



Information Circular

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Subject: BCG Vaccination Schedule for Tuberculosis Control

This document is designed to advise Department of Health staff in Western Australia of a change to the recommended use of BCG vaccine for Tuberculosis Control.

BCG vaccination is no longer recommended for newborn Aboriginal and Torres Strait Islanders. Previous policy recommended that these newborn children did receive BCG vaccination. The justification for this change of policy is summarised in appendix A.

BCG Indications

BCG vaccination should not be offered routinely to Australian residents. However, it is indicated in the following people:

- Newborn children of parents with leprosy or a family history of leprosy.
- Children under the age of 6 who are going to live in another country with a high incidence of tuberculosis (defined as an annual incidence of > 50 per 100 000 population, see <http://apps.who.int/globalatlas/dataQuery/default.asp>)
 - for more than 6 months,
 - or who will be making repeated visits to a country with a high incidence of tuberculosis for longer than 3 months at a time.
- Newborn children of migrants who have arrived from countries with a high incidence of tuberculosis (see definition above) in the last 5 years, or newborn children who have household contact with people who have arrived from a high incidence country in the last 5 years.

BCG vaccination can be considered for persons not included in these indications. However, care should be taken to adequately inform all persons of the potential risks and low efficacy of the vaccine, especially in adults.

It is recommended that the decision to give BCG outside of the above indications should be discussed with the Medical Director or Clinical Nurse Manager of the Tuberculosis Control Program.

BCG Contra-indications

BCG vaccination is no longer recommended in newborn Aboriginal and Torres Strait Islander children living north of the Tropic of Capricorn in WA. The justification for this change of policy is summarised in appendix A.

BCG vaccination is not recommended for Health Care Workers.

BCG vaccination is not recommended when requested by employers as a pre-requisite of employment and where there is no clinical indication. Examples of employers insisting on BCG vaccination that is outside of WA policy include:

- Overseas employers of health care workers in low incidence countries
- Employers in other industries (e.g. airline stewards)
- Agencies placing students overseas in low incidence countries (e.g. France)

General Considerations

- BCG vaccination should only ever be administered by appropriately trained health care providers.
- Informed consent must be obtained from the individual or parent/guardian.
- A risk assessment should be undertaken before giving BCG vaccination.
- Other than infants less than 6 months of age who have not travelled outside Australia, BCG vaccination should be preceded by a Mantoux skin test (or equivalent tuberculin test), and should not be given if the result is 5mm induration or greater. For individuals older than 15 years of age, a two-step* Mantoux test is recommended to establish tuberculin negativity.
- A record of the BCG vaccination (including name, date of birth, date of vaccination, dose, and batch number of vaccine) must be kept, with a copy given to the recipient.
- BCG vaccination pamphlets are available from the Perth Chest Clinic.

*Two-step mantoux testing requires repeating a Mantoux test 1-3 weeks after an initial negative test where a booster reaction is expected. The booster effect occurs when an individual's ability to react to tuberculin has waned but the Mantoux boosts the immunological memory of mycobacterial antigens. Retesting will produce a larger (boosted) response and should be considered the true result.

Inquiries regarding BCG vaccination should be directed to:

Perth Chest Clinic

17 Murray Street
Perth WA 6000
Tel: (08) 9219 3222
Fax: (08) 9219 3200

Regional Population / Public Health Units including:

Perth-North 9345 7700
Perth South 9431 0200
Wheatbelt 9622 4320
Goldfields 9080 8200
Great Southern 9842 7500
Kimberley 9194 1630
Midwest / Gascoyne 9941 0570 / 9956 1985
Pilbara 9172 8333
Southwest 9781 2350

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WESTERN AUSTRALIAN TUBERCULOSIS CONTROL PROGRAM

PERTH CHEST CLINIC

NMAHS PUBLIC HEALTH AND AMBULATORY CARE DIVISION

This information is available in alternative formats upon a request from a person with a disability.

