



DEPARTMENT OF HEALTH

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# BCG Vaccination Policy



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**Isle of Man**  
Government

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## 1. Introduction

The UK and Isle of Man vaccination programmes introduced changes to the Bacillus Calmette-Guérin (BCG) programme in July 2005.

The changes have evolved following the changing epidemiology of tuberculosis (TB) in individuals in the UK and emerging evidence regarding the effectiveness of BCG. When the vaccine was first introduced in the 1950s there were over 50,000 cases of TB in the UK.

'Provisional data show that 8,587 cases of TB were reported in the UK in 2010, a rate of 13.9 per 100,000 population. Compared to provisional numbers reported in 2009, this is a 6% decrease. Provisional data should be interpreted with caution because numbers are likely to change due to late notifications and de-notifications of cases. It is therefore too early to determine if this represents a reversal of the increase seen over the past two decades. Nevertheless, the absence of a further rise is encouraging'.

*Tuberculosis Update (HPA) March 2011*

## 2. BCG Vaccination for Neonates

Wherever possible, neonates eligible for BCG vaccination should be identified antenatally and vaccinated soon after birth - ideally before discharge from hospital.

BCG immunisation should be offered to:

- All infants (aged 0 to 12 months) living in areas of the UK where the annual incidence of TB is 40/100,000 or greater.\* (See page 4).
- All infants (aged 0 to 12 months) with a parent or grandparent who was born in a country where the annual incidence of TB is 40/100,000 or greater (See Appendix 4).



### 3. BCG Vaccination for Children aged over 12 months

BCG immunisation should be offered to:

- Previously unvaccinated children aged one to five years with a parent or grandparent who was born in a country where the annual incidence of TB is 40/100,000 or greater. These children should be identified at suitable opportunities, and can normally be vaccinated without tuberculin testing.
  - Previously unvaccinated, tuberculin-negative children aged from six to under 16 years of age with a parent or grandparent who was born in a country where the annual incidence of TB is 40/100,000 or greater. These children should be identified at suitable opportunities, tuberculin-tested and vaccinated if negative (see Section 7 on tuberculin testing prior to BCG vaccination).
  - Previously unvaccinated tuberculin-negative individuals under 16 years of age who are contacts of cases of respiratory TB (following recommended contact management advice – see National Institute for Health and Clinical Excellence (NICE), 2006).
  - Previously unvaccinated, tuberculin-negative individuals under 16 years of age who were born in or who have lived for a prolonged period (at least three months) in a country with an annual TB incidence of 40/100,000 or greater.
- \* Universal vaccination operates in areas of the country where the TB incidence is 40/100,000 or greater. This is applied for operational reasons since these geographical areas generally have a high concentration of families who come from regions of the world where the TB incidence is 40/100,000 or greater. The decision to introduce universal vaccination in an area is based on geography in order to target vaccination to children who may be at increased risk of TB in an effective way. It does not imply that living in areas that have an incidence of TB 40/100,000 or greater puts children at increased risk of TB infection. This is because most infections of children are likely to occur in household settings. Further, there has been little evidence of TB transmission in schools in the UK.



## 4. BCG Vaccination for Other 'At Risk' Individuals

### Individuals at occupational risk

People in the following occupational groups are more likely than the general population to come into contact with someone with TB:

- healthcare workers who will have contact with patients or clinical materials
- laboratory staff who will have contact with patients, clinical materials or derived isolates
- veterinary and staff such as abattoir workers who handle animal species known to be susceptible to TB - for example, simians
- prison staff working directly with prisoners
- staff of care homes for the elderly
- staff of hostels for homeless people and facilities accommodating refugees and asylum seekers.

Unvaccinated, tuberculin-negative individuals aged under 35 years in these occupations are recommended to receive BCG. There are no data on the protection afforded by BCG vaccine when it is given to adults aged 35 years or over.

Not all healthcare workers are at an equal risk of contracting TB. There are likely to be categories of healthcare workers who are at particular risk of TB, and the Occupational Health professional should undertake a risk assessment when the use of BCG is being considered for a healthcare worker over 35 years of age.

### Travellers and those going to reside abroad

BCG may be required for previously unvaccinated, tuberculin-negative individuals according to the destination and the nature of travel. The vaccine is recommended for those under 16 years who are going to live or work with local people for more than three months in a country where the annual incidence of TB is 40/100,000 or greater [Refer to Department of Health, 2001, *Health information for overseas travel*, for more information]. (See Appendix 4).



