

BCG Vaccination

Protecting London's children against tuberculosis

June 2009

Outline

More than half of London boroughs have a high rate of tuberculosis, yet children living in these areas are not entitled to the BCG (Bacillus Calmette-Guérin) vaccination.

The current NHS guidance on the BCG vaccination means that children over the age of 12 months can only receive the vaccine if they are born in a foreign country with a rate of tuberculosis (TB) of 40 cases per 100,000 people, or if they have parents or grandparents born in one of these countries, or if they visit such a country for a month or more.

Even though eighteen of the thirty one Primary Care Trusts in London have this rate of TB i.e. 40 cases per 100,000 people or greater, children above the age of 12 months living in these boroughs are not entitled to the BCG vaccine. This is an inconsistent policy leading to health inequalities, because children are clearly being exposed to similar levels of risk as they would in the instances that trigger the eligibility for the BCG vaccination.

We estimate that running an annual vaccination programme for school children in the affected London boroughs would cost £46,040 annually (plus administration costs). We will be calling on the Mayor of London to write to the Joint Committee on Vaccination and Immunisation, requesting that they change their guidance on the BCG vaccination to allow children who live or attend school in an area of London with a TB incidence of 40/100,000 or greater to receive the vaccination from the NHS. This change is necessary to protect children in London and reduce the spread of tuberculosis.

Background

Tuberculosis

In the UK, there has been an increase in reported TB cases, from 8,496 in 2007 to 8,679 in 2008. In both years, 39% of UK cases have occurred in London.¹

Tuberculosis primarily damages the lungs, although infection can spread to different parts of the body including the bones and nervous system. The disease is transmitted through coughing, but usually requires close contact for 8 hours or more with an infectious case.² TB is curable with a combination of specific antibiotics, but treatment must be continued for at least six months.³ Left untreated, an active TB infection can be fatal.⁴

BCG Vaccination Programme 1953-2005

From 1953-2005, the BCG vaccination was offered to all children aged 12 or 13. In the 1960s, the vaccination programme was extended to include immunisation of neonates born to recent entrants to the UK from countries with high rates of TB. The number of cases of TB dropped significantly from 50,000 cases each year in the UK in the 1950s,⁵ to around 8,478 in 2005.⁶

Current criteria for BCG vaccination

In July 2005, the Chief Medical Officer for Britain wrote to all Primary Care Trusts and Immunisation Co-ordinators to change the BCG vaccination programme. The BCG vaccination would no longer be offered to all children aged 12 and 13. Instead, a targeted vaccination programme would be introduced for:

- All infants (aged 0-12 months) living in areas with a TB incidence of 40/100,000 or greater
- All infants (aged 0-12 months) with a parent or grandparent born in a country with a TB incidence of 40/100,000 or greater
- Previously unvaccinated new immigrants from high prevalence countries for TB.⁷

In August 2005, the Department of Health sent a letter to all Primary Care Trust Immunisation Co-ordinators in England with further details on the selective BCG vaccination programme. From 1 September 2005, the BCG vaccination would only be given to those who met the above criteria or the additional conditions below:

- Children (older than 12 months) who were born in a country outside the UK with a TB incidence of 40/100,000 or greater
- Children (older than 12 months) who have a parent or grandparent born in a country with a TB incidence of 40/100,000 or greater
- Children (older than 12 months) who are contacts of a TB case, or are to visit or live in a country with a TB incidence of 40/100,000 or greater for a period of one month or more.⁸

The Department of Health guidance specifies that “for children over the age of 12 months, living in, or moving into an area of the UK where the incidence of TB is 40/100,000 or greater is NOT on its own an indication for vaccination.”

The Joint Committee on Vaccination and Immunisation (JCVI), which advises the Secretary of State for Health on immunisation, reviewed the guidance on the BCG vaccination in 2007. They concluded that the current criteria for the targeted BCG vaccination programme remained appropriate.⁹

Why the BCG vaccination should be offered to children in areas with high TB incidence?

London compared to the UK

London has an exceptionally high rate of TB compared to the rest of the country. The average TB incidence across London is 43.2/100,000 in contrast with a national average of just 13.8/100,000 (statistics for 2007).¹⁰ Whilst the NHS guidance on BCG vaccination may be appropriate for the majority of the UK, London is a unique case since 39% of all UK tuberculosis cases occur in the capital.¹¹

Health Risk

The Department of Health recognises that a TB rate of 40/100,000 or above is a health risk, with the NHS recommending children should be vaccinated if they go abroad for a month to a country with a TB incidence of 40/100,000. This is why it is so important that children living or attending school in a London borough with a TB rate of 40/100,000 or more are protected against TB through the BCG vaccination.

