Abstract P57 Table 1 Comparison of results achieved against targets set in the London TB Metrics

Metric	Metric detail	Target	Achieved
2	Access: suspected pulmonary TB cases seen within 2 weeks of referral	≥90%	92.7%
3	Diagnosis: confirmation of pulmonary TB by liquid culture	≥65%	63.2% (70.6% excluding foreign diagnoses)
4	Diagnosis: sputum smear results available within one working day	100%	30.1% within 1 day, 61.8% within 2 days
5	Risk assessment recorded	≥90%	94.5%
6	Treatment completion rate	≥85%	84.9% (98.4% excluding transfers)
7	Contact tracing	Able to report activity and outcome	Achieved
8	Workforce	One TB nurse per 40 notifications per year	Achieved
9	HIV testing offered	≥80%	94.5%

Discussion We have audited performance of a local TB clinic against targets set in the London TB Metrics. Achieving a microbiological diagnosis in 65% is difficult as patients are often already on treatment before referred into the service. Changes were instituted in laboratory workflow patterns to improve sputum smear result availability within one working day, increasing to 93.8% in the first 2 months of 2010.

Conclusion The London TB Metrics targets are achievable (seven of eight targets met) and provide an audit tool that may facilitate improvements in the standard of TB care.

P58 WHAT DOES PULMONARY TUBERCULOSIS (TB) LOOK LIKE IN LONDON?

doi:10.1136/thx.2010.150979.9

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Introduction A typical radiological presentations of TB may lead to unnecessary and costly tests, delayed or missed diagnoses, and increased transmission. Feeling that such presentations were increasing, we retrospectively reviewed our thoracic TB patients' radiology.

Methods The London TB Register (LTBR) was queried for patients at our Trust with intrathoracic lymph node or pleural disease (January 2006–December 2008), or pulmonary disease (January 2008–December 2008). Chest radiographs (CXR) and CT scans from symptom onset to diagnosis were analysed by a consultant radiologist. Clinical data was obtained from hospital records.

Results 118 patients were identified: male=75 (64%); median age=33 years; HIV-infected=10 (8%). 118 (100%) had CXRs and 57 (48%) additional CTs. From LTBR 16 had intrathoracic lymphadenopathy, 16 pleural diseases, 73 pulmonary diseases, and three mixed. One pre-diagnosis CXR was performed in 7/10 (70%) HIV-positive and 63/108 (58%) HIV-negative/unknown; two in 3/10 (30%) HIV-positive, 27/108 (25%) HIV-negative/unknown; >3 CXR (maximum eight) were performed in 18/108 (17%) HIV-negative/unknown. We focused on radiologically pneumonic cases. 63/118 (53%) had consolidation on initial CXR, 66/118 (56%) on final. 29/66 (44%) had multifocal disease; all but 8/29 (28%) had either lymphadenopathy, cavitation, or nodules. 37/66 (56%) had disease in one zone (see Abstract P58 Table 1). 18/37 (49%) were right UZ; eight with/without pleural involvement but no other suggestive features such as cavitation or nodularity. 7/37 (19%) were left UZ patients; 4/7 (57%) with no other suggestive features. 8/37 (22%) had solely LZ consolidation; 2/8 (25%) with no other suggestive features. Of 17 presentations that could mimic standard pneumonia

(zonal disease with/without pleural involvement but no suggestive TB features) one was HIV positive; 15 had sputum samples—4/15 (27%) were smear positive, 12/15 (80%) were culture positive. Progression to CT was 10/17 (59%). With any consolidation, 20/32 (63%) CTs accessible yielded additional information, often minimal (e.g. 14/32 (44%) showed nodules in addition to lymphadenopathy). 13/32 (41%) were women, 9/13 (69%) under 40-years-old.

Abstract P58 Table 1

Sole disease site	RUZ	RMZ	RLZ	LUZ	LMZ	LLZ
Total number	18	1	3	7	3	5
With pleural involvement	4	1	1	2	0	2
No other TB features	8	1	1	4	2	1
With cavitation	4	0	2	2	0	1
With nodules	0	0	0	0	0	2
With lymphadenopathy	9	1	2	0	1	2
Progressed to CT	10	2	3	4	2	1

Discussion In our cohort the majority of patients had typical diagnostic features on presenting CXR. Lower zone cases were not uncommon but most had features suggestive of TB. The high frequency of CT with questionable clinical gain and high radiation exposure, particularly in young women, is of concern.

