Public Health Needs Assessment

Tuberculosis in Southampton

June 2012

Lead contributors
Dominique Letouze, Specialty Registrar in Public Health, NHS Southampton City
Dr Graham Watkinson, Consultant in Public Health, NHS Southampton City

Acknowledgements
With thanks to all the staff at the Southampton TB service, Southampton University Hospitals Trust, Health Protection Agency, NHS Southampton, Portsmouth Hospitals Trust, North Central London TB Network, Southampton Solent University, Chelsea and Westminster Hospital TB Service and Southampton Community and Voluntary Services who assisted with and informed this health needs assessment.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents</td>
<td>2</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Policy background</td>
<td>4</td>
</tr>
<tr>
<td>Description of the disease and its epidemiology</td>
<td>6</td>
</tr>
<tr>
<td>Surveillance</td>
<td>7</td>
</tr>
<tr>
<td>Control, prevention and treatment</td>
<td>7</td>
</tr>
<tr>
<td>Local epidemiology</td>
<td>7</td>
</tr>
<tr>
<td>Social risk factors</td>
<td>9</td>
</tr>
<tr>
<td>Southampton and South West Hampshire TB services</td>
<td>15</td>
</tr>
<tr>
<td>Screening and referral</td>
<td>18</td>
</tr>
<tr>
<td>Treatment</td>
<td>18</td>
</tr>
<tr>
<td>Contact tracing and active case finding</td>
<td>18</td>
</tr>
<tr>
<td>Non-attendance</td>
<td>18</td>
</tr>
<tr>
<td>Screening high-risk groups: new entrants</td>
<td>19</td>
</tr>
<tr>
<td>Screening high-risk groups: homeless</td>
<td>20</td>
</tr>
<tr>
<td>BCG vaccination</td>
<td>20</td>
</tr>
<tr>
<td>Local education and awareness raising</td>
<td>21</td>
</tr>
<tr>
<td>Monitoring and reporting</td>
<td>22</td>
</tr>
<tr>
<td>Staff training</td>
<td>23</td>
</tr>
<tr>
<td>Stakeholder views</td>
<td>23</td>
</tr>
<tr>
<td>Staff views</td>
<td>23</td>
</tr>
<tr>
<td>BCG vaccination</td>
<td>24</td>
</tr>
<tr>
<td>Outreach and health promotion</td>
<td>25</td>
</tr>
<tr>
<td>New entrant screening</td>
<td>25</td>
</tr>
<tr>
<td>Workload assessment</td>
<td>26</td>
</tr>
<tr>
<td>Patient feedback</td>
<td>26</td>
</tr>
<tr>
<td>Comparative services</td>
<td>29</td>
</tr>
<tr>
<td>Portsmouth TB Service</td>
<td>29</td>
</tr>
<tr>
<td>Staff structure</td>
<td>29</td>
</tr>
<tr>
<td>Outreach</td>
<td>29</td>
</tr>
<tr>
<td>Delivery of BCG vaccination</td>
<td>29</td>
</tr>
<tr>
<td>The North Central London TB service</td>
<td>30</td>
</tr>
<tr>
<td>The TB Link Project</td>
<td>30</td>
</tr>
<tr>
<td>Increased awareness</td>
<td>31</td>
</tr>
<tr>
<td>Regional steering group with senior leadership</td>
<td>31</td>
</tr>
<tr>
<td>Strength, weaknesses, opportunities, threats</td>
<td>31</td>
</tr>
<tr>
<td>Option appraisal for new entrant screening</td>
<td>34</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
<tr>
<td>Staff capacity</td>
<td>37</td>
</tr>
<tr>
<td>Education and training</td>
<td>37</td>
</tr>
<tr>
<td>Estate capacity</td>
<td>37</td>
</tr>
<tr>
<td>Latent TB screening: hard to reach groups</td>
<td>38</td>
</tr>
<tr>
<td>BCG vaccinations</td>
<td>38</td>
</tr>
<tr>
<td>Recommendations</td>
<td>40</td>
</tr>
<tr>
<td>Appendix</td>
<td>42</td>
</tr>
<tr>
<td>Appendix 1: Patient satisfaction questionnaires</td>
<td>42</td>
</tr>
<tr>
<td>Appendix 2: Suggested text for university welcome pack (from Portsmouth TB Service)</td>
<td>46</td>
</tr>
</tbody>
</table>
Executive Summary

Tuberculosis (TB) is the leading cause of death among curable infectious disease worldwide. The World Health Organisation (WHO) declared TB a global emergency in 1993. In the UK, TB remains a serious public health problem, with a largely rising trend in incidence over the last two decades.

This Health needs assessment (HNA) incorporates epidemiological, comparative and corporate (taking stakeholder views) approaches\(^1\), attempting to draw a complete picture of community-based tuberculosis services in Southampton. This HNA follows recent guidance from NICE on *Identifying and Managing Tuberculosis among hard-to-reach groups\(^2\)* which recommends that annual local needs assessments be conducted. It informs the revised service specification for the Tuberculosis Nurse-Led Service in Southampton, currently commissioned by NHS Southampton.

In the UK in 2010, a total of 8,483 TB cases were reported, a rate of 13.6 cases per 100,000 population. In the same year, 73% of cases were born outside the UK.

Cases of TB in Southampton are rising. In 2010, the rate per 100,000 population of new TB notifications in Southampton was 12.1, under the national average. This figure rose to 23.4 per 100,000 in 2011, largely due to the existence of a large and growing cluster of cases. In 2011, there were 51 cases resident in Southampton recorded onto the Enhanced TB Surveillance system. In 2009, the majority of cases in Southampton had entered the UK before 2004, indicating a latent period of infection.

Local TB services have the aim of controlling TB by reducing the number of TB cases and reducing onward transmission of the disease. The key objectives of the service are to:
- Identify and treat cases through clinical identification and case finding among the local at risk population.
- Chemoprophylaxis for those at risk
- Offer selective immunisation with BCG

TB services in Southampton are commissioned by the Primary Care Trust NHS Southampton from the primary care provider Solent NHS Trust, and the acute care provider University Hospitals Southampton (UHS). The TB nurse-led outpatient service based at Royal South Hampshire Hospital in St Mary’s, manages both active and latent cases in conjunction with specialist consultants from the UHS.

The TB service is currently meeting most national and local targets for service delivery, despite the greatly increased work load in the past year. Ongoing health need is linked to the increase in cases and the burden this places on the service in terms of treatment, follow-up and contact tracing.

Corporate views were gathered from patients and staff at the TB service and elsewhere. When patients at the TB service were surveyed, the vast majority were very happy with the quality of the service.

Staff and patients did identify a number of issues of concern to them, primarily connected to latent TB screening, service capacity, outreach, training and education.
Good practice was also identified elsewhere linked to the structure of the service, outreach and senior executive leadership. Eleven recommendations are made on these themes.

Introduction

Tuberculosis (TB) is the leading cause of death among curable infectious disease worldwide. The World Health Organisation (WHO) declared TB a global emergency in 1993. In the UK, TB remains a serious public health problem, with a largely rising trend in incidence over the last two decades.

Health needs assessment (HNA) is a systematic method of gathering information on the health needs of a particular population in order to inform service planning and improve service. For the purposes of HNA, need is assumed to exist when there is an effective and acceptable intervention or the potential for health gain.

James and Raftery have described three approaches to HNA:
- Epidemiological – describes the epidemiology of a condition, current service provision and the effectiveness and cost-effectiveness of interventions and services
- Comparative – compares services between different populations
- Corporate – elicits the views of stakeholders, for example healthcare staff or patients.

This HNA incorporates all three approaches, attempting to draw a complete picture of community-based tuberculosis services in Southampton.

Policy background

This HNA follows recent guidance from NICE on Identifying and Managing Tuberculosis among hard-to-reach groups which recommends that annual local needs assessments be conducted. It informs the revised service specification for the Tuberculosis Nurse-Led Service in Southampton, currently commissioned by NHS Southampton.

In 2004, the Chief Medical Officer released an action plan for stopping TB in England, based on the imperative to reduce high rates of TB in the UK. It set out three main steps:
- Reduce the risk of people being newly infected with TB
- Provide high quality treatment and care for all people with TB
- Maintain low levels of drug resistance, especially for Multi-drug Resistant TB (MDR-TB)

In order to assist commissioners and service providers to implement the action plan, the Department of Health released a comprehensive Toolkit for Planning, Commissioning and Delivering High-Quality Services in England. The toolkit includes maps of suggested commissioning responsibilities, which has been used to inform this HNA.

In 2009, the British Thoracic Society and Royal College of Nursing conducted concurrent surveys to establish the extent to which the CMO’s action plan had been
implemented\textsuperscript{7}. It was found that although progress had been made, more action was needed to ensure national standards were met. This lead to a number of recommendations, including:

- Services should operate within the recommended 1:40/1:50 nurse to patient ratio\textsuperscript{1}, and ensure that all nursing staff treating TB are adequately trained and that their skills are regularly updated
- Trusts should ensure that effective local awareness raising programmes are run in all high risk communities.

