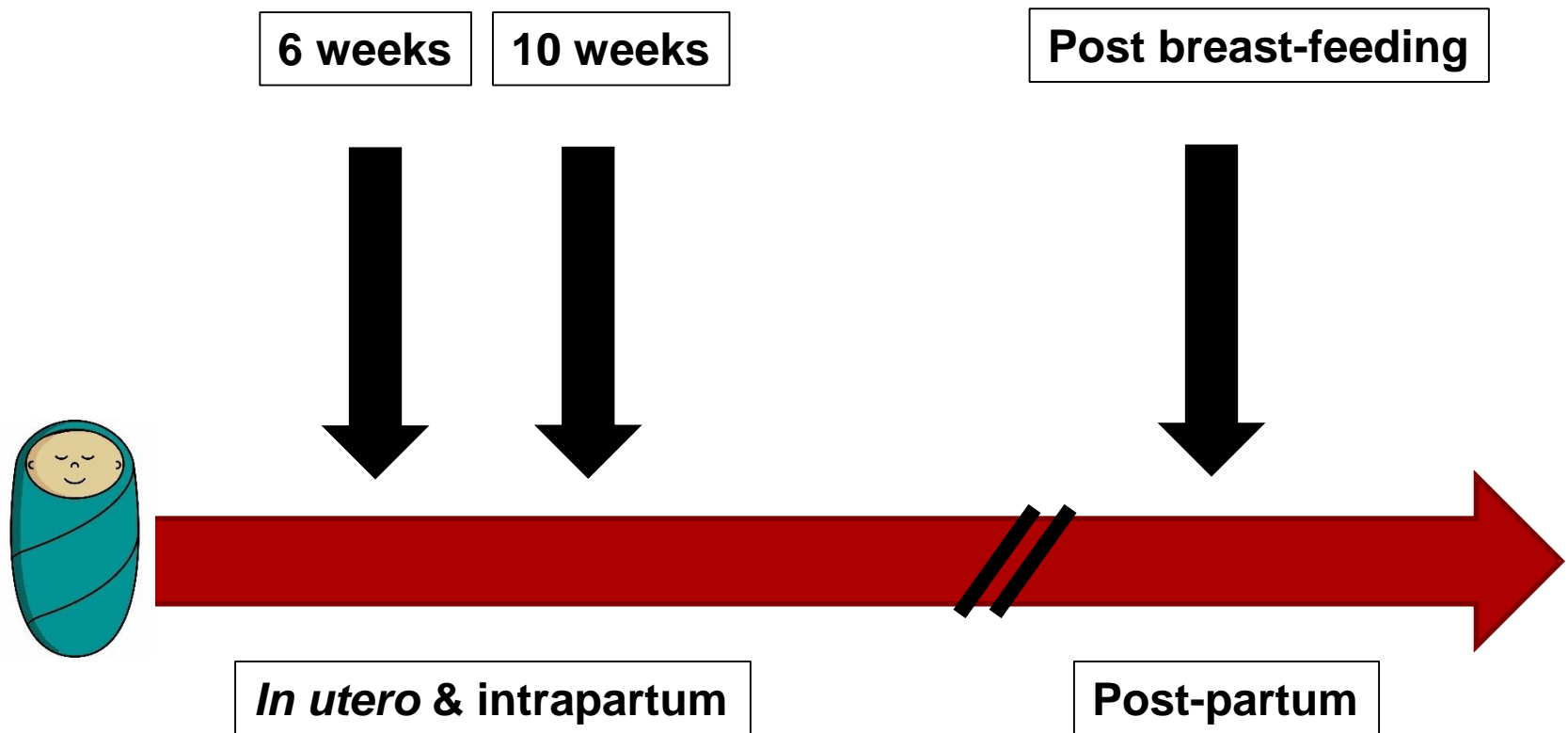


# DOES HIV-PCR TESTING OF HIV-EXPOSED INFANTS AT BIRTH REDUCE FOLLOW-UP FOR TESTING AT 4 -14 WEEKS OF AGE?

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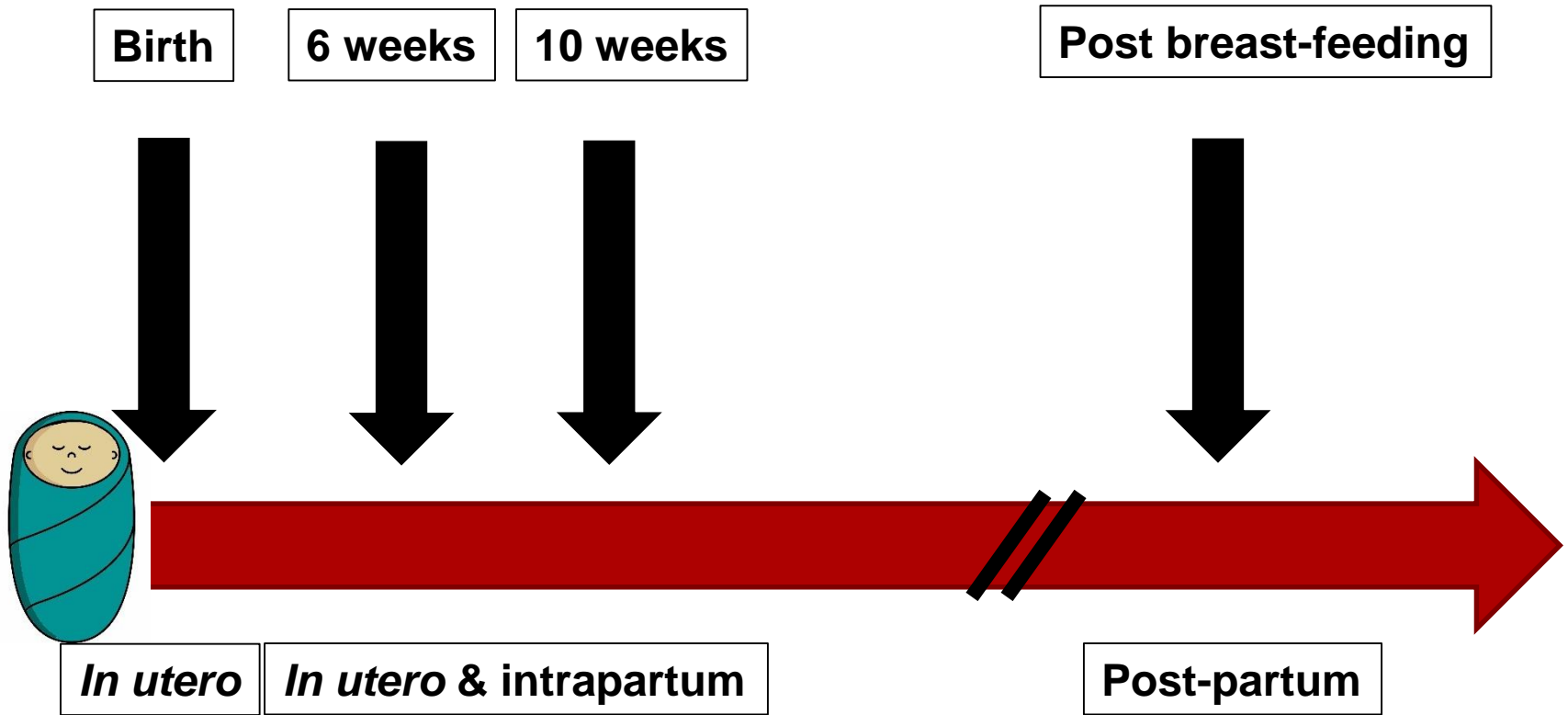




Globally, in 2014 only 50% of infants were tested by 2 months.

ART delayed in HIV-infected infants.

6 week time-point is not validated in presence of extended infant drug prophylaxis.



Detect 75% of infants who will test positive at 6 weeks.  
Detect infants at high risk of rapid progression.

# BACKGROUND

- A caveat to HIV testing at birth is that a second PCR will be required to detect late intra-partum and post-natal infections in addition to testing after cessation of breast-feeding.

## OBJECTIVE

- **To determine whether a negative birth HIV-PCR result decreased follow-up for routine testing at 4-14 weeks.**



# METHODS

- Infants born to a cohort of HIV-infected women
- Antenatal care at Mitchell's Plain Midwife Obstetric Unit
- Delivery: MP MOU and its 3 referral hospitals
- February 2014 – March 2015
- Analysis: logistic regression
  - Outcome: HIV-PCR test result @ 4 – 14 weeks
  - Adjusted for other predictors of routine testing @ 4 – 14 weeks