### **Individual requests for BCG vaccination**

People seeking vaccination for themselves or their children should be assessed for specific risk factors for TB.

Those without risk factors should not be offered BCG vaccination but should be advised of the current policy and given written information.

Further information is available at [www.immunisation.nhs.uk](http://www.immunisation.nhs.uk). People with risk factors should be tuberculin-tested and offered BCG vaccination via a formal referral to the Health Protection Unit, Public Health Directorate.

## **5. Repeat BCG Vaccination**

Although the protection afforded by BCG vaccine may wane with time, there is no evidence that repeat vaccination offers significant additional protection and repeat BCG vaccination is not recommended.

## **6. Contra-indications to BCG**

The vaccine should not be given to:

- those who have already had a BCG vaccination
- those with a past history of TB
- those with an induration of 6mm or more following Mantoux (SSI) tuberculin skin testing
- those who have had a confirmed anaphylactic reaction to a component of the vaccine.
- neonates in a household where an active TB case is suspected or confirmed.
- people who are immune-compromised by virtue of disease or treatment; for example:
  - patients receiving corticosteroid or other immunosuppressive treatment, including general radiation. Inhaled steroids are not a contra-indication.
  - those suffering from a malignant condition such as lymphoma, leukaemia, Hodgkin's disease or other tumour of the reticuloendothelial system.

BCG is contra-indicated in symptomatic HIV-positive individuals. In countries such as the UK where the risk of TB is low, it is recommended that BCG is also withheld from all those known to be, or suspected to be, HIV positive,





regardless of clinical status. Where vaccination is indicated - for example, infants born to HIV-positive mothers - this can be administered after two appropriately-timed negative postnatal PCR tests for HIV infection (see Chapter 6, Contra-indications and special considerations. *Immunisation against infectious disease, DH 2006*).

Individuals with generalised septic skin conditions should not be vaccinated. If eczema exists, an immunisation site should be chosen that is free from skin lesions.

## **7. Tuberculin testing prior to BCG Vaccination**

A tuberculin skin test is necessary prior to BCG vaccination for:

- all individuals aged six years or over
- infants and children under six years of age with a history of residence or prolonged stay (more than three months) in a country with an annual TB incidence of 40/100,000 or greater
- those who have had close contact with a person with known TB
- those who have a family history of TB within the last five years.
- BCG can be given up to three months following a negative tuberculin test, otherwise a retest is necessary.





## Appendix 1

### Opportunities to Identify, Test and Vaccinate People Eligible for BCG Vaccination

It is important that every opportunity is taken to identify and offer BCG vaccination to infants, children and young people at higher risk of contracting TB. All eligible infants not vaccinated in delivery units at birth can be identified and referred for BCG vaccination at the earliest opportunity, before they reach the age of one year, by reference to the table below. BCG should only be administered by healthcare professionals trained and experienced in tuberculin-testing and BCG administration.

Age	Health Professional	Process
<b>Antenatal check</b>	Midwives/Health Visitors	Identification of future need for BCG; notes marked, information leaflet given to mother/father
<b>At birth</b>	Midwives	Notes marked appropriately
<b>14-28 days</b>	Midwives/Health Visitors	Refer to Health Protection Unit - Tel 642688
<b>6-8 weeks postnatal check</b>	Practice Nurse/Health Visitor/General Practitioner	Refer to Health Protection Unit - Tel 642688
<b>8 weeks primary immunisations</b>	Practice Nurse/Health Visitor/General Practitioner	Refer to Health Protection Unit - Tel 642688
<b>12 weeks – routine immunisations</b>	Practice Nurse/Health Visitor/General Practitioner	Refer to Health Protection Unit - Tel 642688
<b>16 weeks – routine immunisations</b>	Practice Nurse/Health Visitor/General Practitioner	Refer to Health Protection Unit - Tel 642688
<b>12 months – routine immunisations</b>	Practice Nurse/Health Visitor/General Practitioner	Refer to Health Protection Unit - Tel 642688 (BCG can be given at the same time as other live vaccines; otherwise they must be given at least 4 weeks apart).



