Update on New HIV Platform Ancillary Study

Urvi M Parikh, PhD

MTN Virology CORE

Lab Breakout Session

MTN Regional Meeting 2014

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Update HIV Testing Algorithms

- 31 acute infections in VOICE were missed by current rapid tests (22 @ enrollment; 9 @ PUEV)
- High rate of resistance (8/28; 29%) in subjects acutely infected at enrollment assigned to product arms (iPrEx, Partners, TDF2, VOICE)
- Updated algorithm using Ag/Ab rapids and Multispot confirmation could:
  - Allow detection and confirmation same day
  - Eliminate ambiguity from WB
  - Allow detection 1-2 weeks earlier than current tests

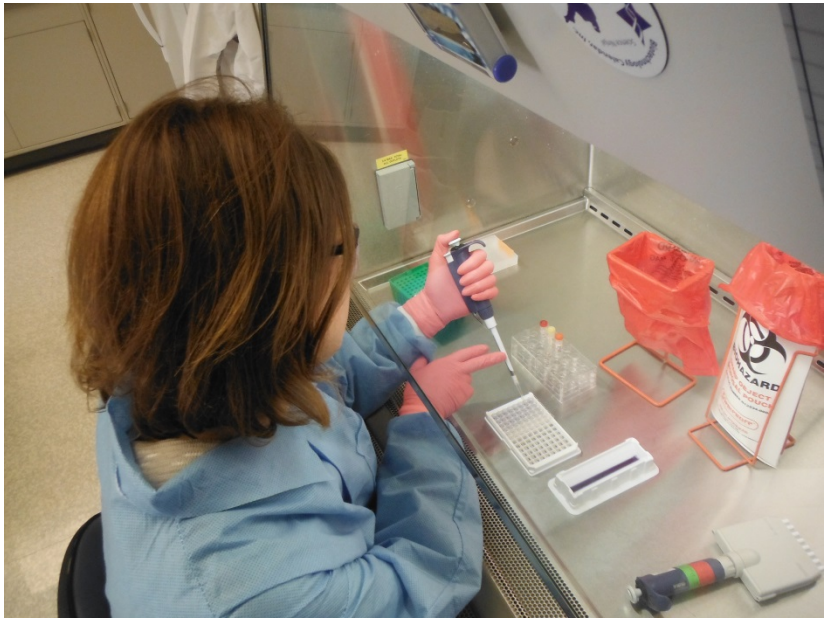
New Diagnostic Tests

Kit Name	Advantages
Determine® HIV-1/2 Ag/Ab Combo Rapid Test	• Detects p24 antigen • Mixed results on ability to detect infection earlier
Bio-Rad Multispot HIV-1/2 Rapid Test	• Can be performed as a point-of-care confirmatory test
Bio-Rad EIA HIV-1/2+O Ag/Ab Combo	• Improved diagnostic window up to 20 days but not point-of-care (Jentson, J Clin Virol 2011)
INSTI™ HIV-1 Rapid Test	• 3rd generation antibody only test • Could improve visit flow with "instant" results; test does not require incubation