London Data

The Government's newly released statistics on TB are startling:

- **18 of the 31 Primary Care Trusts in London have a TB incidence of 40/100,000 or greater.**
- 2 London Primary Care Trusts - **Brent and Newham – have a TB incidence of 100/100,000 or greater.** This is an exceptionally high rate of tuberculosis, and is comparable to TB incidence in China, Ukraine and Ecuador (see Annex 1).
- Outside of London, only 4 other Primary Care Trusts in England have a TB incidence of 40/100,000 or greater (see Annex 2).

The table below shows the TB incidence in London boroughs in 2005. This is the most recent data available from the Department of Health:¹²

Primary Care Trust	Banded rates of TB per 100,000
Barking and Dagenham PCT	30-39
Barnet PCT	30-39
Bexley Care Trust	10-19
Brent Teaching PCT	100-109

Bromley PCT	0-9
Camden PCT	40-49
City and Hackney Teaching PCT	60-69
Croydon PCT	30-39
Ealing PCT	70-79
Enfield PCT	30-39
Greenwich Teaching PCT	30-39
Hammersmith and Fulham PCT	50-59
Haringey Teaching PCT	50-59
Harrow PCT	60-69
Havering PCT	10-19
Hillingdon PCT	50-59
Hounslow PCT	70-79
Islington PCT	40-49
Kensington and Chelsea PCT	20-29
Kingston PCT	10-19
Lambeth PCT	50-59
Lewisham PCT	40-49
Newham PCT	100-109
Redbridge PCT	40-49
Richmond and Twickenham PCT	10-19
Southwark PCT	50-59
Sutton and Merton PCT	20-29
Tower Hamlets PCT	60-69
Waltham Forest PCT	50-59
Wandsworth PCT	40-49
Westminster PCT	30-39

Young People

Young people are one of the groups most at risk of contracting tuberculosis.¹³ Therefore, it is particularly important that all children in boroughs with high TB rates should be provided with the BCG vaccination.

Case Study: France

Like the UK, France has a low rate of TB and pockets of high TB incidence. The TB incidence in France is 14/100,000 (2007)¹⁴ though it is higher in Ile de France which has a TB incidence of

19.7/100,000.¹⁵ Nationally, France operates a targeted vaccination policy very similar to that in the UK. However in Ile de France, the BCG vaccination is given to all children up to the age of 15.¹⁶

BCG Vaccination Protects Children against TB

The BCG vaccination offers significant protection against tuberculosis. Research cited by the NHS suggests the BCG offers over 75% protection in the UK.¹⁷ Meta-analyses of studies into the BCG vaccination show that it is 70-80% effective against the most severe forms of the disease, such as TB meningitis in children.¹⁸ Evidently, the BCG vaccination would offer a substantial level of protection for children in areas with a high rate of TB.

Cost of BCG vaccination

The school-based BCG vaccination programme operated until mid-2005 and provided both a Heaf test and a BCG vaccination for each pupil. The aggregate cost for the Heaf test and BCG vaccination was approximately £2 per pupil in 2005, although this does not include administration costs.¹⁹ If the BCG vaccination programme was reintroduced for every 12 year old in London boroughs with a TB rate of 40/100,000 or above, it would cost £46,040 + administration costs each year. (See Annex 3)

Initially, it might be necessary to run a catch-up programme to for those pupils who missed out on the BCG vaccination when the schools-programme was stopped in 2005. However, the ongoing cost to the NHS in London each year to vaccinate every 12 year old in areas with a high TB rate is only £46,040 + administration costs. This is minimal compared to the benefits in reducing the spread of TB and ensuring London's children are protected against this disease.

Next Steps

As members of the London Assembly, we will lobby the Mayor of London. We will specifically request that Boris Johnson writes to the Joint Committee on Vaccination and Immunisation, asking them to change their guidance on the BCG vaccination to allow children who live or attend school in an area of London with a TB incidence of 40/100,000 or greater to receive the BCG vaccination from the NHS.