## Opportunities for Children over 12 months

<b>Age</b>	<b>Health Professional</b>	<b>Process</b>
<b>Health Assessment up to 4 years of age</b>	Health Visitor	Refer to Health Protection Unit - Tel 642688
<b>Health assessments undertaken between 4-16 years of age</b>	School Nurse	Refer to Health Protection Unit - Tel 642688
<b>Any time</b>	Practice Nurse/Health Visitor/General Practitioner	New entrant screening; new patient registration; contact-tracing and overseas travel advice - refer to Health Protection Unit - Tel 642688.



## Appendix 2

### Arrangements for Audit

The following should be noted in the patient's records and the GP informed:

- i) Tuberculin skin test date/BCG immunisation date.
- ii) Lot number and expiry date of Tuberculin PPD and/or BCG vaccine and solvent for BCG.
- iii) Arm used for tuberculin skin test/BCG vaccine.
- iv) Signature, name and designation of nurse/doctor performing tuberculin skin test/BCG vaccination.
- v) Date of tuberculin skin test reading.
- vi) Measurement of tuberculin reaction.
- vii) Name, signature and designation of person reading the reaction.



## Appendix 3

### Competence in Immunisation

#### Aim

To ensure safe practice in the administration of immunisation by nurses.

A formal programme of study is facilitated by the Public Health Directorate. The Code – standards of conduct, performance and ethics for nurses and midwives (NMC 2008).

- You must have the knowledge and skills for safe and effective practice when working without direct supervision.
- You must recognise and work within the limits of your competence.
- You must keep your knowledge and skills up to date throughout your working life.
- You must take part in appropriate learning and practice activities that maintain and develop your competence and performance.

Before undertaking immunisation, the nurse should ensure that he/she has achieved competence in the following areas of practice:

1. Immunity - active and passive.
2. Storage, distribution and disposal of vaccines, including cold chain.
3. Understanding of the principles of valid consent and implied consent.
4. Indications and contra-indications of specific vaccines/tuberculin PPD.
5. Adverse reactions.
6. Anaphylaxis and resuscitation.
7. Disposal of sharps and clinical waste.
8. Needle-stick injury.
9. Understanding of the principles of immunisation under Patient Group Directions (PGD).
10. Record-keeping requirements.
11. Reconstitution of vaccines, skin preparation, site of immunisation and injection technique.

All nurses involved in immunisation have a professional responsibility to reinforce and update their knowledge and skills in this area, with particular reference to recent and current changes in practice.



## Appendix 4

### World Health Organization (WHO) Estimates of Tuberculosis Incidence by Country, 2009

#### Definition of high incidence

With reference to the National Institute for Health and Clinical Excellence (NICE) recommendations for BCG vaccination and screening in England and Wales, countries/territories with an estimated incidence rate of 40 per 100,000 or greater are considered to have a high incidence of tuberculosis.

Country/Territory	WHO Region	Estimated number of cases	Estimated rate per 100,000 population
Afghanistan	Eastern Mediterranean	53000	189
Albania	Europe	460	15
Algeria	Africa	21000	59
American Samoa	Western Pacific	1.4	2
Andorra	Europe	9	10
Angola	Africa	55000	298
Anguilla	The Americas	3.2	21
Antigua and Barbuda	The Americas	4.5	5.1
Argentina	The Americas	11000	28
Armenia	Europe	2200	73
Australia	Western Pacific	1400	6.4
Austria*	Europe	910	11
Azerbaijan	Europe	9700	110
Bahamas	The Americas	50	15
Bahrain	Eastern Mediterranean	370	46



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Bangladesh	South-East Asia	360000	225
Barbados	The Americas	2.2	0.88
Belarus	Europe	3800	39
Belgium	Europe	920	8.6
Belize	The Americas	120	40
Benin	Africa	8300	93
Bhutan	South-East Asia	1100	158
Bolivia (Plurinational State of)	The Americas	14000	140
Bosnia and Herzegovina	Europe	1900	50
Botswana	Africa	14000	694
Brazil	The Americas	87000	45
British Virgin Islands	The Americas	2.3	9.9
Brunei Darussalam	Western Pacific	240	60
Bulgaria	Europe	3100	41
Burkina Faso	Africa	34000	215
Burundi	Africa	29000	348
Cambodia	Western Pacific	65000	442
Cameroon	Africa	35000	182
Canada	The Americas	1600	4.8
Cape Verde	Africa	750	148