Appendix A: Justification for no Longer Recommending BCG Vaccination in Newborn Aboriginal and Torres Strait Islander Children in Western Australia

Previous Operational Circulars (OP 1827/04; 12/08/2004) have recommended BCG vaccination in:

“Newborn Aboriginal and Torres Strait Islanders living north of the Tropic of Capricorn. Aboriginal neonates from other areas should also be considered according to local circumstances i.e. TB and HIV incidence amongst adults, movement of subjects to northern areas including NT.”

It is now not recommended that these newborn children are routinely vaccinated with BCG.

The reasons for this change in policy are:

- **BCG vaccination does not improve TB control:** Though BCG vaccination has been demonstrated to protect vaccinated individuals against tuberculosis (TB), it has not been shown to improve population TB control, even in high incidence settings.
- **Probable low benefit:** The protection against TB that BCG vaccination will give Aboriginal neonates in the north of WA is likely to be low, because the number of cases of infectious TB in this area is, and has been for some time, low. Therefore the risk that these children will be exposed to TB is low.
- **Children exposed to TB are protected by contact tracing:** Procedures and resources for contact tracing are well established. If a child is in contact with an infectious TB case, they are likely to be identified, appropriately screened for TB infection and given preventive therapy.
- **Poor BCG coverage:** It is likely that BCG vaccination coverage in this cohort is poor, because many of these people live remotely. There has also been poor coverage of Aboriginal children born in Perth that subsequently return to their homes in the north. Despite this poor coverage there has been no instance of TB in preschool aged Aboriginal children for over 20 years.
- **Maintaining competency:** Maintaining adequately trained staff that are competent in BCG vaccination is difficult amongst a highly mobile workforce and in an area with a widely dispersed and sparse population. There are generally no competent staff outside of the major centres (Broome & Derby), so children born outside these centres or who return to homes outside these centres before vaccination is administered are currently unlikely to receive BCG in spite of the previous recommendations.
- **High cost:** In the face of perceived low benefit as described above, continued BCG vaccination incurs considerable cost. The table below shows the number of vials of BCG used in centres above the Tropic of Capricorn. It is assumed that these are almost exclusively for vaccination of Aboriginal neonates.

Table: BCG vials used in centres north of the Tropic of Capricorn in WA –number of vials used, number as a percentage of total WA use and cost.

year	No BCG vials	% WA usage	cost (\$)
2008/9	188	74.9%	15,980
2007/8	385	90.0%	32,725
2006/7	405	82.3%	34,425
2005/6	218	94.8%	18,530

Each BCG vial (@ \$85 each) contains 10 doses. However, each is likely to only be used to vaccinate 1 – 2 children, because there are rarely more than that many children to vaccinate at one time. The remainder of each vial must be discarded and is therefore wasted

Risks

The potential risks of no longer vaccinating Aboriginal children include:

- **Loss of protection against Hansen's disease:** Aboriginal children that are not vaccinated will no longer receive the recognised secondary protection of BCG against infection with *M. leprae* (Hansen's disease). There continues to be an incidence of Hansen's disease in the north of WA, though it is very low. Most of these are chronic cases in adults, with no evidence of transmission or new cases in resident Australians. Given this and the poor coverage of BCG described above, the benefit of protection is considered very low. Further, BCG vaccination remains indicated in newborn children with a family history of Hansen's disease.
- **Contradicting Australian Guidelines:** Recommending against BCG vaccination in Aboriginal children in the north of WA will be contrary to the Australian Vaccination Guidelines and the policy of the Northern Territory (NT). However, these guidelines are specific to NT circumstances, where there have been several outbreaks of TB in Aboriginal communities and secondary cases of TB in Aboriginal children, unlike WA.
- **TB occurring in an Aboriginal child:** this would be especially concerning in a pre-school aged child, when TB is potentially more dangerous and BCG more efficacious. However, this is considered very unlikely for the reasons described above.

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