In 2011 the National Institute for Health and Clinical Excellence (NICE) revised its guideline for the \textit{Clinical diagnosis and management of tuberculosis, and measures for its prevention and control}\textsuperscript{8}. Key priorities for implementation include:

- the management of active TB through delivery of a standard drug regimen;
- improvement of adherence to treatment through a named case worker and, if necessary, using Directly Observed Therapy (DOT)
- new entrant screening at port of arrival, primary care registration, entry to education and via links with statutory and voluntary groups working with new entrants.
- BCG vaccination for any baby at increased risk of TB.

This guideline is supported by specific public health guidance on \textit{Identifying and managing tuberculosis among hard-to-reach groups}\textsuperscript{9} that contains recommendations for:

1. NHS commissioning board and Public Health England to maintain strategic oversight and commissioning of TB prevention and control activities
2. Public Health Teams to undertake health needs assessments
3. Public Health leads to undertake Cohort Review of TB patients
4. Commissioning of multidisciplinary TB support for hard-to-reach groups
5. Raising awareness and sustaining awareness of TB among health professionals and those working with hard-to-reach groups
6. Raising and sustaining awareness of TB among hard-to-reach groups
7. Identifying active pulmonary TB among those using homeless and substance misuse services
8. Identifying and managing active TB in prisons or immigration centres
9. Identifying and managing active and latent TB among vulnerable migrants; substance misusers and prison populations
10. Improving contact investigations
11. Maintaining and promoting rapid-access TB services
12. Enhanced case management for hard-to-reach groups

Aside from the public health imperative to reduce TB rates, there are also policy drivers that require local health organisations to address TB. The draft Public Health Outcomes Framework 2013-16 requires information on the following, recognising their importance as indicators for population health:

\begin{itemize}
\item[1] Guidance from the Royal College of Nursing recommends that ‘staffing levels for all TB services should be based on one WTE TB case manager per 40 notifications annually requiring standard case management and one WTE TB case manager per 20 notifications annually requiring enhanced case management. This proposed staffing ratio does not include essential administrative staff, health advocates, interpreters and non-clinically qualified outreach staff working alongside TB MDTs’ (RCN, 2012).
\end{itemize}
3.3 the proportion of eligible 1-16 year olds that have been vaccinated with BCG
3.5 the proportion of patients who successfully complete treatment for tuberculosis.

**Description of the disease and its epidemiology**

In humans tuberculosis (TB) is caused by the *Mycobacterium tuberculosis* complex (which includes *M. tuberculosis*, *M. bovis* and *M. Africanum*). Infection is spread by droplets expelled through coughing, talking or smoking in close proximity. Around two thirds of UK cases are pulmonary, but bacteria can pass through the bloodstream to infect any part of the body.

It is estimated that 30% of those exposed to the disease become infected, and only 5-10% will go on to develop disease. Risk of developing active disease is greatest within the first 5 years following infection, however, only a small minority of those infected go on to develop symptoms. In others, the bacteria lie dormant, which may reactivate years or decades later. Symptoms include a coughing, sometimes with blood and sputum, night sweats, lack of appetite, weight loss, fever and fatigue.

The World Health Organisation defines an active pulmonary case as one which is sputum-smear positive based on the presence of at least one acid fast bacilli (AFB+) in at least one sputum sample.

Those most at risk are individuals in close contact with an active pulmonary case (for example living in the same overcrowded household), and those with compromised health or immunity, such as children, the elderly and those dependent on drugs and alcohol.

In 2010, there were 8.8 million (range 8.5 – 9.2 million) incident cases of TB worldwide, and since 2002 incidence rates have been falling. In the UK in 2010, a total of 8,483 cases were reported, a rate of 13.6 cases per 100,000 population (95% CI 13.3 0-13.9). This rate is a decrease of 5.6% compared with 2009, but further years of data are needed to determine if this is a true decline of the rise in incidence over the last 20 years. The highest rate of disease (42 per 100,000, 95% CI 4.05-43.4) was found in London.

In 2010, 73% of cases were born outside the UK, the same proportion as 2009. The rate of tuberculosis among the non UK-born population was nearly 21 times the rate in the UK-born. The majority of non UK-born cases originated from South Asia (55%) and sub-Saharan Africa (26%). Time since entry into the UK to tuberculosis diagnosis was known for 85% of non-UK-born cases. Of these, only 23% were diagnosed within two years of entering the UK.

Information on social risk factors was known for 86-90% of cases. Among cases with known information:
- 2.7% had a history of problem drug use
- 4.3% of alcohol misuse/abuse
- 2.7% of homelessness
- 2.5% (183/7305) had a history of imprisonment.
One in ten cases had at least one of the risk factors. About one in five cases had more than one risk factor and 11 cases were reported to have all four risk factors. Of cases with at least one social risk factor, 42% were started on Directly Observed Therapy (DOT)\textsuperscript{12}.

**Surveillance**

All forms of TB are notifiable in England and Wales, which contributes to surveillance figures. Enhanced Tuberculosis Surveillance (ETS), managed by the Health Protection Agency (HPA), and gathered by local TB services obtains detailed information on the disease and demography of sufferers, and has been used to inform this Health Needs Assessment. A passive system of TB incident and outbreak surveillance (TBIOS) was established by the HPA in 2004 to contribute to the evidence base and improve public health outbreaks of such events.

**Control, prevention and treatment**

Vaccination with Bacillus Calmette-Guerin (BCG) provides protection against TB, and is recommended for infants (0-12 months) with parents or grandparents from countries of high annual incidence\textsuperscript{2}, or living in areas of high annual incidence (such as some areas of London). High prevalence for the purposes of vaccination is considered to be \(\leq 40\) per 100,000. If older children are identified as being unvaccinated, vaccination should be delivered\textsuperscript{13}.

Screening contacts of active cases reduces the risk of latent cases developing active disease, and limits onward transmission. Screening of new entrants to the UK is recommended by NICE\textsuperscript{14}.

TB is treated with 6 months of multi-drug therapy. Adherence to treatment is essential in order to prevent multi-drug resistant strains developing (MDR-TB), which is rising in the UK. Drug-resistant forms of the disease are more difficult to treat and may require longer courses of treatment.

**Local epidemiology**

Cases of TB in Southampton are rising. In 2010, the rate per 100,000 population of new TB notifications in Southampton was 12.1, under the national average. This figure rose to 23.4 per 100,000 in 2011, largely due to the existence of a large and growing cluster of cases, detailed below. In 2009, the majority of cases in Southampton had entered the UK before 2004, indicating a latent period of infection.

In 2011, there were 51 cases resident in Southampton recorded onto the Enhanced TB Surveillance system. This represents an approximate 63% increase in cases since 2010.

In 2011, thirty three cases completed treatment, of whom, less than 5 were known to misuse alcohol or to be homeless. Five or fewer are recorded as having received Directly Observed Therapy (DOT), all of whom have completed treatment.

\textsuperscript{2} For country information on prevalence see: www.who.int/tb/country/data/profiles/en/index.html
Southampton City PCT did not meet the 85% treatment completion target laid out in the Chief Medical Officer’s National Action Plan\textsuperscript{15}, instead achieving 75.9% treatment completion\textsuperscript{16}. However, the 85% completion rate may be due to incomplete data entry on the ETS system, as anecdotally completion rates are much higher than this.

There are currently 2 clusters of TB in Southampton, both of which have genetic links to cases across the country. The following section is from the Hampshire and Isle of Wight Health Protection Unit and gives an overview of the ongoing cluster in Southampton.

Since January 2010 positive *Mycobacterium tuberculosis* (MTB) cultures originating in Hampshire and Isle of Wight are routinely sent for prospective 24 locus VNTR (Variable Number Tandem Repeat) genotyping to the National Mycobacterium Reference Laboratory in London.

TB strain typing results, when combined with epidemiological data, help to identify TB patients who may be involved in the same chain of recent TB transmission and assist in the initiation of timely and appropriate control measures. Strain typing also helps distinguish between reactivation of TB disease acquired in the past and a new episode of disease with a new TB strain, and helps uncover false positive results. The Hampshire and Isle of Wight Health Protection Unit (HPU) became aware of a cluster of less than five TB cases with an indistinguishable VNTR typing in May 2011; this has now expanded to an outbreak of 30 cases of TB disease, all with links to Southampton.

The outbreak is male dominated; cases are mainly under 25 years of age (6 are children) and cases are predominately of Black African ethnicity. Nine TB cases have had infectious sputum smear positive TB. A large number of close contacts have been identified and screened with a high rate of transmission of infection to contacts. The TB strain is fully sensitive to first line TB medication and cases are HIV negative.

The HPU has worked closely with NHS colleagues in the TB service along with Southampton City Primary Care Trust. Extended questionnaires have been completed with members of the outbreak and a number of social links have been identified: a football club, a local barber’s shop, an internet café, playing computer games in homes and attendance at local mosques.

Public health action taken to try to raise awareness and early diagnosis has included extended contact tracing including screening members of a football club, a sixth form college, and a homeless hostel. TB notices were read out by religious leaders in local mosques and temples, a Somali community event was held in addition to a radio phone-in programme. GPs were alerted to the outbreak and Southampton universities have provided TB information to students.

This outbreak has demonstrated the uses and benefits of VNTR strain typing. The strain typing brought the onset of the outbreak to the attention of the HPU, it helped confirm that this outbreak represented recent transmission of TB in Southampton and not reactivation of TB disease from exposure to TB infection in the country of origin, and it continues to identify new cases in the outbreak where initially no known epidemiological link is known.

