

Maternal and childhood anaemia in remote Aboriginal communities

SUNRISE ANAEMIA PROJECT



Acknowledgements



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Anaemia

In pregnancy

- Premature delivery, low birth weight, increased maternal and neonatal mortality

For children

- Immediate and long-term implications for children, affecting health, development, cognition, learning ability and economic productivity

Maternal and childhood anaemia

Association between maternal anaemia and infant anaemia and low iron stores¹⁻⁵

As early as 3 months³ and persisting up to 56 months⁴

Even children born at term and normal birthweight affected

Exclusive breast feeding exacerbates the risk⁵

1. Colomer et al 1990 2. Kilbride et al. 1999 3. de Pee S et al. 2002 5. Nair et al. 2016
5. Meinen-Derr et al. 2006

Anaemia in remote NT

What we know:

- Maternal anaemia prevalence 17-22%
- HU5K - Childhood anaemia prevalence 17% in 2015 (34% at 12-17 months)
- More recent data prevalence 40% in children <2 yo across Northern Australia

No studies on risk factors for anaemia in Australian Aboriginal children < 5 years since 1990s

Current practice

CARPA Standard Treatment Manual and Women's Business Manual

For pregnant women

- Hb at first visit, 28, 32, 36 weeks
- Anaemia
 - Hb < 110g/L in first and second trimester, Hb <105 in third trimester

For children

- Hb every 6 months for first 2 years
- Iron supplementation from 1 month if LBW or premature
- Routine iron supplementation for all exclusively breastfed infants from 4 months – dosage not supported by evidence

Aims

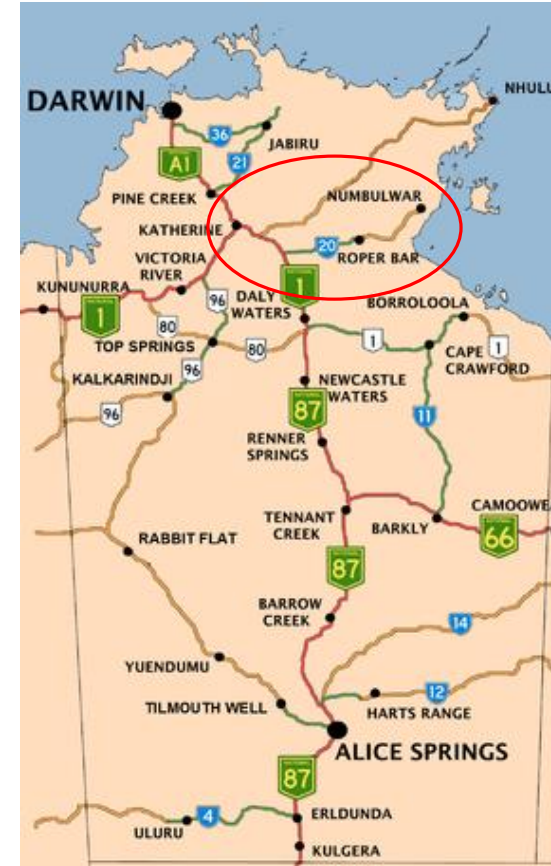
1. Describe prevalence of maternal anaemia in pregnancy and childhood anaemia in the first 2 years of life
2. Identify any association between maternal anaemia and childhood anaemia

Setting

3 remote communities in Katherine East region

- Population ~300-1000

Sunrise Anaemia Project



Methods

Retrospective cohort study

Participants – children born 2004-2014 and their mothers

Maternal and child data linked for analyses.

Analysis

Risk factors:

- Maternal anaemia
 - Stratified by iron treatment
- LBW
- Prematurity

Outcomes of:

- Anaemia at 6, 12, 18, 24 months

Results

170 mother/child dyads
~80% of all births



Results – Maternal anaemia

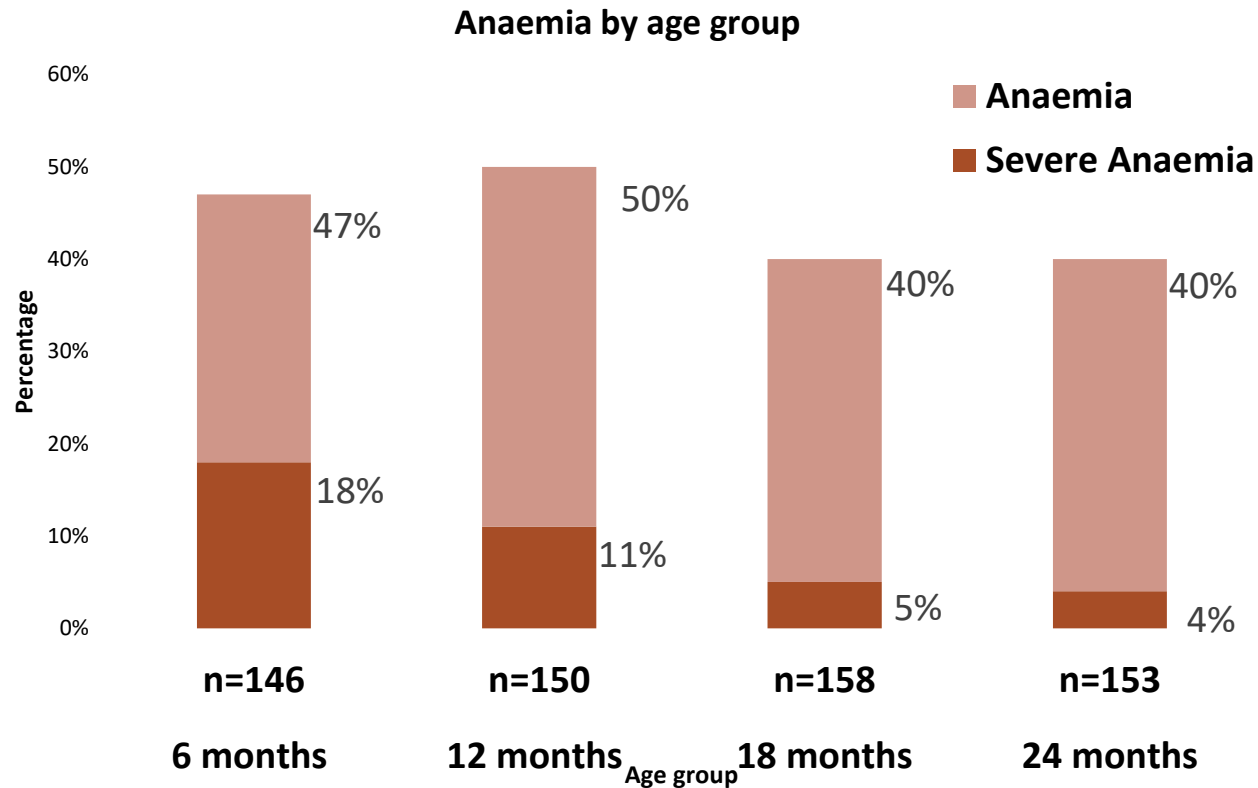
Trimester	Screened	Anaemic
1 st	70 (41%)	32 (46%)
2 nd	50 (29%)	24 (48%)
3 rd	170 (100%)	105 (62%)

No association between maternal anaemia and maternal age (OR 0.97, 95%CI 0.47 – 2.33) or parity (OR 1.23, 95%CI 0.67- 3.71).