<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Central African Republic	Africa	14000	327
Chad	Africa	32000	283
Chile	The Americas	1800	11
China	Western Pacific	1300000	96
China, Hong Kong SAR	Western Pacific	5800	82
China, Macao SAR	Western Pacific	340	64
Colombia	The Americas	16000	35
Comoros	Africa	260	39
Congo	Africa	14000	382
Cook Islands	Western Pacific	5.4	27
Costa Rica	The Americas	480	10
Côte d'Ivoire	Africa	84000	399
Croatia	Europe	1100	25
Cuba	The Americas	610	5.5
Cyprus	Europe	48	5.5
Czech Republic	Europe	910	8.8
Democratic People's Republic of Korea	South-East Asia	82000	345
Democratic Republic of the Congo	Africa	250000	372
Denmark	Europe	370	6.8
Djibouti	Eastern Mediterranean	5400	620



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Dominica	The Americas	8.8	13
Dominican Republic	The Americas	7100	70
Ecuador	The Americas	9300	68
Egypt	Eastern Mediterranean	15000	19
El Salvador	The Americas	1800	30
Equatorial Guinea	Africa	790	117
Eritrea	Africa	5000	99
Estonia	Europe	400	30
Ethiopia	Africa	300000	359
Fiji	Western Pacific	160	19
Finland	Europe	470	8.8
France	Europe	3800	6.1
French Polynesia	Western Pacific	59	22
Gabon	Africa	7400	501
Gambia	Africa	4600	269
Georgia	Europe	4500	107
Germany	Europe	4000	4.9
Ghana	Africa	48000	201
Greece	Europe	510	4.5
Grenada	The Americas	4.3	4.1



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Guam	Western Pacific	110	64
Guatemala	The Americas	8700	62
Guinea	Africa	32000	318
Guinea-Bissau	Africa	3700	229
Guyana	The Americas	850	112
Haiti	The Americas	24000	238
Honduras	The Americas	4300	58
Hungary	Europe	1600	16
Iceland	Europe	10	3.1
India	South-East Asia	2000000	168
Indonesia	South-East Asia	430000	189
Iran (Islamic Republic of)	Eastern Mediterranean	14000	19
Iraq	Eastern Mediterranean	20000	64
Ireland	Europe	380	8.5
Israel	Europe	390	5.4
Italy	Europe	3800	6.4
Jamaica	The Americas	180	6.6
Japan	Western Pacific	26000	21
Jordan	Eastern Mediterranean	360	5.6
Kazakhstan	Europe	26000	163



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Kenya	Africa	120000	305
Kiribati	Western Pacific	340	351
Kuwait	Eastern Mediterranean	1000	35
Kyrgyzstan	Europe	8700	159
Lao People's Democratic Republic	Western Pacific	5600	89
Latvia	Europe	1000	45
Lebanon	Eastern Mediterranean	640	15
Lesotho	Africa	13000	634
Liberia	Africa	11000	288
Libyan Arab Jamahiriya	Eastern Mediterranean	2600	40
Lithuania	Europe	2300	71
Luxembourg	Europe	45	9.2
Madagascar	Africa	51000	261
Malawi	Africa	46000	304
Malaysia	Western Pacific	23000	83
Maldives	South-East Asia	120	39
Mali	Africa	42000	324
Malta	Europe	46	11
Marshall Islands	Western Pacific	130	207
Mauritania	Africa	11000	330



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Mauritius	Africa	280	22
Mexico	The Americas	19000	17
Micronesia (Federated States of)	Western Pacific	99	90
Mongolia	Western Pacific	6000	224
Montenegro	Europe	130	21
Montserrat	The Americas	0.46	7.8
Morocco	Eastern Mediterranean	29000	92
Mozambique	Africa	94000	409
Myanmar	South-East Asia	200000	404
Namibia	Africa	16000	727
Nauru	Western Pacific	0.19	1.8
Nepal	South-East Asia	48000	163
Netherlands	Europe	1200	7.5
New Caledonia	Western Pacific	60	24
New Zealand	Western Pacific	330	7.8
Nicaragua	The Americas	2500	44
Niger	Africa	28000	181
Nigeria	Africa	460000	295
Northern Mariana Islands	Western Pacific	43	49
Norway	Europe	280	5.9



