Monitoring, Evaluation, and Reporting (MER) Guidance (v2.4): PMTCT

Presenter: Jenny Albertini, S/GAC

Date: December 2019

Video Outline

1) **Section 1:** Overview of the technical area and related indicators

2) **Section 2:** Indicator changes in MER 2.4

3) **Section 3:** Review of numerator, denominator, and disaggregations.

   - Where should data be collected from? How does data flow from facility?
   - What is the programmatic justification and intention for the data being collected?
   - How are program managers expected to use this data to make decisions that will improve PEPFAR programming?
   - How does it all come together? How should the data be visualized (e.g., cascades)? How do these indicators relate to other MER indicators?
   - Include data entry screen screenshots if no changes are taking place to the data elements in FY20.

4) **Section 4:** Overview of guiding narrative questions

5) **Section 5:** Data quality considerations for reporting and analysis

6) **Section 6:** Additional Resources and Acknowledgments

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Section 1:

Overview of the technical area and related indicators

PMTCT Program Goals

To keep mothers healthy and alive on ART and eliminate HIV transmission from the HIV+ mother to her infant
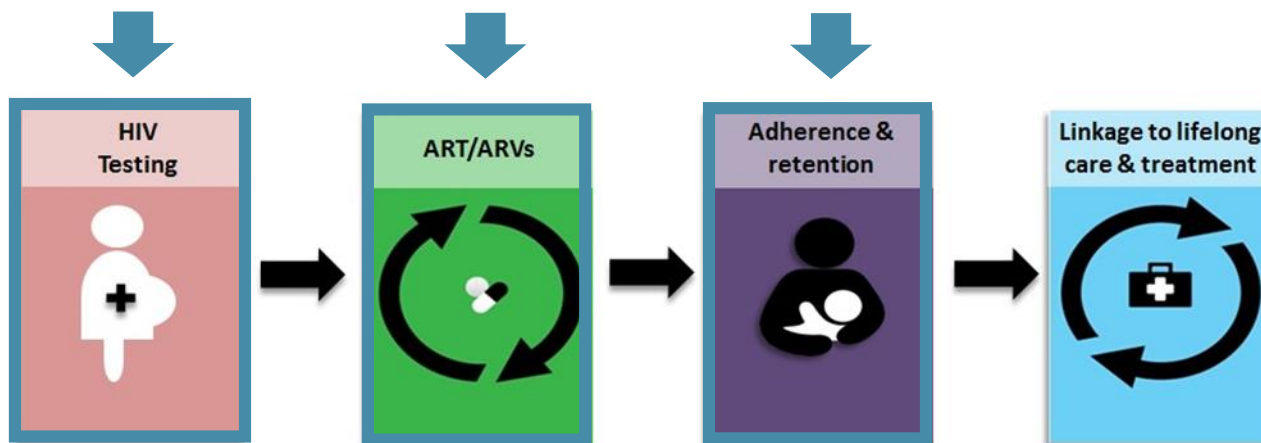
We accomplish this by:

- Identifying all HIV+ pregnant and breastfeeding (PBF) women
- Retaining them in care on ART through completion of BF
- Monitoring the viral load of women to reach suppression
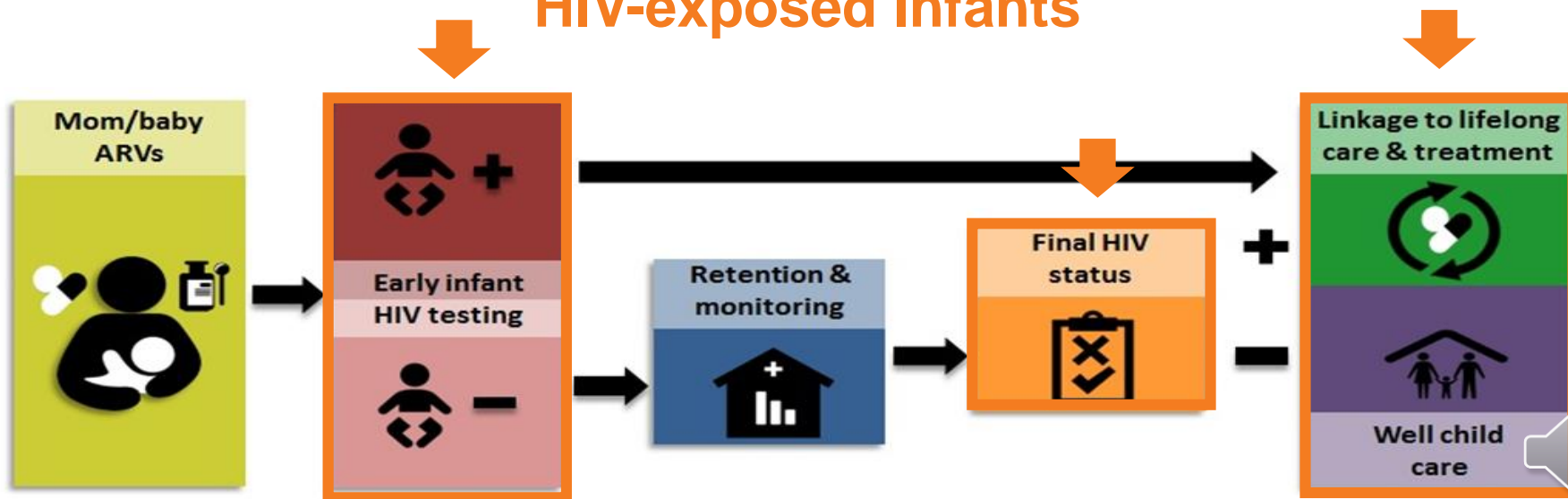- Early identification and linkage of HIV-infected infants to treatment

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Aligning MER Indicators to the PMTCT Cascade

Pregnant & Breastfeeding Women

HIV Testing → ART/ARVs → Adherence & retention → Linkage to lifelong care & treatment

HIV-exposed Infants

Mom/baby ARVs → Early infant HIV testing (+/−) → Retention & monitoring → Final HIV status → Linkage to lifelong care & treatment / Well child care
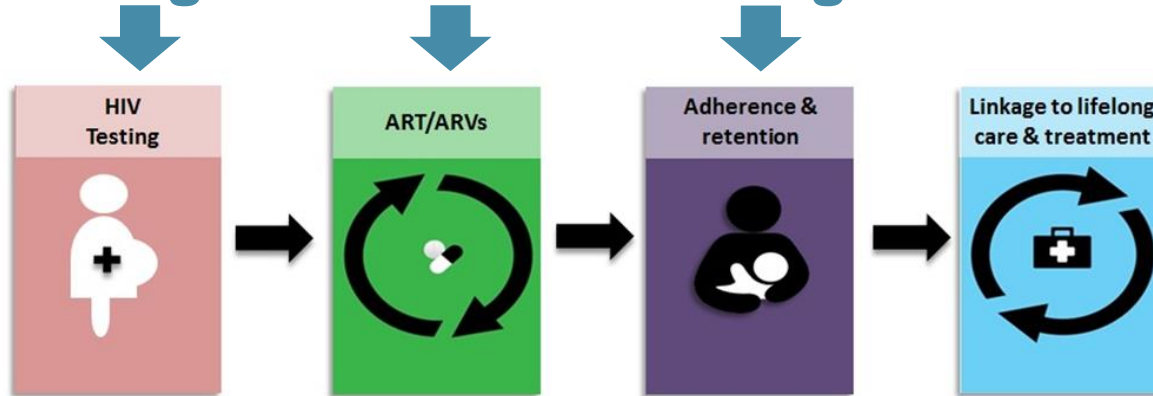
Teasdale & Abrams 2013

