ART Initiation in Infants
the new challenge

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Without Treatment what proportion of HIV +ve newborns die by 1 year of age?

- A 33%
- B 50%
- C 66%
- D 75%

ART WILL REDUCE MORTALITY IN HIV +VE CHILDREN BY.....?

- A 33%
- B 50%
- C 66%
- D 75%

What proportion of eligible children in RSA are on ART?

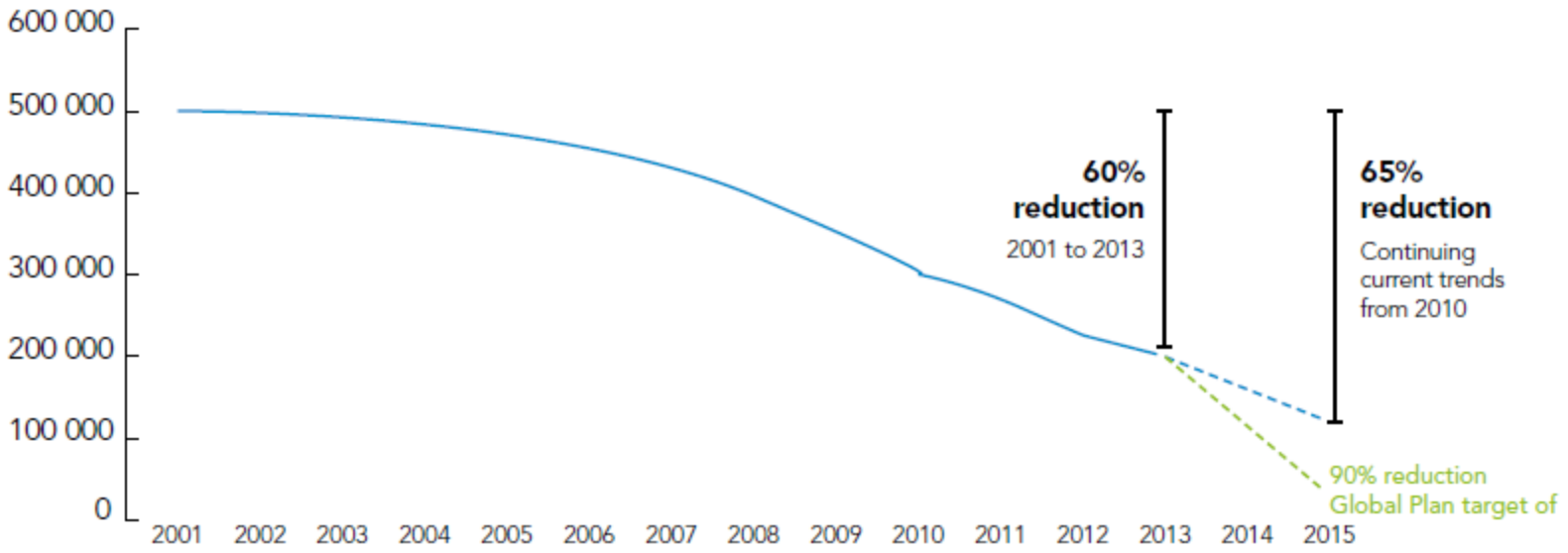
- A 33%
- B 50%
- C 66%
- D 75%

GLOBAL PICTURE: PAEDIATRIC HIV

- Higher risk of disease progression & death
- No treatment
  - ⅓ dead within 1 year
  - ½ dead within 2 years
- 80% VL suppression at 1 year on R_x
- R_x within 12 weeks ↓ mortality by 75%
- Children on ART
  - 647 000 in 2012
  - 35% coverage vs 65% for adults

New Paediatric HIV Infections

Number of new child HIV infections globally, 2005–2013, and projected targets



Source: UNAIDS estimates, 2013.

