

# Rapid HIV testing: St. Petersburg, Russia

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**Team Leader**

Unintended pregnancy, STD, HIV, Intervention Research (USHIR)  
Team

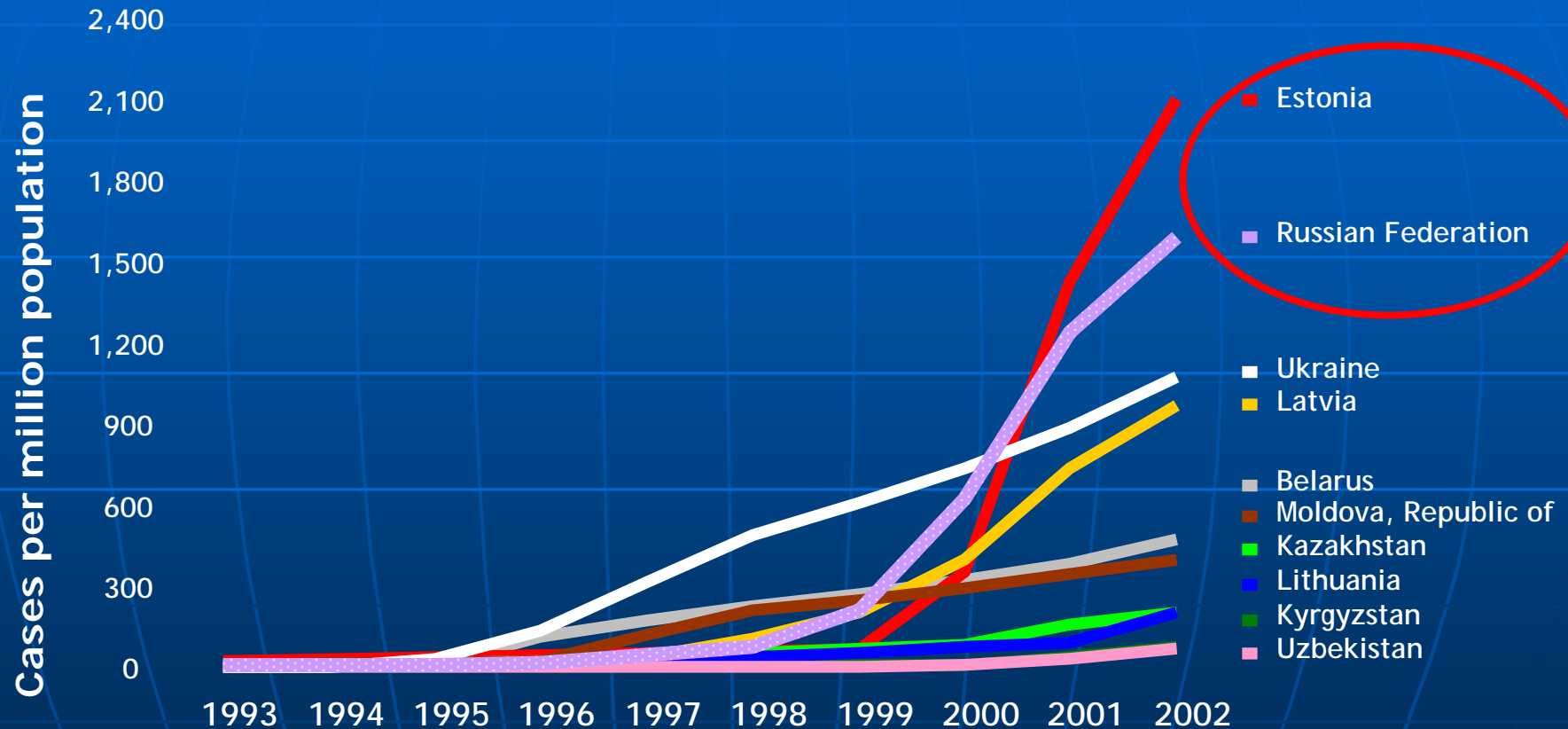
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Centers for Disease Control and Prevention

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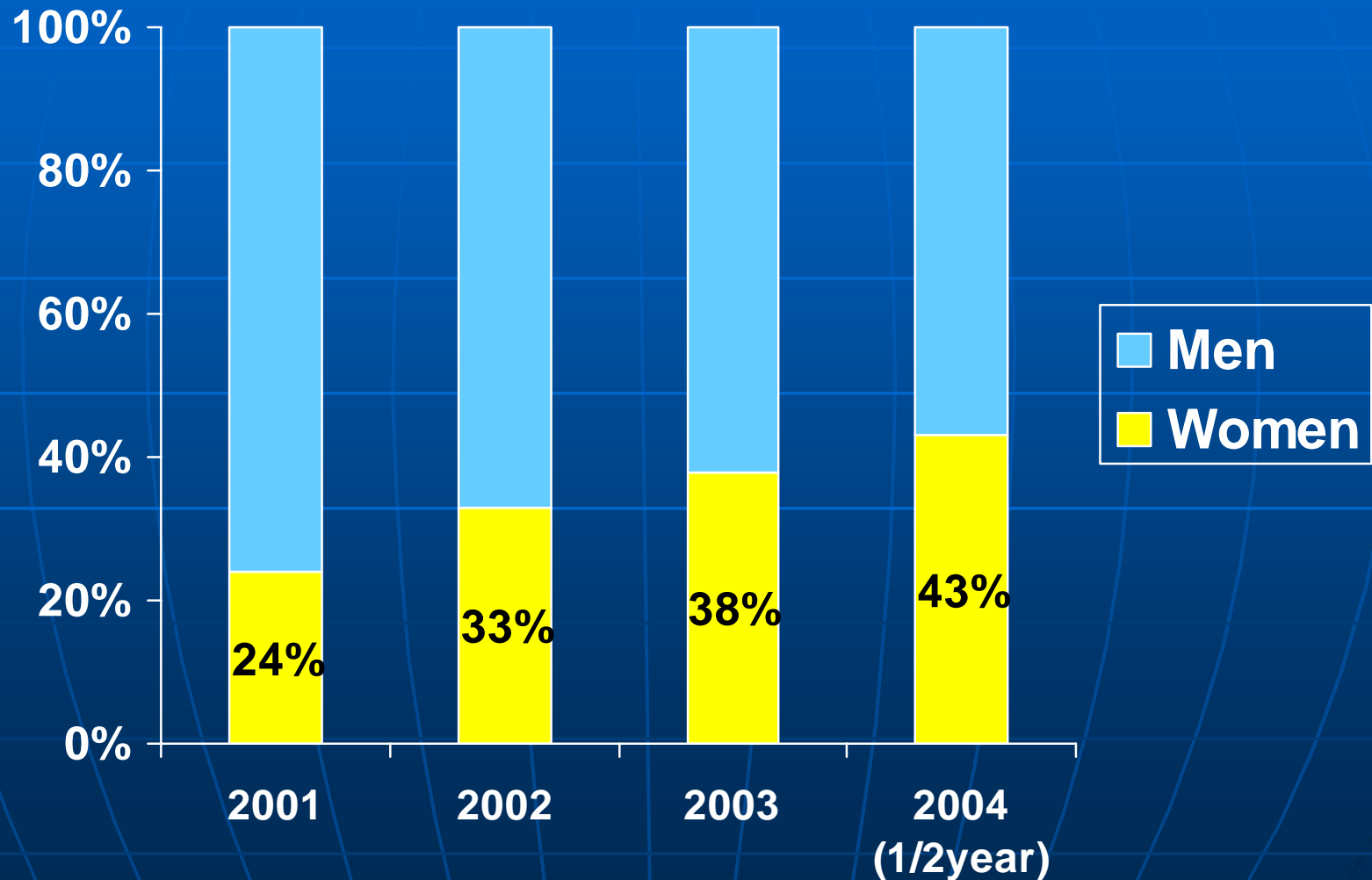


# Cumulative reported HIV infections per million population in Eastern European countries: 1993-2002



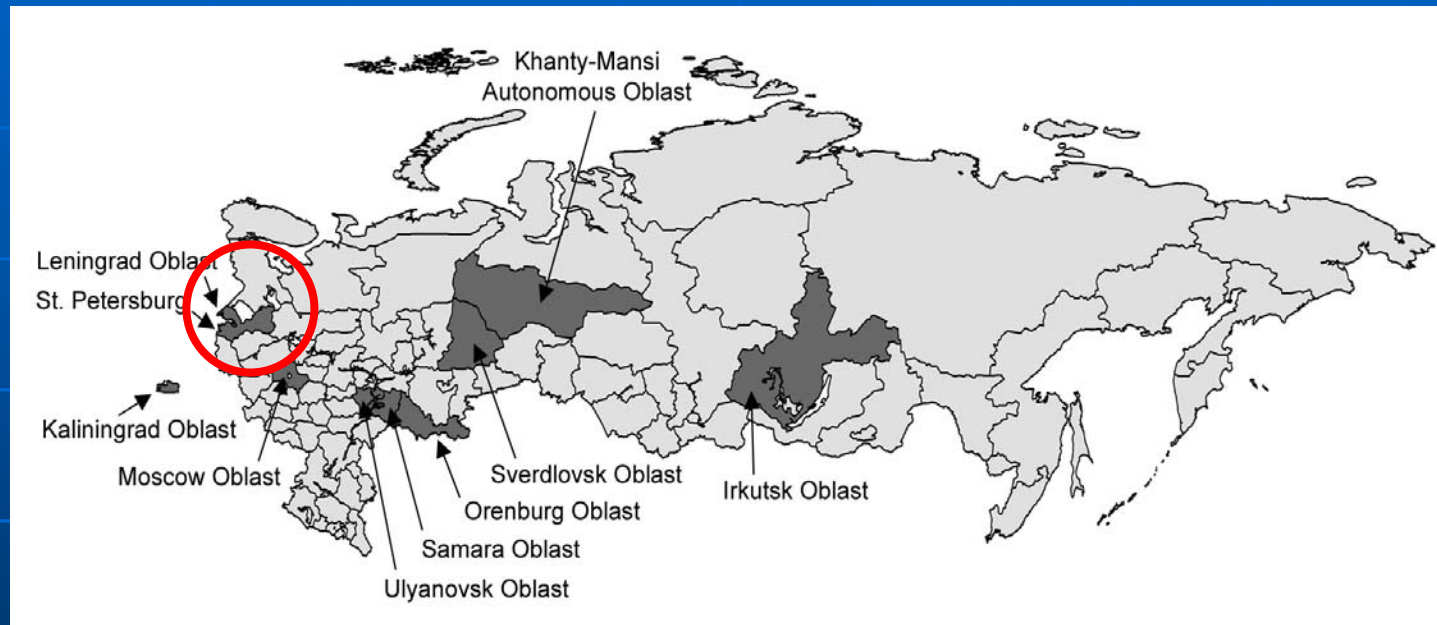
Source: National AIDS Programmes (2002). HIV/AIDS surveillance in Europe. End-of-year report. Data compiled by the European Centre for the Epidemiological Monitoring of AIDS.

