

# Clinical Evaluation of Standardised Iron Deficiency Screening and Management within an Australian Regional Population - A Retrospective Cohort study

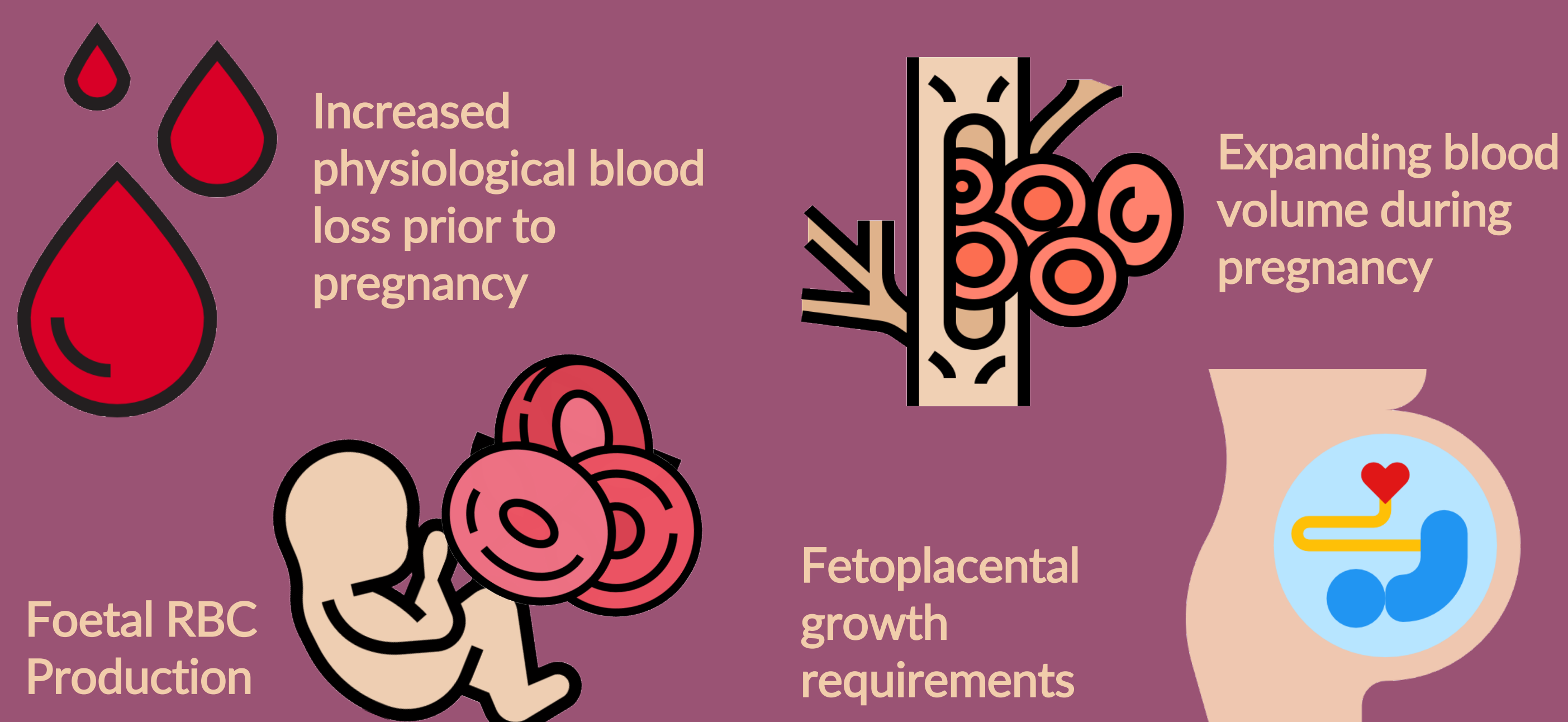
## AIMS

To evaluate the clinical impact of standardised screening and management for iron deficiency in pregnancy within a regional Australian centre.

## INTRODUCTION

- Anaemia affects an estimated 38% of pregnant women worldwide, with 18% of pregnant women affected in high income countries
- Nutritional iron deficiency is the leading cause, and is associated with significant maternal and foetal morbidity
- Current RANZCOG guidelines DO NOT recommend routine screening of iron deficiency through dedicated iron studies
- The 'Australian Blood Management Guidelines' outlines a more active approach to antenatal screening and management for iron deficiency anaemia, recommending routine ferritin testing for all pregnant women
- Previous Australian and International tertiary centres have shown significant benefits to early antenatal screening and management for iron deficiency anaemia
- The Australian Red Cross Lifeblood standardised ferritin screening and management has not previously been evaluated in a regional population

### Causes for Iron Deficiency in Pregnancy

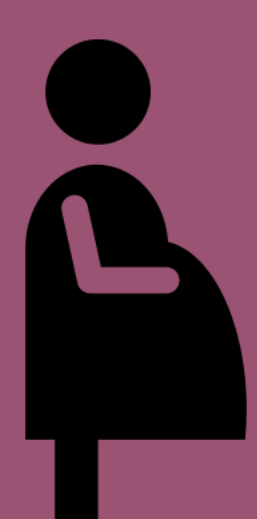


## METHODOLOGY

- Single centre, retrospective cohort observational study
- Study period between 1st October 2017 – 31st May 2020
- Hospital electronic medical records (EMR) were audited pre and post implementation of the Australian Redcross Lifeblood antenatal iron screening and management bundle of care in October 2018
- Participants allocated to either pre-implementation or post-implementation group based on the timing of their antenatal care
- The rates of anaemia at birth, rates of peripartum blood transfusions and rates of peripartum iron infusions we compared between study groups