RSA 6 week PCR +ve	2.0%
New cases per annum	21 000

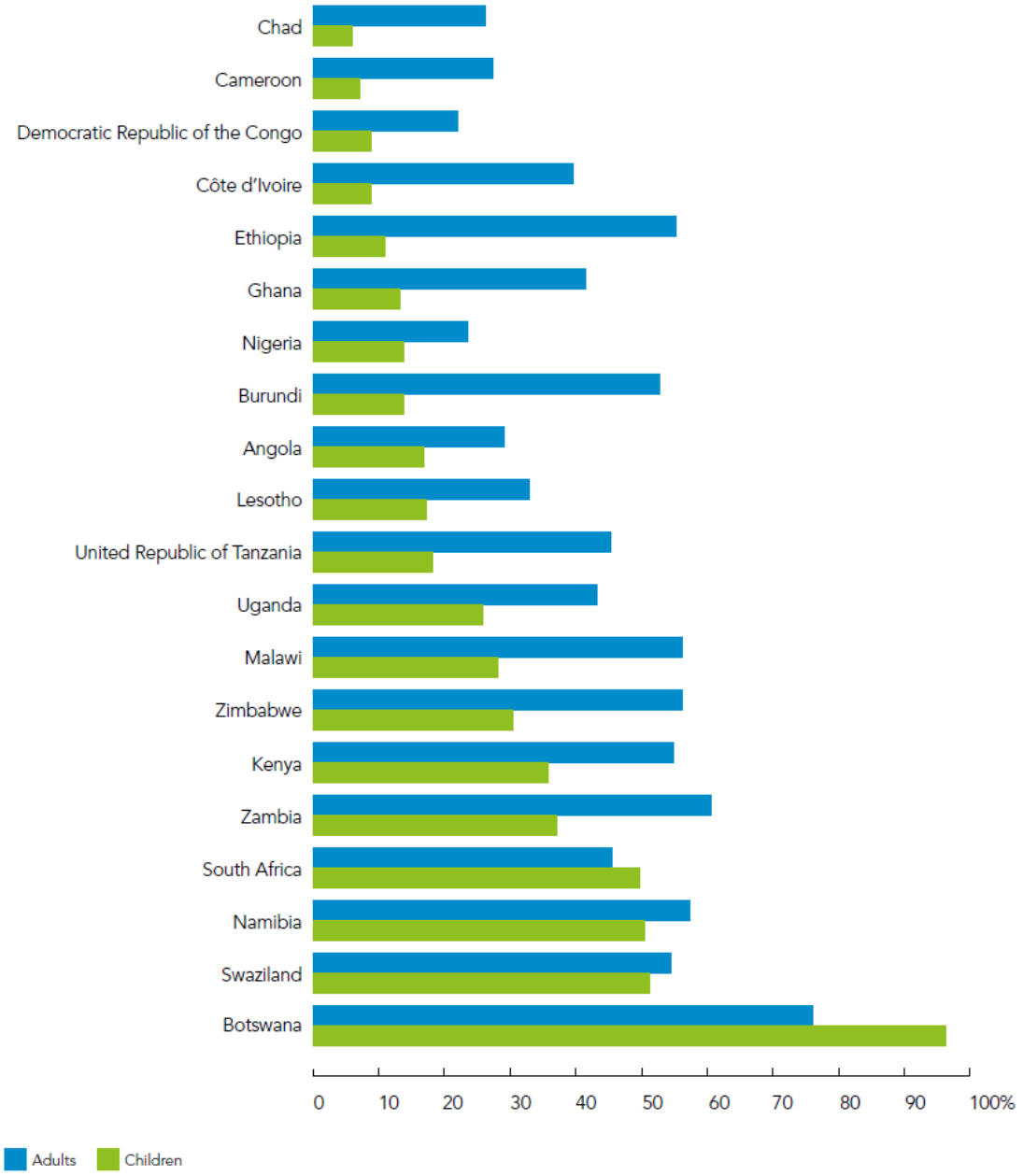
So …. What should we be doing - WHO

- Establish HIV exposure status at birth
- Test infants
  - At 4 – 6 weeks
  - 6 weeks after stopping breastfeeding
  - At 9 months
  - When symptomatic
- Initiate ART
  - < 5 years on diagnosis
  - > 5 years CD4 count ≤ 350

AND …… RSA

- Test children
  - At 6 weeks
  - 6 weeks after stopping breastfeeding
  - At 18 months
  - If symptomatic
- Initiate ART
  - < 5 years on diagnosis
  - > 5 years WHO stage 3 or 4 / CD4 count ≤ 350
  - Fast track < 1 year ……

PROPORTION OF ELIGIBLE PEOPLE ON ART



Source: 2013 estimates from UNAIDS, WHO and UNICEF.