5

Aligning MER Indicators to the PMTCT Cascade

Pregnant & Breastfeeding Women

Maternal Cascade	MER Indicator
Pregnant women who attend ANC1	PMTCT_STAT_D
Pregnant women with known HIV status at ANC1	PMTCT_STAT_N
HIV+ pregnant women at ANC1	PMTCT_STAT_POS
HIV+ pregnant women after ANC1	HTS_TST_POS (Post ANC1)
HIV+ pregnant women receiving ART	PMTCT_ART_N
HIV+ breastfeeding women	HTS_TST_POS (Post ANC1)
Breastfeeding women new on treatment	TX_NEW (breastfeeding disagg)
HIV+ pregnant women virally suppressed	TX_PVLS pregnancy disagg
HIV+ breastfeeding women virally suppressed	TX_PVLS breastfeeding disagg

Aligning MER Indicators to the PMTCT Cascade

HIV-Exposed Infant Cascade	MER Indicator
HIV-exposed infants (Proxy: HIV+ Pregnant & BF women)	PMTCT_STAT_POS + HTS PMTCT Post ANC1: Pregnancy/L&D/BF
HIV-exposed infants tested by 2 and 12 months of age	PMTCT_EID
HIV-infected infants identified by 2 and 12 months of age	PMTCT_HEI_POS
HIV-infected infants new on ART	PMTCT_HEI_POS_ART
HIV-exposed infants uninfected not breastfeeding	PMTCT_FO

HIV-exposed Infants

Teasdale & Abrams, 2013
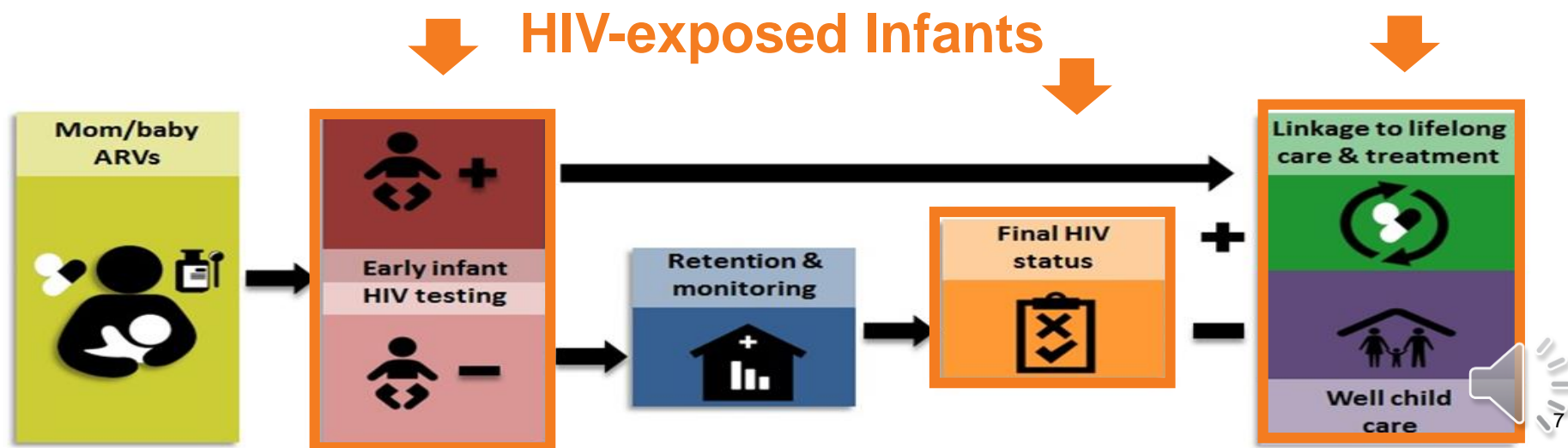
Overview of PMTCT Indicators

Program Area	Indicator Code	Indicator Name	Reporting Frequency	Reporting Level
Knowing HIV Status	PMTCT_STAT	Percentage of pregnant women with known HIV status at antenatal care	Quarterly	Facility
	PMTCT_EID	Percentage of infants born to HIV-positive women who received a first virologic HIV test (sample collected) by 12 months of age.	Quarterly	
	PMTCT_HEI_POS	Number of HIV-infected infants identified in the reporting period, whose diagnostic sample was collected by 12 months of age.	Quarterly	
	PMTCT_FO	Percentage of final outcomes among HIV exposed infants registered in a birth cohort.	Annual	
On ART	PMTCT_ART	Percentage of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission (MTCT) during pregnancy	Quarterly	
Viral Suppression	TX_PVLS (Disagg preg/bf)	Percentage of HIV-positive pregnant and breastfeeding women with a suppressed viral load (<1000 copies/ml)	Quarterly	

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8

Overview of PMTCT Indicators: Host Country

PMTCT Host Country Indicators			
PMTCT_STAT_ NAT & SUBNAT	Percentage of pregnant women with known HIV status at antenatal care	Annual	National & Subnational
PMTCT_ART_ NAT & SUBNAT	Percentage of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission (MTCT) during pregnancy		

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How to Count PMTCT Indicators

Indicator	Disaggregates	How to calculate annual total
PMTCT_STAT	ANC Register	Sum
PMTCT_ART	ANC or PMTCT Register	Sum
PMTCT_EID	Clinical Source: HIV-Exposed Infant Register, Patient Files, EMR	Sum
PMTCT_HEI_POS	Clinical Source: HIV-Exposed Infant Register, Patient Files, EMR, Lab information systems	Sum
PMTCT_FO	Longitudinal records: HIV-exposed infant registers or facility patient cards	Annual indicator

- **Key analytic consideration:**
  - For coverage indicators (N&D): Achievement should be evaluated by comparing the numerator and denominator.

Section 2:

Indicator changes in MER 2.4

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What's Changed?: PMTCT & HTS_RECENT

Change	Programmatic Rationale for Change
HTS_RECENT will disaggregate data by <u>testing modality</u>, including PMTCT ANC1 and PMTCT Post ANC1	Disaggregation of HTS_RECENT by testing modality will allow program managers to determine which testing modalities are most effectively identifying recent infections. Identification of recent infections is critical to maintaining epidemic control.
Remove pregnancy status disaggregates from HTS_RECENT	Information about pregnancy status will be available through the PMTCT ANC1 and PMTCT Post ANC1 modalities

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Section 3:
Review of numerator, denominator, and disaggregations

PMTCT_STAT

- Percentage of pregnant women with known HIV status at antenatal care

Numerator:	Number of pregnant women with known HIV status at first antenatal care visit (ANC1)
Denominator:	Number of new ANC clients in reporting period

Required Disaggregations:

Numerator: Status/Age	Denominator: Age
- Known Positives x Age - Newly Tested Positives x Age - New Negatives x Age - Recent Negatives x Age	

Key Reporting Clarifications:
- Only results from ANC1 should be reported under this indicator
- New disagg: ***Recent Negative at Entry –*** Women who recently tested HIV negative and are not eligible (according to country clinical guidelines) for another HIV test at ANC1. Expected to be a less utilized disaggregate.

Data Entry Screen: PMTCT_STAT (N)

DSD: PMTCT_STAT (Numerator) — Collapse

Auto-Calculate	Number of pregnant women with known HIV status at first antenatal care visit (ANC1) (includes those who already knew their HIV status prior to ANC1). Numerator will auto-calculate from the Status and Age Disaggregates.

