

Newborn Screening for Severe Combined Immune Deficiency (SCID) and BCG Vaccination Position Statement

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The **Bacille Calmette–Guérin (BCG) vaccine** is primarily used to prevent **tuberculosis (TB)** infection and disease in regions and population groups with high TB incidence in In Australia and New Zealand.

There are differences in epidemiology of TB infection across Australia and New Zealand, with recent high burden of infection in some Australian regions, and differences in routine BCG vaccination practices for at-risk neonates.

In the ideal setting (as recommended in the UK), newborn screening results for **severe combined immune deficiency (SCID)** would be reviewed prior to administration of BCG vaccines and withheld in the case of an abnormal screening result. However, this is not practical, and could lead to delays or missed opportunities, if BCG vaccines are not administered prior to the neonate being discharged home, before newborn screening test results are available.

Overall, the risk of SCID is very small (around 1 in 60,000 infants born in Australia and New Zealand), whereas the risk of TB infection in some regions and population groups is much higher.

Infants with SCID have absent or low numbers of T lymphocytes (T cells) and therefore a high risk of infections. Newborn screening for SCID allows these infants to be diagnosed and treated early, which improves long term outcomes and enables early life saving treatment with bone marrow transplantation. Transplantation can cure SCID if performed early, before infants have life-threatening infections.

Currently there is no international consensus regarding BCG vaccination in the context of newborn screening for SCID, and there is limited available data/literature.

Therefore, the following recommendations are based on expert experience and consensus:

- **At-risk neonates should continue to receive BCG vaccination prior to discharge in the immediate antenatal period.** There are risks of reduced BCG vaccine uptake and coverage if vaccination is delayed or omitted, with implications for public health and disease control.
- **Parents of infants who are receiving BCG vaccination should be counselled regarding the risk/benefit profile of BCG vaccines.** This should be provided prior to the results of newborn screening tests being available, and reinforced with an information sheet.

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