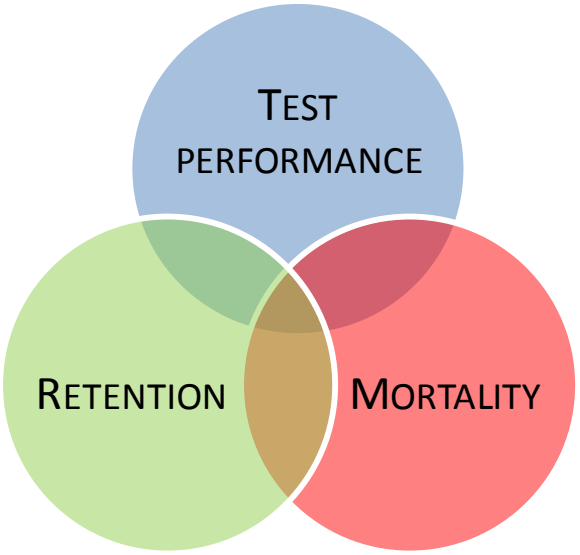
Paediatric ART Status in RSA 2013

Starting ART / month	2 375
Total on ART	155 000
Still on ART @ 1 yr	81.6%
Status after 1 yr ART	
Dead	2.2%
Lost to follow up	16.2%
VL assessed	36.1%
VL suppressed	61.4%

CHALLENGES

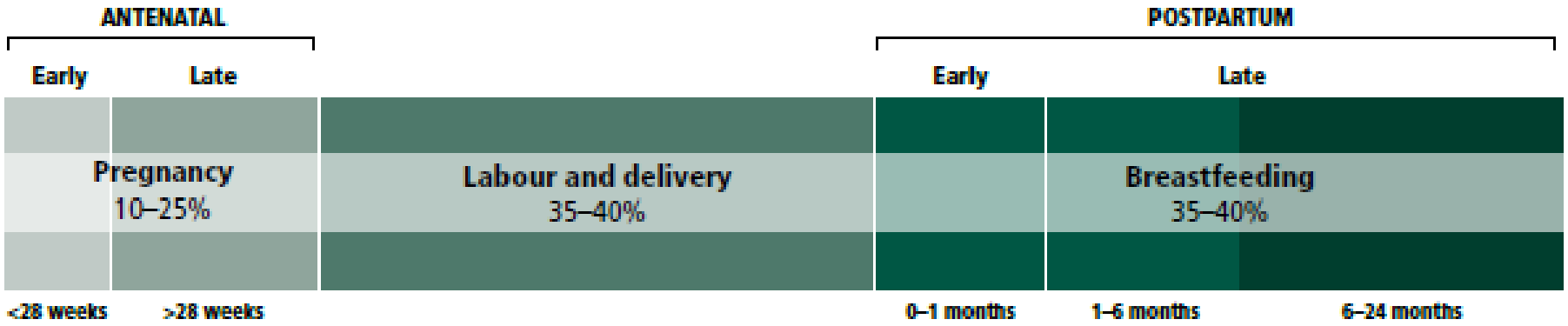
- Early diagnosis (2012)
  - 35% tested by 2 months
  - 45% drop out before initiating ART
- Prolonged treatment on failing regimens
- Risk of resistance
  - No greater than for adults but for ongoing R_x with failing regimen

RESPONSE - EID



- Influenced by
  - Timing of infection
  - Test performance
  - Mortality risk
  - Retention n testing & treatment cascade
- Ideal time
  - Pre- peak mortality
  - Linked to scheduled child health visits