# Newly diagnosed HIV cases by gender and year, Russia



Source: Children, women and HIV infection in Russian Federation. UNICEF and Russian Ministry of Health, 2004.

# Regions in the Russian Federation most-affected by HIV



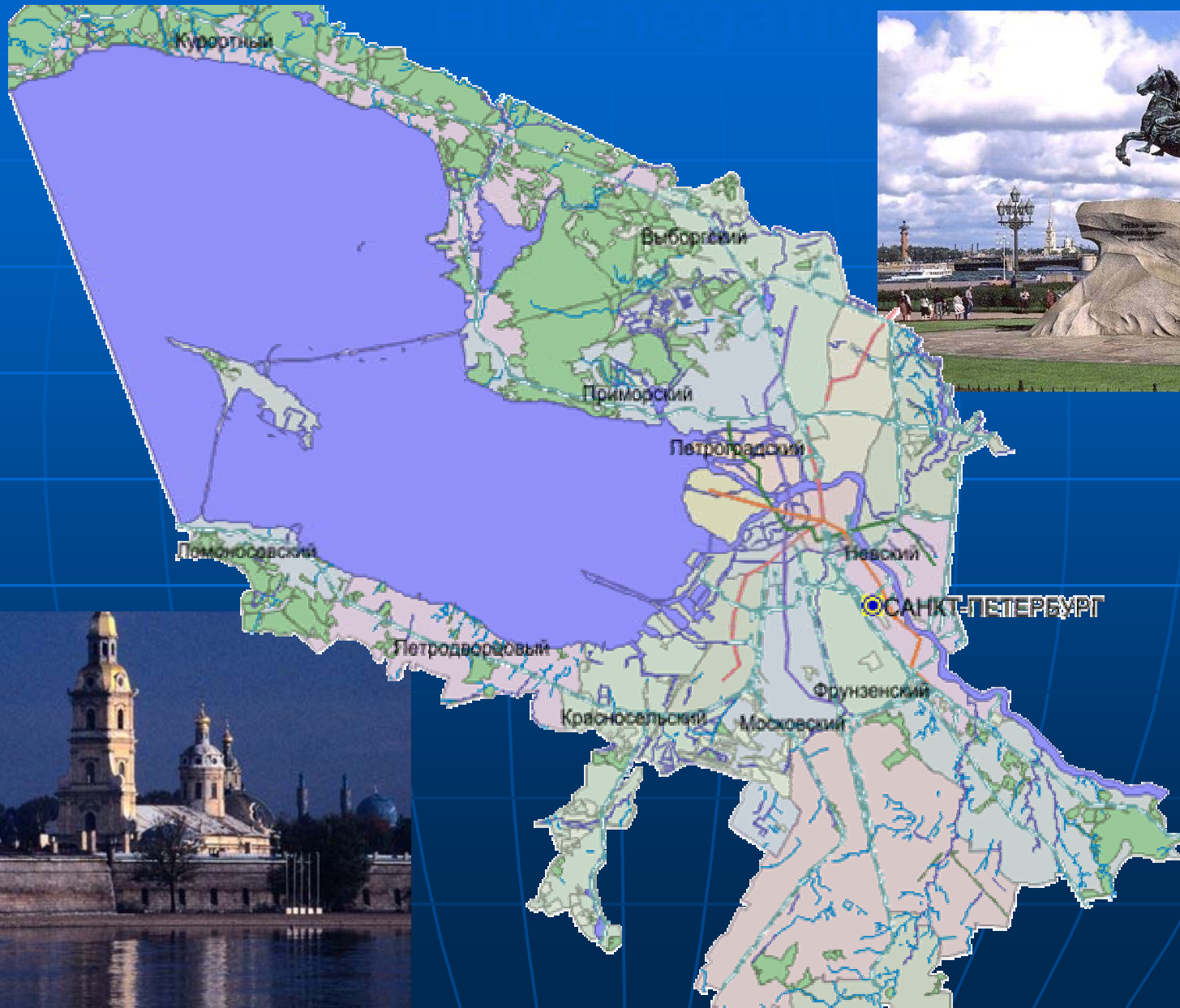
*Source: Russian Federal AIDS Center, based on registered number of people living with HIV through 22 March 2004. Compiled by AIDS Foundation East-West. AIDS epidemic update, December 2004.*

# HIV prevalence among women giving birth in St. Petersburg (1998-2003)



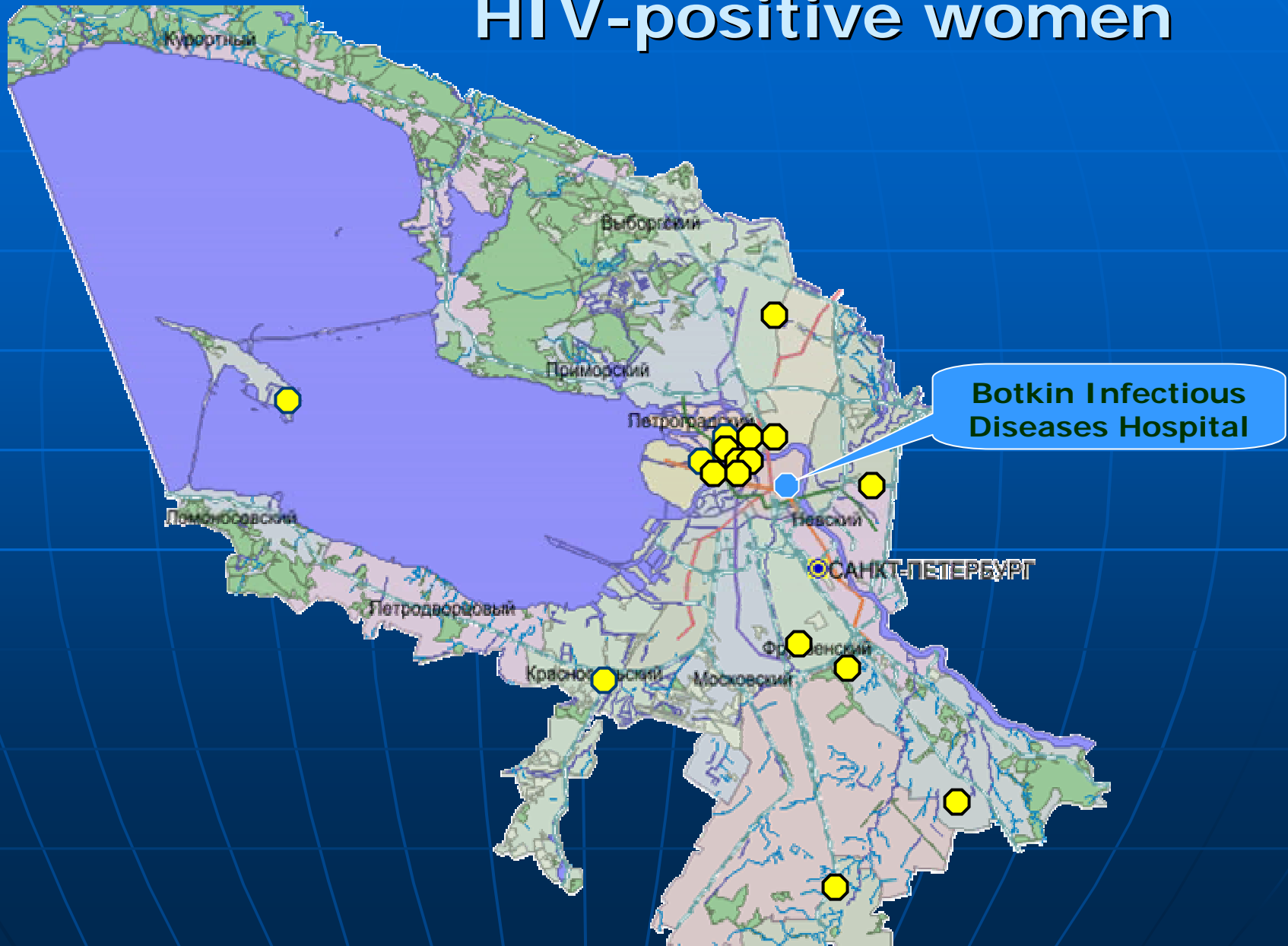
Source: Khaldeeva N et al. HIV-1 seroprevalence rates in women and relinquishment of infants to the state in St Petersburg, Russia, 2002. *Lancet*. 2003 Dec 13;362(9400):1981-2

# St. Petersburg





# Delivery services for HIV-positive women

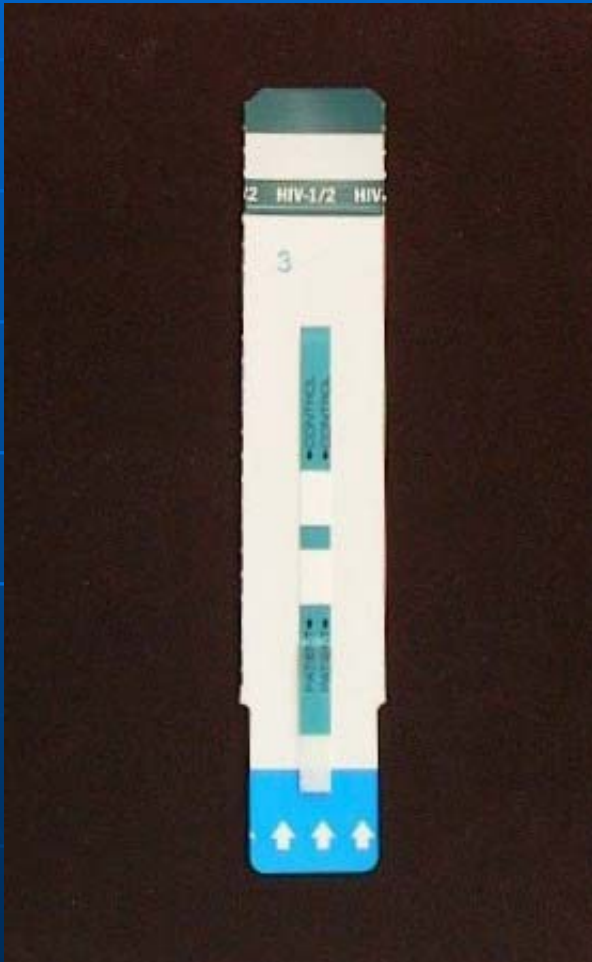




# Rapid HIV Testing Program

- **Rapid testing on labor and delivery in Maternity Hospitals #15 & 16**
- **Established with funding from Glaser PAF grant**
- **Began program April 2004**