\textbf{Anne Black, June 2012}
Cohort Review is a process of systematically reviewing the case management and contact investigation of every case of TB in an area. The process was devised in New York and was subsequently adopted in London, where treatment completions rates improved after its adoption, in addition to a reduction in the proportion still on treatment and lost to follow-up at 12 months. The Hampshire and Isle of Wight TB Network started Cohort Review in April 2011, with one meeting so far and more planned.

Social risk factors
Certain social factors have been identified as risks for TB, and include extreme young and old age, those who experience chronic poor health as a result of lifestyle factors such as homelessness, alcoholism and drug abuse, and those who have lived in countries or areas of high prevalence.

Southampton’s population profile is pictured below. It shows that Southampton has 7% more people aged 20-24 than the English national average, and fewer middle and old age adults. This is in part due to the two large universities in the city, and reflects the young age profile of Southampton’s recent TB cluster.

Figure 1: Population pyramid for Southampton Local Authority, 2011
Deprivation is a known social risk factor for TB. Those living in poverty tend to live in poor quality, overcrowded housing, which can encourage the spread of TB and exacerbate symptoms. Around a quarter of Southampton’s residents (23%) live in the 30% most deprived areas in England. However, this is fewer people living in deprived areas than in cities considered comparable to Southampton (e.g. Liverpool, Brighton and Hove, Bristol and Newcastle).  

Figure 2: England Deprivation Deciles for Southampton Lower Super Output Areas, 2010

The service also serves South West Hampshire, pictured below. It is clear that South West Hampshire suffers less deprivation on the whole than Southampton City, but nevertheless has pockets of deprivation, particularly around Totton and Eastleigh.
Figure 3: Deprivation in South West Hampshire Quintiles by Lower Super Output Area, 2010

Source: NHS Hampshire & NHS Southampton Public Health Information Teams, 2012

Southampton is ethnically diverse. In 2009, an estimated 18.3% of residents were of an ethnic group other than White British, compared to 17.2% nationally. This is a higher proportion than in most of the cities considered ‘most similar’ to Southampton according to the ONS 2001 Area Classification\(^\text{20}\). The largest Black and Minority Ethnic (BME) groups in Southampton are Asian or British Asian populations which make up 6.4% of the population followed by the Other White population which make up 4.3% of the population (see below)\(^\text{20}\).

Trends in ethnicity of live births suggest the Other White background has risen most significantly in recent years; rising from 8% on 2006/07 to 12% in 2010/11\(^\text{21}\). Most of this population is from Eastern Europe, particularly Poland.
### Table 1: Southampton’s ethnic population breakdown

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All People</td>
<td>236,700</td>
<td>81.7%</td>
</tr>
<tr>
<td>White</td>
<td>193,500</td>
<td>0.8%</td>
</tr>
<tr>
<td>Irish</td>
<td>2,000</td>
<td>4.3%</td>
</tr>
<tr>
<td>Other White</td>
<td>10,100</td>
<td>2.2%</td>
</tr>
<tr>
<td>Mixed</td>
<td>5,300</td>
<td>6.4%</td>
</tr>
<tr>
<td>Asian or British Asian</td>
<td>15,100</td>
<td>2.2%</td>
</tr>
<tr>
<td>Black or British</td>
<td>5,100</td>
<td>2.3%</td>
</tr>
<tr>
<td>Chinese or Other Ethnic Group</td>
<td>5,500</td>
<td></td>
</tr>
</tbody>
</table>

Source: Office for National statistics 2010

In terms of TB, the regions with the highest rates are Africa and the Western Pacific. However, Pakistan, Bangladesh, India and Nepal all have rates above the 150/100,000 threshold for screening and, as noted above, the majority of non UK-born cases originated from South Asia (55%) in 2010. In Eastern Europe, only Romania has a rate above 40/100,000, the threshold for delivering BCG vaccination. Latvia has a TB rate of 39/100,000.

Homelessness is a key risk factor for TB, due the transmission risks of sleeping rough or in overcrowded accommodation. In 2009/10 186 people were accepted as being homeless in Southampton a rate of 1.9 per 1,000 households. Between January and March 2011, 55 households were accepted as being homeless and in priority need. This compares to 109 households in Portsmouth for the same period. Around 55% of households on council accommodation waiting lists have requested a single bedroom, suggesting the majority are single people.

Misuse of alcohol is a significant public health issue for Southampton residents. The North West Public Health Observatory (NWPHO) has produced local alcohol profiles which show that Southampton measures significantly worse than the England average for seven of the 23 indicators of alcohol-harm. Alcohol attributable mortality among women and alcohol attributable hospital among under18’s are significantly higher than the national average, and are rising.
Southampton has high rates of alcohol specific hospital admissions, particularly for under 18 year olds. The figure below indicates the rate of hospital admissions related to alcohol by ward, which can be used as a proxy for rates of binge drinking in the city. There is variation throughout the city, but Bevois, Bargate, Millbrook, Redbridge and Coxford are all significantly higher than the national average.24
Figure 5: Southampton hospital admissions for alcohol related conditions by ward, 2010

Source: NHS Southampton Annual Public Health Report, 2010
Southampton and South West Hampshire TB services

Local TB services have the aim of controlling TB by reducing the number of TB cases and reducing onward transmission of the disease. The key objectives of the service are to:

- Identify and treat cases through clinical identification and case finding among the local at risk population.
- Chemoprophylaxis for those at risk
- Offer selective immunisation with BCG

Currently TB services in Southampton are commissioned by the Primary Care Trust NHS Southampton from the primary care provider Solent NHS Trust, and the acute care provider University Hospitals Southampton (UHS). The TB nurse-led outpatient service (referred to henceforth as ‘the service’), based at Royal South Hampshire Hospital in St Mary’s, manages both active and latent cases in conjunction with specialist consultants from the UHS.

The staff structure of the service is detailed below.

Figure 6: TB service staff structure (2012)

Clinical Nurse Manager
- Has overall responsibility for the service
- Management of all clinical aspects, including decisions regarding what work should be undertaken by the team
- Management of nurses and responsibility for their work

Business Manager
- Responsible for administrative functions and processes
- Line management of administrative staff
- Contracts, IT, records management, health and safety, service development, finance and performance management

TB Specialist Nurse
- Responsible for line management of nurses
- Responsible for day to day management of the service and clinical practice
- Supervision of administrative staff
TB Liaison Nurses
- Provision of Tuberculosis screening and treatment

Administrative Assistant
- Staffs reception
- Follows up new entrants with no address given

The Royal College of Nursing (RCN)\textsuperscript{25} and NICE recommend that a service should have at least 1 TB case managers per 40 uncomplex cases and 1 per 20 complex cases. Last year, the Southampton service had 51 cases in the year 2011. Of the 33 cases known to have completed treatment, 5 underwent DOT. It is possible therefore that this is an underestimate of the total number of complex cases. According to the RCN rationale, Southampton has an appropriate number of nurses to deal with the city’s case-load.

The diagram below outlines the service:
Respiratory Consultant
- All cases of TB (pulmonary or non-pulmonary) must be supervised in conjunction with local lead TB consultant
- Complex cases, including drug resistant cases, (pulmonary and non-pulmonary) should be directly managed by the respiratory consultant.

Genito-urinary Medicine Consultant
MDR-TB cases and HIV associated cases should be jointly managed by GUM consultants and respiratory consultants, with links to the TB service.

Paediatric Consultant
Infant and child cases are managed by paediatric consultants with links to respiratory consultants and the community TB service.

Suspected TB referral from:
- GP
- Health visitors
- Princess Anne Hospital (BCG)
- Community midwives
- Other consultant clinics (e.g. Dermatology, Rheumatology)
- Occupational health
- Ward referrals – pre-diagnosis
- Employers of healthcare staff

Diagnosis
- Made by an experienced clinical specialist in TB, in accordance with NICE guidelines.
- Should be supported by culture specimens where possible.

Allocated named nurse
- checks compliance at least monthly.
- Some patients may require more frequent monitoring in their own home

Treatment
In accordance with NICE guidelines. Should be seen in outpatient clinic where possible. Prescriptions should only be issued by TB specialist team. At least 85% patients should complete treatment.

Treatment complete
Treatment completion notification to ETS

Poor compliance with treatment
- DOT: Supervised by nursing staff
- Failure to turn-up to clinic: followed up via phone or outreach visit shortly after clinic and outcome documented. Each patient is followed up by their named case-worker.

Liaison with the Hampshire and Isle of Wight Health Protection Unit and primary care Public Health Team.
Screening and referral
The service screens all adults and children with suspected TB living in Southampton and South West Hampshire, new entrants and homeless people. Adults and children with confirmed disease are referred to and managed by acute respiratory and paediatric physicians respectively at UHS, with monitoring and support from the community team.

Treatment
Service staff supervise cases and monitor compliance with treatment in the community. Treatment follows NICE guidelines. In 2011, there were 51 cases resident in Southampton recorded onto the Enhanced TB Surveillance system. Thirty three cases have completed treatment, of whom, less than five are known to have alcohol misuse and less than five are homeless.

No treatment issues, regarding care delivery or pharmacology, were raised by staff or patients as needs that required addressing.

