Challenges and Access to Viral Load Testing in Africa: Example of Cote d'Ivoire

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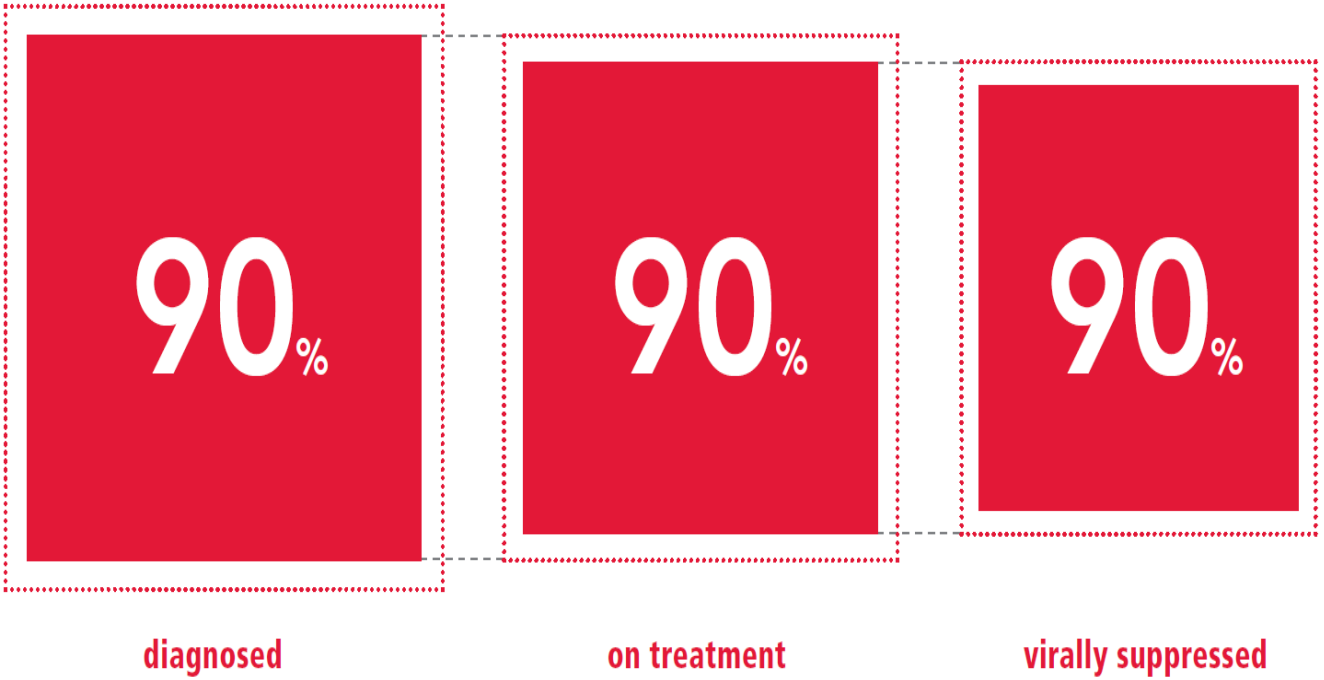
Outline

1. **Introduction**
2. **Barriers to Scaling up Viral Load and Uptake**
3. **Demand Creation and Monitoring and Evaluation**
4. **Conclusion**



1 Introduction

Progress in Viral Load Testing

June 2013 WHO Recommendations

Addis Ababa, Ethiopia
Sept 2014 & 2016

Viral Load Monitoring
in African HIV Treatment Programmes
Cape Town, South Africa, 18-20 April 2013

Cape Town, South Africa
April 2013

July 2014 (20th Int'l Aids Conf)
WHO Technical Guidelines
and UNAIDS DAI **90-90-90**

U.S. Ambassador Birx's commitment to scale-up viral load testing

Progress in Cote d'Ivoire

UNAIDS DAI 1998

2008 National Guidelines
-Children every 6 months
- Adults on demand

2012
National VL
scale-up plan

2013
OppERA

July 2014 (20th Int'l Aids Conf)
WHO Technical Guidelines
and UNAIDS DAI **90-90-90**