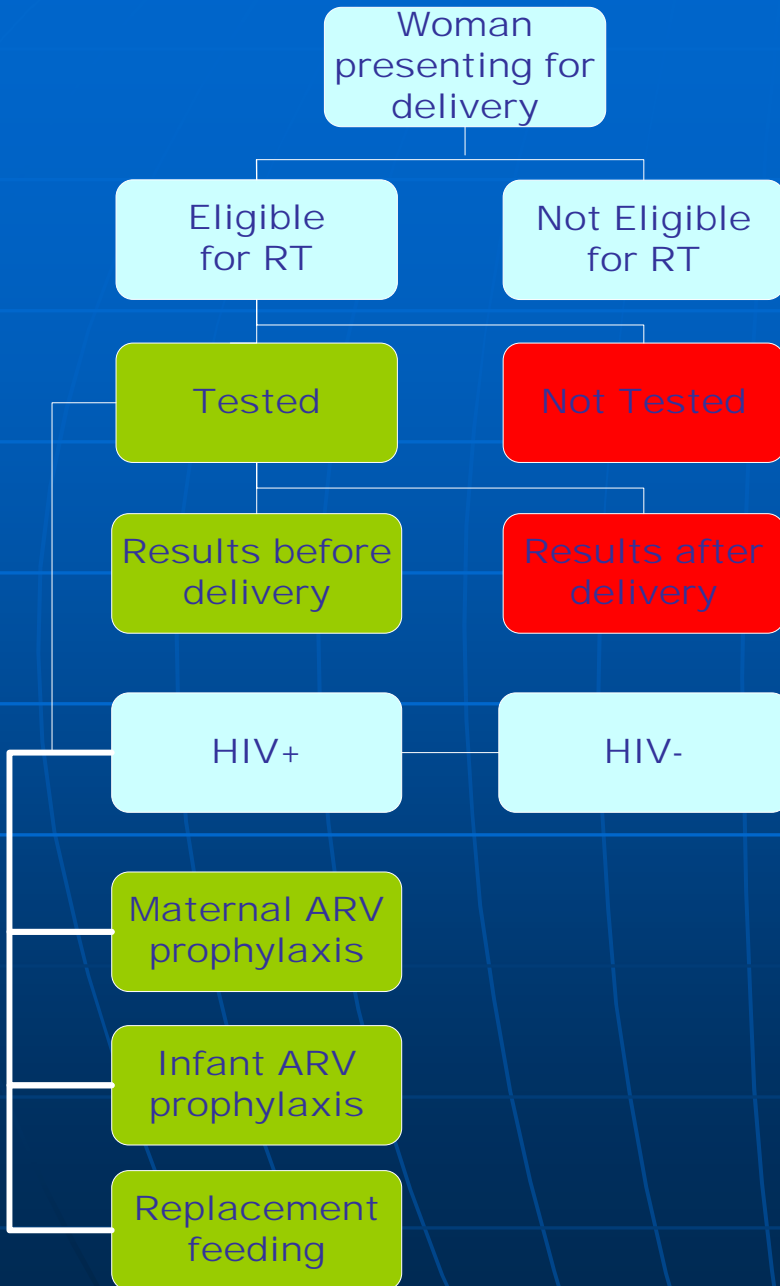
# Rapid HIV Testing



- Determine HIV-1/2 (Abbott Laboratories)
- Specimen: serum
- Sensitivity: 100%
- Specificity: 99.89%
- Parallel standard testing (EIA/WB) by policy

# Objectives

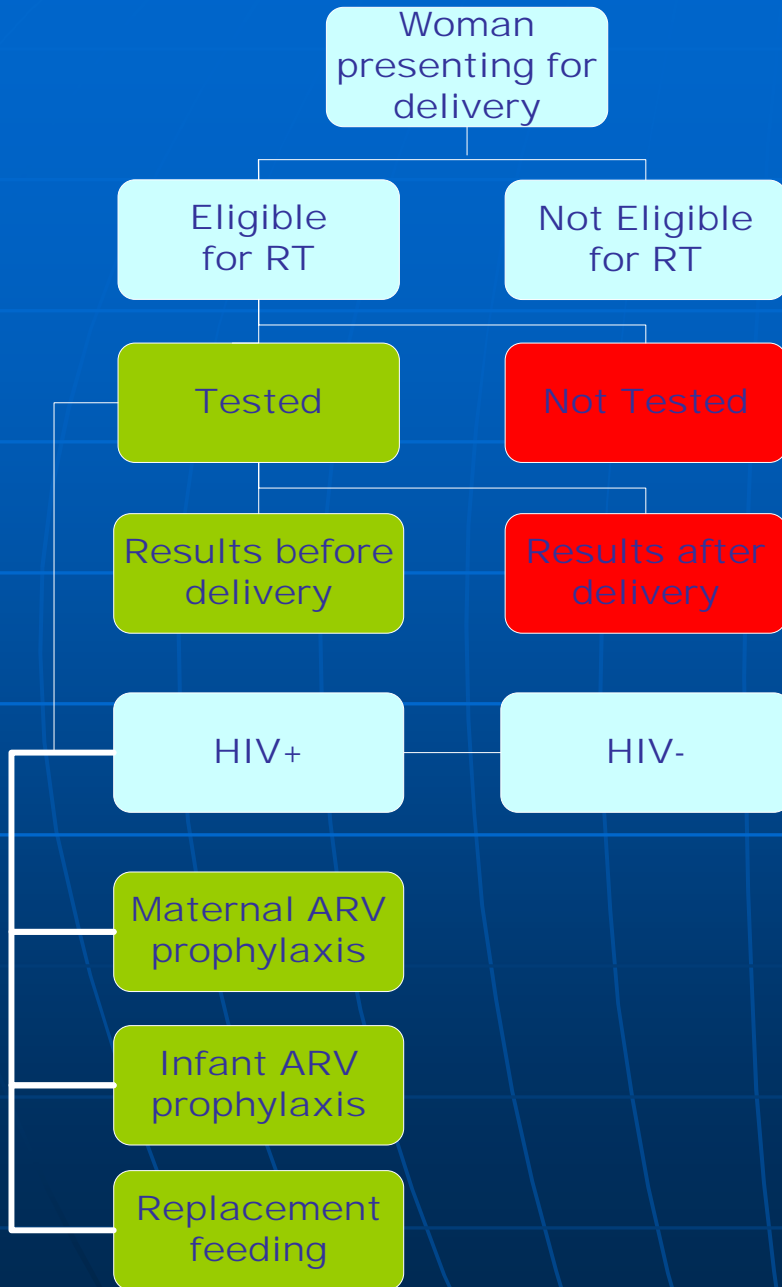
- **Determine the effectiveness of rapid HIV testing and MTCT prevention program in high-risk maternity hospitals**
- **Describe risk profile for HIV-positive women identified through the rapid HIV testing program**



## Objective I:

Determine the effectiveness of rapid HIV testing and prevention program in high-risk maternity hospitals