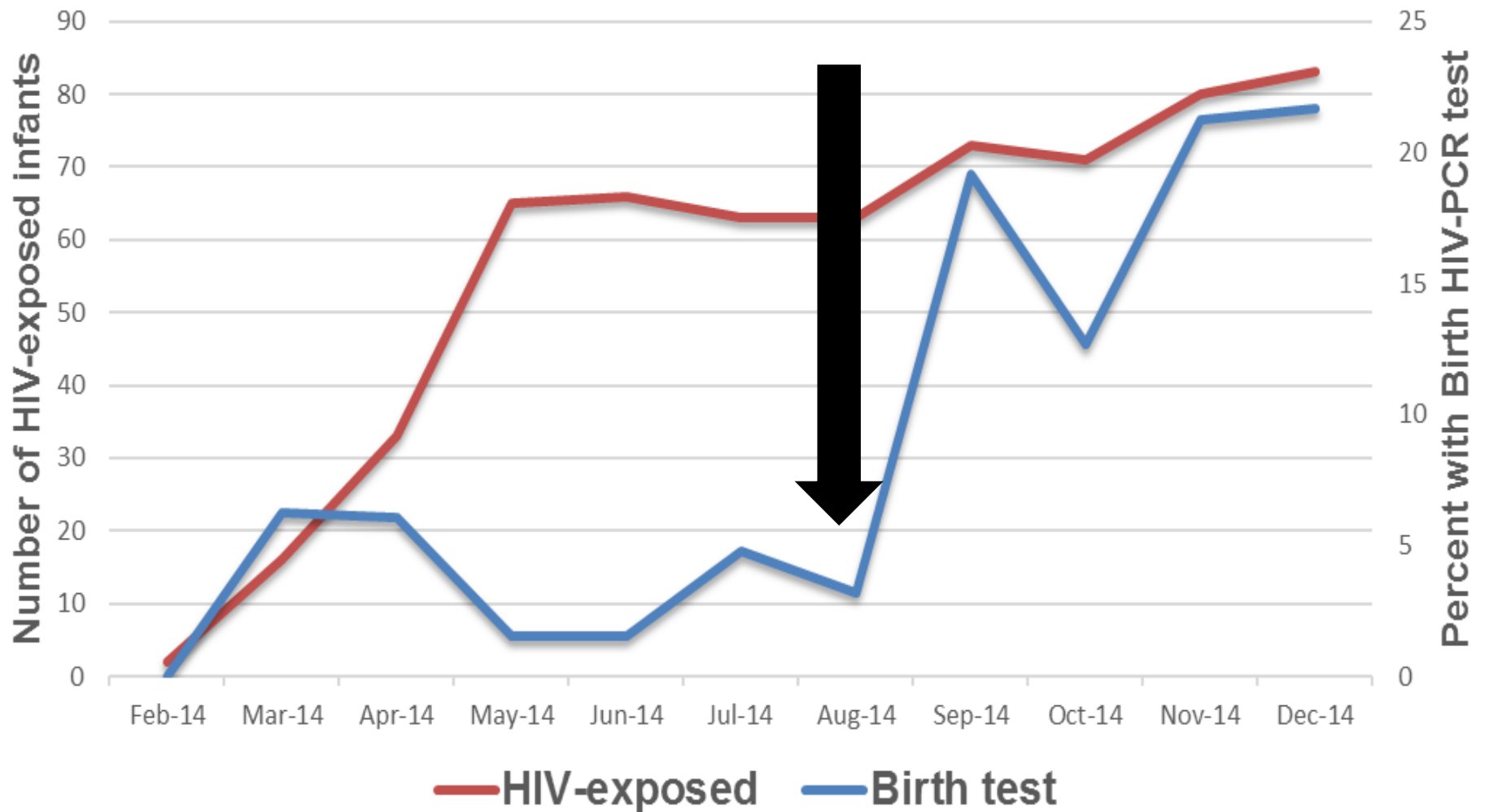
# METHODS

- Testing algorithm at the time:
  - Routine HIV-PCR all exposed infants @ 4 – 6 weeks old
  - August 2014: targeted birth HIV-PCR – high-risk criteria