Numerator [Subtotal]

Required — Disaggregated by Status and Age

	Unknown Age	<10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	
Known Positives:												Subtotal
Newly Tested Positives:												Subtotal
New Negatives:												Subtotal
Recent Negatives:												Subtotal
Sub-total	Subtotal											

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15

Data Entry Screen: PMTCT_STAT (D)

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PMTCT_ART

- Percentage of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission (MTCT) during pregnancy

Numerator:	Number of HIV+ pregnant women who received ART
Denominator:	Number of HIV+ identified pregnant women (PMTCT_STAT_POS)

Required Disaggregations:
- Maternal Regimen Type & Age
  - New on ART x Age
  - Already on Treatment x Age

Key Reporting Clarifications:
- Includes all women on treatment during pregnancy, even if initiated post ANC1
- Does not include women who initiate treatment during L&D or breastfeeding
- Report women where they receive ANC services.
  - If a woman receives her treatment at a different facility she will be counted on TX there but under PMTCT_ART at her ANC facility

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Data Entry Screen: PMTCT_ART

DSD: PMTCT_ART	- Collapse

Auto-Calculate	Number of HIV-positive pregnant women who received ART to reduce the risk of mother-to-child-transmission during pregnancy. Numerator will auto-calculate from the Maternal Regimen Type Disaggregates.

Numerator [Subtotal]

Required	Disaggregated by Regimen Type:

New on ART

Unknown Age	<10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	Subtotal

Already on ART at the beginning of current pregnancy

Unknown Age	<10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+	Subtotal

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PMTCT_EID

- Percentage of infants born to HIV-positive women who received a first virologic HIV test (sample collected) by 12 months of age

Numerator:	Number of infants who had a first virologic HIV test by 12 months of age during the reporting period
Proxy Denominator:	HIV+ women identified during pregnancy or breastfeeding [PMTCT_STAT_POS + HTS_POS *PMTCT (Post ANC1: Preg/L&D/BF)]*

Required Disaggregations:
- Numerator: Infant Test by Age at Sample Collection
  - 0 to <2 months or 2 to 12 months

Key Reporting Clarifications:
- Includes first virologic test only
- All (1st) samples collected during the reporting period should be reported, regardless of result return.

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Data Entry Screen: PMTCT_EID

DSD: PMTCT_EID	- Collapse
Auto-Calculate	**Number of infants who had a virologic HIV test within 12 months of birth during the reporting period. Numerator will auto-calculate from infant age at first test.**
Numerator	Subtotal
Required	**Disaggregated by infant age at first test**
	0 ≤ 2 Months 2 - 12 Months
Infants who had a first virologic HIV test (sample collected) by:	[ ] [ ]

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20

PMTCT_HEI_POS

- Number of HIV-infected infants identified in the reporting period, whose diagnostic sample was collected by 12 months of age.

Required Disaggregations:
- Infant age at virologic sample collection, for positive infants
  - 0 to ≤2 months of age
  - 2 to 12 months
- Positive, confirmed initiated ART by age at virologic sample collection
  - 0 to <2 months of age
  - 2 to 12 months

Key Reporting Clarifications:
- Includes ALL infants, regardless of test number, who were found to be HIV-positive by 12 months of age (age at sample collection)

Data Entry Screen: PMTCT_HEI_POS

DSD: PMTCT_HEI_POS — Collapse

Auto-Calculate	Number of HIV-infected infants identified in the reporting period, whose diagnostic sample was collected by 12 months of age. Excludes confirmatory testing. Numerator will auto-calculate from the HIV-infected infant age disaggregation.

Numerator [Subtotal]

Required — Disaggregated by infant age at virologic sample collection.

	0 ≤ 2 Months	2 - 12 Months
Positive	[ ]	[ ]

Required — Disaggregated by ART initiation and age at virologic sample collection.

	0 ≤ 2 Months	2 - 12 Months
Positive, confirmed initiated ART	[ ]	[ ] [Subtotal]

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PMTCT_FO

- Percentage of final outcomes among HIV-exposed infants in a birth cohort

Numerator:	Number of HIV-exposed infants at 18-24 months of age disaggregated by outcome type.
Denominator:	Number of HIV-exposed infants who were born 24 months prior to the reporting period and registered in the birth cohort.

Required Disaggregations:
- Numerator: Outcome Type
    - HIV-infected
    - HIV-uninfected
    - HIV-final status unknown
    - Died without status known

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Definitions of Disaggregates: PMTCT_FO

Outcome Type:

- HIV-infected: HIV-exposed infants identified any point during follow-up.
- HIV-uninfected: HIV-exposed infants with a documented negative antibody test at their 18-month visit or post breastfeeding (at least 6 weeks post breastfeeding)
- HIV final status unknown: Sum of the following disaggregates (not reported in DATIM but should be documented at site level)
  - In care but no test done
  - Lost to follow-up
  - Transferred out
- Died without status known: HIV-exposed infants documented to have died without confirmation of HIV-infection between 0 and 18 months.

Key Reporting Considerations: PMTCT_FO

- Not all infants are exactly 18 months at their 18-month appointment. This indicator is intending to capture data at the time the child goes to their 18-month visit but the child may in fact be 18-24 months of age.

- HIV-exposed infants who are HIV infected and later confirmed to have died or transferred out during follow-up are <u>still counted under HIV infected</u> and not died or transferred out.

- All infants should be assigned an outcome but <u>only one</u> outcome

- If breastfeeding lasts past 24 months, consider documenting "final status unknown"

FY19 Reporting Timeline Guide

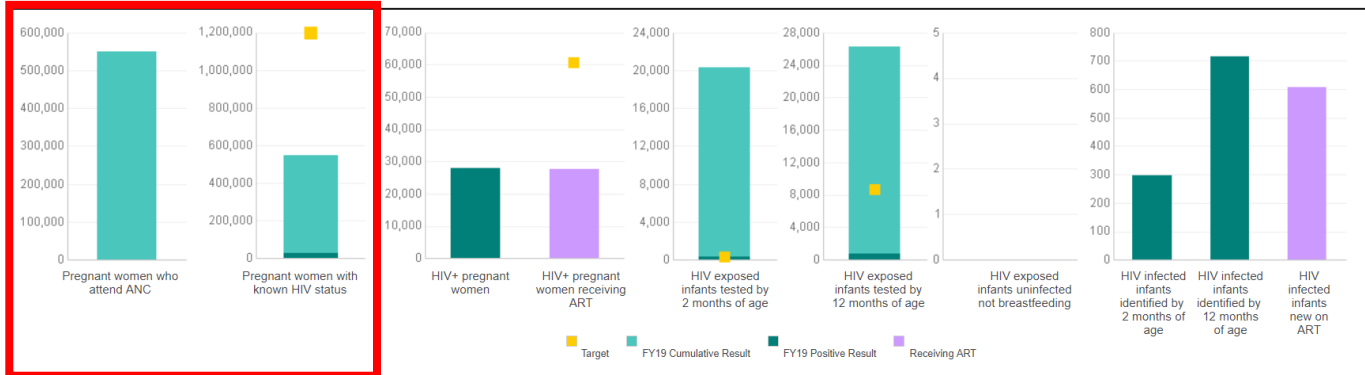| FY 2019 (Report results for the entire 12-month reporting period for these indicators at the Q4 reporting cycle)											
Reporting Month (FY19)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Birth Month (FY17)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

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Data Entry Screen: PMTCT_FO

DSD: PMTCT_FO — Collapse

Required	Number of HIV-exposed infants who were born 24 months prior to the reporting period and registered in the birth cohort.
Denominator	

Auto-Calculate	Number of HIV-exposed infants with a documented outcome by 18 months of age disaggregated by outcome type. Numerator will auto-calculate from the Outcome Type Disaggregate.
Numerator	Subtotal

Required	Numerator: Disaggregated by Outcome Type
HIV-infected	
HIV-uninfected	
HIV-final status unknown	
Died without status known	

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26

What non-traditional PMTCT indicators capture Pregnant and Breastfeeding data?

