



Public Health  
England

Protecting and improving the nation's health

# Health inequalities briefing for London Tuberculosis: Inequalities by protected characteristics and socioeconomic factors

Public Health England (London): key facts on social inequalities in tuberculosis rates.

## About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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## Background

Public Health England's (PHE) mission is to improve and protect the nation's health and wellbeing and improve the health of the poorest fastest. This includes PHE's core aim of reducing health inequalities. Health inequalities are systematic, avoidable differences in health between different groups of people. Health inequalities arise from social inequalities in factors that influence health like housing, the environment, income, employment and education.

Complementary to work on health inequalities is a focus on advancing equality, which is underpinned by provisions in the Equality Act 2010. Work on equality and diversity focuses on having due regard to eliminating discrimination, advancing equality of opportunity and fostering good relations between people or persons in relation to certain "protected characteristics" set out in the Equality Act 2010<sup>1</sup>. Legislation exists to protect the rights of individuals and promote equality of opportunity for all. The Act includes a public sector Equality Duty which requires "public authorities", such as Public Health England, to have due regard to the following commitments:

- eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act,
- advance equality of opportunity between people who share a protected characteristic and people who do not and
- foster good relations between people who share a protected characteristic and those who do not.

## Purpose of the briefings

This initial suite of briefings provides a summary description of inequalities in relation to protected characteristics (under the Equality Act) and socioeconomic factors. They will be updated for new data and evidence, periodically. The aim is to:

- 1 Increase awareness of health equality and socioeconomic differences across PHE London's five priority areas, as well as tobacco and Health Checks
- 2 Inform decision making in the implementation of plans to reduce health inequalities and support compliance with the Equality Act 2010.

This briefing provides a summary description of inequalities in tuberculosis according to the Equality Act in relation to the protected characteristics and socioeconomic factors. They are not systematic reviews but they have been developed with local, regional and national experts in the field. This equalities briefing contains descriptive information. We hope that providing background information on how tuberculosis might impact on people with protected characteristics will help public health teams shape and implement local

programmes. PHE London are using the information contained in this suite of briefings to inform our support work.

Other areas covered in the suite of briefings include mental health, sexual health, obesity, childhood immunisation, tobacco use and NHS Health Checks.

The protected characteristics include:

- age
- disability
- gender reassignment
- marriage and civil partnership
- pregnancy and maternity
- race
- religion and belief
- sex
- sexual orientation
- socioeconomic factors

The socioeconomic factors include, for example, deprivation, employment status, educational attainment level, housing status.

## Context

Tuberculosis (TB) rates in the UK have stabilised at a high level in recent years, and the UK now has one of the highest incidence rates of any Western European country. A total of 7,892 cases of TB were reported in the UK in 2013, an incidence of 12.3 per 100,000<sup>2</sup>. Rates of TB in London remain high compared to the rest of the UK and comparable western European cities. In 2013, 2,985 TB cases were reported among London residents, a rate of 36 per 100,000 population<sup>2</sup>. London accounted for the highest proportion of cases in the UK, accounting for 38% of the 7,892 TB cases reported in the UK in 2013.

There is significant regional and local variation in rates of TB, depending on population characteristics and level of local risk. Certain groups in England, such as ethnic minority groups, and those with certain social risk factors (history of homelessness, imprisonment, drug or alcohol misuse), are disproportionately affected.

The majority of TB cases in the UK and in London occur in people born in countries with high levels of TB. Areas with higher rates of migration or established communities originating from countries with higher TB levels will likely experience a higher incidence of TB. Other factors such as existing illness, poor nutrition, poor access to healthcare, poor housing, problem drug use, alcohol misuse and imprisonment all increase a person's risk of acquiring infection. The same factors are associated with poor

adherence to treatment, the development of drug-resistant strains of TB, onward transmission of the disease, and people being lost to follow-up. In 2013, 70% of cases in the UK were resident in the 40% most deprived areas, and 10% of TB cases had at least one social risk factor. In London almost one in three (30%) TB patients were resident in an area that was one of the 20% most deprived (based on the Index of Multiple Deprivation), compared to 6% resident in the least deprived, and 9% were reported to have at least one social risk factor<sup>2</sup>.