## **HIGH-RISK CRITERIA FOR VERTICAL HIV INFECTION BIRTH PCR INDICATED**

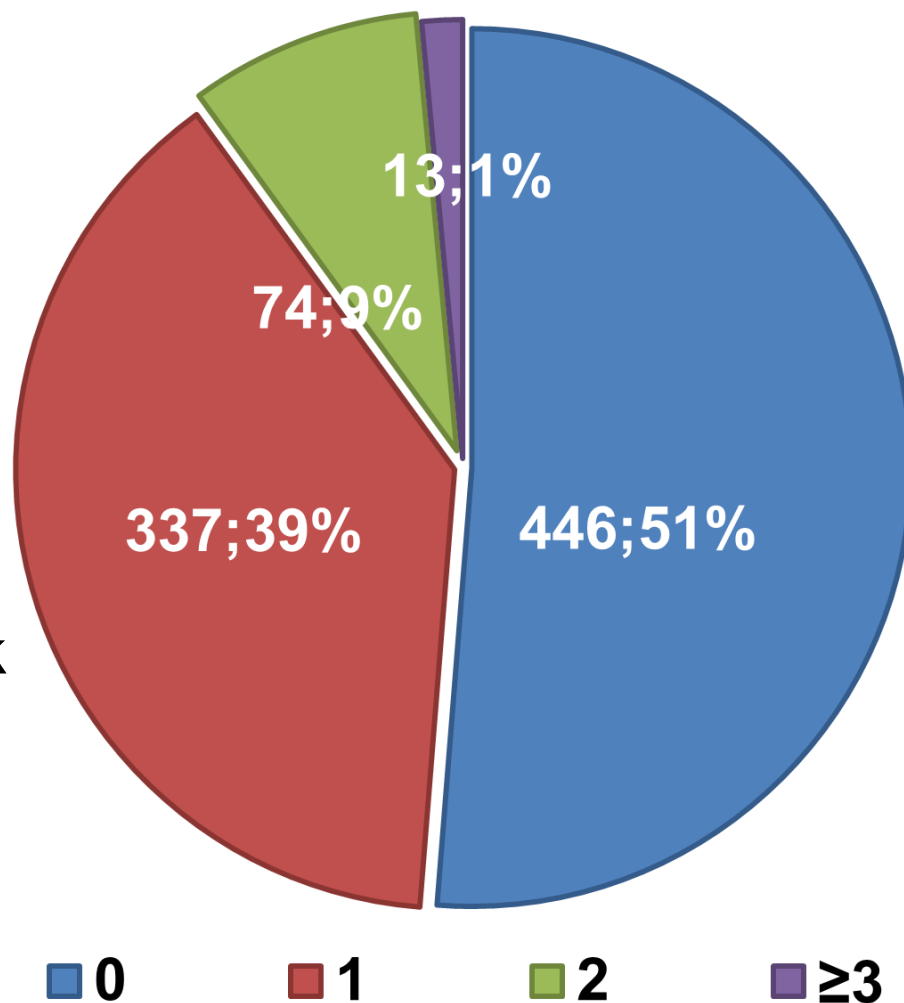
1. Maternal ART for less than 3 months before delivery
2. Maternal viral load > 1000 copies/ml or unknown
3. Infant less than 37 weeks completed gestation
4. Birth weight less than 2.5 kg

## Number of HIV-exposed infants delivered per month and percent with birth HIV-PCR.



# RESULTS

- 870 mother-infant pairs
- 49%  $\geq$  1 high-risk criterion
- 18% of these were tested at birth
- Increasing number of high-risk criteria increased the likelihood of having a birth HIV-PCR
  - 5% if no risk factors
  - 15% if one risk factor
  - 32% if  $\geq$  2 risk factors