As per NICE guidelines, Directly Observed Therapy (DOT) is used for complex cases requiring enhanced case management. Between 1 April 2011 and 31 March 2012 there were 33 patients on enhanced case management. Five cases are recorded as having received Directly Observed Therapy (DOT), all of whom have completed treatment.

Contact tracing and active case finding
Contact tracing can identify additional cases who may have been infected by, or be the source of infection for, the index case. It can also identify those who would benefit from preventative treatment. The service identifies contacts and the necessary screening according to NICE guidelines and in consultation with the Health Protection Agency. Contacts are invited for screening 6 weeks after the last known contact with the index case to reduce the possibility of false negative results.

Non-attendance
To minimise non-attendance for all appointments, nursing staff call patients prior to the appointment to remind them.

Refusal to attend screening is written up in the individual’s TB service patient record and their GP is informed in writing. If contacts do not attend one appointment, the TB service calls to establish the reason for non-attendance and the importance of screening. Their GP is informed in writing.

If the contact fails to attend two appointments, the contact will be discharged from the service and a letter and information booklet sent. This is documented in the TB service patient record. Their GP is informed.

If the index case is particularly infectious, or the case complex, the Health Protection Agency is informed of any screening refusal or non-attendance.
**Screening high-risk groups: new entrants**

The majority of TB in the UK is contracted overseas so NICE recommends that screening of new entrants takes place to determine those with active disease and identify those who have latent TB infection and who therefore require chemoprophylaxis. NICE notes that there are particular opportunities to make appointments with new entrants at primary care registration, at entry to education and via links with statutory and voluntary groups working with new entrants.

In Southampton, new entrants aged 16 and under from countries with TB rate greater than 150/100,000 (as per the HPU local guideline) are offered Mantoux testing in nurse-led clinics. New entrants aged over 16 years but under 35 years, from those areas, are screened with an IGRA test. Those new entrants from countries with a prevalence rate of 40-150/100,000 are given information about TB and a local GP list to encourage registration.

In the financial year 2001-12, 877 new entrant forms were received by the Southampton TB service from the UK Border Agency which indicated a need to screen. Of those 581 had valid addresses, and 297 (51%) attended screening. 533 of those individuals identified as requiring screening were students. In the financial year 2011-12, 296 new entrant forms contained only a university address. 223 would have been sent appointments if addresses were given. Fifty one of these were from countries with an incidence of 250/100,000 or more. In other words, were at high risk of latent or active TB. Of the 296 students with no home address, the majority were Indian (102), Vietnamese (32) and Nigerian (21), and attended the University of Southampton (266/296).

Considerable efforts have been made over the last few years to set up systems to screen students arriving to the city as the largest group of new entrants arriving each year. In 2010, a short-term nurse-led screening clinic was established at the University of Southampton. This has since been discontinued however due to concerns by the University of breach of confidentiality (in terms of identifying students eligible to be screened) and health and safety (in terms of a viable clinic space).

In May 2012 the TB team searched the summary care record to search for 44 students chosen randomly (but reported to be staying for 2 or more years in the UK) to see if they had registered with a GP. Of these 26 (60%) were found and therefore could be sent appointments.

New government plans have been established to create a pre-entry TB screening programme. From July 2012, migrants wishing to enter the UK for more than six months, who are from over 67 countries with a high risk of TB, will need to be screened before they are granted a visa for the UK. This replaces the existing system of screening whereby chest x-rays are undertaken at port of entry by immigration control. It is anticipated that this will greatly increase TB detection rates. However, screening will only identify active cases, not those infected with latent TB.

Nationally, in 2010, of the 85% of non-UK-born cases where time since entry to the UK was known, only 23% were diagnosed within two years of entering the UK. Similarly in Southampton in 2009, the majority of cases in Southampton had entered the UK before 2004. Both these figures indicate a substantial number of cases experiencing a latent period of infection.
**Screening high risk groups: homeless**

Regular screening of homeless people is undertaken at Homeless Healthcare. This is not however, a regular event, but takes place on an ad-hoc basis.

**BCG vaccination**

BCG vaccinations are undertaken by a TB specialist nurse-led team in accordance with Department of Health recommendations. As Southampton City has TB rates below the recommended vaccination threshold of 40/100,000, a targeted programme is in operation for neonates whose parents or grandparents are from a country where TB rates are high.

Referrals of babies and infants requiring TB are made directly from maternity hospitals, Health Visitors and Practice Nurses to the community TB service. BCG should be offered as soon after birth as practical. Coverage rates are detailed below and are just short of the target for 90% of eligible children to be vaccinated before 12 months. The herd immunity threshold for TB is unknown.

The slightly lower than target coverage for the financial year 2011/12 may be due to systems difficulties due to a new computer system being introduced in April 2011. Coverage for the last six months of that year indicated an increase in coverage, above the target threshold.

<table>
<thead>
<tr>
<th></th>
<th>1 Apr 2011* - 31 Mar 12</th>
<th>1 Oct 2011 - 31 Mar 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of referrals from maternity services</td>
<td>823</td>
<td>390</td>
</tr>
<tr>
<td>Number of babies receiving vaccination</td>
<td>713</td>
<td>355</td>
</tr>
<tr>
<td>Coverage (%)</td>
<td>87%</td>
<td>91%</td>
</tr>
</tbody>
</table>

*new computer system in place during April 2011.
Source: Southampton TB Service, 2012

A more detailed examination of which groups attended BCG vaccination indicates shows poorest attendance by Pakistani groups (80%) and Other White ethnic groups (82.5%). This could inform future health promotion activity.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Attended</th>
<th>DNA</th>
<th>TOTAL</th>
<th>% ATTENDANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistani</td>
<td>64</td>
<td>16</td>
<td>80</td>
<td>80%</td>
</tr>
<tr>
<td>Other White</td>
<td>33</td>
<td>7</td>
<td>40</td>
<td>82.5%</td>
</tr>
<tr>
<td>African</td>
<td>110</td>
<td>15</td>
<td>125</td>
<td>88%</td>
</tr>
<tr>
<td>Indian</td>
<td>154</td>
<td>19</td>
<td>173</td>
<td>89%</td>
</tr>
<tr>
<td>Other Asian</td>
<td>91</td>
<td>9</td>
<td>100</td>
<td>91%</td>
</tr>
<tr>
<td>Chinese</td>
<td>43</td>
<td>&lt;5</td>
<td>&gt;43</td>
<td>98%</td>
</tr>
</tbody>
</table>

Source: Southampton TB service, 2012
Local education and awareness raising

Following the ongoing cluster of cases that started in 2011, the service has developed outreach links with a number of BME communities in Southampton. Working alongside the Public Health team, a number of outreach information sharing sessions have been undertaken with the Southampton Community and Voluntary Service, a BME community group and faith groups.

Figure 8: TB service multi-agency links

* NHS Southampton will be existence until 31.3.13, after will it be replaced by alternative commissioning organisations.

As mentioned above, substantial time has been spent linking up with Universities in the city to provide information on TB and to stress the importance of attending screening.

However, there is no formalised outreach strategy, and this work has been conducted on a relatively ad-hoc basis. Recently released NICE public health guidance on *Identifying and managing tuberculosis among hard to reach groups*\(^{30}\) suggests that the following groups be considered ‘hard to reach’: homeless people; substance misusers; prisoners; vulnerable migrants. The document makes the following recommendations, below.
Recommendation 4: Commissioning multi-disciplinary TB support for hard-to-reach groups
Includes:
- Commissioners should ensure that multi-disciplinary TB teams should include at least one TB case manager has responsibility for planning and coordinating the care of hard-to-reach people
- Have the skills and resources to manage people with complex needs (either directly or via an established route) including: asylum, immigration, welfare, substance dependency and other health and social care needs
- Have the resources to provide ongoing TB awareness-raising activities for professional and voluntary (including advocacy) groups that work with hard-to-reach groups.

Recommendation 5: Raising and sustaining awareness of TB among health professionals and those working with hard-to-reach groups
Includes:
- Multi-disciplinary teams should identify and support and ongoing TB education programme for local professionals in contact with hard-to-reach groups (e.g. emergency department staff, GPs, migrant support workers).

Recommendation 6: Raising and sustaining awareness of TB among hard to reach groups

Monitoring and reporting

The service completes quarterly returns for NHS Southampton City and NHS Hampshire as part of the contract agreement.

The service contributes to the HPA joint quarterly report which includes data for the national enhanced TB surveillance database (ETS).

One Cohort Review has also taken place, with more planned. Cohort reviews include participants from across the TB network region (Hampshire and the Isle of Wight), and comprise a rapid status update of all current cases. Cohort reviews have been very successful elsewhere and are profiled in the comparative services section of this paper.