Indicator	Disaggregation(s)	Reporting Frequency
TX_NEW	Breastfeeding (Pregnancy Captured in PMTCT_ART)	Quarterly
TX_PVLS	Pregnancy Breastfeeding	Quarterly
HTS_TST PMTCT (ANC1-Only) modality		Quarterly
HTS_TST PMTCT (Post ANC1: Pregnancy/L&D/BF) modality		Quarterly
HTS_RECENT	Modalities: PMTCT ANC1 and PMTCT Post ANC1	Quarterly

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Pulling it together in visuals

PMTCT Cascade

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Dashboards

PMTCT Cascade (OU Level)   PMTCT Cascade (Mechanism)

Legend: Target (yellow), FY19 Cumulative Result (teal), FY19 Positive Result (dark teal), Receiving ART (purple)

Categories shown: Pregnant women who attend ANC; Pregnant women with known HIV status; HIV+ pregnant women; HIV+ pregnant women receiving ART; HIV exposed infants tested by 2 months of age; HIV exposed infants tested by 12 months of age; HIV exposed infants uninfected not breastfeeding; HIV infected infants identified by 2 months of age; HIV infected infants identified by 12 months of age; HIV infected infants new on ART

Source: pepfar-panorama.org; PMTCT Cascade Dashboard

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PMTCT Cascade

Analytic Question:
What percentage of pregnant women who attend ANC have a known HIV status?

Answer:

$$\frac{547{,}000 \text{ known HIV status}}{550{,}000 \text{ attend ANC}} = 99\%$$

Our program is doing well at the OU level! We can do the same analysis at the SNU and mechanism level to check for any gaps.
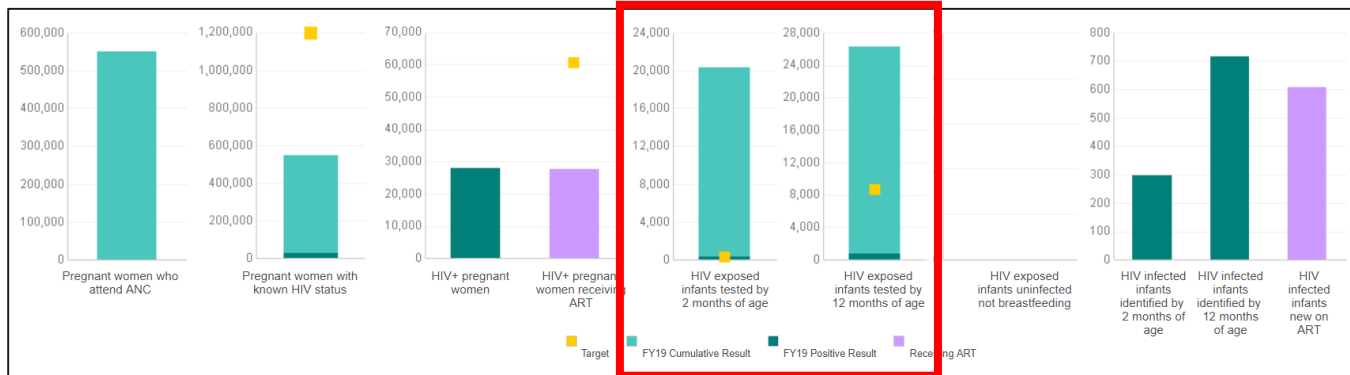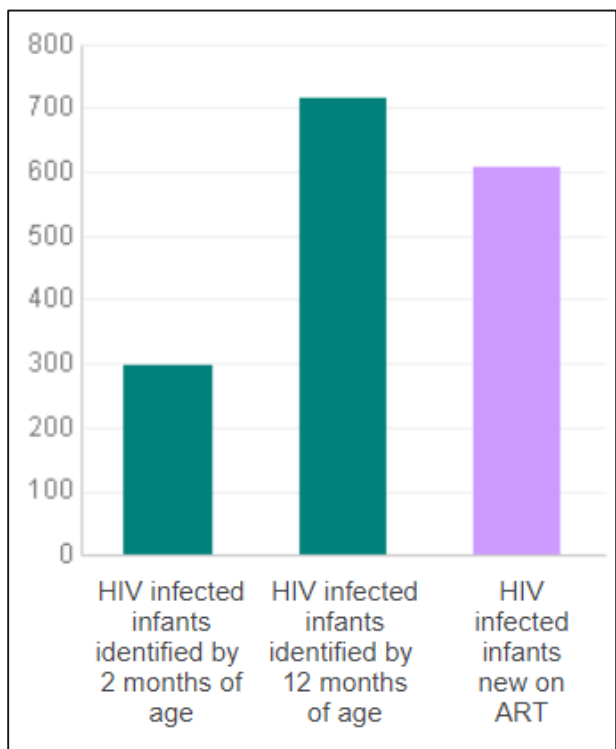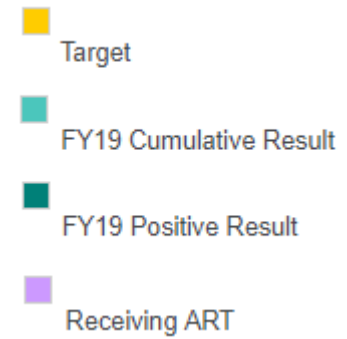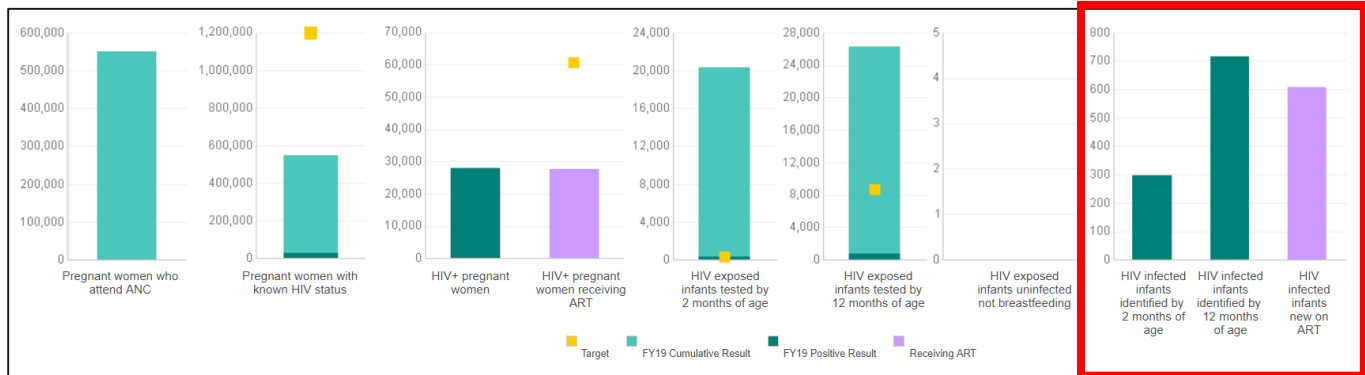
PMTCT Cascade
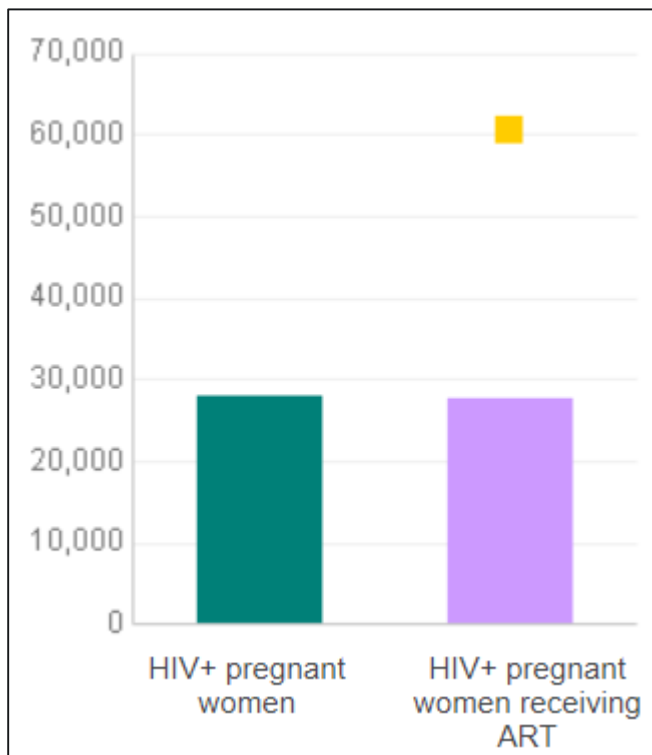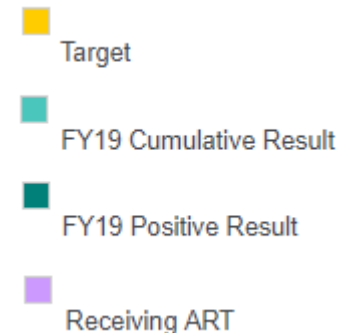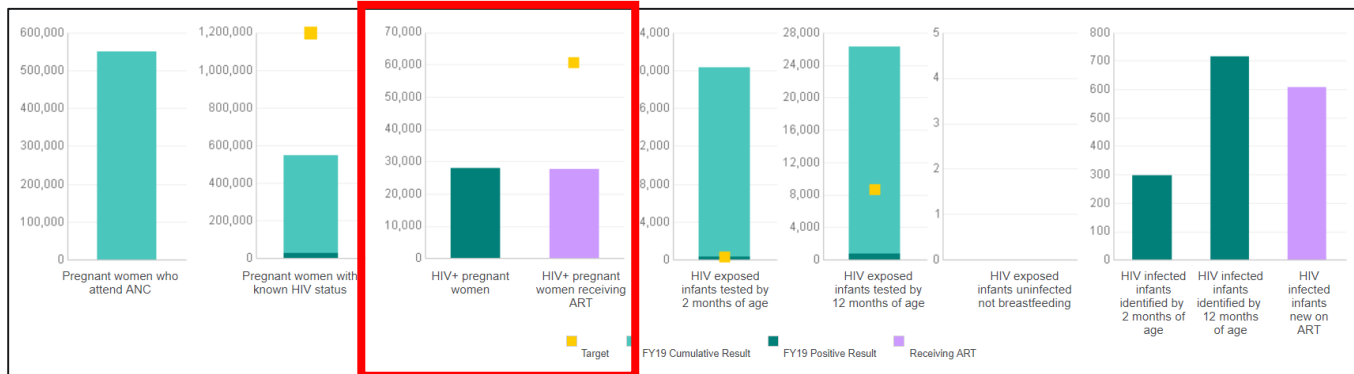
Analytic Question:
Are 95% of HIV-positive pregnant women receiving ART?