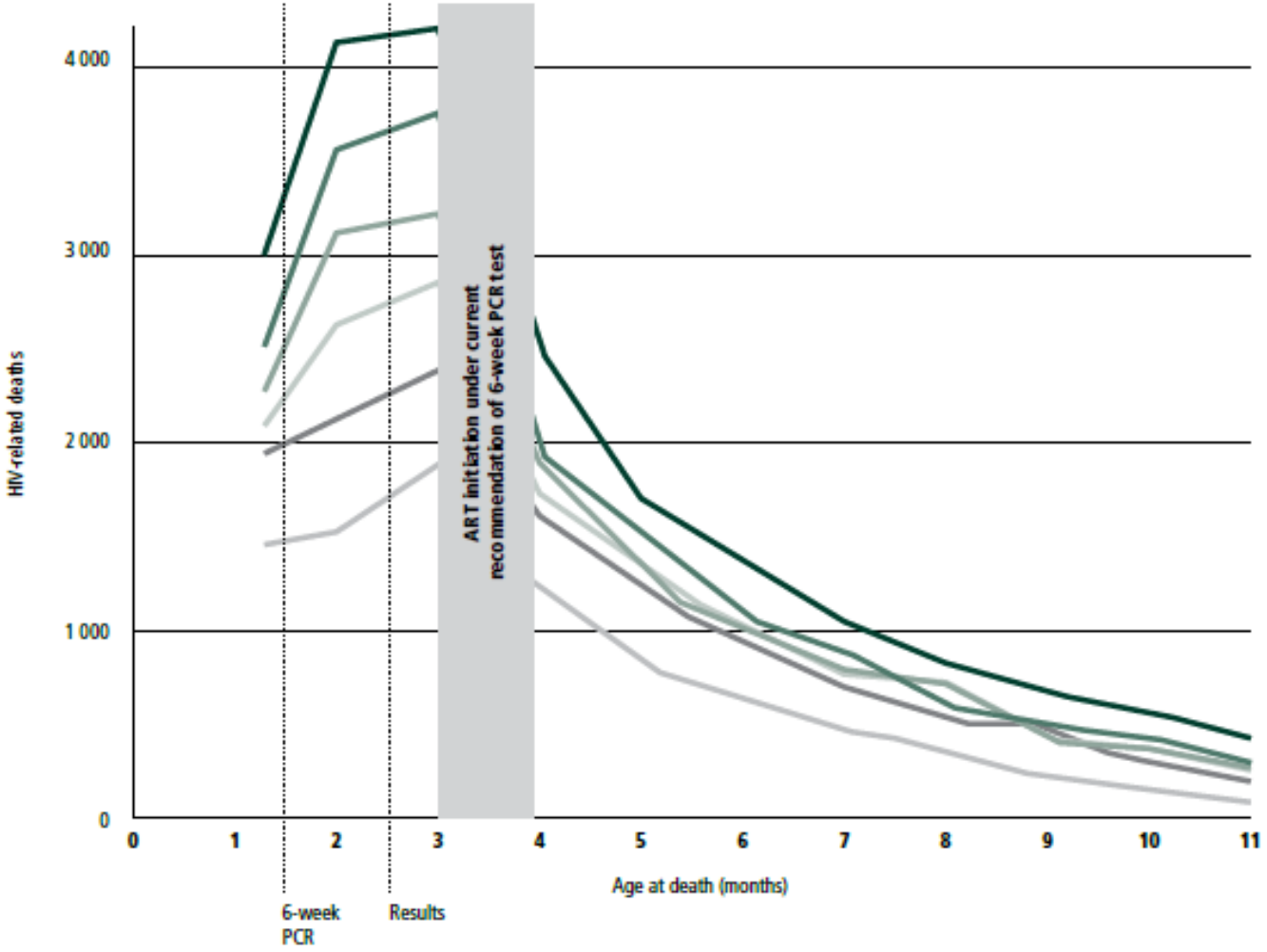
VERTICAL TRANSMISSION



TEST

- Assays
  - Virological - HIV DNA / HIV RNA / Up24 Ag
  - Serological
- Performance
  - Poor if PMTCT successful PPV = 50% @ 6 weeks
  - 6 weeks - detects in utero & most intrapartum infections
  - ? impact of neonatal prophylaxis which may ↓ VL
  - ? Influenced by maternal R_x

EARLY HIV MORTALITY



Source: Bourne *(23)*.