Annual assessment takes place against the following national TB standards:

<table>
<thead>
<tr>
<th>Number</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Coverage of neonatal BCG for target population to be a minimum of 75% by 3 months and 90% by 12 months of age.</td>
</tr>
<tr>
<td>2.</td>
<td>Each patient who is suspected by a health professional to have pulmonary TB is seen by a specialist TB service within 2 weeks of first contact with the NHS.</td>
</tr>
<tr>
<td>3.</td>
<td>A standardised risk assessment is carried out on each patient to identify those at risk of not completing their treatment.</td>
</tr>
<tr>
<td>4.</td>
<td>Achieve as a minimum 85% treatment completion building towards 90%</td>
</tr>
<tr>
<td>5.</td>
<td>All defined contacts of TB should be identified using standardised risk assessment. Services should be able to report contact tracing, specifically numbers seen, numbers offered chemoprophylaxis, numbers offered BCG and number diagnosed with TB.</td>
</tr>
<tr>
<td>6.</td>
<td>All TB patients should be offered an HIV test</td>
</tr>
<tr>
<td>7.</td>
<td>All cases of multidrug resistant TB should be identified to the PCTs as a serious untoward incident, and follow the established protocols for notification.</td>
</tr>
</tbody>
</table>
**Staff training**

All staff at the service take part in training, but none that I talked to were aware of any formal programme of continuing professional development or service development strategy.

**Stakeholder views**

**Staff views**

Informal interviews were conducted with the following staff from the service and other services operating along the pathway:

- 1 x Consultant in Respiratory Medicine
- 2 x TB Liaison Nurses
- 1 x Administrator
- 1 x TB Nurse Specialist
- 1 x Clinical Manager
- 1 x Business Manager
- 1 x Consultant Nurse in Pre-natal Diagnosis
- 1 x Student Liaison Manager
- 1 x Senior Health Visitor
- 1 x Child Health Record Manager

The needs of the service that emerged from these interviews have been grouped as themes and detailed below.

On the whole it seemed that staff and allied services were happy with the way the service was running. Suggestions for improvements were grouped around four main themes: BCG vaccination; latent TB screening, capacity and training and development.
A number of meetings with individuals from other organisations expanded some of the themes outlined above.

**BCG vaccination**

There was a concern from TB service staff that the infants attending the clinic for BCG vaccination may be exposed to TB via patients with active disease attending the service for treatment. BCG clinics have been moved to separate days to avoid this. A systematic review of risk to infants from hospital exposure to tuberculosis, found only 7 instances of transmission among 4867 babies in 26 reports (19 published, 7 from a national database for reporting such events)\(^3\). This paper would suggest that the current system at the Southampton TB service therefore poses limited risk to infants receiving BCG vaccination.

The Child Health Team outlined the processes for entering BCG vaccination data onto the RiO computer system. Numbers of eligible children are faxed to Child Health by Nursery Nurses at the Princess Anne Hospital. A list of both eligible children and those vaccinated are also faxed to Child Health by staff at the TB clinic at RSH. Patients receiving BCG are entered onto the RiO system by Child Health.
Unfortunately, it is not possible to record a list of eligible children onto the RiO system. Any changes to RiO involve a software change with the system's provider, which may incur additional costs.

Since April 2011, the Child Health Team have recorded data on all eligible children onto a separate spreadsheet. However, those receiving vaccination is not recorded on this spreadsheet and so coverage cannot be calculated from it.

Staff at the TB clinic do record coverage data, used here, which is shared on request with other organisations, but at present there is no routine reporting of this information.

**Outreach and health promotion**

The rise in incident cases in Southampton in 2011 highlighted the need for preventive education and awareness raising to reduce stigma surrounding TB and encourage those with symptoms to attend the TB clinic.

The lead for Health Visiting and School Nursing at NHS Solent suggested that training for Family Support Workers in the Central locality (8 staff) would enable them to deliver health promotion messages to parents, particularly those parents that may be hard to reach in other settings.

Additional printed information could be provided via this route in the form of posters and leaflets. The Stop TB charity has put together a health promoting pack specifically for Somali groups, which could be utilised.

Another route for health promotion would be to make use of Health Trainers in the city.

**New entrant screening**

As noted above, in the financial year 2011-12, only 581 individuals of 877 new entrants identified as requiring screening had valid addresses. 533 of those individuals identified as requiring screening were students. In the same year, 296 new entrant forms contained only a university address. 223 would have been sent appointments if addresses were given.

As part of this health needs assessment the TB team searched the summary care record to search for 44 students chosen randomly (but reported to be staying for 2 or more years in the UK) to see if they had registered with a GP. Of these 26 (60%) were found and therefore could be sent appointments. A member of staff suggested that the service could undertake this task in November/December each year and send appointments out. However, she pointed out that given the administrative time to do this search and the delay in inviting students for screening there should be debate about whether students staying for only 6 months or a year are given an appointment.
**Workload assessment**

Nursing staff completed time sheets at 10 minute intervals for at least 5 working days to further explore how the weight of clinical, office and outreach tasks was apportioned.

The majority of time was spent on patient administration, such as e-mails, team meetings, data entry tasks (including cohort review and ETS data entry), contact and DNA tracing and referral letters. The level of these tasks depended on seniority. It should be noted however, that during the study period one member of administration staff was on sick leave, and these tasks were being picked up by nursing staff.

Clinical time was spent preparing for and running BCG clinics, supporting Consultant clinics, TB screening, planning and following-up patient treatment plans, prescriptions and mantoux-test reading. The latter two tasks were undertaken by the TB Specialist Nurse only.

There were limited opportunities for outreach, which comprised between 8 and 16% of nurse time. Outreach work for TB liaison nurses mainly consisted of DOT. For the TB Specialist Nurse this also involved patient advice, medicine support and monitoring and discussion with a local employer about new entrant screening. Outreach work in terms of liaison with community members and training and education for health professionals and others is essential to identifying latent cases and contacts, and to promoting prevention messages.

It should be noted however, that as workload was self reported, some of the differences between time apportioned to different roles for the same post could be due to different interpretations of what constitutes ‘patient administration’, ‘clinic’ and ‘outreach’ work.

**Patient feedback**

A patient feedback questionnaire was undertaken, based on previously validated questionnaires conducted by the Respiratory Clinic at UHS and the TB clinic at Chelsea and Westminster Hospital.

A short pilot with 15 respondents was conducted prior to the main study. To test the readability of the questionnaire the Gunning Fog Index was used, determined by complexity of text and sentence length. Texts for a wide audience generally need a fog index less than 12. The patient questionnaire used for this needs assessment has an index of 9.3. The questionnaire can be found in Appendix 1.

The main study had 55 respondents, surveyed over several weeks. Patients were asked to complete the questionnaire during clinic times and deposit their anonymous sealed responses in a box at reception. The questionnaire is included in the Appendix.

Most respondents were receiving BCG (n=22) or visiting a Respiratory Consultant (n=16). Twenty-five were male, 23 female, and 7 did not complete the gender field. Of those that completed ethnicity information, 16 were White British or White Other, 16 were Asian, and 6 Black African. Other ethnicities cannot be disclosed due to
small numbers potentially rendering respondents identifiable. The average age of adult patients was 40 years and of BCG patients under 1 year, 8 weeks.

Forty-eight respondents (87.2%) agreed that the clinic was at a convenient time for them. However, less than five patients would have preferred alternative times.

Forty-three respondents (78.1%) agreed that the clinic was in a convenient location. Eight disagreed with their reasons including that there was another hospital closer to home, and that the clinic at RSH was too far from home.

The table below summarises further responses.

**Table 4: Summary of patient questionnaire responses (n=55)**

<table>
<thead>
<tr>
<th></th>
<th>Agree n (%)</th>
<th>Disagree n (%)</th>
<th>Neither agree nor disagree n (%)</th>
<th>Not applicable n (%)</th>
<th>Missing n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The waiting area (seating) was satisfactory</td>
<td>51 (92.7%)</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>The staff at the clinic were polite and helpful</td>
<td>54 (98.2%)</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>I understand the reason for my visit</td>
<td>50 (90.9%)</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>I understand what to expect during the visit</td>
<td>43 (78.2%)</td>
<td>&lt;5</td>
<td>7 (12.7)</td>
<td>&lt;5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>I was able to ask questions during my consultation</td>
<td>43 (78.2%)</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>9 (16.3)</td>
<td></td>
</tr>
<tr>
<td>My consultation was long enough</td>
<td>35 (63.6%)</td>
<td>&lt;5</td>
<td>Between 5 and 10</td>
<td>Between 5 and 10</td>
<td></td>
</tr>
<tr>
<td>I am been able to contact a nurse outside clinic times if I need to</td>
<td>28 (50.9%)</td>
<td>&lt;5</td>
<td>11 (20)</td>
<td>Between 5 and 10</td>
<td>Between 5 and 10</td>
</tr>
<tr>
<td>Did the information given to you answer your questions?</td>
<td>25 (45.4%)</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>&lt;5</td>
<td>30 (54.5)</td>
</tr>
</tbody>
</table>

Respondents were asked for two ways things the service had done well and two ways it could be improved.

In terms of the way the service could be improved, less than five responses were received. These included concern that they were at increased risk by being exposed to other patients due to an underlying health condition. Also waiting a long time for an appointment, and finding the seating very uncomfortable, but at the same time recognising that staff were doing their best to be efficient.