Answer:
<u>27,500 on ART</u> = 99%
27,800 HIV+

Our program is doing well at the OU level! We can do the same analysis at the SNU and mechanism level to check for any gaps.

Source: pepfar-panorama.org; PMTCT Cascade Dashboard

PMTCT Cascade
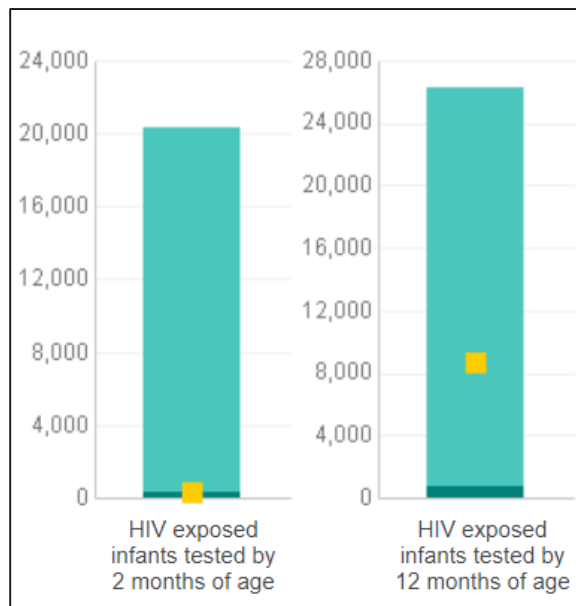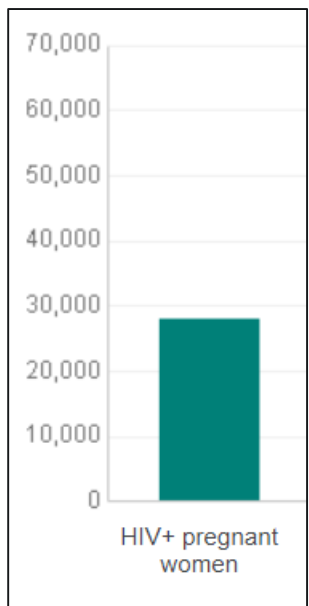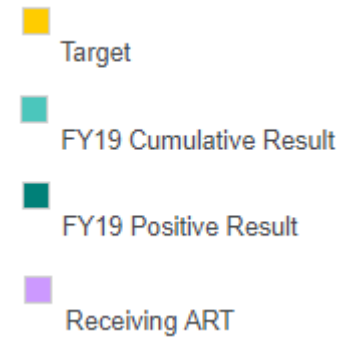
Analytic Question:

Are 90% of HIV-exposed infants are tested by 2 months of age? Number of HIV-positive pregnant women can be used as a proxy for number of HIV exposed infants.

Answer:

$$\frac{20{,}000 \text{ tested by 2 months}}{27{,}800 \text{ HIV+ pregnant women}} = 72\%$$

We need to improve the testing of HIV-exposed infants within 2 months.

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Source: pepfar-panorama.org; PMTCT Cascade Dashboard