Existing guidelines lead to unequal access to the BCG vaccination, since children going abroad for a month to a foreign country with a TB rate of 40/100,000 or greater can receive the BCG vaccination, whilst children in London who live in boroughs with a TB rate of 40/100,000 are not entitled to this vaccine. This is a health inequality, so as London Assembly Members, we will lobby the Mayor of London to deal with this matter in his forthcoming Health Inequalities Strategy.

Annex 1

World Health Organisation's statistics on TB incidence.²⁰

	Estimated TB Incidence per 100,000 in 2005	Estimated TB Incidence per 100,000 in 2007
Algeria	54	55
Argentina	33	31
Australia	6	6
Bosnia and Herzegovina	52	51
Bulgaria	40	39
China	100	98
Ecuador	107	101
France	14	14
Germany	7	6
Latvia	63	53
Morocco	97	94
Sierra Leone	509	540
Ukraine	102	102
United Kingdom	14	15
United States of America	5	4

Annex 2

Department of Health's most recent data on **Primary Care Trusts outside of London with a TB incidence of 40/100,000 or above:**²¹

Primary Care Trust	Banded rates of TB per 100,000 (for 2005)
Blackburn with Darwen	40-49
Heart of Birmingham	80-89
Leicester City	90-99
Sandwell (to the north west of Birmingham)	40-49

Annex 3

Mid-2007 Population Estimates. Source: Office for National Statistics, General Register Office for Scotland, Northern Ireland Statistics and Research Agency.²²

London areas with TB rate of 40/100,000 or above	No. of children aged 10-14 yrs
Brent	7,000
Camden	4,800
City of London and Hackney	5,900
Ealing	8,300
Hammersmith and Fulham	3,600
Haringey	5,600
Harrow	6,800
Hillingdon	8,000
Hounslow	6,100
Islington	4,300
Lambeth	6,300
Lewisham	7,100
Newham	8,200
Redbridge	8,600
Southwark	6,800
Tower Hamlets	5,800
Waltham Forest	6,800
Wandsworth	5,100
Total	115,100

Based on these population statistics, there are an estimated 23,020 children aged 12 in London boroughs that have a high TB rate. Since the cost of a Heaf test and BCG vaccination is approximately £2 per person + administration costs, it would cost £46,040 + administration to provide the Heaf test and BCG vaccination to all 12 year olds living in London boroughs with a high TB rate.

Endnotes

- ¹ http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1237797271436
http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1207035533566
- ² <http://www.nhsfife.scot.nhs.uk/newsItems/RGC1.doc>
- ³ <http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942150134?p=1191942150134>
- ⁴ <http://www.nhs.uk/conditions/Tuberculosis/Pages/Introduction.aspx>
- ⁵ <http://www.immunisation.nhs.uk/Publications/CMO060705.pdf>
- ⁶ http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1225268885463
- ⁷ <http://www.immunisation.nhs.uk/Publications/CMO060705.pdf>
- ⁸ <http://www.swph-education.org.uk/OSPHE/other/Mock%20Question%209.pdf> p.5
- ⁹ <http://www.ukmicentral.nhs.uk/headline/database/story.asp?offset=810&NewsID=6214>
- ¹⁰ http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1225268885463
- ¹¹ http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1225268885463 p.5
- ¹² http://www.parliament.the-stationery-office.com/pa/cm200809/cmhansrd/cm090423/text/90423w0012.htm#column_837W
- ¹³ <http://www.london.gov.uk/assembly/reports/health/tb.pdf> p. 7
- ¹⁴ <http://apps.who.int/globalatlas/dataQuery/default.asp>
- ¹⁵ <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3268>
- ¹⁶ http://www.sante.gouv.fr/htm/dossiers/tuberculose/vaccin_bcg.htm
- ¹⁷ <http://www.bdpct.nhs.uk/userfiles/file/TB%20Briefing%202008.pdf> p.4
- ¹⁸ http://www.dh.gov.uk/en/PublicHealth/Healthprotection/Immunisation/Greenbook/DH_4097254
- ¹⁹ http://www.publications.parliament.uk/pa/cm200809/cmhansrd/cm090604/text/90604w0014.htm#column_672W
- ²⁰ <http://apps.who.int/globalatlas/dataQuery/default.asp>
- ²¹ http://www.parliament.the-stationery-office.com/pa/cm200809/cmhansrd/cm090423/text/90423w0012.htm#column_837W
- ²² <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106>