PAEDIATRIC HIV MORTALITY IN RSA

- RSA HIV associated mortality:

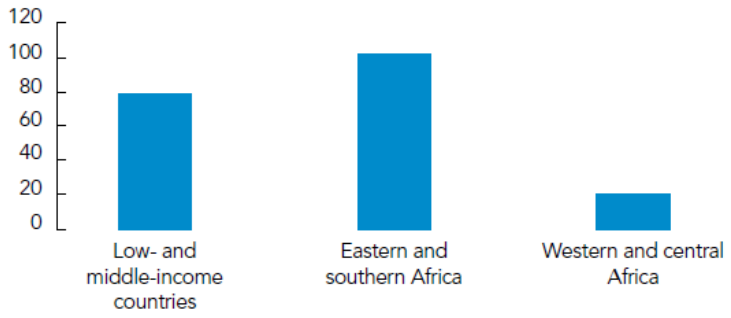
	2009	2010	2014	2012	2013
STATSSA	1.5%	1.4%	1.2%	1.0%	
CHILD PIP	48.3%	49.9%	43.0%	39.9%	39.1%

- Newborn deaths in children's wards
  - Unknown 51%
  - Exposed, not tested 32%
  - -ve 13%
  - +ve 4%

RETENTION

- Global
  - 35% PCR coverage
  - 70% EID rate
  - 40% linked to care
  - 30% initiate ART
- RSA
  - 100.2% PCR coverage

Percentage of children born to HIV-positive women tested for HIV within two months of birth by region



Source: Global AIDS response progress reporting data. Geneva, UNAIDS, 2013.

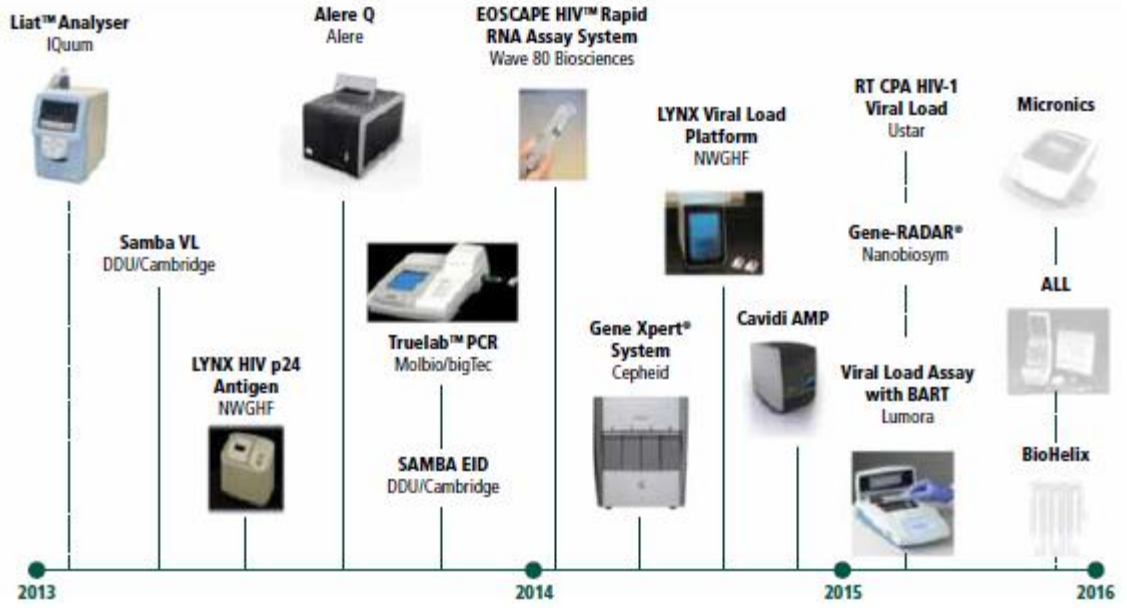
INNOVATIONS

- Birth testing
  - 80% ↓ in cost (US$ 458 – US$ 823)
  - Diagnostic yield ↑ (69% vs 56%)
  - ↓ Deaths pre ART (25% vs 27%)
  - ↑ initiation of ART (37% vs 31%)