PMTCT Cascade

Analytic Question:
Are 90-100% of HIV-infected infants linked to ART?
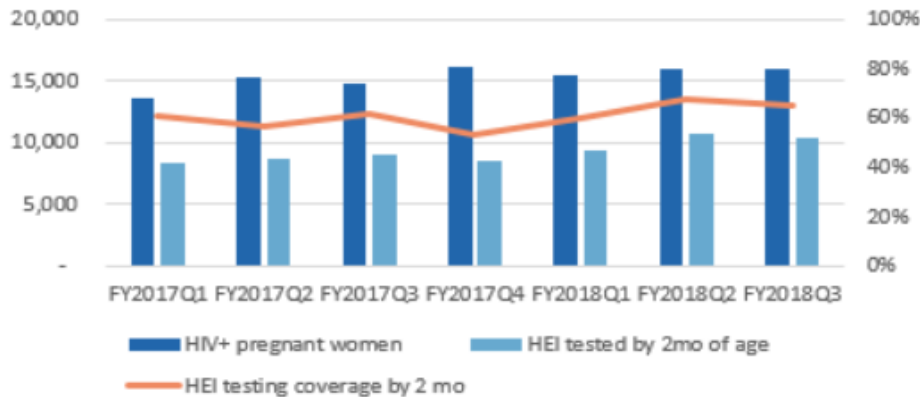
Answer:
<u>600 infected infants new on ART</u> = 86%
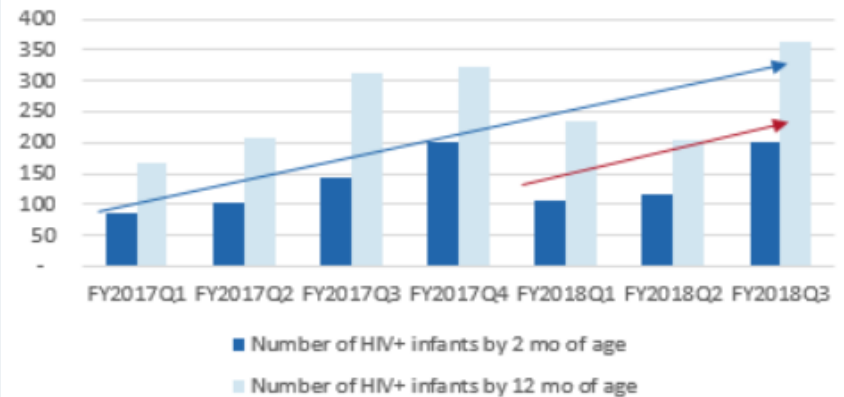700 infected infants identified

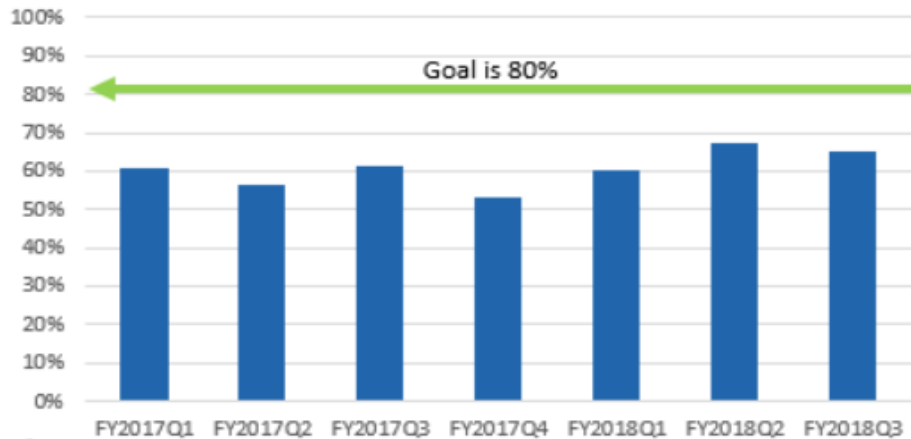We need to work on improving the linkage of HIV infected infants to treatment.

Source: pepfar-panorama.org; PMTCT Cascade Dashboard

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33

Trend analysis examples
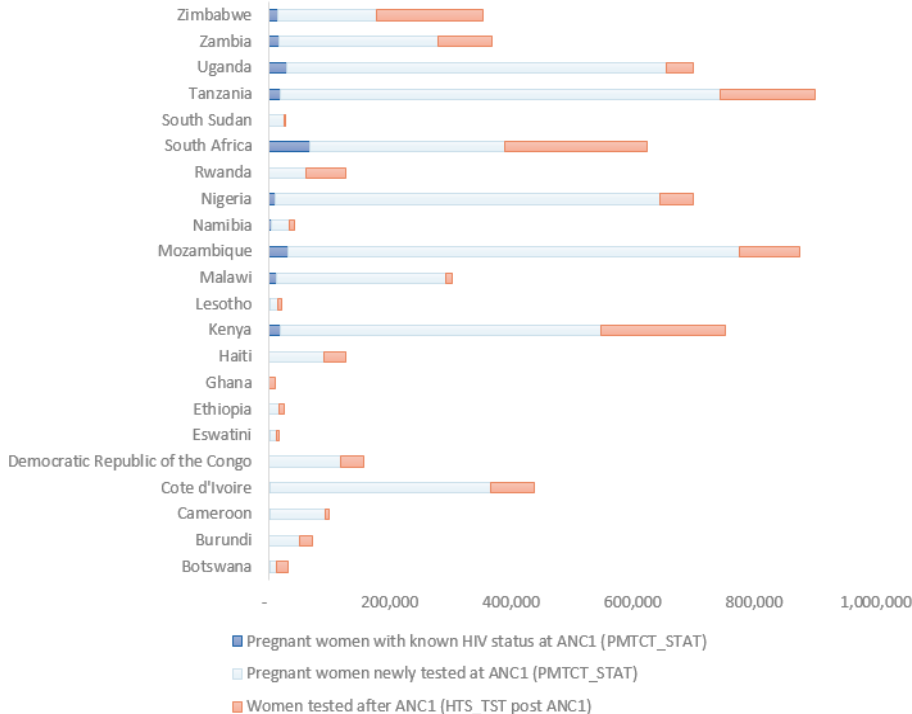

34
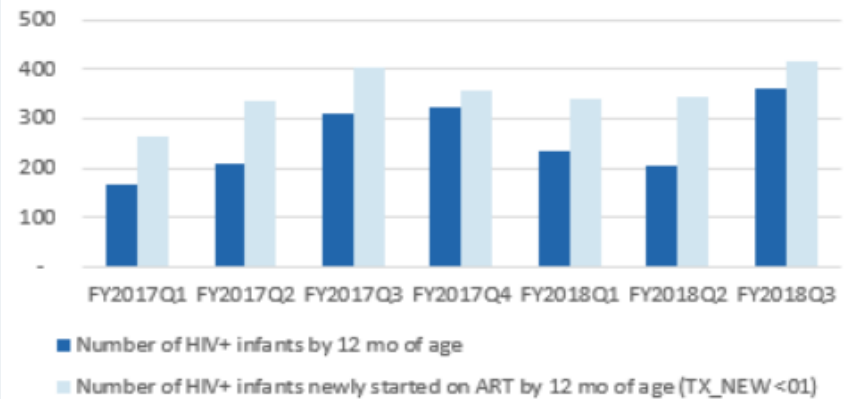
Additional analysis to consider

Retesting: Are pregnant and breastfeeding women getting retested in post ANC1 (HTS_TST post ANC1) to evaluate seroconversion and reduce the risk of MTCT?