44% of anaemic mothers treated with iron

Results - Childhood anaemia

Screening rates over 85% at all scheduled checks

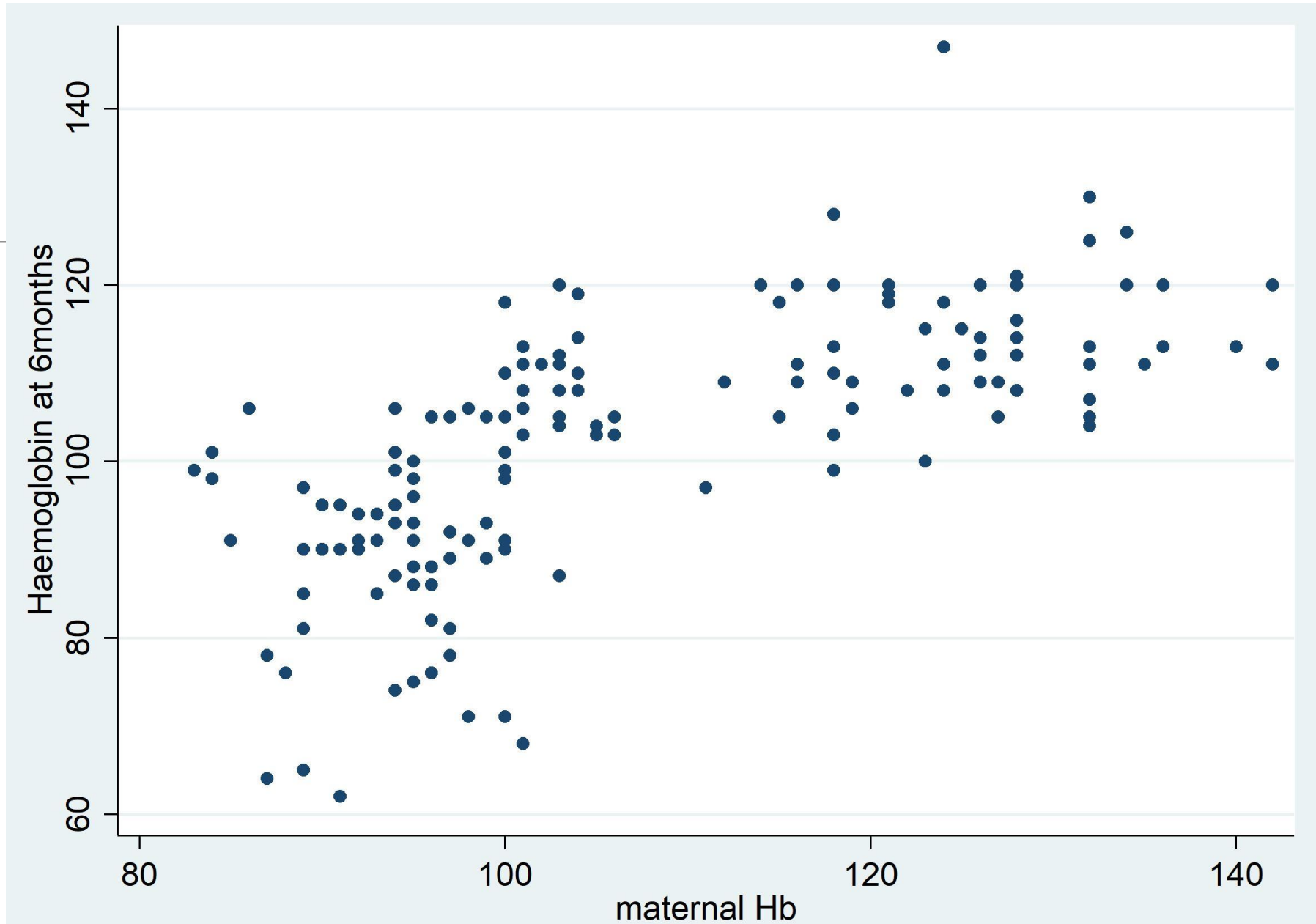


Results – Type of anaemia

90% of maternal anaemia was IDA

Only 7 FBCs on children – all hypochromic, microcytic

Limited iron studies



Results – Anaemia at 6 months

	Yes	No	Odds ratio	95% CI
Childhood anaemia	n = 69 (%)	n = 77 (%)		
Maternal anaemia 3rd trimester				
No	13 (25)	39 (75)	1.00	
Yes	56 (60)	38 (40)	4.42	2.08 – 9.36
- Untreated	35 (67)	17 (33)	6.17	2.62 - 14.51
- Treated	21 (50)	21 (50)	3.00	1.25 – 7.17
Low birth weight				
No	45 (41)	64 (59)	1.00	
Yes	24 (65)	13 (35)	2.62	1.21 – 5.70
Premature birth				
No	50 (44)	64 (56)	1.00	
Yes	19 (59)	13 (41)	1.87	0.84 – 4.15

Does it persist?

- **12 months OR 2.04 (95% CI 1.03 – 4.06)**
- 18 months OR 1.5 (95% CI 0.78 – 2.88)
- **24 months OR 2.08 (95%CI 1.04 – 4.16)**

Conclusions

High prevalence of maternal and childhood anaemia

Pregnant women are under screened and undertreated for anaemia

3rd trimester maternal anaemia is a significant risk factor for infant anaemia at age 6 months (and potentially later on)

Implications

Focus on maternal anaemia screening and treatment

Inclusion of children born to anaemic mothers in iron prophylaxis alongside premature and LBW

Routine iron supplementation in pregnancy?