

# Anaemia in young children of Cape York

## Results of a chart audit - summary report

### Introduction

When families bring their babies and young children for a Well Child Health Check, the child health team does a series of checks, including a measurement of haemoglobin on a HemoCue to tell if the child is anaemic (has weak blood). This is the report of an audit of haemoglobin results for 155 babies and young children aged from 6 months up to 24 months, measured between February 2014 and October 2015, during a child health check provided by Apunipima in eight communities in Cape York. Only the most recent result for each child was included in the audit. This audit was conducted to provide information on anaemia among young children in Cape York needed for planning and evaluation of health services. This is the first time an audit like this has been done.

### Background

Children with anaemia are less healthy than other children, and can fall behind in their developmental milestones, like learning to walk and talk. The Sprinkles project (2010 to 2012) found high rates of anaemia in babies and young children in six remote communities across north Australia, including one Cape York community (1). There are different causes of anaemia but the most common cause among mothers, babies and young children is iron deficiency. Iron is a nutrient that is important for healthy blood. During pregnancy, mothers need a lot of iron for new blood, as do children who are growing fast. Iron is also important for the healthy development of a child's brain (2, 3).

Usually a child has iron deficiency for a few months before iron deficiency anaemia develops. Iron deficiency in childhood, with or without anaemia, is associated with lower levels of achievement later, during the school years. Treatment of anaemia can be very effective to bring blood indicators back to healthy levels, but treatment doesn't appear to reverse the developmental delay. It is not clear why this is. It may be that if iron deficiency occurs at a critical time for brain growth and development, the opportunity for that development is missed. This means that it is important to focus on prevention of anaemia, as well as prompt and effective treatment of anaemia (3-5).

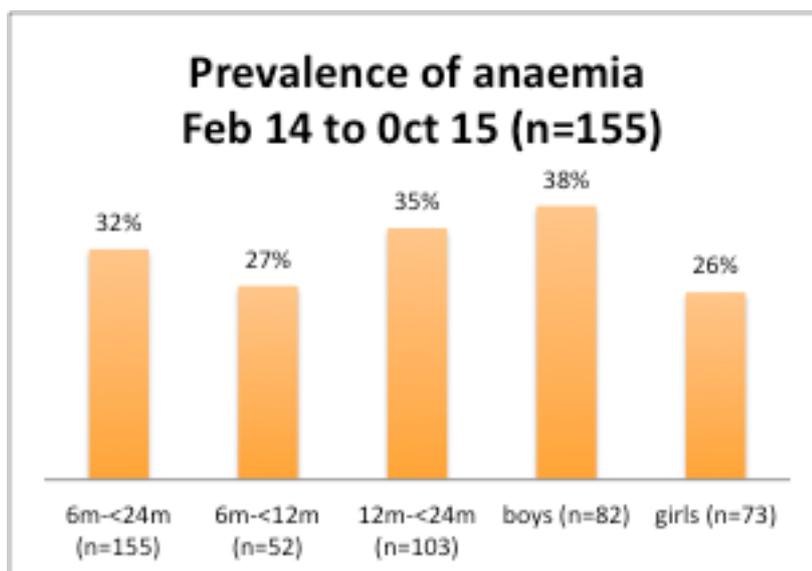
For babies for their first six months of life, the main source of iron is not breast-milk or infant formula but their iron stores, provided by their mother before they were born (6). The babies of mothers who had low iron in pregnancy, are at high risk of early anaemia (7). From around six months of age, all babies need solid food that is rich in iron and other nutrients, as well as breast-milk or formula (8). Many of the traditional foods of Aboriginal and Torres Strait Islander peoples in Australia are very good sources of iron and other nutrients. Some store foods are also nutrient rich but these tend to be expensive. Across Australia, there is more anaemia among people on low incomes (9). Many families in Cape York, as in other Australian remote settings, have low incomes and may not be able to buy the foods that provide enough iron and other nutrients that mothers and their young children need for good health and early childhood development (10, 11).

The most common reasons why a child is iron deficient or has iron deficiency anaemia are (6, 7, 12-14):

- The child's mother has low levels of iron and/or other important nutrients, such as folate and/or vitamin B<sub>12</sub>, during pregnancy
- The child is born preterm and/or low birth weight
- Maternity ward practices – early cord clamping can reduce iron stores of new born babies
- Rapid growth like 'catch-up' growth in babies who were small at birth. Also boy babies tend to grow faster than girl babies.
- The child's mother has diabetes in pregnancy, which is associated with rapid growth of her child before and after birth
- Cow's milk used as the main milk for babies under the age of 12 months
- The solid food given to a child from around six months of age to complement breast milk or infant formula, does not include enough iron/nutrient rich foods.

#### Key findings:

- In the eight communities combined, about one in three (32%) of the children (n=155) aged 6 months up to 24 months were anaemic at their last haemoglobin test.



- There was more anaemia among the children aged one year up to two years (35% anaemic) compared to babies aged 6 months up to one year (27% anaemic) and more anaemia in boys (38% anaemic) compared to girls (26% anaemic) but these differences were not statistically significant.

- The prevalence of anaemia among young children, shown in this audit, is much higher than the reported prevalence of anaemia among non-Indigenous Australian children (about 2% to about 6%) but very similar to the anaemia prevalence reported for young Aboriginal children of remote communities in the Northern Territory (15)
- Screening results were available for 24 babies aged just 6 months (6m-<7m) and of these 24 babies, five (20.8%) were anaemic, which may be due to low iron status of mothers during pregnancy
- In one community, the prevalence of anaemia (82%) was especially high. The reason for this needs to be clarified, but even if results for this community are excluded, the prevalence of anaemia in the other seven communities (26% anaemic) is still much higher than for other non-remote Australian children.

## Recommendations

- 1 Develop and implement initiatives to address early childhood anaemia among young children in Cape York to focus on prevention, as well as screening, treatment and monitoring. These initiatives should be developed in partnership with the community leaders, elders and families of Cape York. Options to be considered could include:
  - Home fortification initiative to prevent anaemia in early childhood, with promotion of optimal infant and young child nutrition combined with provision of a multi-micronutrient preparation for home fortification of solid food for older babies and young children
  - Promotion of nutrient rich first foods, to complement breast feeding/formula from 6 months of age, with the development of affordable and acceptable recipes/products
  - Initiatives to improve the health and nutrition of primary school-aged and adolescent girls , before their first pregnancy
  - Continued investment in improved health and nutrition of pregnant mothers, including mothers with diabetes in pregnancy
  - Investigation of current practices in respect of cord clamping in hospitals where mothers from Cape York give birth, in Cairns and elsewhere
  - Strategies to raise awareness about anaemia and food security for mothers and their children, among the people of Cape York, as well as service providers and policy makers.
- 2 Develop reporting systems which utilise routine health service data to provide information for monitoring and evaluation, and the information required to secure funding for initiatives to address issues such as anaemia. Appropriate ethical approvals are needed for this.
- 3 Design routine reporting of anaemia to include information on key factors such as birth weight, prematurity and early childhood growth. This information should be linked with records of maternal health indicators.
- 4 Conduct further investigations to validate audit results and address research questions in respect of:
  - causes of anaemia, to clarify issues such as iron deficiency, other nutritional factors and non-nutritional causes of anaemia

- prevalence of anaemia among other groups including young children, primary-school-aged children, adolescent girls, pregnant mothers and the elderly, all of whom are vulnerable to anaemia
- determine reasons underlying the abnormally high rates of anaemia in one community
- dietary intakes of pregnant mothers, their babies and young children.

It may be possible to address some of these research questions through the proposed longitudinal study of the Baby One Program.

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