# Selected rapid HIV testing and prevention program indicators:



**% eligible women tested/predictors**

**% tested women with results before delivery/predictors**

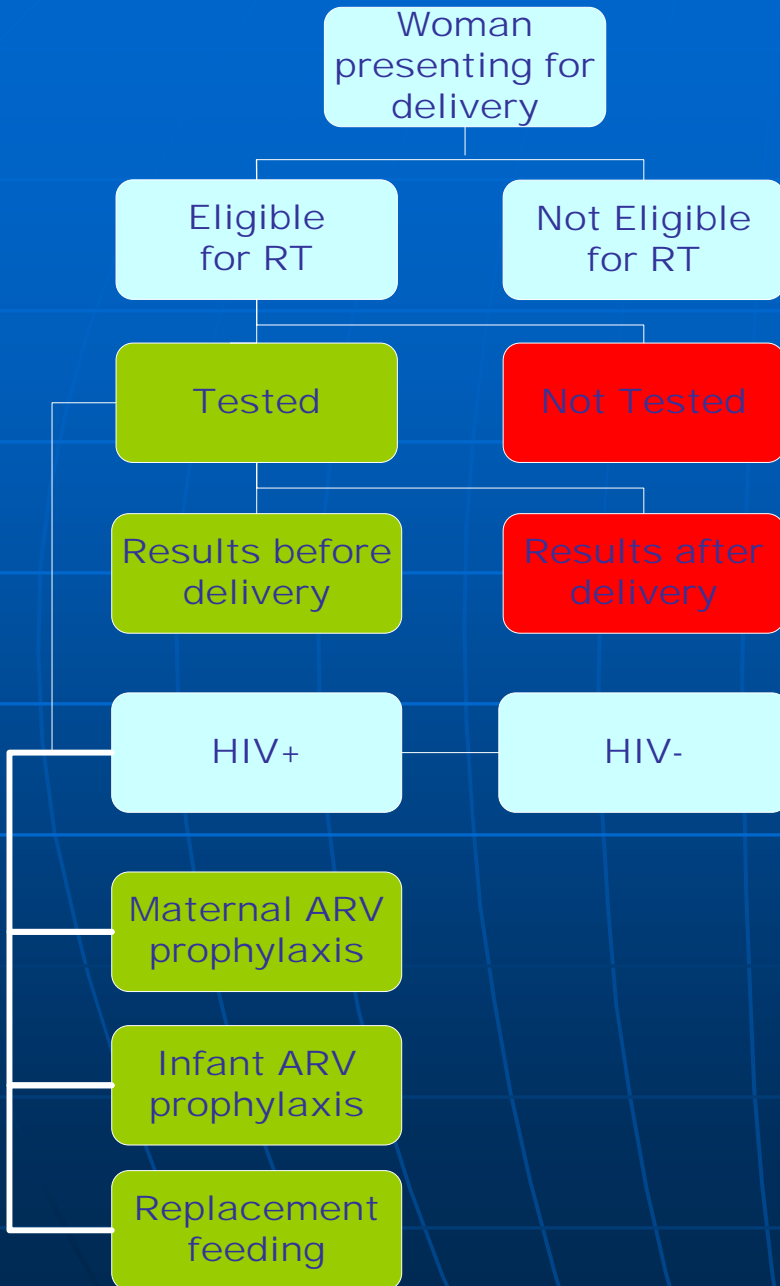
**HIV seroprevalence**

**% HIV+ women receiving ARV**

**% exposed infants receiving ARV**

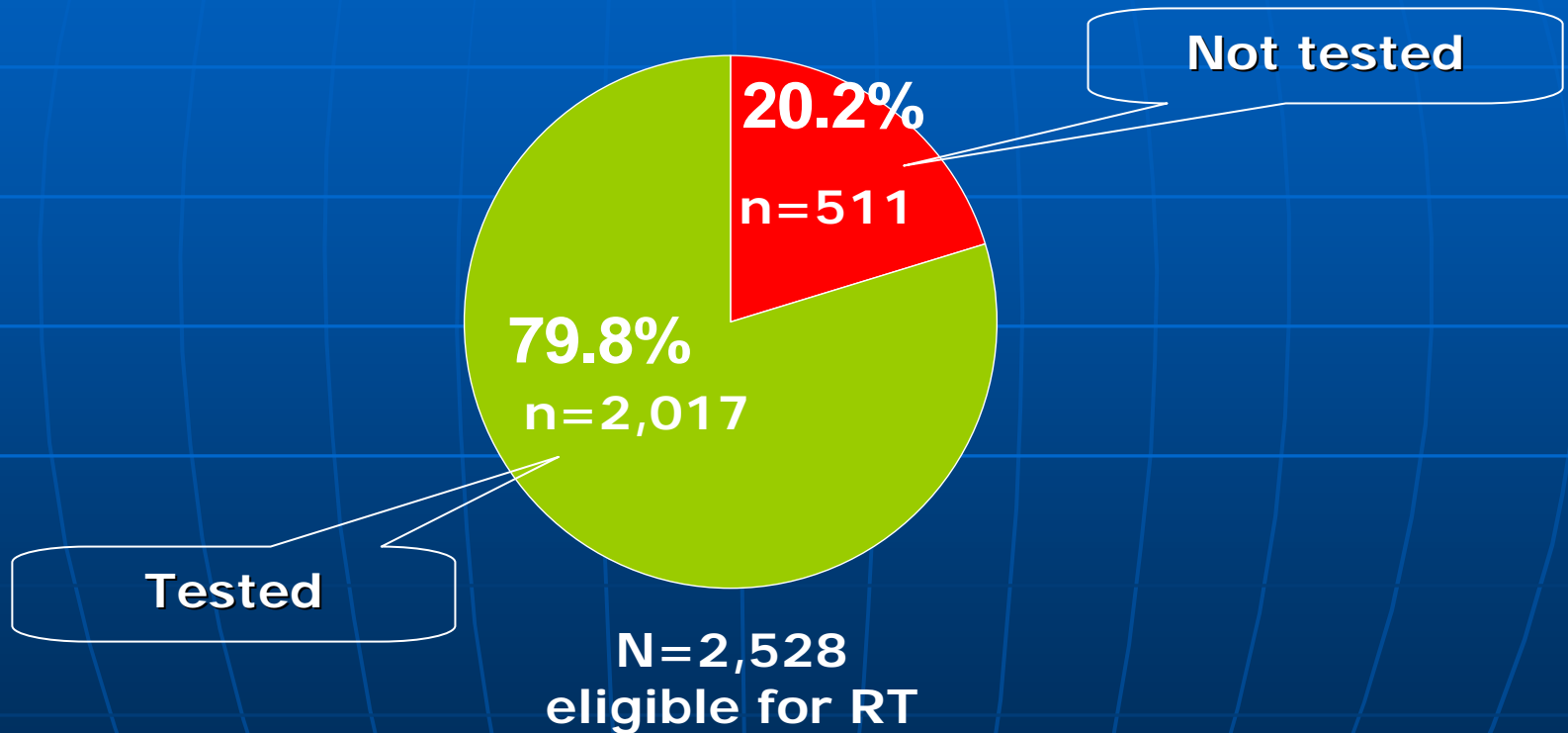
**% exposed infants receiving replacement feeding**