Source: ICPI PMTCT Cascade Dashboard
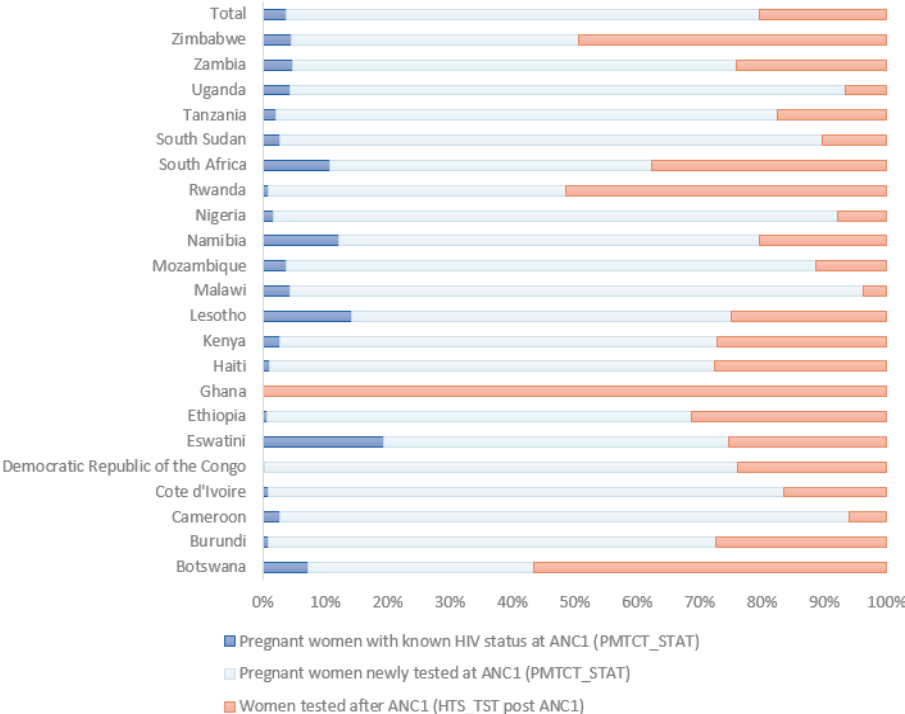
Additional analysis to consider

Are pregnant and breastfeeding women virally suppressed? We can answer this question using pregnant and breastfeeding disaggregates of TX_PVLS Numerator and Denominator.
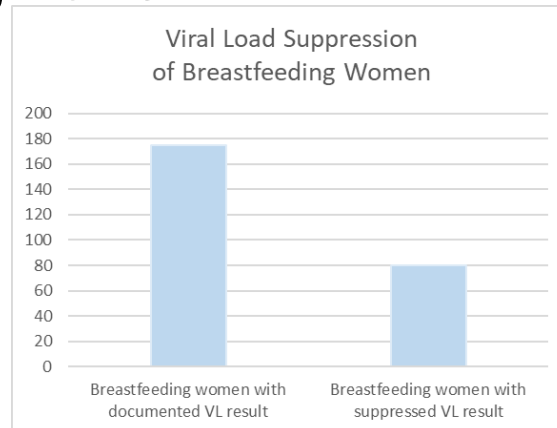
Pregnant women:
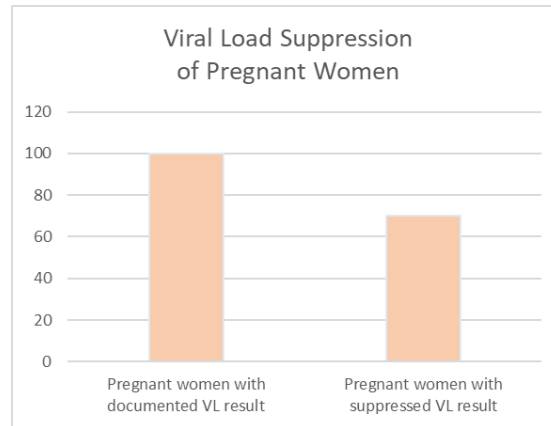
$\underline{70 \text{ VL suppressed}} = 70\%$

100 VL result

Breastfeeding women:
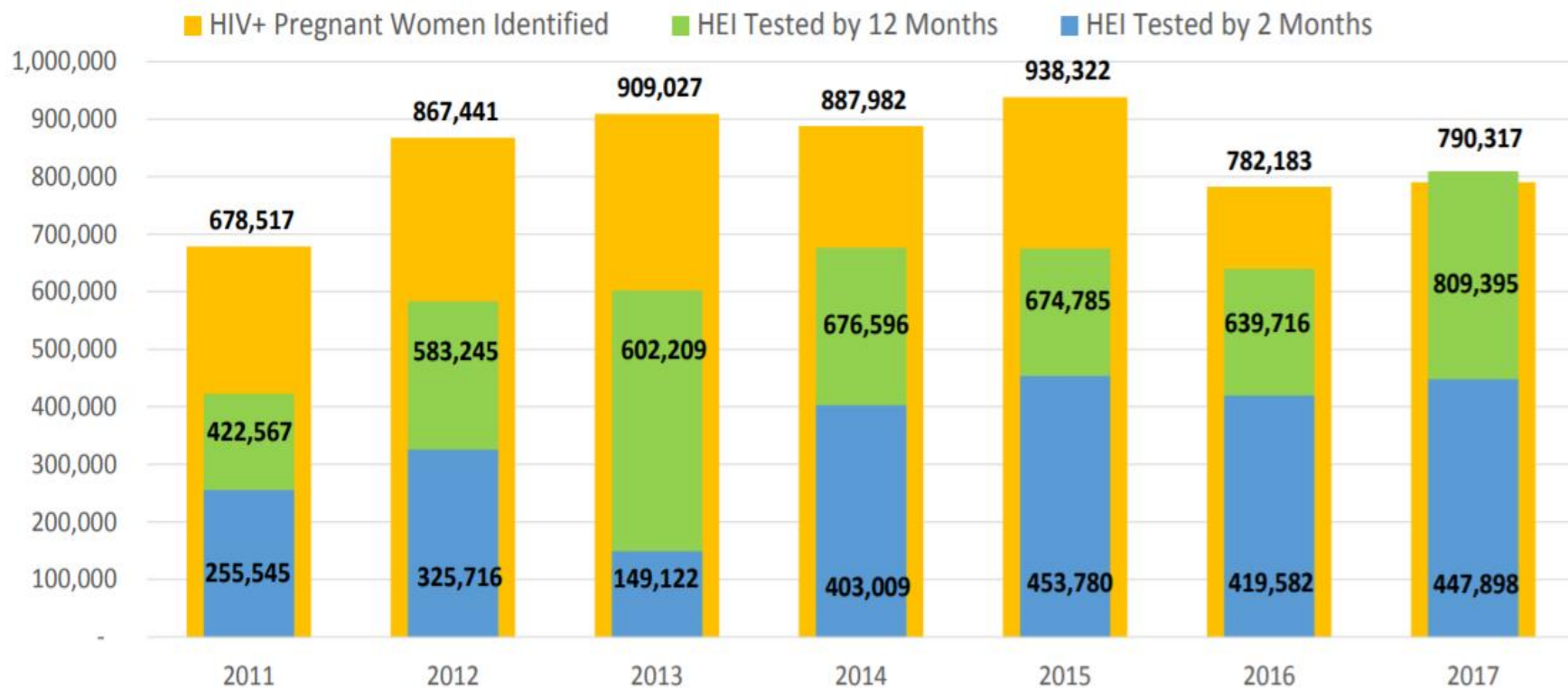

$\underline{80 \text{ VL suppressed}} = 53\%$

150 VL result

Additional analysis to consider

Early infant diagnosis (EID) by 2 months remains low in PEPFAR-supported sites

Legend: HIV+ Pregnant Women Identified | HEI Tested by 12 Months | HEI Tested by 2 Months

	2011	2012	2013	2014	2015	2016	2017
HIV+ Pregnant Women Identified	678,517	867,441	909,027	887,982	938,322	782,183	790,317
HEI Tested by 12 Months	422,567	583,245	602,209	676,596	674,785	639,716	809,395
HEI Tested by 2 Months	255,545	325,716	149,122	403,009	453,780	419,582	447,898
2 mo. Coverage	37%	37%	16%	45%	48%	54%	56%
12 mo. Coverage	63%	67%	66%	76%	72%	82%	102%

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Analysis ICPI Undertook to create PMTCT Trends using PEPFAR data (created 5/18/2015, updated 12/19/16 and 9/11/18)