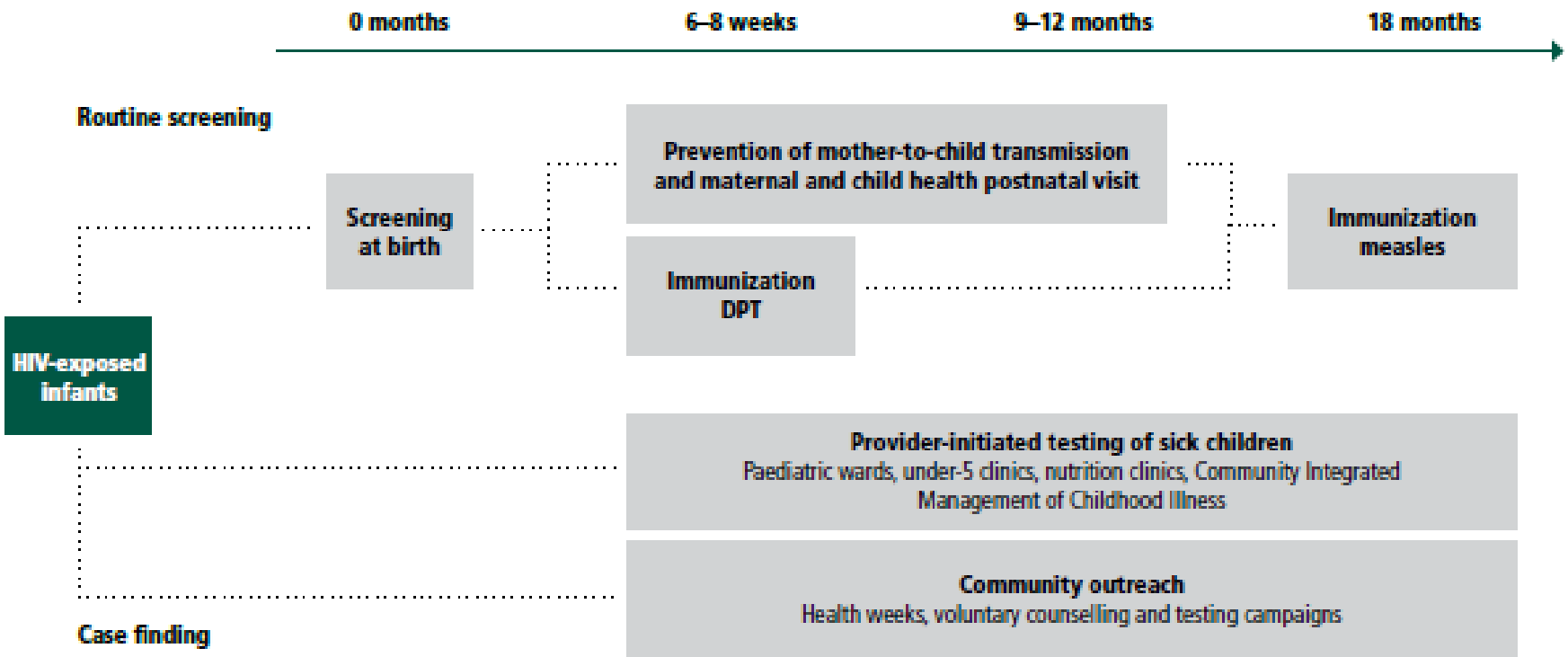
- Better understanding still required

INNOVATIONS

- Current system
  - Lab based
  - Long turn around time for results
- POCT
  - Comming



WHEN TO TEST



Source: adapted from Chewe Luo, UNICEF, presented at the International Conference on AIDS and STIs in Africa, December 2013.

How …… RSA

THEN CONSIDER HIV INFECTION IN ALL YOUNG INFANTS

Has the child been tested for HIV infection?