Many more respondents commented on things the service had done well. The following table summarises the key themes.
| Staff helpful, welcoming, friendly and polite | 16 |
| Clear advice and information, questions answered | 11 |
| Fast service/ short waiting time | 9 |
| Staff professional | 6 |
| Staff made patients feel valued and well cared for | <5 |
| Good service overall | <5 |
| Waiting area clean, tidy, quiet, adequate play area for children | <5 |
| Convenient (distance from home; ease of making appointment) | <5 |

Less than five patients commented that staff made patients feel valued and well-cared for, a topic that was not explored elsewhere in the questionnaire. Some of the comments made are shown below:-

‘The way you received me was so marvellous’

‘The way you explained things to me really makes me feel great and also feel at home’

‘How you talk to people to understand, and agree to do things in their own interest’

‘Giving the vaccination to African children is very thoughtful of you. You actually care about their health’

The carers of BCG patients were asked whether they would prefer to have their child vaccinated at the TB clinic or in hospital after birth, as this was an issue that arose during staff interviews.

Of 30 that responded, 19 would have preferred their child to be vaccinated in hospital after birth, and 11 at the TB clinic at RSH. Reasons are cited in the table below.

<table>
<thead>
<tr>
<th>Reasons for PAH preference</th>
<th>Reasons for RSH preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easier than to go back to hospital (RSH) again</td>
<td>Suitable to me</td>
</tr>
<tr>
<td>To minimise hospital and doctors appointments</td>
<td>Near to parents, too young in hospital</td>
</tr>
<tr>
<td>At the hospital the child will still be in the same hospital</td>
<td>Young infants have a very heavy payload in first few years [older children being vaccinated]</td>
</tr>
<tr>
<td>More convenient and easy in hospital</td>
<td></td>
</tr>
<tr>
<td>Convenient</td>
<td></td>
</tr>
<tr>
<td>Easy</td>
<td></td>
</tr>
</tbody>
</table>

Thirteen of those who preferred PAH, and 8 of those who preferred RSH completed their postcode. Interestingly, preference does not seem to relate strongly to postcode and thus proximity to either location, although the numbers are extremely small.
Comparative services

The comparative needs assessment compares similar services to those being assessed.

Portsmouth TB Service

The Portsmouth TB service serves a smaller population, but is considered by the Office of National Statistics to be a city comparable to Southampton. In 2009, the rate of TB in Portsmouth was 17.8 per 100,000. The Portsmouth TB service is based at Queen Alexandra hospital with strong links into the community. It differs from the Southampton service in a number of key ways:

Staff structure

There is less staff capacity than the Southampton service in terms of hours, but roles are structured differently to give emphasis to specific aspects of the service, such as paediatric patients and case work.

The Portsmouth comprises:

<table>
<thead>
<tr>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x 1WTE TB Nurse Specialist with additional Business Manager functions and support for 1 chest clinic per week.</td>
</tr>
<tr>
<td>1 x 0.6WTE TB Nurse</td>
</tr>
<tr>
<td>1 x 0.4WTE Paediatric Nurse</td>
</tr>
<tr>
<td>1 x 0.4WTE TB case worker (Healthcare Assistant)</td>
</tr>
<tr>
<td>There is 1 consultant clinic per week and one paediatric clinic per week.</td>
</tr>
</tbody>
</table>

Outreach

The post of TB case worker is responsible for three main areas: DOT, service support and new entrant processing. In practice this means taking responsibility for supervising DOT patients in terms of support and tablet counting, contact tracing, general support and care for community patients and liaison with different groups in contact with new entrants including the University of Portsmouth. The contact with the University means new students are identified and screened for latent TB by the service when they arrive in this country.

The team also undertake regular training with other health professionals and others. Maternity nurse training is outlined below.

Delivery of BCG vaccination

For around 7 years, BCG vaccinations have been delivered by midwifery services. Infants eligible for BCG are identified at the ante-natal check. Midwives deliver the vaccination on the labour ward and on post-natal wards. Those infants eligible who are not delivered at the Queen Alexandra have appointments with the TB service and are vaccinated by the Paediatric Nurse.

Senior midwives are trained in BCG vaccination delivery by TB Nurses, and those Senior Midwives go on to provide cascaded training to all Midwives.
In the financial year 2011/12, 725 babies were identified as needing BCG vaccination. Of those, 503 were given, 46 were sent appointments, 9 parents declined and on 7 occasions, the vaccine was unavailable, so in total 160 babies eligible for the vaccine did not receive it. Some of those 160 were identified and referred to the Paediatric BCG clinic by Health Visitors and GPs. Work conducted by the Portsmouth TB service identified that most missed vaccination opportunities occurred at night, due to a lack of Midwives on night shifts who are competent to administer the vaccine. Portsmouth TB service are therefore in the process of working with midwifery practice educators to design a training competency for a yearly training update for Midwives. There is also work to develop competency for a core group of midwives who regularly work night shifts, with the aim that there should be at least one midwife on every shift able to administer BCG.

The table below compares the Portsmouth to the Southampton model. It shows that the Portsmouth model does not necessarily increase coverage. However, to truly compare, another measurement should be taken once training plans have been enacted.

Table 7: Comparison of BCG vaccination coverage in Southampton and Portsmouth, 2011/12

<table>
<thead>
<tr>
<th></th>
<th>Southampton 1 Apr 2011 - 31 Mar 12</th>
<th>Portsmouth 1 Apr 2011 - 31 Mar 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total births</td>
<td></td>
<td>6223</td>
</tr>
<tr>
<td>Number of referrals from maternity services</td>
<td>823</td>
<td>725</td>
</tr>
<tr>
<td>Number of babies receiving vaccination</td>
<td>713</td>
<td>565</td>
</tr>
<tr>
<td>Coverage (%)</td>
<td>87%</td>
<td>78%</td>
</tr>
</tbody>
</table>

The advantage of the Portsmouth model is the ease with which data can be obtained and the fine detail available. These factors make it much easier to track coverage and address issues as the service has done with identifying training needs. From a commissioning and service development perspective, having a single institution collecting data, in this case based at Queen Alexandra Hospital, is a substantial advantage.

The North Central London TB service

The Strategy Report for the North Central London TB Service Steering Group outlines a number of areas of good practice, emerging from recommendations made in the document ‘Stopping Tuberculosis in England: An Action Plan from the Chief Medical Officer’. These examples have been chosen as methods that are not currently used in Southampton to highlight how different services choose to fulfil the CMO’s Action Plan.

The TB Link Project

The Link Worker model was a 3 year pilot project to effect better clinical and social outcomes for homeless people with TB. The Link Worker worked with Social Services and specialist immigration advisory agencies, which offered housing and financial support for patients who would otherwise have remained vulnerable and at
risk. It also ‘freed up’ nurses time enabling them to focus on the clinical and health aspects of TB management.

**Increased awareness**

The service runs regular TB awareness and educational sessions for primary care staff, General Practitioners, community care staff, local authority and health service staff and voluntary and community organisations. Presentations on TB have been made to workshops, community events and local authority and health service events by TB nurses, doctors, the Network Manager, Health Development worker and other TB staff. There is an annual cycle of improving professional awareness through continuing professional development.

Close working with community groups representing high-risk populations to improve TB awareness and reduce stigma through culturally sensitive initiatives, particularly using World TB Day.

**Regional steering group with senior leadership**

The North Central London TB Network set up the North Central London TB Steering Group in 2003, and is chaired by a PCT Chief Executive, with membership from the Strategic Health Authority, HPA, and local TB groups. The group led on the development of a strategic report which provided a strategic overview and sector-wide approach to TB services provision, ensuring targets are met, overseeing the work of the local TB groups and to identify and take forward areas of work that would benefit from a sector wide approach.

The Hampshire and Isle of Wight TB Network is a multi-agency group that meets several times a year to share best practice and data. Members can also support individual TB services with limited surge capacity. This group is chaired by the Health Protection Agency, but may also benefit from input from a senior representative from a local commissioning organisation, as in North Central London.

**Strength, weaknesses, opportunities, threats**

A ‘Strengths, Weaknesses, Opportunities, Threats’ or ‘SWOT’ analysis has been used to explore the needs identified at the TB service in Southampton.
<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BCG vaccination</strong></td>
<td>The vast majority of parents are happy with the quality of service delivered at the TB service.</td>
<td>Most parents living outside Southampton would prefer to have their children vaccinated after birth. Current information provided by the Child Health Information system RiO cannot provide meaningful epidemiological data for planning and monitoring</td>
<td>More streamlined data recording systems with regular feedback reports on vaccinations delivered as a % of those eligible Liaison with midwives or health visitors to vaccinate those living outside Southampton</td>
</tr>
<tr>
<td><strong>Latent TB screening</strong></td>
<td>Recent contact tracing successful so far, often based on substantial outreach work by team which has built rapport with at risk groups.</td>
<td>Contact tracing is done when it is needed and is not supported by a formal outreach strategy, or links with the community and voluntary sector.</td>
<td>A formal outreach strategy and links with the community and voluntary sector could further build rapport with at risk groups, facilitating contact tracing.</td>
</tr>
<tr>
<td><strong>New entrant screening</strong></td>
<td>New national plans for UK visa requirements to include chest x-rays will routinely identify acute cases from July 2012.</td>
<td>Chest x-rays will not identify latent cases, and the service may have to work harder to persuade patients, institutions and employers to undertake screening as there could be a perception that new entrants have already been tested for TB, and therefore do not require further testing.</td>
<td>Solent University are keen to support identification of new students eligible for screening</td>
</tr>
<tr>
<td><strong>Homeless screening</strong></td>
<td>Annual screening takes place in conjunction with the Homeless Healthcare team</td>
<td>No regular screening programme</td>
<td>Put in place regular screening programme</td>
</tr>
<tr>
<td><strong>Service capacity</strong></td>
<td>Recent addition of 1WTE TB Liaison Nurse has relieved pressure and added capacity for seeing patients and data entry. Additional Consultant session has been established so that Consultant clinics run weekly from June 2012</td>
<td>Some patients do not attend their appointments.</td>
<td>An evening Consultant session may help to reduce the non-attendance rate among working age patients. A case worker role to follow up and record all non-attenders.</td>
</tr>
<tr>
<td><strong>Estate capacity</strong></td>
<td>Feedback from patients that many are happy that they are seen quickly</td>
<td>Lack of clinic rooms means unnecessary waste of staff time on clinic days</td>
<td>Clinic space could be converted from existing meeting space with minimal loss of meeting space</td>
</tr>
</tbody>
</table>
## Training, education and outreach