Missed Opportunities

Bar chart titled "Missed Opportunities" with y-axis from 0 to 50000:
- # Women missed outside of ANC? — marked with "?"
- # Women not tested in ANC — 36,313
- # Positive women not started on ART — 7,508
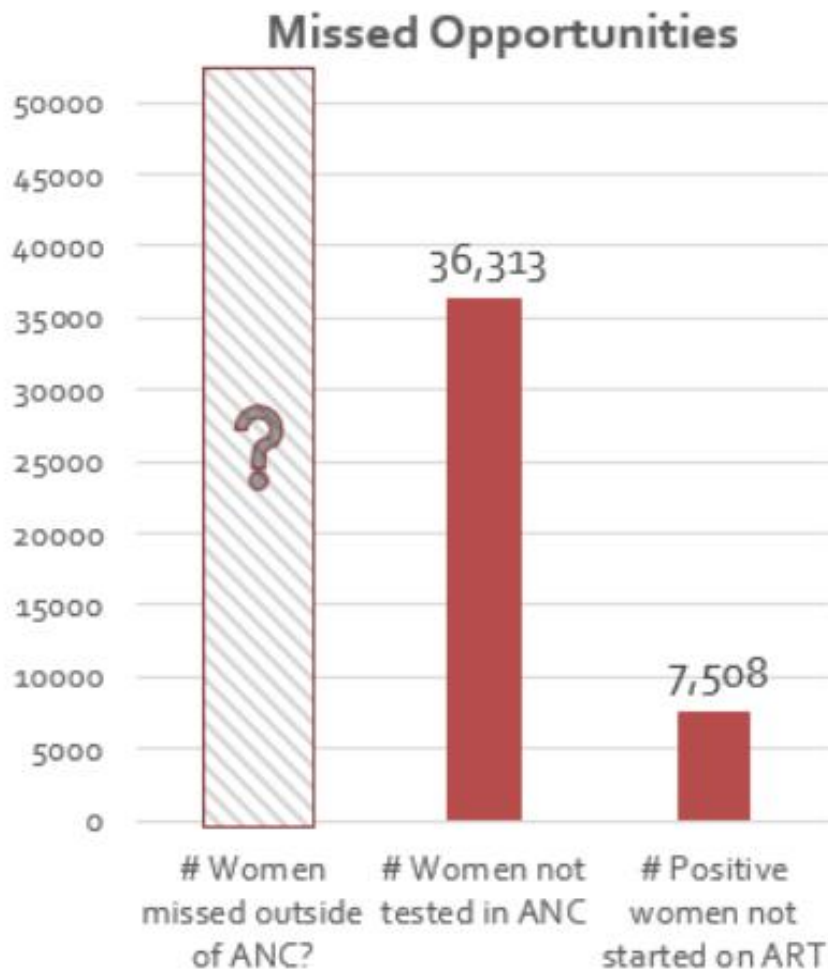
Using MER data:

\# women who don't know their HIV status at ANC1

\# HIV+ women not linked to ART

\# HEI not tested by 2 months of age

Outside of MER data:

How many women are not making it to ANC?

How many of these women might be positive?

How many women seroconvert during MTCT risk period?

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Section 4:

Overview of guiding narrative questions

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Guiding Narrative Questions

Narratives provide programmatic context to reported results and demonstrate that results have been analyzed and any notable challenges or trends are described and responded to.

All PMTCT indicators:

- Provide context for poor coverage performance by geographic area, age, or IP, including planned remedial actions
- Describe any reporting/data collection challenges and known data quality issues

PMTCT_ART:

- Describe activities related to ensuring retention through the breastfeeding period. If able, describe retention rates among pregnant women continuing or starting ART as of ANC1.
- Explain any differences in PMTCT_ART coverage among newly identified HIV positive women initiating ART compared to known positives already on ART.

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Guiding Narrative Questions

EID:

- Provide additional monitoring data related to: turn-around time of virologic test results back to the facility and results returned to caregiver

HEI_POS:

- Define data source
- Describe linkage rates by age and SNU, including any remediation activities to improve linkage.

PMTCT_FO:

- Define data source
- Provide status of cohort monitoring (by IP if relevant) for HEI and HIV+ mothers

Reference indicator reference sheets for complete indicator-specific questions

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Section 5:

Data quality considerations for reporting and analysis

Data Quality Checks

All

- Review outliers (>100% and significantly <100% coverage)

PMTCT_STAT

- $N \leq D$ (total & by age band)
- <10, possible data entry error

PMTCT_ART

- $N \leq D$ (total & by age band)
  - Note: N includes women initiated at any ANC visit, but D limited to ANC1; Identification and initiation may occur in different quarters

PMTCT_EID

- Compare N & D. See indicator reference sheet for considerations

PMTCT_HEI_POS

- If EID reported, HEI_POS reported

PMTCT_FO

- $N = D$

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Section 6:

Additional Resources and Acknowledgments

UNAIDS analysis among children newly infected

Infections during breastfeeding	Number	Percent
Mom seroconverted during breastfeeding	20,000	11%
Mom received no ARV	19,000	11%
Mom dropped off ART	16,000	9%
Mom started ART during pregnancy	12,000	7%
Mom started ART before pregnancy	1,000	1%
Mom started ART just before delivery	600	0.4%
Infections during pregnancy		
Mom seroconverted during pregnancy	8,500	5%
Mom received no ARV	74,000	42%
Mom dropped off ART	13,000	7%
Mom started ART during pregnancy	10,000	6%
Mom started ART before pregnancy	2,000	1%
Mom started ART just before delivery	1,500	1%
Total	**180,000**	**100%**

New child infections
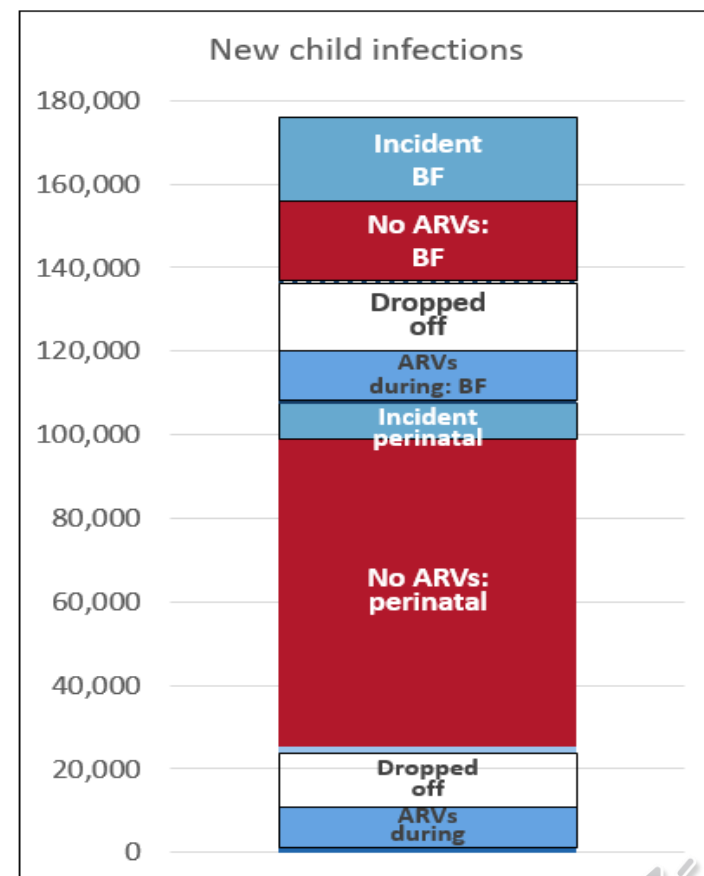
Source: UNAIDS special analysis of 2018 estimates

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PEPFAR
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Thank you