

# Ensuring High Quality Testing for Vaccine-Preventable Bacterial Diseases in AFRO LabNet

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Vaccine Preventable Diseases Surveillance

# WHO-Coordinated Global Sentinel Surveillance Network for Invasive Bacterial Vaccine Preventable Diseases

# Overview

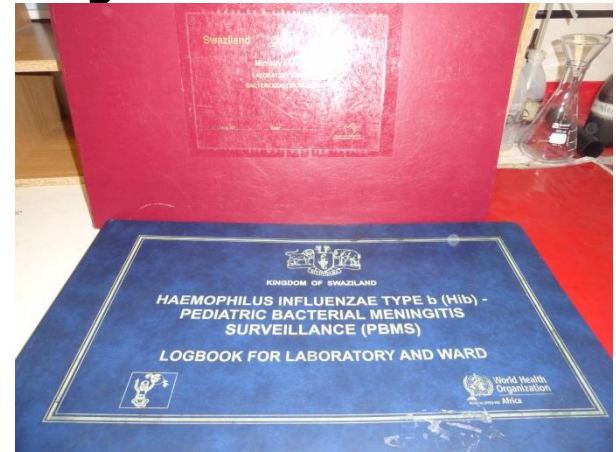
- Objectives
- Evolution of the network
- Components
- Improvements
- Way forward



# IB-VPD Surveillance Objectives

## Platform for VPD

- Presence of disease
- Disease epidemiology
- Data for estimating disease burden
- Vaccine introduction
- Circulating serotype/s distribution
- Antimicrobial resistance



Ministries of Health, Academic institutions,  
Health facilities (regional/sub-regional)

## Long term

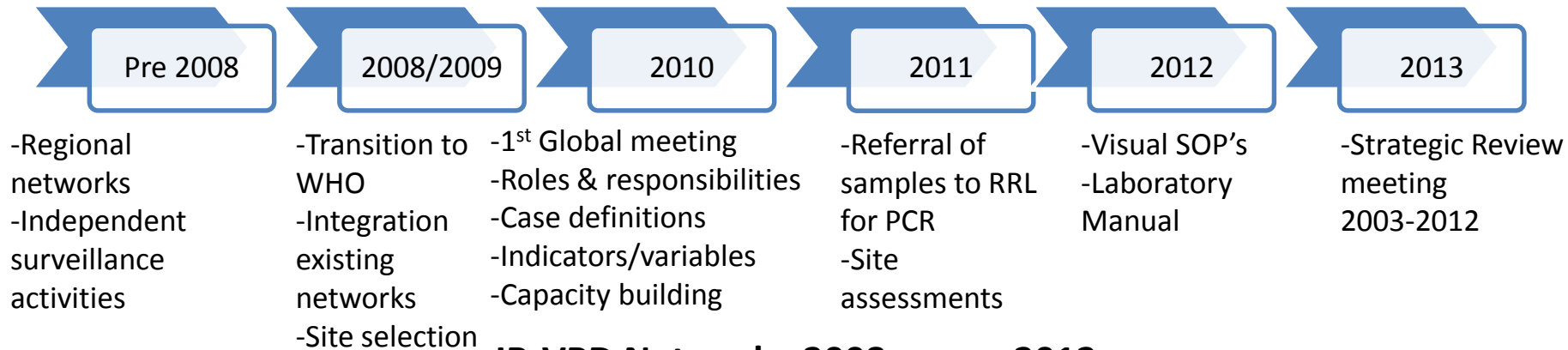
- Disease trends over time
- Vaccination program impact
- Changes in circulating strains/serotypes
- Platform for effectiveness and safety evaluation and introduction of other vaccines