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Oman	Eastern Mediterranean	370	13
Pakistan	Eastern Mediterranean	420000	231
Palau	Western Pacific	13	65
Panama	The Americas	1600	48
Papua New Guinea	Western Pacific	17000	250
Paraguay	The Americas	3000	47
Peru	The Americas	33000	113
Philippines	Western Pacific	260000	280
Poland	Europe	9100	24
Portugal	Europe	3200	30
Puerto Rico	The Americas	71	1.8
Qatar	Eastern Mediterranean	690	49
Republic of Korea	Western Pacific	43000	90
Republic of Moldova	Europe	6400	178
Romania	Europe	27000	125
Russian Federation	Europe	150000	106
Rwanda	Africa	38000	376
Saint Kitts and Nevis	The Americas	4.8	9.2
Saint Lucia	The Americas	24	14
Saint Vincent and the Grenadines	The Americas	27	24



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Samoa	Western Pacific	32	18
Sao Tome and Principe	Africa	160	98
Saudi Arabia	Eastern Mediterranean	4500	18
Senegal	Africa	35000	282
Serbia	Europe	2100	21
Seychelles	Africa	26	31
Sierra Leone	Africa	37000	644
Singapore	Western Pacific	1700	36
Slovakia	Europe	490	9.1
Slovenia	Europe	230	12
Solomon Islands	Western Pacific	600	115
Somalia	Eastern Mediterranean	26000	285
South Africa	Africa	490000	971
Spain	Europe	7500	17
Sri Lanka	South-East Asia	13000	66
Sudan	Eastern Mediterranean	50000	119
Suriname	The Americas	700	135
Swaziland	Africa	15000	1257
Sweden	Europe	580	6.2
Switzerland	Europe	370	4.9



<b>Country/Territory</b>	<b>WHO Region</b>	<b>Estimated number of cases</b>	<b>Estimated rate per 100,000 population</b>
Syrian Arab Republic	Eastern Mediterranean	4600	21
Tajikistan	Europe	14000	202
Thailand	South-East Asia	93000	137
The Former Yugoslav Republic of Macedonia	Europe	460	23
Timor-Leste	South-East Asia	5600	498
Togo	Africa	30000	446
Tonga	Western Pacific	24	23
Trinidad and Tobago	The Americas	300	23
Tunisia	Eastern Mediterranean	2500	24
Turkey	Europe	22000	29
Turkmenistan	Europe	3400	67
Turks & Caicos Islands	The Americas	4.3	13
Tuvalu	Western Pacific	15	155
Uganda	Africa	96000	293
Ukraine	Europe	46000	101
United Arab Emirates	Eastern Mediterranean	190	4.1
United Kingdom of Great Britain & Northern Ireland	Europe	7400	12
United Republic of Tanzania	Africa	80000	183
United States of America	The Americas	13000	4.1
Uruguay	The Americas	730	22





Country/Territory	WHO Region	Estimated number of cases	Estimated rate per 100,000 population
Uzbekistan	Europe	35000	128
Vanuatu	Western Pacific	170	72
Venezuela (Bolivarian Republic of)	The Americas	9500	33
Viet Nam	Western Pacific	180000	200
Wallis and Futuna Islands	Western Pacific	0.18	1.2
West Bank and Gaza Strip	Eastern Mediterranean	800	19
Yemen	Eastern Mediterranean	13000	54
Zambia	Africa	56000	433
Zimbabwe	Africa	93000	742

Information taken from HPA website  
[http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1195733758290](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1195733758290)

**Notes:**

Data presented here are an extract of data available for download from the WHO website. Only 'best estimate' figures of incidence are included here. Uncertainty bounds for these estimates are included in data downloadable from the WHO website and should be referred to if further interpretation of the figures is required. Full details of the methods used for the estimation of incidence can be found in the WHO report 'Global tuberculosis control 2010', available at [http://www.who.int/tb/publications/global\\_report/2010/en/index.html](http://www.who.int/tb/publications/global_report/2010/en/index.html).

**Source:** WHO TB burden estimates, available at:

<http://www.who.int/tb/country/data/download/en/index.html>, and Global tuberculosis control 2010, available at

[http://www.who.int/tb/publications/global\\_report/2010/en/index.html](http://www.who.int/tb/publications/global_report/2010/en/index.html). Accessed 15/04/2011.

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The information in this booklet can be provided in large print or  
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