<table>
<thead>
<tr>
<th>Training and education</th>
<th>Staff are supported to take time out for training.</th>
<th>Training is not formalised into a continuing professional development (CPD) programme.</th>
<th>Formalised CPD would support skill maintenance and development and aid team morale. E.g. Motivational interviewing to improve success of contact tracing</th>
<th>Staff capacity to support time out for training would need to be examined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outreach</td>
<td>Good links exist with Homeless Healthcare; CVS; Somali Women’s Group</td>
<td>There is no formal outreach programme</td>
<td>Further links could be forged with refugee groups and strengthened with the Somali Women’s Group and other BME groups</td>
<td>Time constraints on staff may restrict this.</td>
</tr>
</tbody>
</table>
Option appraisal for new entrant screening

Throughout the process of conducting this needs assessment it became clear that there is a need for a new entrant screening strategy. Staff are keen to formalise the process which has proved challenging in the past.

Option appraisal is a technique for creating and reviewing options and analysing their relative costs and benefits. It should help develop a value for money solution that meets the objectives of the service.

Option appraisal is an iterative process and began by garnering stakeholder views on the topic. Based on staff feedback, a number of options for routinely screening new entrant students each year were identified. These were discussed in a workshop whereby each option was measured and scored against the strategic objectives of the TB service. Based on these scores staff agreed the best option to be carried forward, and agreed to determine preliminary costing for the desired option.

Options

- Option 1: Existing system – UK Border Agency sends a list of new entrants requiring screening to the TB service, who send those individuals a letter inviting them to screening.
- Option 2: Data trawl every January identify from GP lists those not previously contactable and therefore screened, plus health promotion with new entrant students each autumn.
- Option 3: Work with universities to identify all those eligible for screening and carry out health promotion messages.

A number of strategic objectives of the service were identified from the TB service’s own policy document, and the existing service specification.

Strategic objectives

Will each option:

1. Align TB services in Southampton with the recommendations in the NICE guidelines to ensure best practice?\(^3\)
2. Identify and treat cases of TB and TB related conditions?
3. Raise awareness amongst healthcare and other professionals about the risk of TB, with the aim of improving early detection rates?
4. Be acceptable, deliverable and value for money?
   i.e. Be supported by local stakeholders? Be acceptable to patients and communities? Be acceptable to the PCT and other authorities? Is it realistic? Is it affordable in terms of staff time? Can we estimate the NNS?

In a group exercise comprising the TB Service Lead, Business Manager, TB Specialist Nurse, TB Liaison Nurse and two Respiratory Consultants, options and objectives were scored to come up with the option most desired by the service.

---

\(^3\) NICE public health guidance 37 ‘Identifying and managing hard-to-reach groups’ – Recommendation 11: identifying and managing active and latent TB: vulnerable migrants ‘people born in countries with an incidence of >150/100,000 should be made a priority for latent TB screening when they arrive here’
Scoring followed the steps below:
1. Weight each of the strategic objectives out of 100.
2. Score each option against each strategic objective out of 10.
3. Multiply this score with the agreed weighting of the objective.
4. Combine the scores to produce a total score for each option.
5. Agree best option
6. (Consider preliminary costing)

Stage 6 was not considered in the workshop, but later by the TB Service Business Manager.

Each individual in the group gave an anonymous weight or score and the mean figure taken.

Table 8: Weights given to each strategic objective

<table>
<thead>
<tr>
<th>Strategic objective</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Align with NICE</td>
<td>12.5</td>
</tr>
<tr>
<td>B. Identify and treat</td>
<td>42.5</td>
</tr>
<tr>
<td>C. Improving early detection</td>
<td>22.5</td>
</tr>
<tr>
<td>D. Acceptable, deliverable and value for money (VFM)</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Scores out of 10 were given to each option.

Table 9: Scores given to each option

<table>
<thead>
<tr>
<th>Strategic objectives</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Align with NICE</td>
<td>1. Existing system</td>
</tr>
<tr>
<td></td>
<td>2. Data trawl + health promotion</td>
</tr>
<tr>
<td></td>
<td>3. Screening + health promotion</td>
</tr>
<tr>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>9.2</td>
</tr>
<tr>
<td>B. Identify and treat</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>9.2</td>
</tr>
<tr>
<td>C. Improve early detection</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>7.7</td>
</tr>
<tr>
<td></td>
<td>8.7</td>
</tr>
<tr>
<td>D. Acceptable, deliverable, value for money</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>7.5</td>
</tr>
</tbody>
</table>
The total weighted score for each option was then calculated.

Table 10: Total weighted score for each option

<table>
<thead>
<tr>
<th>Strategic objectives</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Existing system</td>
</tr>
<tr>
<td>A. Align with NICE</td>
<td>B. Identify and treat</td>
</tr>
<tr>
<td>B. Identify and treat</td>
<td>C. Improve early detection</td>
</tr>
<tr>
<td>C. Improve early detection</td>
<td>D. Acceptable, deliverable, value for money</td>
</tr>
<tr>
<td>D. Acceptable, deliverable, value for money</td>
<td></td>
</tr>
<tr>
<td>Total weighted score</td>
<td>Total weighted score</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2. Data trawl + health promotion</th>
<th>3. Screening + health promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Align with NICE</td>
<td>65</td>
<td>78.8</td>
</tr>
<tr>
<td>B. Identify and treat</td>
<td>255</td>
<td>306</td>
</tr>
<tr>
<td>C. Improve early detection</td>
<td>78.8</td>
<td>173.3</td>
</tr>
<tr>
<td>D. Acceptable, deliverable, value for money</td>
<td>157.5</td>
<td>184.5</td>
</tr>
<tr>
<td>Total weighted score</td>
<td>556.3</td>
<td>742.6</td>
</tr>
</tbody>
</table>

Next steps
Option 3 – to work with the universities to identify all those eligible for screening and carry out health promotion messages - was therefore deemed the most desirable. The team decided to carry out preliminary costing of this option and consider how the option could be implemented.

Some work towards implementation has already been achieved.
- In 2010 a one-off screening clinic was held at University of Southampton
- Contact was made with GP Practice Manager at Hightfield (Southampton University) Practice in June 2012.
- Contact has been made with Student Services at Southampton Solent University who are keen to have input into International Week, including information in the Welcome Pack and offering health promotion advice alongside St Mary’s Practice.
- Portsmouth TB service have permitted the Southampton service to use words from their Welcome Pack for new international students.
Summary
This needs assessment took a combined epidemiological, corporate and comparative approach. The current rate of TB in Southampton is estimated to be around 23.1 per 100,000 population, an approximate doubling of cases since 2010. The TB service is currently meeting most national and local targets for service delivery, despite the greatly increased workload in the past year. Ongoing health need is linked to the increase in cases and the burden this places on the service in terms of treatment, follow-up and contact tracing. Staff have been able to meet this need so far, but it has been to the detriment of other aspects of the service such as education, training and outreach.

Corporate views were gathered from patients and staff at the TB service and elsewhere. When patients at the TB service were surveyed, the vast majority were very happy with the quality of the service. Staff and patients did identify a number of issues outlined below.

Staff capacity
Clinical work and patient administration and follow-up take up between 86-92% of nursing time, leaving little opportunity for preventive activities such as work with community groups and TB awareness-raising. Recent changes to the staffing structure may help to alleviate this pressure including the addition of 1WTE TB Liaison Nurse which has added capacity for seeing patients and data entry. An additional Consultant session is planned so that Consultant clinics run weekly from June 2012, meaning patients do not have to wait so long between consultant appointments.

Less than five of 55 patients interviewed indicated a wish for an appointment out of working hours, however, this may be due to the inability of working patients to attend and therefore complete the survey. The idea of extended clinic times should not be discounted therefore on the basis of this survey.

Education and training
As with the limited opportunity for outreach, in the past there has also been limited chance to conduct education, training and awareness raising with health and other professionals such as social workers and community development workers.

Estate capacity
Through observation of several clinic days it became clear that staff are frequently short of one clinical room during TB clinics. This means that clinics sometimes run less efficiently than they could do. Negotiations are regularly made to ‘borrow’ rooms from other services such as the Nichols Town Surgery, but no long-term solutions are currently in place. It was also noted however that this pressure only exists during clinic sessions (2-3 sessions per week) and that there is adequate space at other times.
**Latent TB screening: hard to reach groups**

New national plans for UK visa requirements to include chest x-rays will routinely identify acute cases from high incidence countries from July 2012. This will not however identify latent cases, and the majority of cases in the UK are latent cases. The new plans will therefore support, but not replace local TB screening services.

