peters M. EGFR mutation testing and oncologist treatment choice in advanced NSCLC: global trends and differences. *Annals of Oncology* 2015;26(supplement 1):i57-i61

Managing pleural disease

P177 COST EFFECTIVENESS OF AMBULATORY MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX

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Introduction Hospital admissions due to a primary diagnosis of spontaneous pneumothorax (SP) have an annual incidence of 11.2 per 100000.¹ It is estimated there are around 7200 emergency hospital admissions annually for pneumothorax in NHS. We have previously demonstrated pneumothorax patients requiring intercostal drains can be managed safely as outpatients with a Pneumostat device (similar to Heimlich valve).²

Methods All patients with primary spontaneous pneumothorax (PSP) and secondary spontaneous pneumothoraces (SSP) with a good performance status (WHO scale of 0-1) requiring an intercostal drain were eligible for outpatient management. SP patients presenting to hospital between July'14 and June'15 were analysed to see what percentage could be managed on the ambulatory pathway. The number of bed days saved was calculated from the total number of days patients spent in the community with the chest drain. The savings were then extrapolated to whole of NHS.

Results 50 episodes (in 44 patients) of SP presented to hospital between July'14 and June'15. 36 episodes required a chest drain insertion. 20 of these 36 episodes (55%) were managed on the ambulatory pathway. Based on this approximately 4000 (55% of total NHS admissions) SP patients could be managed in an ambulatory setting annually across NHS.

The health care usage (number of attendances at ambulatory care, Chest X-rays and Pneumostat devices used) of patients managed on the ambulatory pathway is listed in table 1. The unit cost of healthcare usage was obtained from the hospital information department and the overall cost of ambulatory care was calculated. The difference between this and the calculated bed day savings established the overall cost savings (Table 1). The potential savings to NHS equate to around £2.8 million based on the calculated average savings of £703/patient.

Conclusion Ambulatory management of Spontaneous pneumothorax could realise significant savings to the NHS.

Abstract P177 Table 1

	Unit cost (£)	Total Savings (+)/costs (-) for ambulatory management
Bed day	320	+22,400 (N = 70)
Attendance at ambulatory care	200	-6800 (N = 34)
Chest x-ray	26.36	-949 (N = 36)
Pneumostat Device	28	-588 (N = 21)
Overall savings		+14,063 (£703/patient)

REFERENCES

- Gupta D, Hansell A, Nichols T, *et al.* Epidemiology of pneumothorax in England. *Thorax* 2000;**55**(8):666–671
- Thomas K, Naeem M, Reddy RV. In the pleural zone: P173 ambulatory management of spontaneous pneumothorax. *Thorax* 2014;**69**(Suppl 2):A150–A151

P178 AMBULATORY CARE OF PRIMARY SPONTANEOUS PNEUMOTHORAX WITH A PNEUMOSTAT DEVICE – COST EFFECTIVE AND SAFE

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Introduction and objectives A Heimlich Valve attached to an intercostal drain facilitates the ambulatory management of primary spontaneous pneumothorax (PSP) and in selected individuals permits outpatient care. We have 3 years of experience in doing this with Atrium's *Pneumostat* device. We ascertained the safety and cost effectiveness of this ambulatory pathway.

Methods We conducted a retrospective evaluation of all patients presenting with a PSP from March 2013 to December 2014. Data was collected on management, length of stay (LOS) and complications. Outpatients with a *Pneumostat* are advised to attend the chest clinic 24 h after bubbling stops for review for drain removal, or earlier if any concerns. Medical bed days saved was calculated as time at home with the device *in situ*, as standard BTS care would require an inpatient stay with a drainage bottle.

Results 73 patients presented with a PSP. 34 patients required chest tube drainage, 24 of which were managed as an outpatient with a *Pneumostat*. The median LOS in the outpatient group was 1.0 day (IQR 0.0–2.0 days) vs 3.5 days (IQR 1.3–7.0 days) in the inpatient group. A total of 98 bed days were saved using the device. Based on a cost of £25.70 per *Pneumostat* and £312 per bed day, the overall saving was £29,959.20. Patients who

required thoracic surgery were kept on the “inpatient waiting list” and could be admitted directly from home.

In the outpatient group, there was 1 drain site infection, 1 drain displacement and 1 patient failed to attend follow-up but returned a week later with a resolved pneumothorax.

Conclusion *Pneumostat* devices have recently been withdrawn from use in the United States by FDA decree. Although legal in the UK and supported by the MHRA, a Certificate of Medical Necessity is required to purchase the devices and there is no alternative “all-in-one” solution that attaches to a standard chest drain. Our data shows that this device is safe in uncomplicated PSP and confers significant financial savings. These benefits should not be overlooked and a consensus statement is required to ensure their continued use in the UK.

P179 THE EFFECTIVENESS OF CHEMICAL PLEURODESIS AGENTS IN SPONTANEOUS PNEUMOTHORAX: A SYSTEMATIC REVIEW

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Introduction and objectives Spontaneous Pneumothorax (SP) is a common pathology. Recurrence rates (RR) for Primary SP (PSP) are often quoted as approximately 30% (individual studies reporting anywhere between 17 and 49%), with less data available on Secondary SP (SSP) recurrence rates. Recurrence prevention at first episode remains controversial. International guidelines suggest pleurodesis for non-resolving air leak or recurrence prevention at second episode. There are numerous candidate agents for chemical pleurodesis.

This study aimed to comprehensively review the existing literature regarding chemical pleurodesis as a treatment modality.

Methods The systematic review methodology was based on the PRISMA approach and principles. Literature searches of multiple databases (PubMed, Embase, Medline, Web of Science, Cochrane Library) used combinations of terms including “spontaneous”, “pneumothorax”, “chemical”, “talc”, “tetracycline”, “minocycline”, “iodopovidone”, and “blood”. Abstracts were reviewed for relevance by two authors, who subsequently assessed and extracted data from the full articles.

Results Of 522 abstracts reviewed; 427 were excluded (e.g. case reports, letters, reviews, animal models or basic science articles); an additional 4 papers included via back-referencing. 99 full text papers were reviewed; 58 were excluded for the following

Abstract P179 Table 1 Detail of 8 randomised trials assessing efficacy of chemical pleurodesis

Study	Medical/Surgical	Intervention agent (# cases)	Control (# cases)	PSP/SSP (# cases)	Co-Intervention	Recurrence rate (agent/control)
Light (1990)	M	Tetracycline (113)	Drainage only (116)	46/183	Nil	25%/41%
Almind* (1989)	M	Talc (29) vs tetracycline (33)	Drainage only (34)	71/25	Thoracoscopy (no intervention)	8%/13%/36%
Tschopp (2002)	M	Talc (61)	Drainage only (47)	108/0	Thoracoscopy (no intervention)	5%/34%
Chen (2006)	S	Minocycline (103)	Saline (99)	202/0	VATS - bullectomy	2%/8%
Chung* (2007)	S	Talc and Dextrose (42) vs Dextrose alone (49)	Drainage only (50)	141/0	Thoraco-scopic bleb resection/cautery	2%/2%/6%
Agarwal (2011)	M	Iodopovidone (20)	Talc (15)	10/25	Nil	0%/0%
Alayouty (2011)	S	Minocycline (42)	Abrasion (40)	82/0	VATS -bullectomy	0%/5%
Chen (2013)	M	Minocycline (106)	Drainage only (108)	214/0	Nil	29%/49%

*Three arms of trial.