Pre implementation cohort

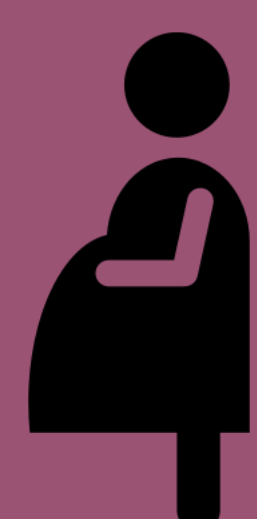
**1372 women**



1<sup>st</sup> October 2017 – 30<sup>th</sup> Sept 2018

Post implementation cohort

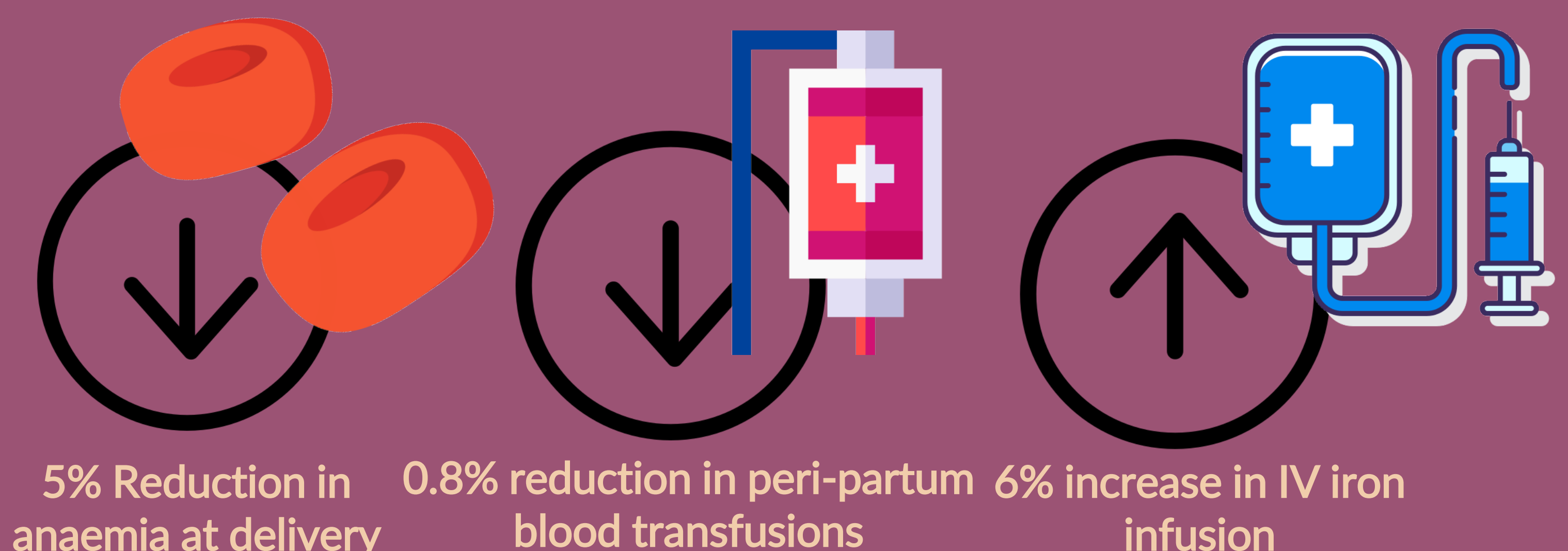
**1401 women**



1<sup>st</sup> June 2019 – 31<sup>st</sup> May 2020

## RESULTS

- Participant demographic data was similar between groups
- **5% reduction in rates of anaemia at time of delivery** post implementation of the antenatal iron bundle of care ( $p=0.043$ )
- **0.8% reduction in post partum blood transfusion** post implementation ( $p=0.048$ )
- **6% increase in IV iron infusions** post implementation ( $p<0.001$ )
- Improvements in severity of anaemia at time of delivery seen post implementation of the antenatal bundle of care
- 10% increase in appropriate referral for IV iron infusions post implementation of the guideline, suggesting a positive association between clinician compliance with the anaemia bundle of care



## DISCUSSION

- This is the first regional study to show a clinically useful and statistically significant reduction in the rates of anaemia and blood transfusion, in line with previous tertiary centre findings
- The timeframe suggested an association between introduction of the Australian Red Cross Lifeblood bundle of care and the study results.
- In order to further assess connection between guideline implementation and our results, we measured compliance to the guideline. Importantly, compliance did improve post implementation of the guideline, indicating that practice did change.
- Relating to blood transfusion, we found 1 in 86 women received a blood transfusion in our pre-implementation group and 1 in 214 women post-implementation. These results were both lower than the state average of 1 in 63 women who receive a blood transfusion.

## RECOMMENDATIONS

We hope our study encourages the implementation of standardised ferritin screening and management packages in antenatal care, whilst also challenge the current RANZCOG consensus-based recommendation to only screen for iron deficiency in women with low haemoglobin

## REFERENCES

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