HMIS FORM 054: INPATIENT REGISTER

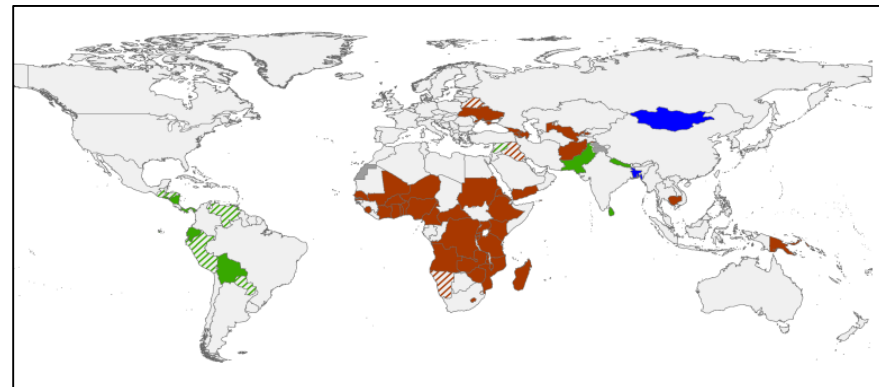
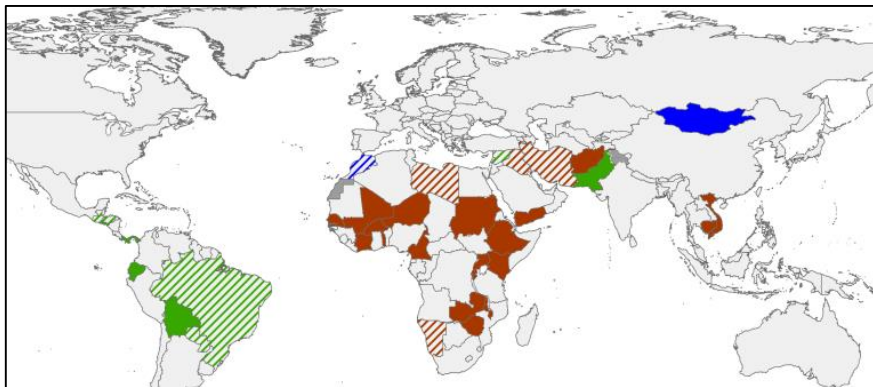
HEADINGS AND COLUMN WIDTHS:  
LEFT SIDE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PT NO	NAME	RESIDENCE	AGE	SEX	HEAT OF FEB	REF NO	REFNO	DATE IN	DATE OUT	PHYSICIAN	PHYSICIAN	PHYSICIAN	PHYSICIAN	PHYSICIAN	PHYSICIAN
		VILLAGE	PARISH												
3010	Lobisa Mkhomo	Ficks	Chibambane	1/6	F	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
						05/02/2014									
3011	Chibambane Mkhomo	Chibambane	Chibambane	4/5	M	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
3012	Chibambane Mkhomo	Chibambane	Chibambane	1/5	M	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
3013	Chibambane Mkhomo	Chibambane	Chibambane	1/5	F	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
3014	Chibambane Mkhomo	Chibambane	Chibambane	1/5	M	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
3015	Chibambane Mkhomo	Chibambane	Chibambane	1/5	F	not known	-	1/1/14	-	1/1/14	-	-	-	-	-
3016	Chibambane Mkhomo	Chibambane	Chibambane	1/5	M	not known	-	1/1/14	-	1/1/14	-	-	-	-	-

# WHO IB-VPD Network Timeline



## IB-VPD Network: 2008 versus 2012



**2008**  
36 countries, 69% GAVI - 91 sites

**2012**  
58 countries, 79% GAVI - 150 sites

Network remains in state of development/evolution

# IBVPD and rotavirus surveillance laboratory network components

Sentinel sites (SS) and Regional Offices (RO)

Regional Reference laboratories TWG Technical Working Group

Global Regional Laboratories iTAG Technical Advisory Group

WHO (RO and HQ)



# IBVDP and rotavirus surveillance laboratory network

	Bacterial <u>meningitis</u> caused by <i>S. pneumoniae</i> , <i>H. influenzae</i> and <i>N. meningitidis</i>	<u>Diarrheal disease</u> Rotavirus
<b>Incidence</b>	Rare	Common
<b>Diagnostic tests</b>	Gram stain, culture, antigen detection and PCR	EIA (Enzyme Immunoassays)
<b>Test complexity</b>	Complex	Significantly less complex
<b>Specimen</b>	CSF – Lumbar Puncture	Stool
<b>Case definition</b>	Suspect, Probable or confirmed	Confirmed

**Strong laboratory capacity needed (Viral and Bacterial)**

# **Improve/enhance IB-VPD laboratory surveillance network**

1. Case definitions
2. Laboratory procedures to be optimized and standardized across the network
3. Well functioning QA/QC programmes and External Proficiency testing for all participating laboratories (globally)
4. Capacity building
5. Technical working group to guide laboratory network



# Improve/enhance IB-VPD laboratory surveillance network

## 1. Case definitions

Sentinel hospital based surveillance

Children <5 years of age

Admitted with syndromes:

- For treatment of acute gastroenteritis - diarrhoea
- With signs & symptoms of bacterial meningitis
- With signs & symptoms of invasive bacterial disease (e.g. sepsis)

# Improve/enhance IB-VPD laboratory surveillance network

## 2. Laboratory procedures to be optimized and standardized across the network

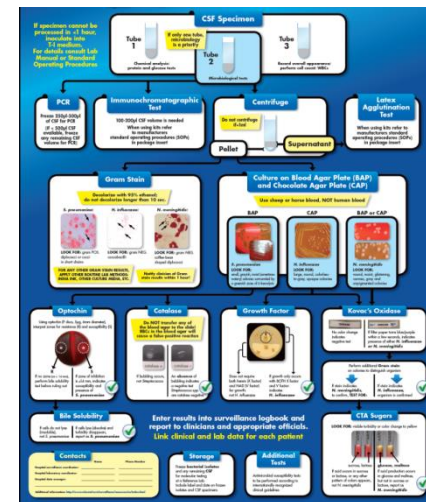
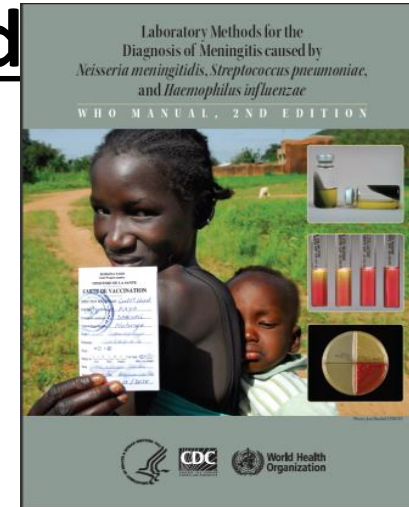
Laboratory manual clearly describing full procedures –

Collection, transport, processing

(phenotypic and molecular)

storage of samples, data reporting, etc.

PCR



# Improve/enhance IB-VPD laboratory surveillance network

## 3. Well functioning QA/QC programmes and External Proficiency testing (PT) for all participating laboratories (globally)

Internal QC procedures

All testing components subjected to external PT

Implemented Performance Measures at all levels SS and RRL's

# Improve/enhance IB-VPD laboratory surveillance network

## 4. Capacity building

On-site visits and training

Standardized assessment tool

VPD Surveillance World Health Organization

Evaluation of Hospital-based Sentinel Surveillance for Invasive Bacterial Vaccine Preventable Diseases (IB-VPD)

Sentinel Site Evaluation Questionnaire

Country:
Sentinel site hospital:
Name and contact information of WHO country focal point for IB-VPD surveillance:
Name and contact information of Ministry of Health focal point for IB-VPD surveillance:
Names of evaluation team lead and members:
Evaluation date:

Revision: January 2012

World Health Organization



# Improve/enhance IB-VPD laboratory surveillance network

## 5. Technical working group to guide laboratory network

- Transition to case-based reporting from RRLs



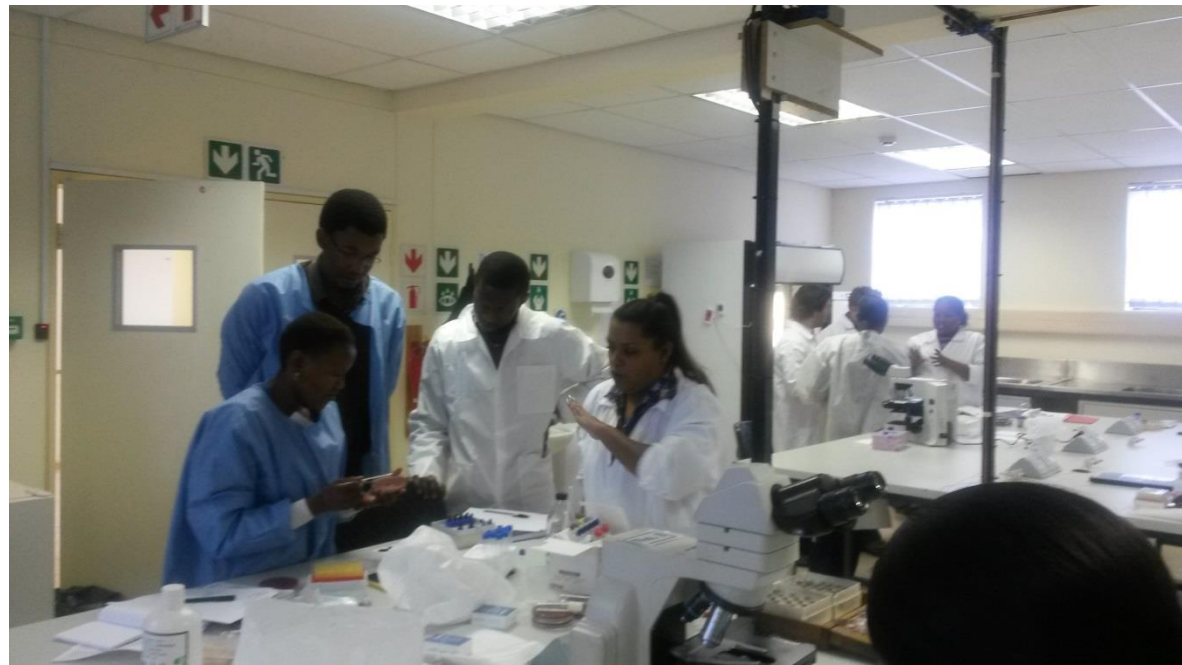
# Optimization of laboratory procedures

- PCR – molecular detection of pathogens (value added)
- Clinician to increase number volume of CSF
- CSFs appropriately stored/shipped to RRL
- Storage of viable isolates
- Linking clinical and lab data
- Developed guidelines sample referral