# Tuberculosis: Inequalities by protected characteristics and socioeconomic factors

## Age

In London and the UK, TB rates in 2013 were highest among adults aged 20 to 39 years old (although in London a decrease in rates in this age group was observed, reflected in a drop in TB among recent migrants, particularly those from India and aged 20 to 29 years old). Rates among other age groups were similar or slightly less than the previous year<sup>2</sup>. TB rates in children in London are higher than they are across England as a whole (the rate in London in 2013 was 5/100,000 in under 5 and 8/100,000 in children under 16<sup>2</sup>. The rate nationally was 2.8/100,000 in both children under 5 and 5-14 years old<sup>2</sup>). Children are also more likely to develop severe forms of disease<sup>3</sup>. The BCG vaccination offers some protection against this although this is not offered universally in all London boroughs.

## Disability

At the time of writing we found little published evidence regarding the presence of inequalities and TB among persons with disabilities.

However, pulmonary impairment after TB could be associated with disability<sup>4, 5</sup>. Spinal TB can lead to permanent severe physical disability, TB meningitis can lead to mild/significant cognitive impairment as well as physical disability. Removal of, or damage to the lungs from TB is a significant disability.

## Gender reassignment

At the time of writing we found little published evidence regarding the presence of inequalities and TB among persons who have undergone gender reassignment or are in the process of doing so.

## Marriage and civil partnership

At the time of writing we found little published evidence regarding the presence of inequalities and TB among individuals in a same sex marriage or civil partnership.

## Pregnancy and maternity

At the time of writing we found little published evidence regarding the presence of inequalities and TB among women who were either currently pregnant or had delivered a baby within the previous 26 weeks.

## Race

In 2013, 83% of TB patients in London were born outside of the UK, and rates in the non-UK born remain nearly ten times greater than among those born in the UK. The most common country of birth of non-UK born TB patients in London was India followed by Pakistan, Somalia, Bangladesh, Nigeria and Nepal.<sup>2</sup>

Indian remained the most common ethnic group of TB patients. This group accounted for almost a third of all cases in 2013 (31%, 907 cases) and the highest rate of TB (161 per 100,000)<sup>2</sup>.

The next highest rates were among the Pakistani population at 145 per 100,000, (comprising 12% (346 cases) of patients in 2013) followed by the black African population (97 per 100,000) with one in five patients (594 cases), but numbers and rates continued to fall in this group<sup>2</sup>.

Numbers of cases in the black Caribbean population were small (92), but rates were nearly four times greater than that of the white population (27 per 100,000)<sup>2</sup>, and have also remained stable since 2001.

Rates were lowest in the white population (7 per 100,000, 334 cases<sup>2</sup>), but have remained stable with no decline in recent years.

The latest figures show that around 40% of UK born TB patients in London were of white ethnicity. Around 15% were black African, 10% were black Caribbean, and 10% were Indian. Around 7% were Pakistani, 5% were Bangladeshi. The proportion of mixed or other ethnicity was around 15%<sup>2</sup>.

Although Indian remains the most common ethnic group, numbers and rates in this group fell in 2013 after increasing continuously since 2001. Numbers and rates also continue to fall in the black African population. The Pakistani, Bangladeshi, black Caribbean, Chinese and white ethnic groups in London have seen little change in TB numbers and rates over this period<sup>2</sup>.

Among diagnosed children under five, almost all were UK born (97%, 30); 32% (10) were black African, 32% (10) were mixed/other ethnicity and 16% (5) Indian. Only two (6%) were white<sup>2</sup>.



## Religion and belief

There is limited published literature on the social and cultural issues influencing attitudes to TB and treatment in the UK. However, it has been noted that in some cultures and communities there may be stigma associated with TB. This may cause delays in seeking treatment. According to TB Alert stigma around TB can also make people reluctant to comply with the long course of treatment for fear of being 'found out'. By taking treatment irregularly, people risk dying or developing drug resistance<sup>6</sup>.

## Sex

In most of the world, more men than women are diagnosed with TB and die from it. TB is nevertheless a leading infectious cause of death among women. As TB affects women mainly in their economically and reproductively active years, the impact of the disease is also strongly felt by their children and families<sup>7</sup>.

In 2013, 58% of TB patients in London were male, and rates among males were higher than those among females as in recent years (42 per 100,000 vs 29 per 100,000 in females). Numbers and rates were higher among males than females for those aged 20 or older, but similar for males and females in those under 20 years old<sup>2</sup>.

## Sexual Orientation

At the time of writing we found little published evidence regarding the presence of inequalities and TB among lesbian, gay or bi-sexual individuals.

## Socioeconomic factors

In the UK nearly half (44%, 3,004/6,869) of TB cases aged 16 years and over in 2013 with known occupational status were not in employment; 11% (726) were either studying or working in education, 6% (398) were health-care workers, and the remaining cases (40%, 2,741) had other occupations<sup>2</sup>.