IF YES, AND THE RESULT IS AVAILABLE, ASK:

- What was the result of the test?
- Was the child breastfeeding when the test was done, or had the child breastfed less than 6 weeks before the test was done?

HIV testing in infants 0 - 2 months:

- Use an HIV PCR test.
- If HIV PCR test positive, do second HIV PCR test to confirm status
- All children of HIV positive mothers should be tested at six weeks of age.
- Babies with symptoms suggestive of HIV infection should be tested earlier.
- If the child is breastfeeding the HIV test must be repeated 6 weeks after breastfeeding stops.

NOTE:
All HIV-exposed children should have an HIV antibody test done at 18 months of age, EXCEPT those already confirmed to be PCR positive and on ART (as this may give a false negative result).

Classify for HIV status

• Child has positive PCR test	**HIV INFECTION**	➢ Follow the six steps for initiation of ART (p. 53) ➢ Give cotrimoxazole prophylaxis from 6 weeks (p. 39) ➢ Assess feeding and counsel appropriately (p. 9, 17—24) ➢ Ask about the caregiver's health, provide HCT and treatment as necessary (p. 11) ➢ Provide long term follow-up (p. 59)
• Child has negative PCR test. **AND** • Child still breastfeeding or stopped breastfeeding less than 6 weeks before the test was done	**ONGOING HIV EXPOSURE**	➢ If mother is HIV positive, give prophylactic nevirapine for 6 or 12 weeks depending on period for which mother received ART (p. 13) ➢ If mother is HIV positive, give cotrimoxazole prophylaxis from 6 weeks (p. 39) ➢ Assess feeding and counsel appropriately (p. 9, 17—24) ➢ Repeat PCR test 6 weeks after stopping breastfeeding. Reclassify on the basis of the test result. ➢ Provide follow-up care (p. 51)
• Child has a negative PCR test. **AND** • Child is not breastfeeding and was not breastfed for six weeks before the test was done	**HIV NEGATIVE**	➢ Stop cotrimoxazole prophylaxis ➢ Counsel the caregiver on home care for the young infant (p. 15)

IF NO TEST RESULT FOR CHILD, CLASSIFY ACCORDING TO MOTHER'S STATUS

ASK:

- Was the mother tested for HIV during pregnancy or since the child was born?
- If YES, was the test negative or positive?

Classify child according to Mother's HIV status

• Mother is HIV positive.	**HIV EXPOSED**	➢ If mother is HIV positive, give prophylactic nevirapine for 6 or 12 weeks depending on period for which mother received ART (p. 13) ➢ Do a PCR test at 6 weeks, or earlier if the child is sick. Reclassify the child on the basis of the result. ➢ Give cotrimoxazole prophylaxis from age 6 weeks (p. 39) ➢ Assess feeding and provide counselling (p. 9, 17—24) ➢ Ask about the caregiver's health, and treat as necessary (p. 11) ➢ Provide long term follow-up (p. 51)
• No HIV test done on mother **OR** • HIV test result not available.	**HIV UNKNOWN**	➢ Counsel caregiver on the importance of HIV testing, and offer HCT ➢ Reclassify on the basis of the child's or the mother's test
• Mother HIV negative	**HIV UNLIKELY**	➢ Counsel the caregiver on home care for the young infant (p. 15)

THEN CONSIDER HIV INFECTION

Has the child been tested for HIV infection?

IF YES, ASK:

- What was the result?
- If the test was positive, is the child on ART?
- If the test was negative, was the child still breastfeeding at the time that the test was done, or had the child been breastfed in the six weeks before the test was done? Is the child still breastfeeding?

HIV testing in children:

- All HIV-exposed infants require PCR testing at 6 weeks of age, 6 weeks post weaning and at any age if the child is symptomatic.
- Below 18 months of age, use an HIV PCR test to determine the child's HIV status. Do not use an antibody test to determine HIV status in this age group.
- If HIV PCR positive, do a second HIV PCR test to confirm the status
- 18 months and older, use a rapid (antibody) test to determine HIV status. If the rapid test is positive then it should be repeated (using a confirmatory test kit). If the confirmatory test is positive, this confirms HIV infection (in a child older than 18 months). If the second test is negative, refer for ELISA test and assessment.