P59 WHY DO WE OFTEN FAIL TO MEET THE GOLD STANDARD FOR THE DIAGNOSIS OF ACTIVE TUBERCULOSIS?

doi:10.1136/thx.2010.150979.10

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Introduction Although laboratory culture of *Mycobacterium tuberculosis* (M TB) remains the gold standard for the diagnosis of active tuberculosis (TB), only 66% of pulmonary and 46% of extra-pulmonary cases of TB in the UK are culture confirmed.¹ The Health Protection Agency's Strategic Plan aims for at least 70% of pulmonary TB cases to be confirmed by positive culture. The aim of this study was to identify the reasons for not obtaining culture confirmation in a cohort of active TB patients.

Methods A retrospective study of all patients with active tuberculosis in a TB centre between January and December 2009.

Results 69 patients (46 male) with a mean age of 42 years (range 3–83) were diagnosed. 36 (52%) had pulmonary TB with or without extra-pulmonary disease and 33 (48%) had extra-pulmonary TB only. 29 (81%) cases of pulmonary TB were culture positive and 4 (11%) had no growth on culture. 3 (8%) cases had no sample obtained. These were all children aged 3–5 years who had a positive Mantoux test, evidence of TB on chest radiograph and a history of close contact. 17 (52%) cases of extra-pulmonary TB were culture positive. 10 (30%) had samples taken but no growth on culture. 2 (6%) had samples obtained but not sent for culture while 4 (12%) had no sample obtained.

Conclusion The commonest reason for not obtaining culture confirmation was a negative growth (20%). Failure to obtain a microbiological sample (10%) and failure to send the collected sample for mycobacterial culture (3%) were the other reasons. A positive culture of M TB is important because it not only confirms the diagnosis but also provides the drug susceptibility profile of the organism. Our finding that the largest proportion of cases not confirmed by positive culture was due to no growth from a specimen suggests that the current microbiological methods for growing M TB may be inadequate and further research is needed to increase the diagnostic yield. Secondly, there is a need to educate

those sending samples, including surgeons and radiologists performing biopsies, so that specimens are sent correctly.

Abstract P59 Table 1 Results

	Pulmonary tuberculosis (N=36)	Extra-pulmonary tuberculosis (N=33)	Total (N=69)
Culture confirmed	29 (81%)	17 (52%)	46 (67%)
No growth on culture	4 (11%)	10 (30%)	14 (20%)
No sample obtained	3 (8%)	4 (12%)	7 (10%)
Sample obtained but not sent for culture	0	2 (6%)	2 (3%)

REFERENCE

1. Annual Report on tuberculosis surveillance in the UK 2009. Health Protection Agency. http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259152022594.

P60 QUESTIONABLE UTILITY OF T-SPOT TESTING IN A TB EXPOSURE INCIDENT ON A CLINICAL HAEMATOLOGY UNIT

doi:10.1136/thx.2010.150979.11

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Introduction Interferon-gamma release assays (IGRAs) have been promoted as having a key role in contact tracing for tuberculosis (TB). In immunosuppressed patients T-SPOT is considered to be the test of choice for detection of latent TB infection. We describe a contact tracing exercise carried out on a Clinical Haematology Unit (CHU) where 168 patients had significant nosocomial exposure to a case of smear-positive TB.

Methods A 29-year old female homeless patient with Hodgkin's lymphoma was diagnosed with smear positive pulmonary tuberculosis (TB). In the 6 months prior to diagnosis she had attended the CHU on 31 occasions including several prolonged inpatient stays. The Incident Management Team initiated a retrospective exercise to identify those at risk in this vulnerable population.

