RECAP

HIV DRUG RESISTANCE SURVEILLANCE

Transmitted HIVDR Surveillance Inclusion criteria

- Epidemiologic criteria
  - age <25
  - No previous pregnancies
- For countries performing CD4 testing
  - CD4>500 and age <25 yrs, OR
  - CD4>500, regardless of age
- If available, laboratory assays (MAA or LAg), if available, to identify recent infections (regardless of age)

How to sample?

Integration in:

1) **HIV sentinel surveillance**

- If multiple HIV sentinel surveillance options (ANC, VCT, key populations) select the one that can give you more eligible individuals based on criteria described before
- Duration= same as for sentinel surveillance
- Sites= same as for sentinel surveillance

2) **Centralized HIV confirmatory test** (if small selection bias)

If new survey for HIVDR

- Max duration 12 months
- Sites (ANC, or VCT) should be chosen to be nationally representative using the sampling approach described yesterday for pre-treatment survey
- The use of pre-treatment population attending health center is discouraged – higher risk to include sick people with chronic infection or previous exposure to drugs

- Estimate the sample size that you will likely achieve and decide upfront if results are meaningful for your programme

I. Surveillance of TDR

		Observed Prevalence of Drug Resistance 95% Wilson Confidence Interval	
		3%[A]	**10%[B]**
Survey Sample Size	**n=25**	(0.4%,18.1%)	(3.2%,27.5%)
	n=50	(0.7%,12.0%)	(4.3%,21.4%)
	n=100	(1.0%,8.5%)	(5.5%,17.4%)
	n=150	(1.2%,7.1%)	(6.2%,15.8%)
	n=200	**(1.4%,6.4%)**	**(6.6%,14.9%)**
	n=250	(1.5%,5.9%)	(6.9%,14.3%)
	n=300	(1.6%,5.6%)	(7.1%,13.9%)

A: Estimated TDR Prevalence from 2012 WHO HIVDR Report

B: Example of a higher observed TDR Prevalence from 2012 WHO HIVDR Report

Pre-treatment

Goal:

- Produce a **nationally representative estimate** of the prevalence of HIVDR in the population initiating treatment

Inclusion criteria

- Consecutive individuals initiating first line ART at the selected sites
  - Includes individuals who may have had prior exposure to antiretrovirals

How to select sites?

- List all your sites
- List # pts initiating ART at each site
- Use Probability Proportional to Size (PPS) Sampling method to select 10-20 representative sites
- With PPS, bigger sites are more likely to be selected
- Each site will contribute the same number of specimens
- Overall sample size= 420 (if 10 sites) to 300 (if 20 sites)
- Confidence Interval Width ±4%, HIVDR Prevalence 10%

And for small countries?

- Finite Population Correction

Sampling Method	Number of clinics	Patients per clinic	Total # patients
Without Finite Population Correction	10	42	420
With Finite Population Correction	7	22	154

  - e.g. country that only has 15 clinics, select 7 sites, and overall sample is 154
  - E.g. if a country has 5 clinics, all starters in a quarter

Summary

- Region with important resources and strong capacity
- Heterogeneity in study design, sampling, definition hamper proper interpretation and comparability of data
- With the exception of one survey, regional data on HIVDR not included in the Global Report because of lack of minimum requirements of comparability

Proposition

- Transmitted HIVDR surveillance
- Pre-treatment HIVDR surveillance
- Acquired HIVDR surveillance

- Follow a common regional approach to implement national representative HIVDR surveillance – to allow comparability over time and across regions

- Minimum criteria of comparability in line with WHO proposal
  - Inclusion criteria
  - Sampling strategy

- Following a representative sampling with agreed inclusion criteria enhance PH utility of data and regional and global relevance

- Proposition: Next time you plan to implement a HIVDR survey, countries are encouraged to liase in advance with PAHO/WHO to ensure standardization.