NOTE:
All HIV-exposed children should have an HIV antibody test done at 18 months of age, EXCEPT those already confirmed to be PCR +ve and on ART (as this may give a false negative result).

Classify for HIV infection in the child

• Positive HIV test in child. OR • Child on ART	**HIV INFECTION**	➢ Follow the six steps for initiation of ART (p. 53) ➢ Give cotrimoxazole prophylaxis from 6 weeks (p. 39) ➢ Give Vitamin A and deworming if due (p. 35) ➢ Assess feeding and counsel appropriately (p. 18– 24) ➢ Remember to screen for TB (p. 34) ➢ Ask about the caregiver's health, offer HCT and manage appropriately ➢ Provide long term follow-up (p. 59)
• Negative HIV test **AND** • Child still breastfeeding or stopped breastfeeding less than 6 weeks before test was done.	**ONGOING HIV EXPOSURE**	➢ If mother is HIV positive, give nevirapine for 6 or 12 weeks depending on period for which mother received ART (p. 13) ➢ Give cotrimoxazole prophylaxis from 6 weeks (p. 39) ➢ Assess feeding and counsel appropriately (p. 18 - 20) ➢ Repeat HIV testing 6 weeks after stopping breastfeeding. Reclassify the child based on the test result. ➢ Provide follow-up care (p. 51)
• Negative HIV test. **AND** • Child no longer breastfeeding (stopped at least six weeks before test was done).	**HIV NEGATIVE**	➢ Stop cotrimoxazole ➢ Consider other causes if child has features of HIV infection (repeat HIV test if indicated).

If no test result available, check for features of HIV

ASK:

- Has the mother had an HIV test? If YES, was it negative or positive?

FEATURES OF HIV INFECTION

ASK:

- Does the child have PNEUMONIA now?
- Is there PERSISTENT DIARRHOEA now or in the past three months?
- Has the child ever had ear discharge?
- Is there low weight?
- Has weight gain been unsatisfactory?

LOOK and FEEL:

- Any enlarged lymph glands in two or more of the following sites - neck, axilla or groin?
- Is there oral thrush?
- Is there parotid enlargement?

Note:
If clinical findings suggest HIV infection but the rapid test is negative, send a further specimen of blood to the laboratory for formal ELISA testing. If unsure discuss with an expert or refer the child.

Classify for HIV infection

• 3 or more features of HIV infection.	**SUSPECTED SYMPTOMATIC HIV INFECTION**	➢ Give cotrimoxazole prophylaxis (p. 39) ➢ Counsel and offer HIV testing for the child. Reclassify the child on the basis of the test result. ➢ Counsel the caregiver about her health, offer HCT and treatment as necessary. ➢ Assess feeding and counsel appropriately (p. 18-20) ➢ Provide long-term follow-up (p. 51)
• Mother HIV positive	**HIV EXPOSED**	➢ If mother is HIV positive, give prophylactic nevirapine for 6 or 12 weeks depending on period for which mother received ART (p. 13) ➢ Give cotrimoxazole prophylaxis (p. 39) - unless child is older than one year and clinically well ➢ Counsel and offer HIV testing for the child. Reclassify based on the test result. ➢ Counsel the caregiver about her health, and provide treatment as necessary. ➢ Assess feeding and counsel appropriately (p. 18 - 24) ➢ Provide long-term follow-up (p. 51)
• One or two features of HIV infection	**POSSIBLE HIV INFECTION**	➢ Provide routine care including HCT for the child ➢ Counsel the caregiver about her health, offer HCT and treatment as necessary. ➢ Reclassify the child based on the test results
• No features of HIV infection	**HIV INFECTION UNLIKELY**	➢ Provide routine care including HCT for the child and caregiver. ➢ If mother not available, get consent from the caregiver to test child for HIV ➢ Reclassify the child based on the test results.

So .....what now

- Continue current testing schedules
- Strengthen health systems
- Support NIMART
- Review of national guidelines