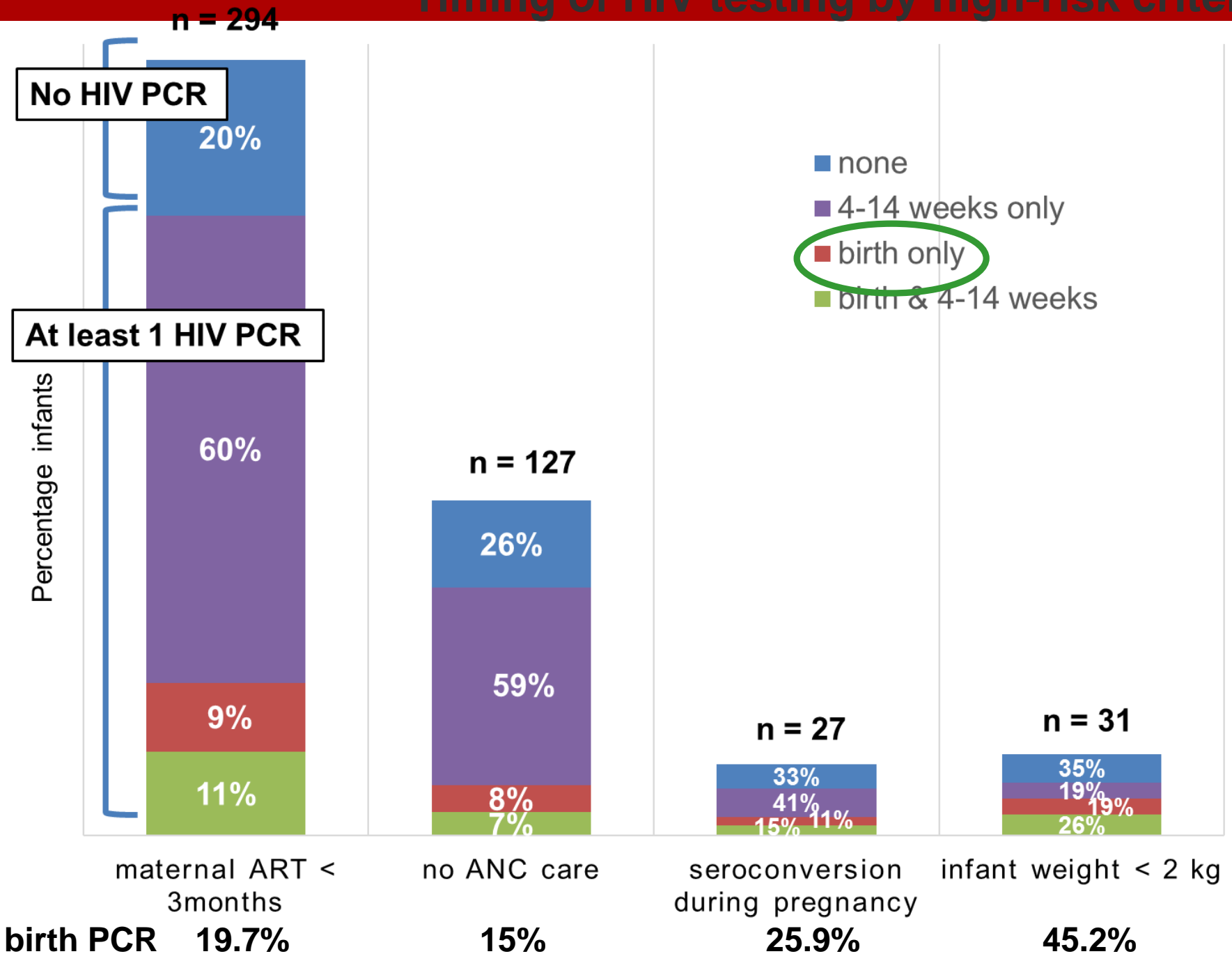
# RESULTS

- Overall vertical transmission: 1.2%
- 74% of the cohort had an HIV-PCR at 4 – 14 weeks
- 3.96% birth HIV-PCR positive versus 0.31% at 4 – 14 weeks

# RESULTS

Mother/infant characteristic		Birth test done	p - value
Antenatal care	None	15%	0.202
	≥ 1 ANC visit	11%	
Seroconverted after 1 <sup>st</sup> ANC visit	Yes	26%	0.018
	No	11%	
Duration maternal ART at delivery	< 3 months	20%	< 0.001
	≥ 3 months	7%	
Infant gestational age	< 37 weeks	35%	< 0.001
	≥ 37 weeks	11%	
Infant birth weight	< 2kg	45%	< 0.001
	≥ 2kg	10%	

# Timing of HIV testing by high-risk criteria



# RESULTS – logistic regression

Mother/infant characteristic	HIV-PCR @ 4 – 14 weeks Adjusted OR (95% CI)
maternal age $\geq$ 35 years	1.78 (1.13-2.79)
$\geq$ 1 ANC visit	1.57 (1.03-2.37)
seroconversion during pregnancy	0.42 (0.19-0.93)
infant < 37 weeks gestation	0.56 (0.28-1.14)
Calendar period	1.66 (1.20-2.30)
birth PCR done	<b>0.59 (0.37-0.93)</b>

# Limitations

- May not be generalizable outside the Western Cape.
- Used laboratory data: an HIV-PCR result does not guarantee receipt of result by care-giver.
- Reason for non-return for routine test may be owing to illness/death.
  - Future: link to admissions and mortality data



# CONCLUSIONS

- In this South African cohort, half of HIV-exposed infants had at least one high-risk criterion for vertical HIV transmission.
- The proportion who received a birth HIV-PCR was low (<20%).
- 74% of exposed infants had an HIV-PCR at 4 – 14 weeks.
- Nearly 4% of birth HIV-PCRs were positive.
- Receipt of a negative birth HIV-PCR result was associated with reduced follow-up testing at 4-14 weeks.
- **Strengthened follow-up systems are needed to ensure adequate early infant diagnosis coverage.**

# ACKNOWLEDGEMENTS

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