In London in 2013 almost one in three TB patients were resident in an area that was one of the 20% most deprived (895, 30%) compared to 6% resident in the least deprived (based on the Index of Multiple Deprivation)<sup>2</sup>.

There could be an association between deprivation and TB treatment delay in some population groups, with one study showing the longer intervals observed among the most deprived black Africans, Indians/Pakistanis/ Bangladeshis and recent UK entrants, but also among the least deprived white and UK-born patients<sup>8</sup>.

While anyone can contract TB, the highest risk of TB for people born in the UK and living in London is among those who misuse alcohol, are homeless, problem drug users and prisoners.

In 2013, social risk and vulnerability factors (reported alcohol misuse, drug use, reported homelessness and imprisonment) were experienced by around one in ten patients, with a number having multiple factors. These were more common among patients of white or black Caribbean ethnicity and among those born in the UK. They were also particularly prevalent among individuals from Eastern Europe although these only accounted for 4% of all patients with risk factors. Overall social risk factors were more than twice as common among UK born patients than those born abroad<sup>2</sup> (also see Race section above). Drug resistance was also associated with having a social risk factor: 28% of all multi-drug resistant TB cases in London in 2013 reported at least one risk factor<sup>2</sup>.

Homeless people are at particular risk from TB. They are more likely to be exposed to TB in hostel accommodation or settings where homeless people gather to sleep or socialise. The immune stresses associated with homelessness – such as rough sleeping, cold, poor nutrition and alcohol or drug abuse – then make it more likely that someone exposed to TB will go on to develop the illness<sup>6</sup>.

## Other

HIV infection has emerged as the most important and prevalent predisposing factor for tuberculosis worldwide

Worldwide, people living with HIV and infected with TB are 30 times more likely to develop active TB disease than people without HIV<sup>9</sup>. However, there is a downward trend in proportion of people in London co-infected with HIV<sup>2</sup>. Universal HIV testing of all TB patients is now standard practice in London (98% of TB patients in 2013 in London were offered an HIV test, or their status was already known).

For more information about Tuberculosis in London please see the latest annual review <https://www.gov.uk/government/publications/tuberculosis-tb-in-london-annual-report>

For more information about PHE and NHS England collaborative tuberculosis strategy for England (2015-2020) <https://www.gov.uk/government/publications/collaborative-tuberculosis-strategy-for-england>

<sup>1</sup> Equality Act 2010 (c.15) Great Britain:HMSO

<sup>2</sup> Public Health England: Tuberculosis in London: Annual Review 2014: London: Public Health England:2014

<sup>3</sup> Centre for Disease Control and Prevention: Available from: <http://www.cdc.gov/tb/topic/populations/TBinChildren/default.htm> (internet) (accessed 15/12/2014)

<sup>4</sup> Pasipanodya JG, McNabb SJN, Hilsenrath P, Bae S, Lykens K, Vecino E, et al. Pulmonary impairment after tuberculosis and its contribution to TB burden. BMC Public Health [internet]:2010;10:259: Available from <http://www.biomedcentral.com/1471-2458/10/259>

<sup>5</sup> Pasipanodya JG, Miller TL, Vecino M, Munguia G, Garmon R, Bae S, et al. Pulmonary Impairment After Tuberculosis. Chest Journal: Official Publication of the American College of Chest Physicians [internet].2007; 131(6):1817-1824. doi:10.1378/chest.06-2949.Available from <http://journal.publications.chestnet.org/article.aspx?articleid=1085187>

<sup>6</sup> TB Alert [internet] [accessed 15/10/2014] Available at <http://www.tbalert.org/about-tb/global-tb-challenges/stigma-myths/>.

<sup>7</sup> World Health Organisation [online] [accessed 15/10/2014] Available at [http://www.who.int/tb/challenges/gender/page\\_1/en/](http://www.who.int/tb/challenges/gender/page_1/en/)

<sup>8</sup> French C. E., Kruijshaar M. E., Jones J.A. Abubakar I. The influence of socio-economic deprivation on tuberculosis treatment delays in England, 2000–2005 Epidemiology. Infect. (2009), 137, 591–596.

<sup>9</sup> World Health Organisation Tuberculosis factsheet. T. Fact sheet N°104. [internet]. Reviewed March 2014 Available from <http://www.who.int/mediacentre/factsheets/fs104/en/>.