# Selected rapid HIV testing and prevention program indicators:

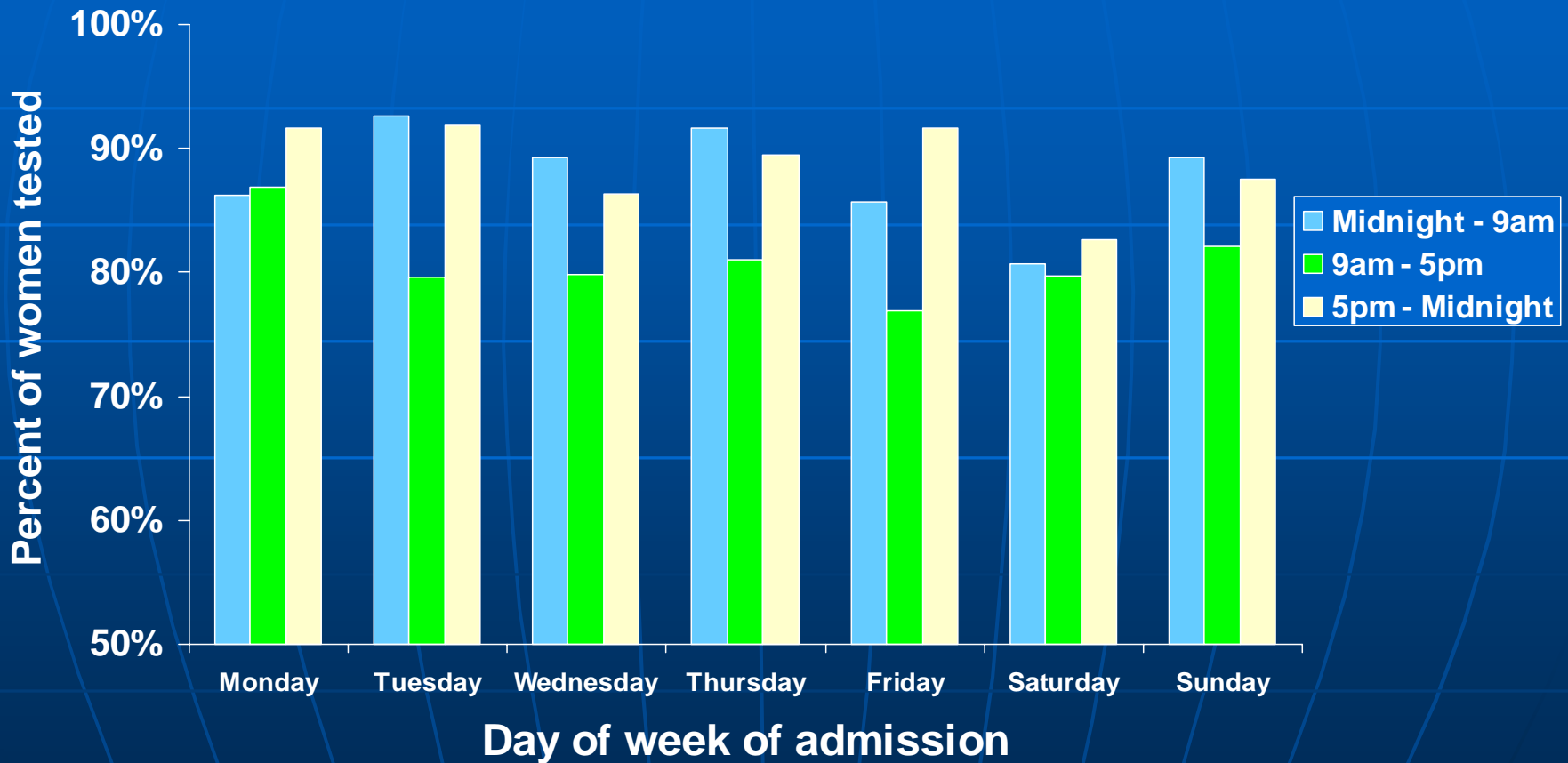


**% eligible women tested/predictors**

# Proportion of women tested among those eligible for rapid testing

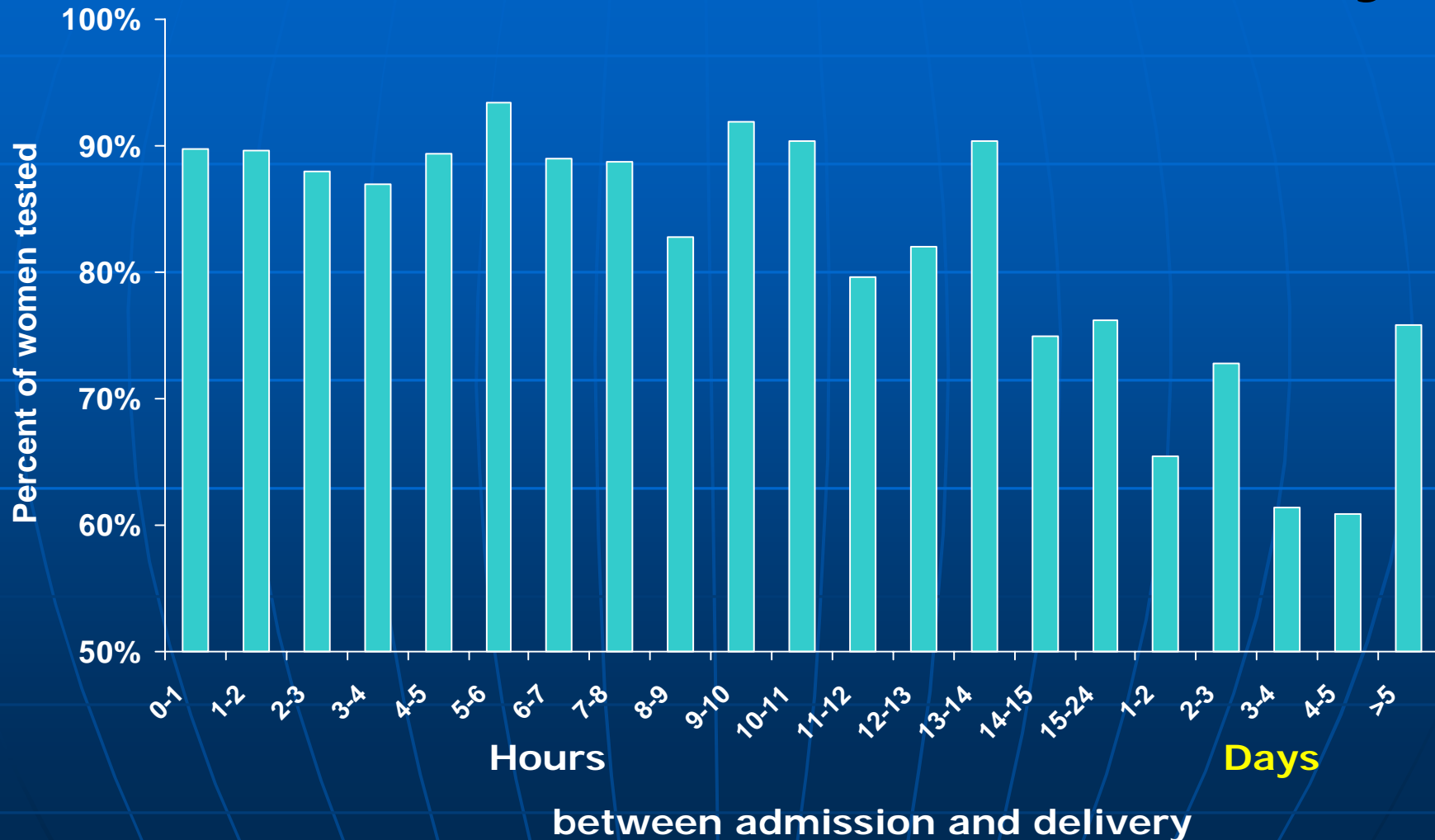


# Proportion of eligible women tested by day/time of admission



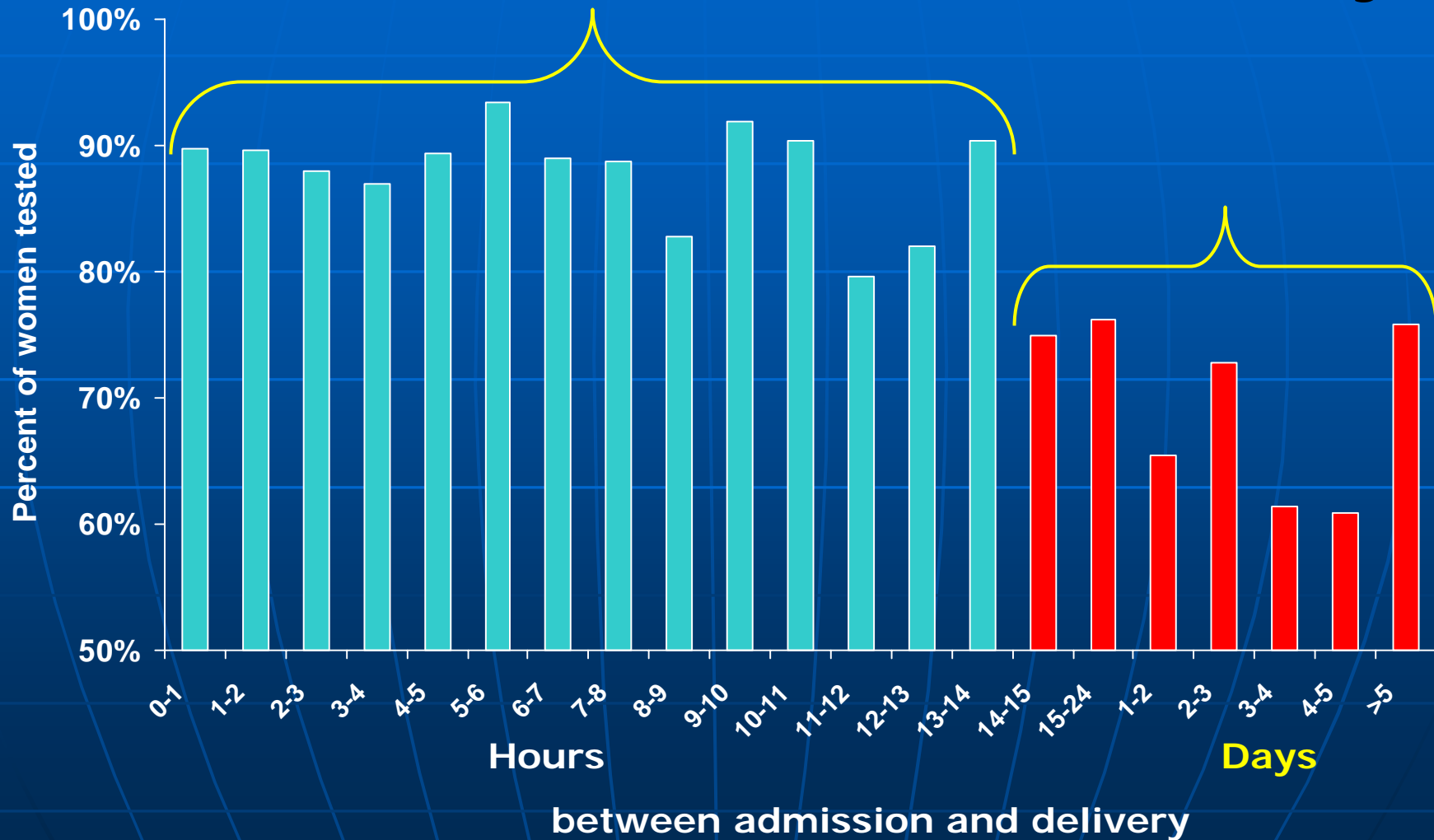
*Time of admission: p for trend <0.0001; Day of week of admission: p for trend >0.05*

# Proportion of eligible women tested with RT and time between admission and delivery\*



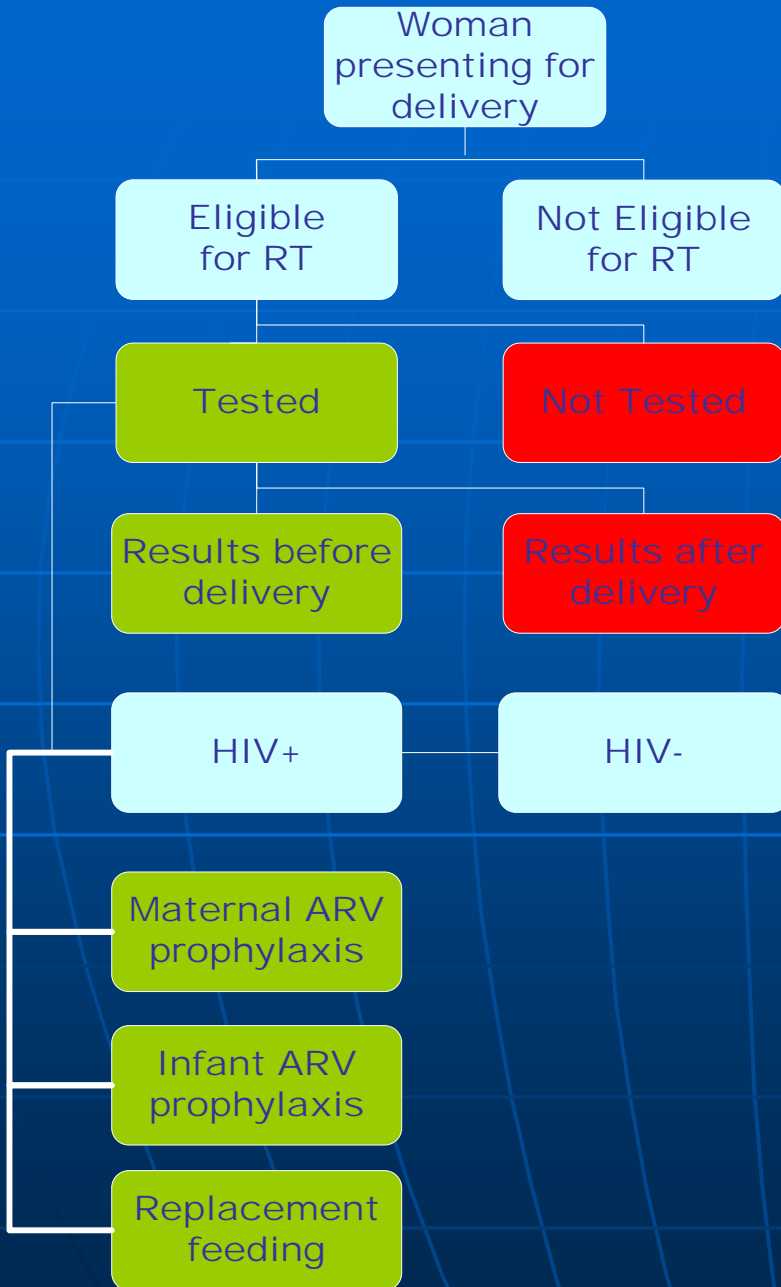
\* Women not tested with RT, but whose EIA results were available before delivery not included;  $p$  for trend  $<0.0001$

# Proportion of eligible women tested with RT and time between admission and delivery\*



\* Women not tested with RT, but whose EIA results were available before delivery not included;  $p < 0.0001$

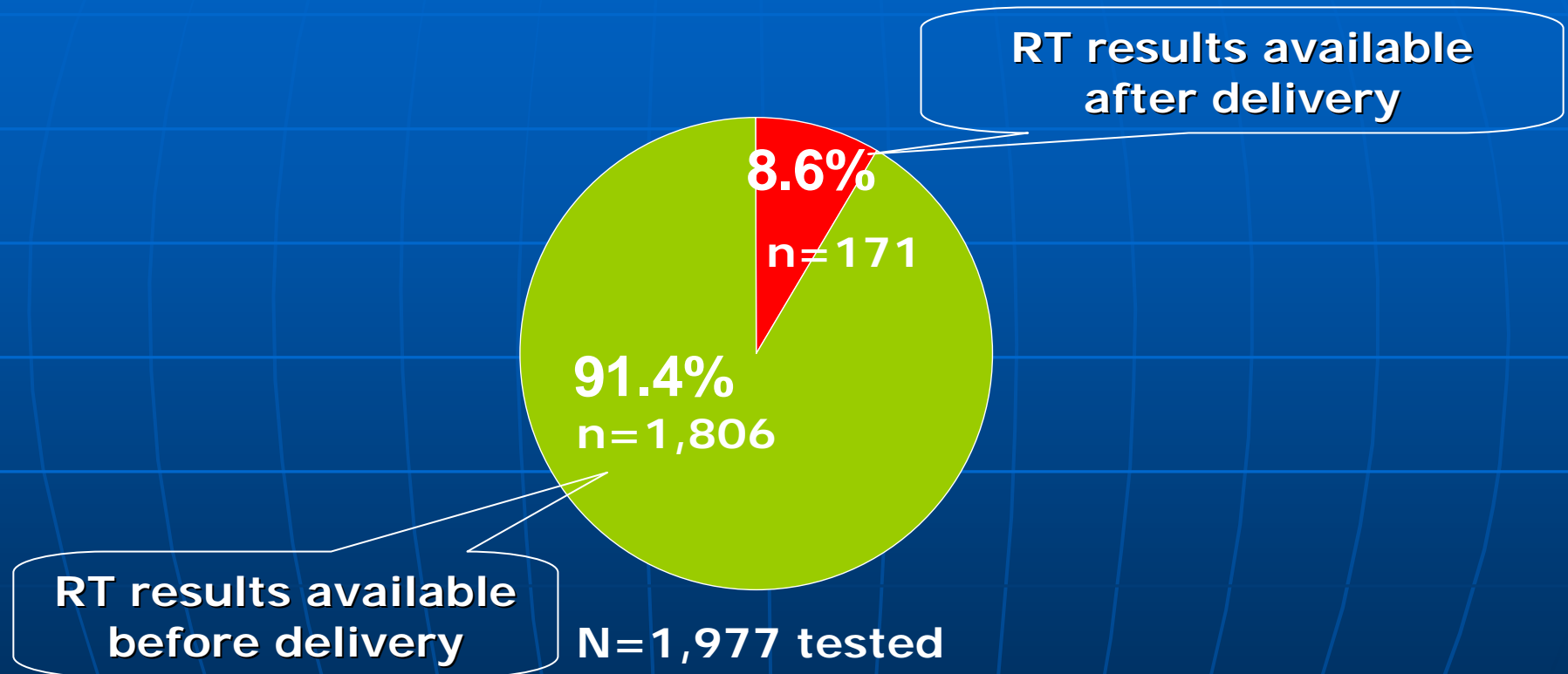
# Selected rapid HIV testing and prevention program indicators:



79.8% of eligible women tested

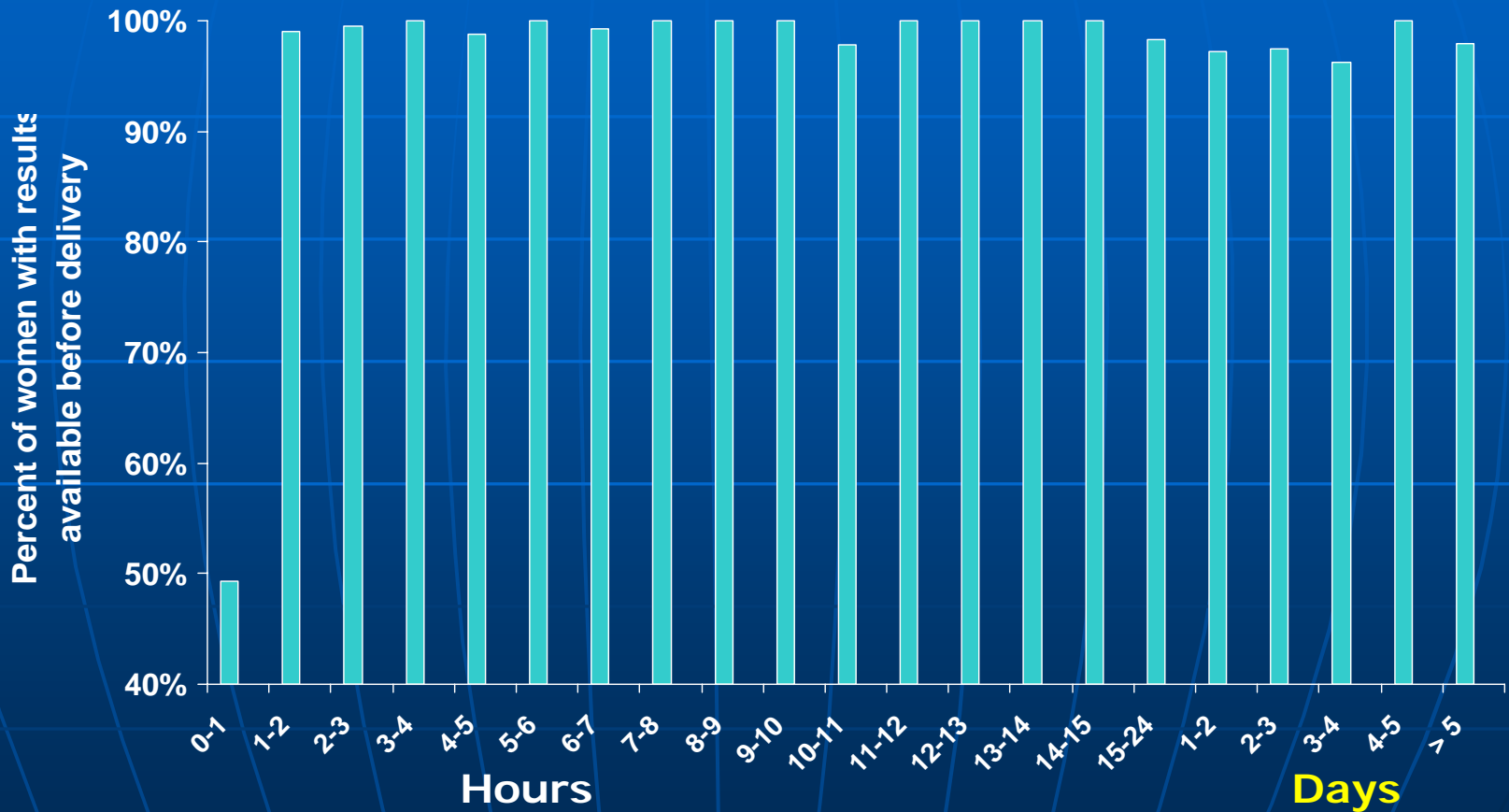
% tested women with results before delivery/predictors

# Proportion of women for whom RT results were available before delivery\*



*\*Note: Information on timing of results availability is missing for 40 women*

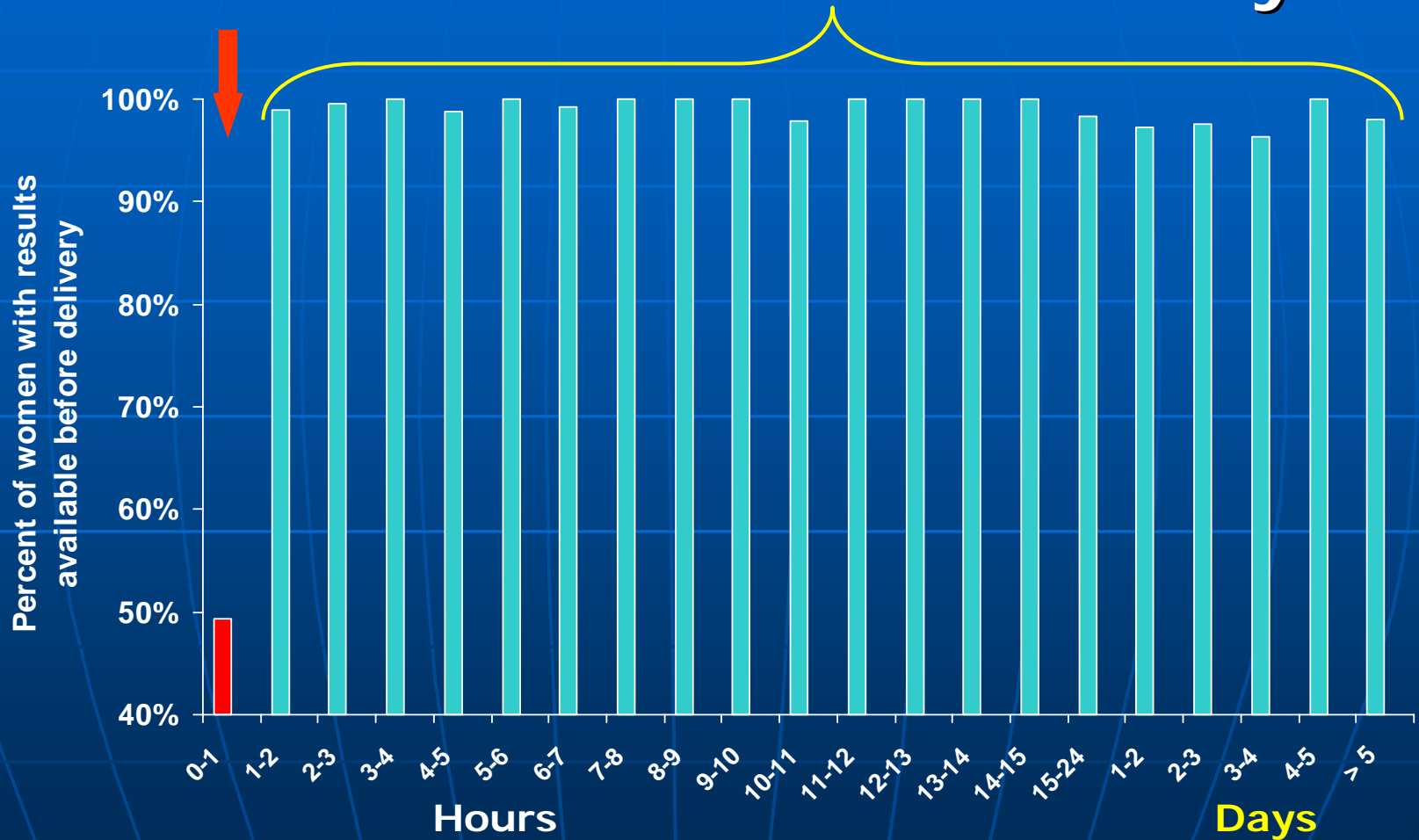
# Proportion of women whose RT results were available before delivery and time between admission and delivery\*



between admission and delivery

\* Women not tested with RT, but whose EIA results were available before delivery not included; p-value for trend <0.0001

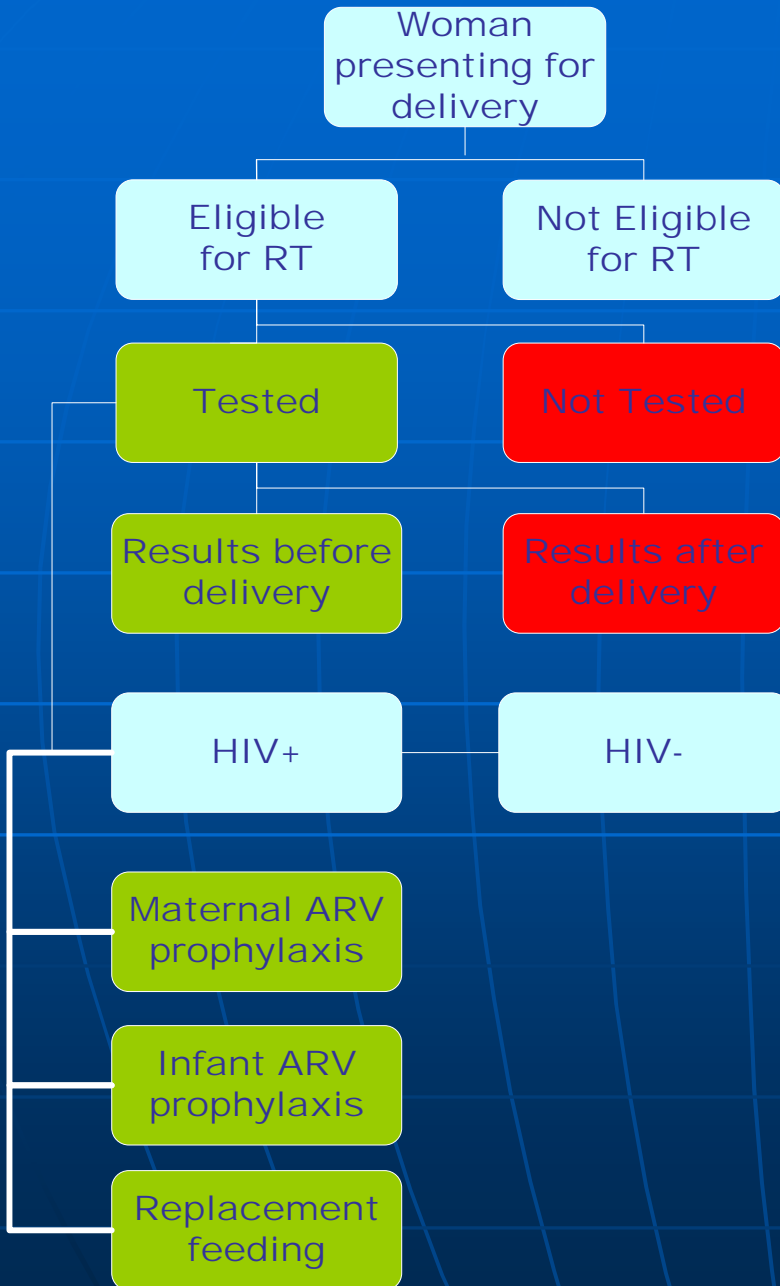
# Proportion of women whose RT results were available before delivery and time between admission and delivery\*



between admission and delivery

\* Women not tested with RT, but whose EIA results were available before delivery not included;  $p$ -value  $< 0.0001$

# Selected rapid HIV testing and prevention program indicators:



79.8% of eligible women tested

91.4% of tested women had results before

**HIV seroprevalence**

# HIV seroprevalence among eligible women

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	<b>% RT+</b> <b>(of tested)</b>	<b>% EIA+</b> <b>(of RT+)</b>	<b>% WB+</b> <b>(of EIA+)</b>
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**All eligible women**

