Cost-analysis indicated that equivocal and indeterminate results plus subsequent TB service management increased the cost of each initial QuantiFERON diagnostic test from £35 to £40.76 per patient.

Conclusion 8% of subjects had an equivocal or indeterminate first IGRA result. The recommended subsequent action often was not followed by the requesting clinicians. When repeated, the test provided a definitive result in two-thirds of subjects - the majority being negative. This adds an appreciable cost to the test, and brings it in line with other commercial IGRA. Further education of referring clinicians is required to minimise avoidable waste and optimise patient care.

Abstract P32 Table 1. Equivocal and Indeterminate repeated tests and referrals

	Equivocal [n = 116, %]	Indeterminate [n = 42, %]
Tests repeated	66 (57%)	24 (57%)
Positive on repeat	13 (20%)	3 (12%)
Negative on repeat	30 (45%)	15 (63%)
Equivocal/indeterminate on repeat	23 (35%)	6 (25%)
No. of patients referred to TB clinic	34	6
No. of patients treated for LTBI	12	1

Abstract P33 Table 1.

Patient No.	Mask Timing	Sputum (Sp)/ BAL samples (Ba) Smear	Culture	GeneXpert	Other Sample Smear	Culture	Mask
2	Pre-treatment	Sp Positive	Positive	Positive	N/A	N/A	Positive
3	Pre-treatment	Sp Positive	Negative	Negative	N/A	N/A	Positive
4	Pre-treatment	Sp Negative	Negative	N/A	N/A	Neck Pus Positive	Negative
6	Pre-treatment	Sp Positive	Positive	Positive	N/A	N/A	Positive
5	Pre-treatment Post BAL	Ba Positive	Positive	N/A	N/A	N/A	Negative
7	Pre-treatment Post BAL	Ba Positive	Positive	N/A	N/A	N/A	Negative
1	Day 5 of treatment	Sp Negative	Negative	N/A	N/A	Pleural fluid Positive	Negative
9	Day 5 of treatment	Sp Positive	Positive	N/A	N/A	N/A	Positive
8	Negative Control	Sp Negative	Negative	N/A	N/A	N/A	Negative
10	Negative Control	Sp Negative	N/A	Negative	N/A	N/A	Negative

P33 MASK SAMPLING IN PULMONARY TUBERCULOSIS

CML Williams, P Haldar, MR Barer; *University of Leicester, Leicester, UK;*

10.1136/thoraxjnl-2013-204457.183

Introduction and Objectives Although pulmonary tuberculosis (pTB) remains a major health burden worldwide relatively little is known about the formation of droplets and aerosols by these patients by that are considered to be the primary source of transmission. We have developed an approach based on wearing face masks.

Our aim was to capture expectorated droplets and aerosols from patients with pTB in a convenient continuously wearable system and to quantify the retained *Mycobacterium tuberculosis* (Mtb).

Methods We designed a mask sampling system to be worn for one hour. A filter mounted in the mask was subjected to GeneXpert analysis (DNA based detection of Mtb and rifampicin resistance) and 16S rRNA analysis using in-house techniques. Where available, a concurrent sputum sample was also processed.

Results Table 1 shows results from 10 patients including two negative controls and one extra-pulmonary TB case.

Three of five pre-treatment pTB patients and one of two pTB patients at day 5 of treatment were filter GeneXpert positive. No Mtb was detected from our negative controls. In one case (patient 3) the mask was the only positive sample apart from a scanty smear. In background experiments we demonstrated a detection limit of 1200 CFU/filter. Preliminary studies on RNA analysis suggest that this may have advantages over DNA-based detection but these require confirmation.

Conclusions The mask sampling system detected expectorated Mtb in just over half of the patients diagnosed to have pTB and all four of those that were sputum smear positive. Compatibility with the GeneXpert system makes the approach widely applicable.

Further studies will be required before comparisons with the Cough Aerosol Sampling System and Guinea Pig sampling approach can be made. However, the mask sampling appears at least as sensitive as the former and the convenience and cost of the method recommend its potential for both diagnosis and research into TB transmission.

Pulmonary rehabilitation

P34 THE MINIMAL CLINICALLY IMPORTANT DIFFERENCE OF THE COPD ASSESSMENT TEST

[1]SSC Kon, [1]JL Canavan, [2]AL Clark, [1]SE Jones, [1]CM Nolan, [1]MI Polkey, [1]WDC Man; *[1]NIHR Respiratory Biomedical Research Unit, Royal Brompton & Harefield NHS Foundation Trust and Imperial College, Harefield, Middlesex, United Kingdom; [2]Harefield Pulmonary Rehabilitation Unit, Harefield, Middlesex, United Kingdom[2]*

10.1136/thoraxjnl-2013-204457.184

Background The COPD (chronic obstructive pulmonary disease) assessment test (CAT) is a simple 8-item, health status instrument (Jones PW *et al* 2009). It has good psychometric properties and has been shown to be responsive to pulmonary rehabilitation (PR) (Dodd *et al* 2011) and recovery from exacerbation (Jones PW *et al* 2011). The CAT has also recently been incorporated into the Global Initiative for Chronic Obstructive Lung Disease (GOLD) combined assessment of COPD, to help assess disease severity. However the minimal clinically important difference (MCID) for the CAT has not been formally established.

Aims The aims of this study were to assess the relationship between change in CAT and change in other health related quality of life (HRQoL) questionnaires and to provide estimates for the MCID.

Methods The CAT, St. George's Respiratory Questionnaire (SGRQ), Chronic Respiratory Questionnaire (CRQ) and Clinical COPD Questionnaire (CCQ) were measured in 565 COPD patients before and after outpatient PR. Paired t tests were used to compare outcomes before and after PR. Spearman rank correlation was used to compare changes in CAT with other HRQoL questionnaires. Using an anchor-based approach and receiver operating characteristic (ROC) curves, the CAT change cut-offs that identified patients achieving the known MCID for other health status questionnaires with PR were identified.

Results The CAT, SGRQ, CRQ and CCQ all significantly improved with PR. CAT change correlated significantly with change in SGRQ, CRQ and CCQ (r = 0.30, -0.44, 0.52