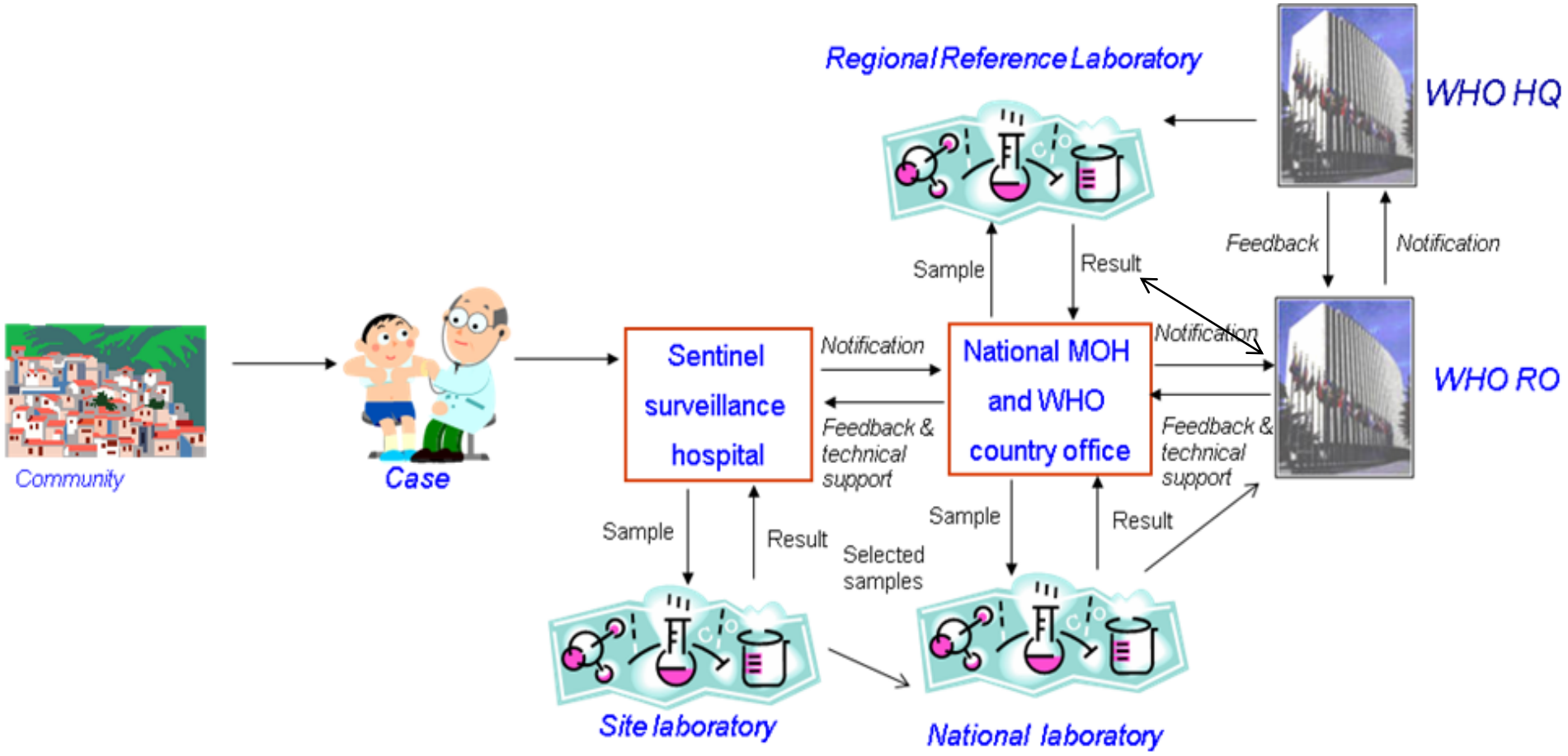


# Way forward

- Coordination & management
- Reporting and data management
- Network size and surveillance function



# Data Flow & Reporting Rotavirus and IBD Surveillance

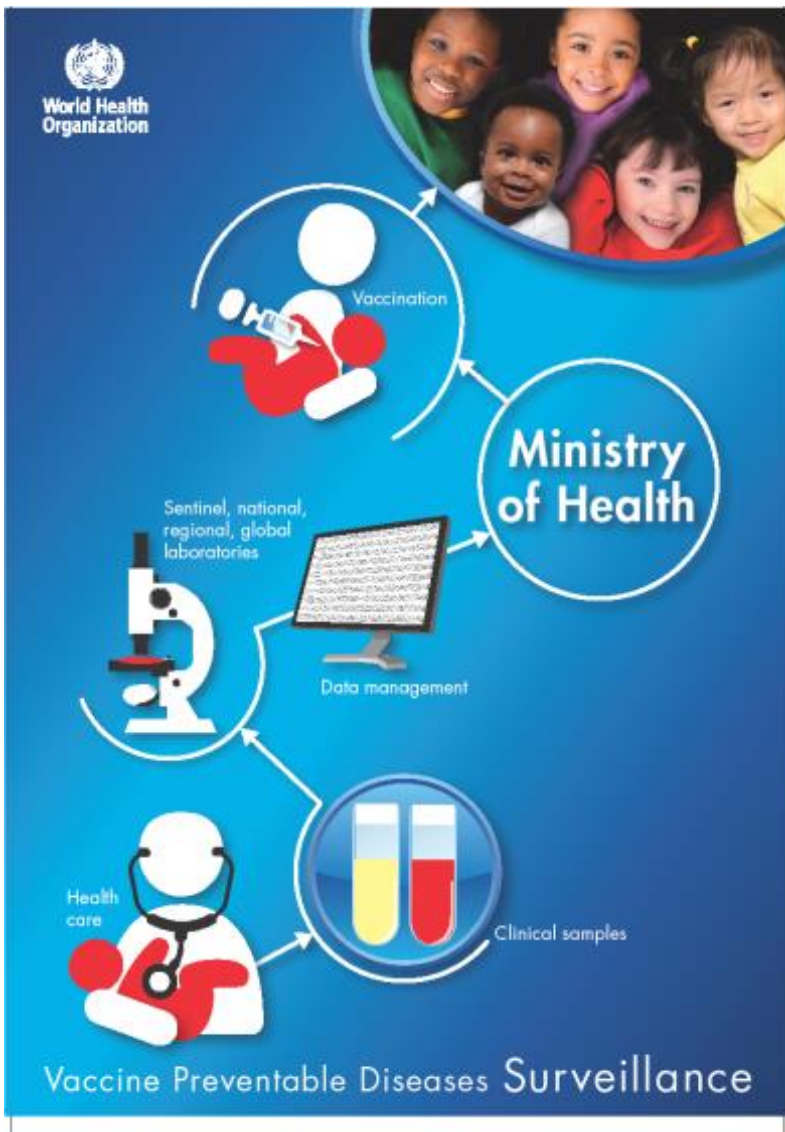


Entities	Frequency
Sentinel Site to MoH	At least quarterly
WHO RO to Countries	Quarterly
RRL to MoH, WHO Country/Regional Offices	6 monthly
WHO RO to WHO HQ	6 monthly
WHO HQ to RO & partners	6 monthly



# Acknowledgements

Sentinel hospitals  
Ministries of Health  
WHO country offices  
WHO ISTs & ROs  
Reference laboratories  
iTAG, TWG  
Partners



**Thank-you!**