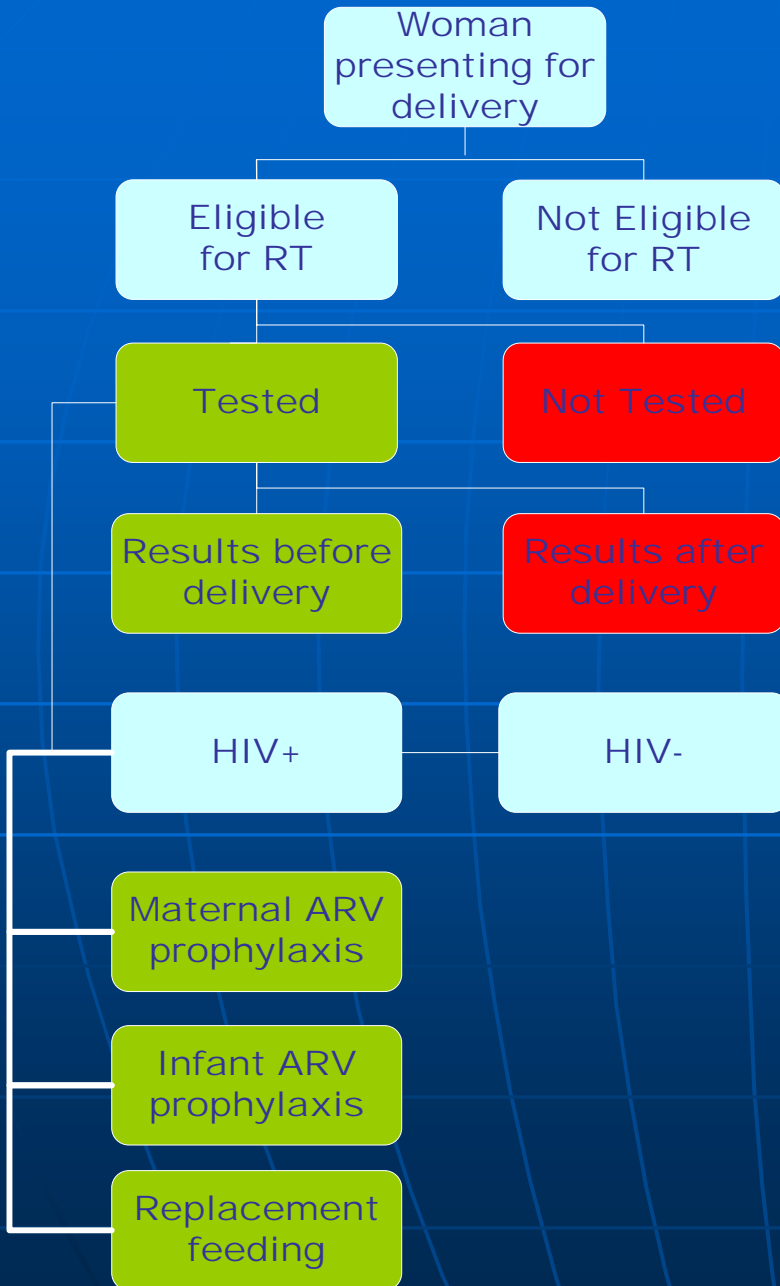
**2.4%**  
49/2,017

**87.8%**  
43/49

**97.7%**  
42/43

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# Selected rapid HIV testing and prevention program indicators:



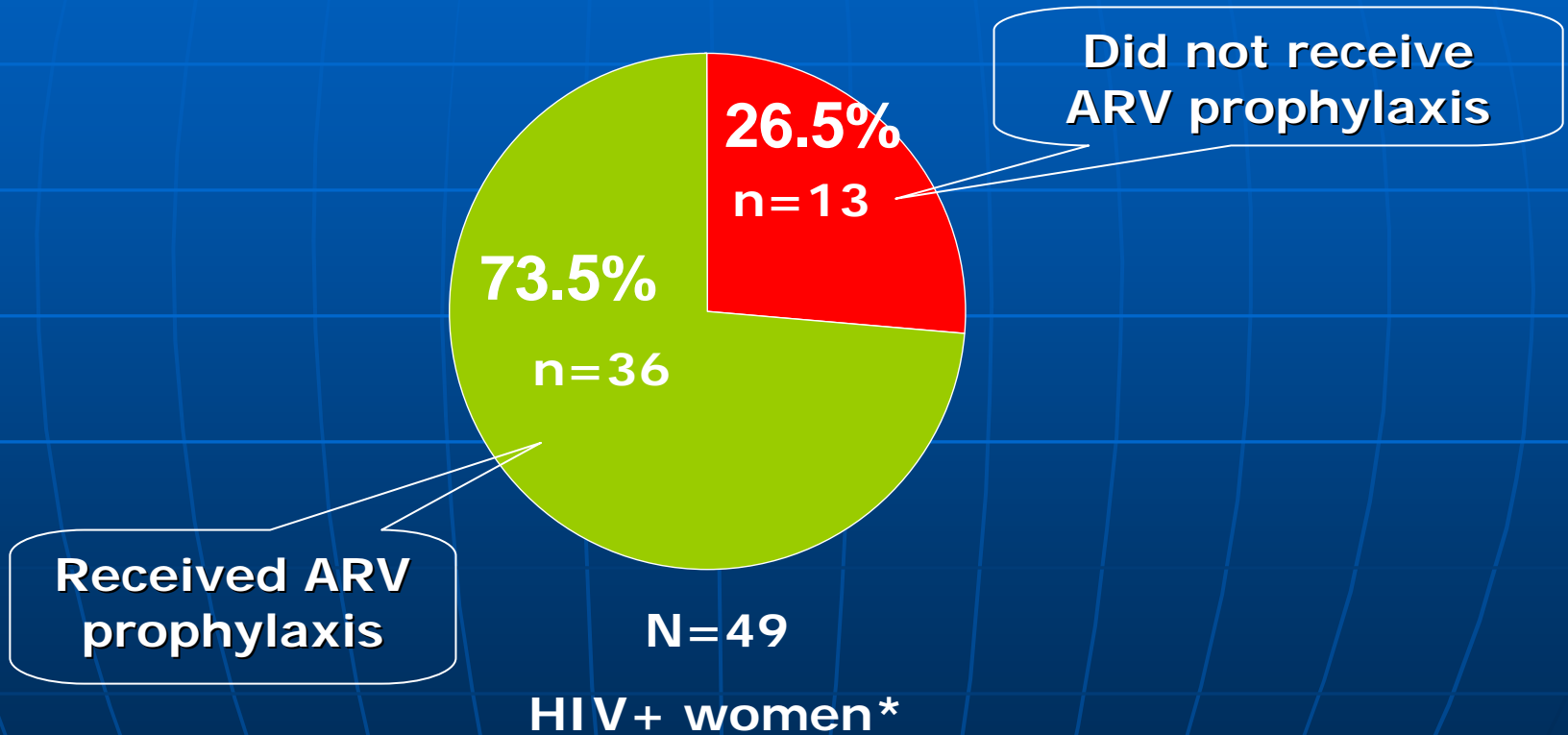
79.8% of eligible women tested

91.4% of tested women had results before

2.4% HIV seroprevalence

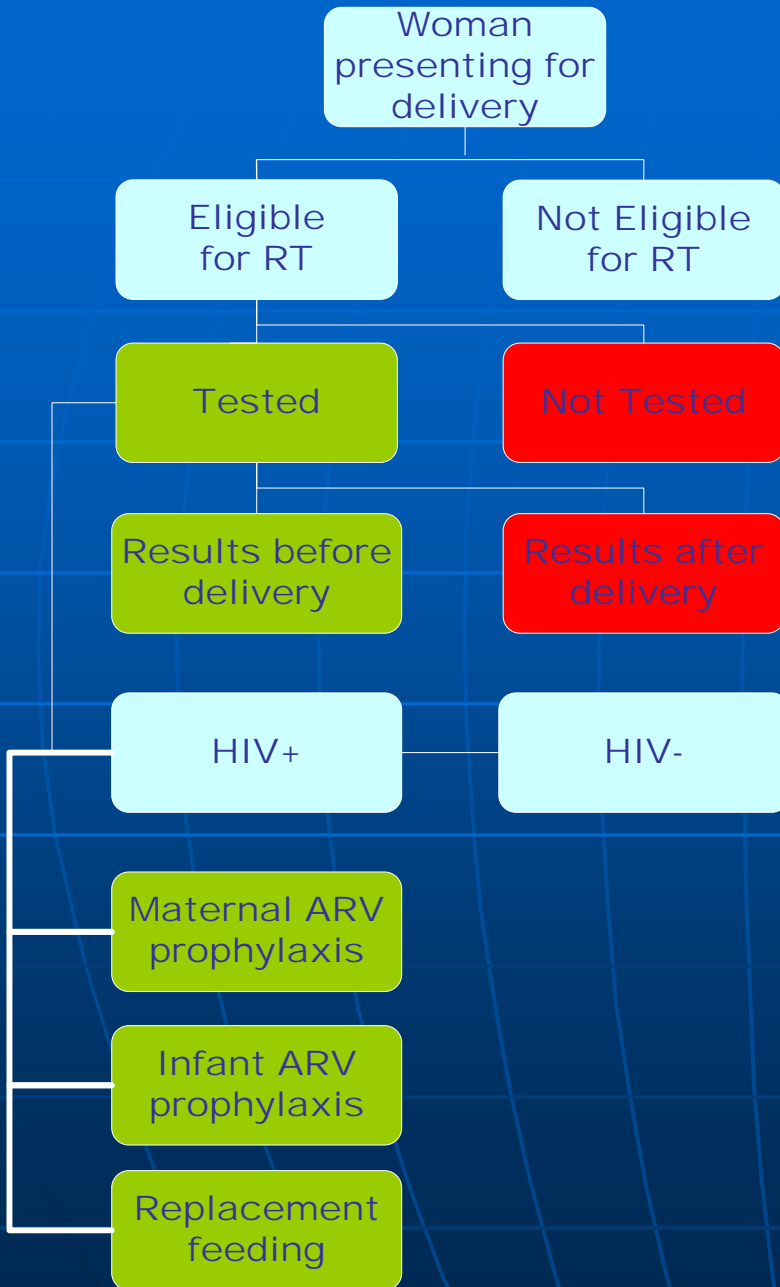
**% HIV+ women receiving ARV**

# Proportion of HIV+ women\* who received ARV prophylaxis



*\*Note: "HIV+ women" refers to women with positive rapid HIV test*

# Selected rapid HIV testing and prevention program indicators:



79.8% of eligible women tested

91.4% of tested women had results before

2.4% HIV seroprevalence

73.5% of HIV+ women received ARV

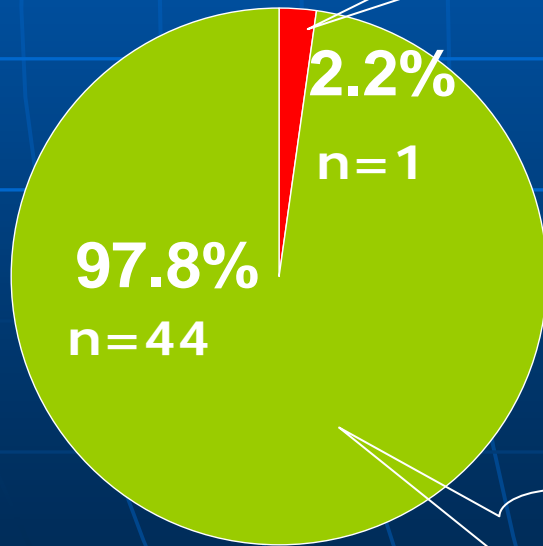
% exposed infants receiving ARV

% exposed infants receiving replacement feeding

# Perinatally exposed liveborn infants

who received  
ART

Did not  
receive ART

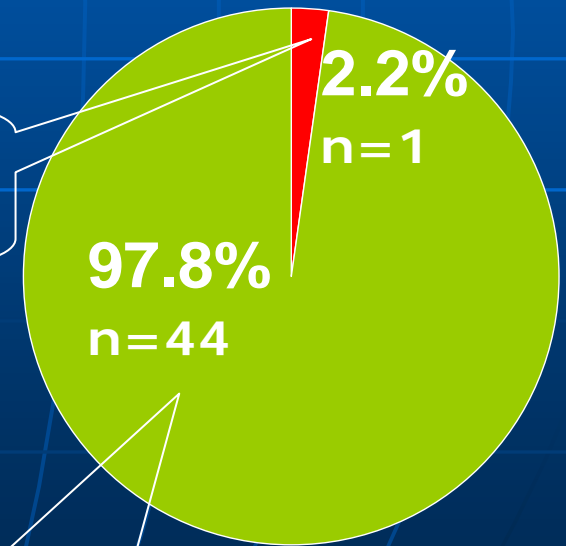


N=45

Received  
ART

who avoided  
breastfeeding

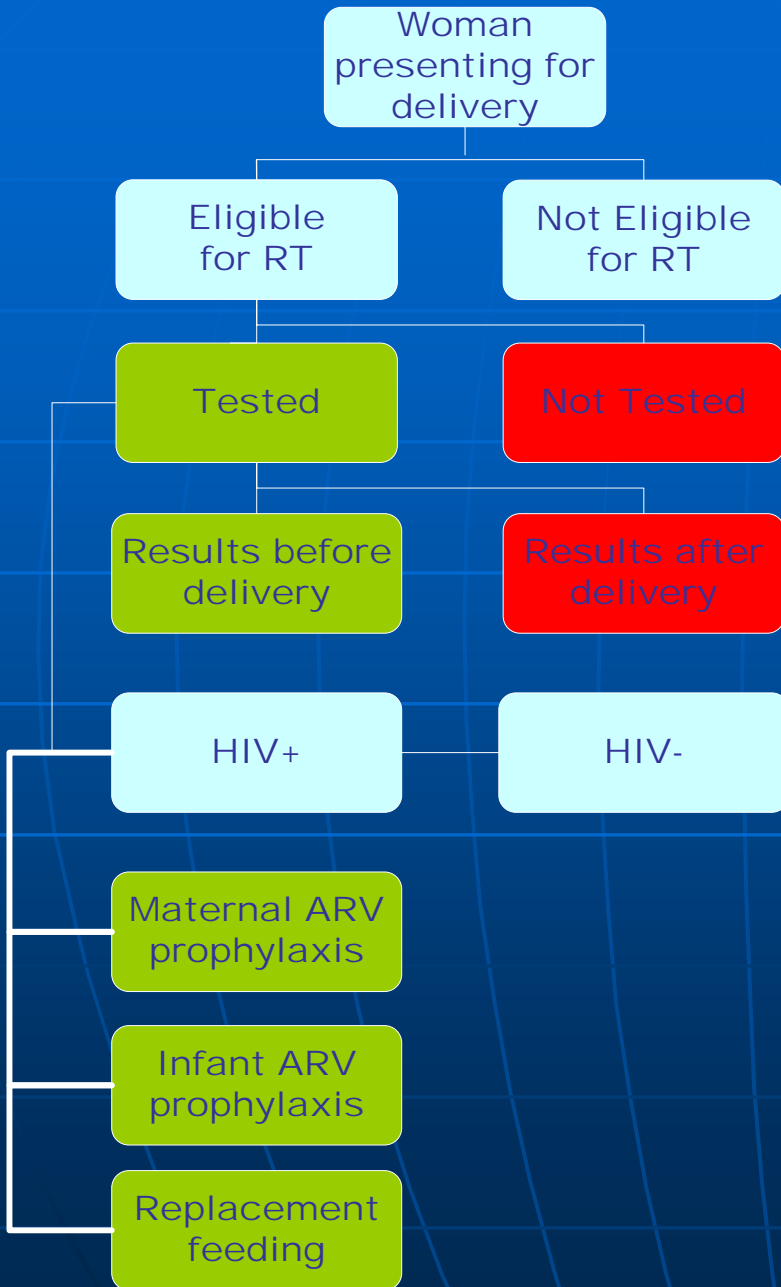
Received  
breastfeeding



N=45

Did not receive  
breastfeeding

# Selected rapid HIV testing and prevention program indicators:



**79.8% of eligible women tested**

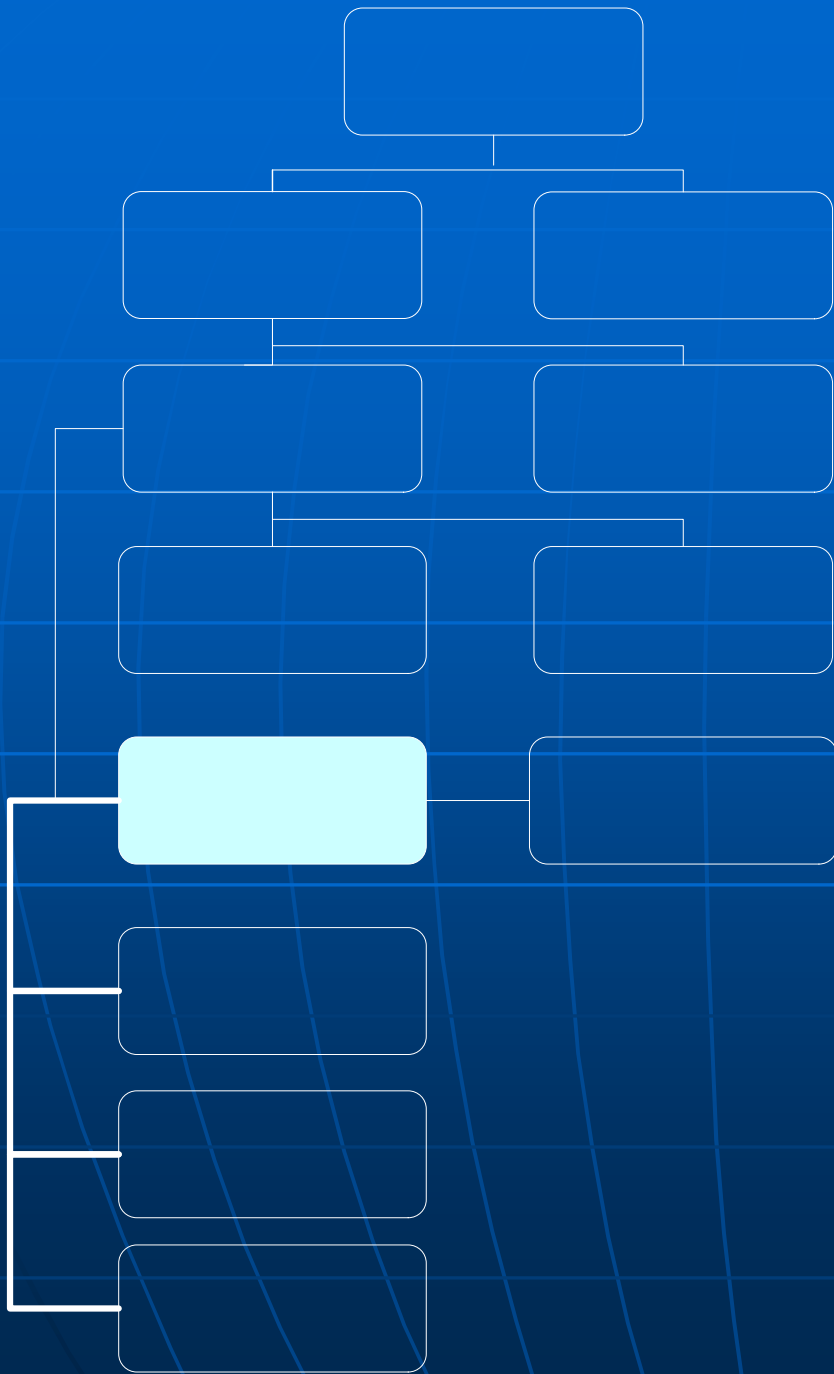
**91.4% of tested women had results before**

**2.4% HIV seroprevalence**

**73.5% of HIV+ women received ARV**

**97.8% of exposed infants received ARV**

**97.8% of exposed infants received replacement feeding**



## Objective II:

Describe risk profile for HIV-positive women identified through the program

**Eligible for RT**

Wo  
presen  
del

# Characteristics of HIV+ women giving birth in high-risk maternity hospitals: Maternal HIV transmission categories

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## Maternal HIV risks

**N=46**

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IDU	67.4%
Contact with IDU	8.7%
Contact with HIV+ with unknown risk	4.3%
Presumed hetero-sexual contact	0.0%
Unknown HIV risk	26.1%

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*Note: Percentages might not add up to 100% because more than 1 risk factor can be present for a woman; information for 3 women was not available*

# Characteristics of HIV+ women giving birth in high-risk maternity hospitals: Demographics and family planning

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## Demographics and family planning

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**N=47**

Unintended pregnancy

60.9%

Child abandonment\*

41.9%

History of abortion(s)

28.3%

Nonresident

23.9%

Unmarried

15.2%

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*\*Note: child abandonment is calculated for women who had live birth (n=45); information for 4 women was not available*

# Conclusions (I):

## Rapid testing program works:

- Eligible women are tested
- Results are available before delivery
- Prophylaxis is provided for both mother and infant

# Conclusions (I):

**Clear areas for program improvements:**  
predictors of failure of rapid HIV testing program

- **Timing of presentation:**

- late presentation (<1 hour before delivery)
- presentation during the day shift
- presentation before onset of labor (>14 hours before delivery)

## Conclusion (II):

- High risk of abandonment among HIV-positive women (especially if pregnancy is unintended)
- High frequency of unintended pregnancy among HIV+ women

# Acknowledgements

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- Bill Miller

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- Galina Volkova

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- Tatyana Lyubimova
- Tatyana Bludova

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- Tatyana Vorobyova