In the financial year 2011-12, only 581 individuals of 877 new entrants identified as requiring screening had valid addresses. 533 of those individuals identified as requiring screening were students, and 296 new entrant forms contained only a university address. 223 would have been sent appointments if addresses were given.

Given these difficulties the TB service may benefit from support from Public Health to achieve NICE recommendation for new entrant screening at primary care registration, entry to education and via links with statutory and voluntary groups working with new entrants.

All those who register with the Homeless Healthcare service are screened for TB. Plans are in place to repeat this screen after patients have been registered for 3 years.

An option appraisal was conducted on how to tackle the screening of new entrants who are students. This exercise identified that the most desirable approach would be to work with universities to identify all those eligible for screening and carry out health promotion messages to all students.

**BCG vaccinations**

Vaccination coverage rates for 2011/12 were 87%, just short of the target for 90% of eligible children to be vaccinated before 12 months. A new computer system was introduced in April 2011 and may account for lower than desired coverage. Coverage between October 2011 and March 2012 was 91%, above the target threshold.

Due to software restrictions the current child health information system cannot provide meaningful epidemiological data on BCG vaccination coverage for planning and monitoring. Data is collected by various agencies however, including the TB service, and could be shared.

When surveyed, more parents would prefer their infants to receive BCG in hospital, particularly those living outside Southampton, that at the community clinic. However it should be noted that only 30 carers were surveyed, a relatively small sample. Parents cite similar reasons for preferring both the community clinic at RSH and the Princess Anne Hospital, particularly ‘convenience’ and proximity to home. As the two sites are in different parts of the city, what is close to home for some patients will necessarily be far from home for others. It may therefore be the case at this time, given the high vaccination coverage rates, that it is more pragmatic to continue with the current model, vaccinating infants at RSH.

A detailed examination of which groups attended BCG vaccination indicates shows poorest attendance by Pakistani groups (80%) and Other White ethnic groups
(82.5%). A focus on reducing non-attendance among those groups should inform future health promotion activity.

The comparative element of the assessment identified good practice elsewhere, including the existence of a Case Worker role in Portsmouth who is responsible for responsible for DOT, service support and new entrant processing.

In North Central London the TB Link Project worked with Social Services and specialist immigration advisory agencies to provide housing and financial support for patients. This ‘freed up’ nurses time enabling them to focus on the clinical and health aspects of TB management. The service also runs regular TB awareness and educational sessions for primary care staff, General Practitioners, community care staff, local authority and health service staff and voluntary and community organisations. Finally there is strong commitment and leadership with the TB Network chaired by a PCT Chief Executive and sector-wide strategy for some issues.
**Recommendations**

1. Consider revising the RiO child health information system at a local level so that BCG vaccination coverage can be recorded and utilised for epidemiological monitoring and service development. If this is not possible, regular reports from the TB service back to Child Health and midwifery staff at Princess Anne Hospital would serve the same purpose.

2. Consider a case worker role (as a whole or partial post) to follow-up patient who do not attend, who require additional support and to conduct data entry.

3. Development of a strategy for education and awareness raising for other health and social care agencies and community groups would work to improve TB awareness, reduce stigma and improve TB control and prevention.

4. Health promotion campaigns should focus initially on increasing take up BCG take up among Pakistani and Other White ethnic groups, where it is relatively low, and on reducing stigma and raising awareness among black and minority ethnic groups in the city, perhaps using TB Alert materials designed for and by BME communities themselves.

5. Development of a strategy for training and development of TB service staff would ensure opportunities for continued professional development and maintain excellence. One example of useful training is motivational interviewing techniques for eliciting contacts.

6. Liaison with Universities to promote TB awareness to students arriving from high risk countries in the autumn to encourage attendance for latent TB screening. A form of words, shared with kind permission from Portsmouth TB service, can be found in Appendix 2.

7. The TB service has suggested that an annual search of their spine database for all students staying for 2 years or more, followed by an invitation to screening for latent TB would pick up many new entrants who are currently missed.

8. The TB service has plans to repeat TB screening for all patients registered with Homeless Healthcare after 3 years. This would meet good practice guidance.

9. The TB service also plans to screen all registering patients for alcohol use using the Audit-C questionnaire or similar. This too would meet good practice guidance.

10. The Southampton Health Visiting service has expressed an interest in health promotion training and resources for Family Point staff. A pilot at St Mary’s Family Point would provide an excellent opportunity to target hard to reach
families. If successful, the model could be extended to other Family Point staff and School Nurses.

11. Staff bandings in Southampton should be comparable with the seniority afforded to staff in similar services, such as Portsmouth (commensurate with responsibility and level of competence).
Appendix

Appendix 1: Patient satisfaction questionnaires

Southampton City

Tuberculosis (TB) Service
Patient Satisfaction Questionnaire

Thank you for taking the time to complete this questionnaire. It is **anonymous** and **confidential**. The information you give will not change the care you are given. It will help us to improve the service.

If you don’t feel that a question is relevant to you, or you cannot answer it, please leave that question blank and go on to the next one.

1. Which clinic are you attending today? (For example, BCG vaccination, Consultant clinic etc).

2. My appointment in the TB Clinic was at a convenient time for me (please tick one).
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Not applicable

3. If this time was **not** convenient, when would you have preferred to come?

4. The clinic is in a convenient location for me (please tick one).
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Not applicable

5. If you disagree, please say why:

6. **For BCG patients only:**
   Where would you prefer to have your child vaccinated against TB?
   - In hospital after birth
   - At the BCG clinic here

7. Please say why:
8. The waiting area (seating) was satisfactory (please tick one).

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

9. The staff at the clinic were polite and helpful (please tick one).

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

**YOUR CONSULTATION**

10. I understand the reasons for my visit (please tick one).

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

11. I understand what to expect during the visit (please tick one).

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

12. I was able to ask questions during my consultation (please tick one).

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

13. My consultation was long enough (please tick one).

<table>
<thead>
<tr>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

14. I am been able to contact a nurse outside clinic times if I need to (please tick one).

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Not applicable</th>
</tr>
</thead>
</table>
YOUR VIEWS

16. Please tell us two things we did well
   a. ____________________________________________________________________________
   b. ____________________________________________________________________________

17. Please tell us two ways the TB Service could be improved
   a. ____________________________________________________________________________
   b. ____________________________________________________________________________

18. Did the information given to you answer your questions? If not, what did we miss?
   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

19. Please add any other comments.
   ____________________________________________________________________________
   ____________________________________________________________________________
ABOUT YOU (OR THE PATIENT IF YOU ARE THE CARER)

□ Male □ Female

Postcode (e.g. SO16 5TQ):_____________________________________

What is your ethnic group? Choose ONE section from A to E, then tick the appropriate box to indicate your ethnic group.

A : White
- British
- Irish
- Any other White background (please write in)

B : Mixed
- White and Black Caribbean
- White and Black African
- White and Asian
- Any other mixed background (please write in)___________________

C : Asian or Asian British
- Indian
- Pakistani
- Bangladeshi
- Any other Asian background (please write in)___________________

D : Black or Black British
- Caribbean
- African
- Any other Black background (please write in)___________________

E : Chinese or other ethnic group
- Chinese
- Any other (please write in)__________________________________

Patient's age:_______________________________________________

Thank you for your help.
Please return this questionnaire in an envelope to the box at reception.
Appendix 2: Suggested text for university welcome pack (from Portsmouth TB Service)

Healthcare is free and confidential in the United Kingdom and I urge all international students to make good use of the UK healthcare system. The local health service is notified when you arrive in Portsmouth and you may be contacted and offered health checks and screening while you are in the UK. You will be informed of these more quickly if you are registered with a local doctor. If you are invited to attend an appointment by the local doctor or hospital you are strongly encouraged to attend.

These health checks and screening opportunities are free, and the results and any treatment offered are absolutely confidential. Patient data is not shared by the UK health service with any other agency, public or private.

To be able to take advantage of these health checks as soon as possible, and to know where to go if you become ill, you need to register with a local doctor (a ‘General Practitioner’ or GP) close to your University accommodation as soon as you arrive.

Contact details (address and telephone number) for all General Practitioners in the city (and elsewhere in the UK) can be found on the National Health Service website: http://www.nhs.uk/servicedirectories/pages/servicesearch.aspx

---

2. NICE (2012) Identifying and managing tuberculosis among hard to reach groups NICE public health guidance 37 www.nice.org.uk/ph37
5. NICE (2012) Identifying and managing tuberculosis among hard to reach groups NICE public health guidance 37 www.nice.org.uk/ph37
7. British Thoracic Society, Royal College of Nursing TB Forum & All Parliamentary Group on Global Tuberculosis Turning UK TB policy into action: the view from the frontline July 2009
29 WHO, http://www.who.int/vaccine_research/about/gvrf/Session6_Clemens_reportWHE.pdf
30 NICE (2012) Identifying and managing tuberculosis among hard-to-reach groups
32 http://www.tbalert.org
33 Sheila Basnayake, Personal Communication, March 2012
34 http://gunning-fog-index.com/