Results 485 haematology patients were subdivided into three cohorts of risk, as well as 69 significant staff contacts. 168 patients considered at highest risk were contact traced and offered screening. 149 of these 168 patients underwent T-SPOT testing. 11 patients did not attend and six patients had died from their underlying condition. In two patients it was not performed as they were already receiving anti-TB therapy. One of these patients had no other known exposure prior to the index case. Of the 149 patients tested with T-SPOT, 19 (12.8%) had a positive result, 76 (51.0%) had a negative result, and 54 (36.2%) had an indeterminate result (negative result with a failed positive control). All those with positive and indeterminate results were followed up in clinic. No further cases of TB were identified. Due to the large number of indeterminate results further T-SPOT testing of additional cohorts was not conducted.

Conclusions T-SPOT testing is considered to have superior sensitivity to tuberculin skin testing in certain immunosuppressed populations, where indeterminate T-SPOT test results have been reported to be infrequent. However, the number of indeterminate results in our study was significantly higher than previously reported in other immunosuppressed groups. This episode calls into question the stated utility of T-SPOT testing in this cohort of patients with haematological conditions. More research is required on the efficacy of IGRAs in the severely immunosuppressed.

P61 PULMONARY NONTUBERCULOUS MYCOBACTERIAL (NTM) CULTURE IS COMMON FOLLOWING LUNG TRANSPLANTATION, AND NTM LUNG DISEASE IS ASSOCIATED WITH POOR PROGNOSIS

doi:10.1136/thx.2010.150979.12

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Introduction NTM lung disease (NTMLD) is commonly associated with advanced pre-existing lung disease or defective cellular immunity. Lung transplant (LTx) recipients receive potent immunosuppression and often have structural lung abnormalities, so might be at uniquely high risk of NTM infection and disease. However, there is little published about NTM following LTx.

Method We carried out a retrospective study of NTM in LTx recipients attending our centre between 1/1/2005 and 31/8/2009. NTMLD was diagnosed according to American Thoracic Society (ATS) guidelines.

Results 326 respiratory samples (from 172 LTx recipients) were sent for mycobacterial culture, of which 51 samples (15.6%) from 39 patients (22.6%) grew NTM. Samples from 32 patients (82%) grew *M. avium* complex (MAC), three grew *M. abscessus*, two *M. goodii*, one *M. kansasii* and one *M. malmoense*. Nine patients had multiple positive cultures (maximum four), but only one species was ever isolated from each individual. None had NTM preoperatively, although one had a single isolate of NTM before the study period. 23 patients had positive culture from BAL or multiple sputum samples, and 21 patients had chest radiology compatible with NTM. ATS radiological and microbiological criteria were met in 13 patients (33%). Those diagnosed with NTMLD according to ATS guidelines had a significantly higher death rate than those from whom no NTM were isolated (HR 2.42, 95% CI 1.09 to 5.37), whereas those who did not meet ATS criteria did not. Four patients were treated for NTM: one was cured, while two deteriorated and died. The fourth developed renal impairment and treatment was abandoned; symptoms and lung function improved.

Comment In our cohort, respiratory NTM were cultured more frequently than previously reported, but a smaller proportion met ATS criteria for NTMLD and fewer were treated than in a previous cohort (15.6%, 33% and 10% respectively, compared with 6.5%, 73% and 82%). MAC is consistently the most common isolate. Patients with NTMLD by ATS criteria do worse than those without. Our data suggest that LTx is likely to be a risk factor for NTM infection but the majority of isolates represent colonisation/contamination. We advocate following ATS guidelines for treatment decisions of NTMLD after LTx.

P62 ARE WE MISSING OPPORTUNITIES TO OBTAIN A MICROBIOLOGICAL DIAGNOSIS OF TB?

doi:10.1136/thx.2010.150979.13

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Introduction TB incidence is rising in the UK, with drug resistance becoming increasingly problematic. Diagnosis with microbiological culture and confirmation of sensitivity is therefore vital. This study investigated how often we are not achieving microbiological diagnosis at our centre, what factors influence this and whether opportunities to obtain microbiological samples were missed.

Methods A retrospective study of all 156 cases (adult and paediatric) diagnosed with TB at Central Manchester Teaching Hospitals in 2009 was carried out. Demographic details, site of disease, types of specimens and results of TB culture were recorded. Cases where