Determine Combo Rapid HIV 1/2 Ag/Ab Test

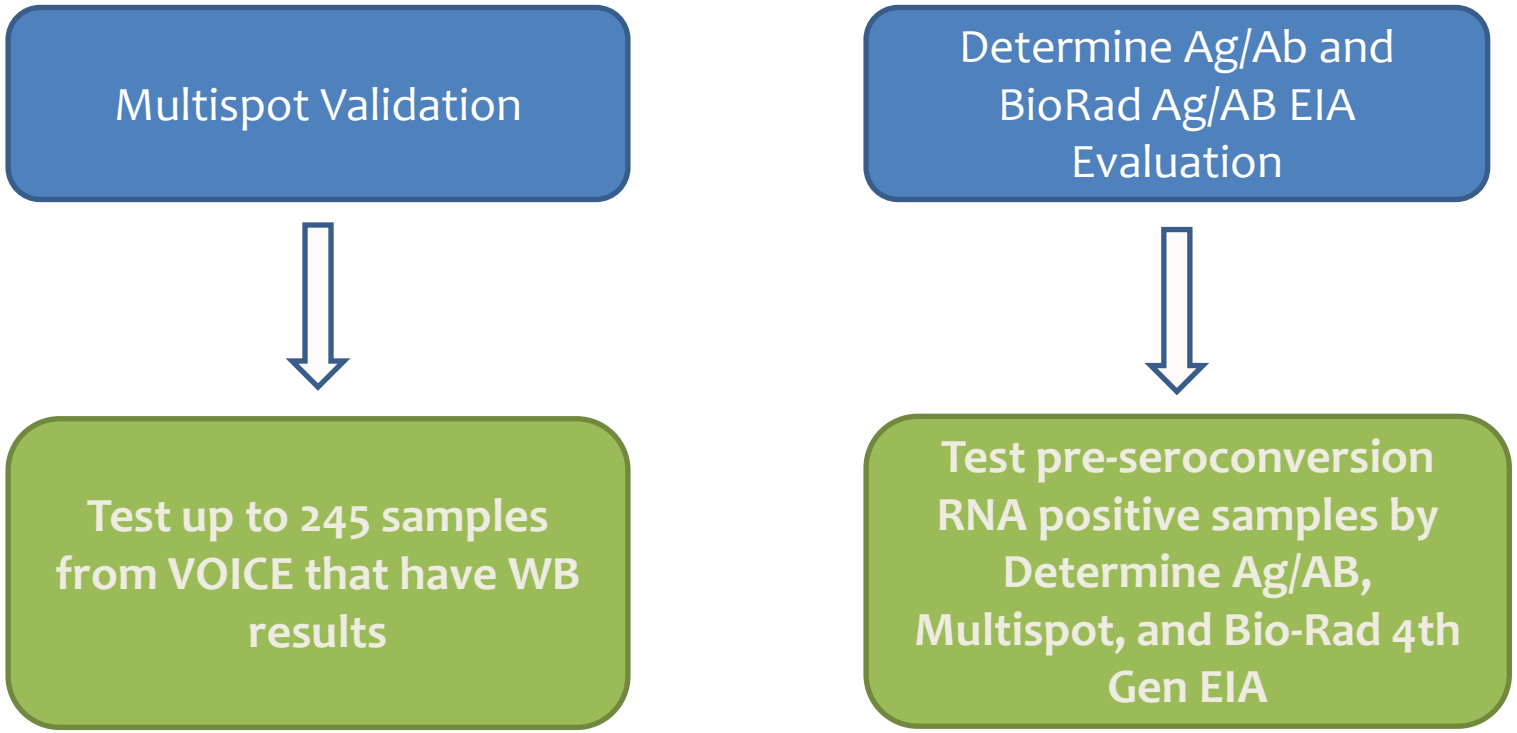
- CLIA moderate complexity
- Distinguishes Ag from Ab
- Whole blood, serum plasma
- FDA-approved August 2013

Bio-Rad EIA HIV-1/2+O Ag/Ab Combo



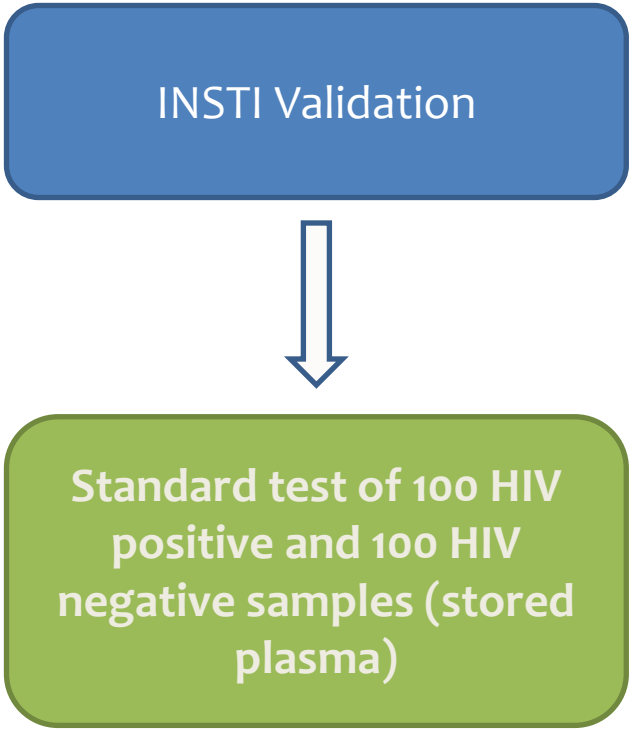
- Microwell plate assay
- Automated version available (EVOLIS™)
- FDA-Approved

Evaluation Plan



- **Ancillary Study approved by EC**
- **Calculate sensitivity/specificity and compare with results from currently used tests**

Evaluation Plan



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Preliminary Results

Archive Category (prior to seroconversion)	N	# with Detectable RNA (%)	HIV RNA copies/ml Median
Month 1 (0-31 d)	9	6 (67%)	1,815,235
Month 2 (33-62 days)	83	42 (51%)	55,120
Month 3 (63-93 days)	94	12/59 tested (20%)	96,410
Month 4 (94-124 days)	39	Not yet tested	-
Month ≥ 5 (125-385 days)	18	Not yet tested	-
TOTAL	**243**	**60/151 tested (40%)**	

- Using pooled RNA testing would have detected infection earlier in 40% of seroconverters (up to 82 days)

Plan for Sites

- Change follow-up algorithm for MTN-025 (HOPE) if new tests are better than current tests
- Site validations will be required
  - Use known HIV+ and HIV- samples
  - Submit ancillary study to use low-priority samples from HPTN 035 and MTN015
  - Have an investigator from each site participate in the ancillary study

Acknowledgements

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