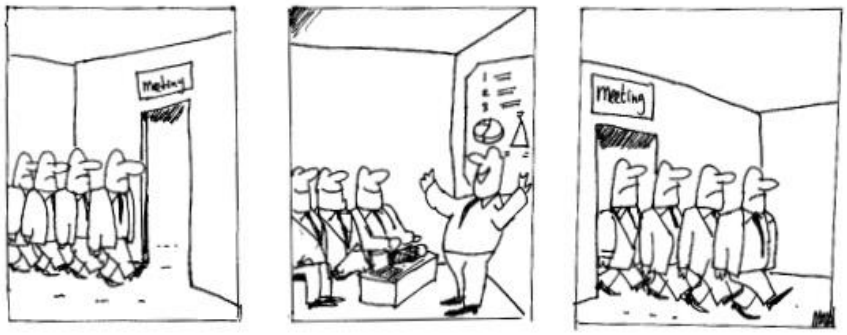
2015 National Guidelines
Viral load for patient monitoring

2015
PEPFAR scale-up

PEPFAR U.S. Ambassador Birx's commitment to scale-up viral load testing

Guidelines Matter – Implementation is Challenging

The error of a top-down approach



"I have shared my vision, so now we have a shared vision"

Cartoon by Mark de Koning

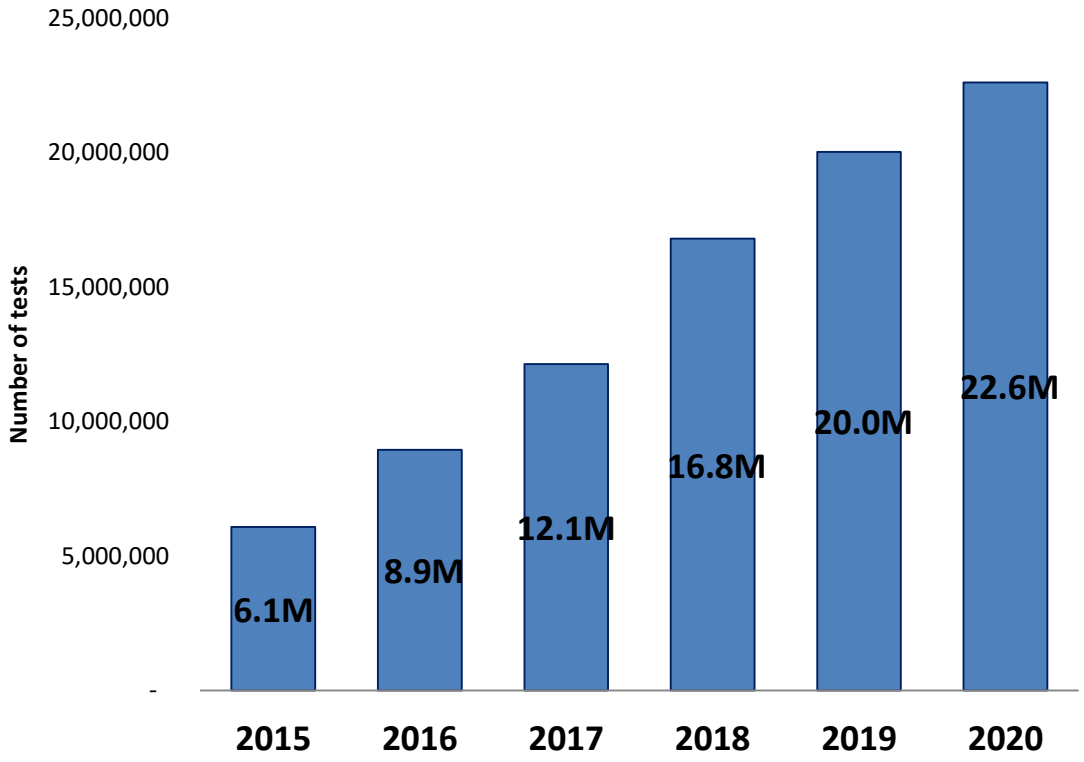
avans
University of Applied Sciences

Van der Zouwen
Consultancy

Viral Load testing Scale-up
Cote d'Ivoire 2012 National Strategies

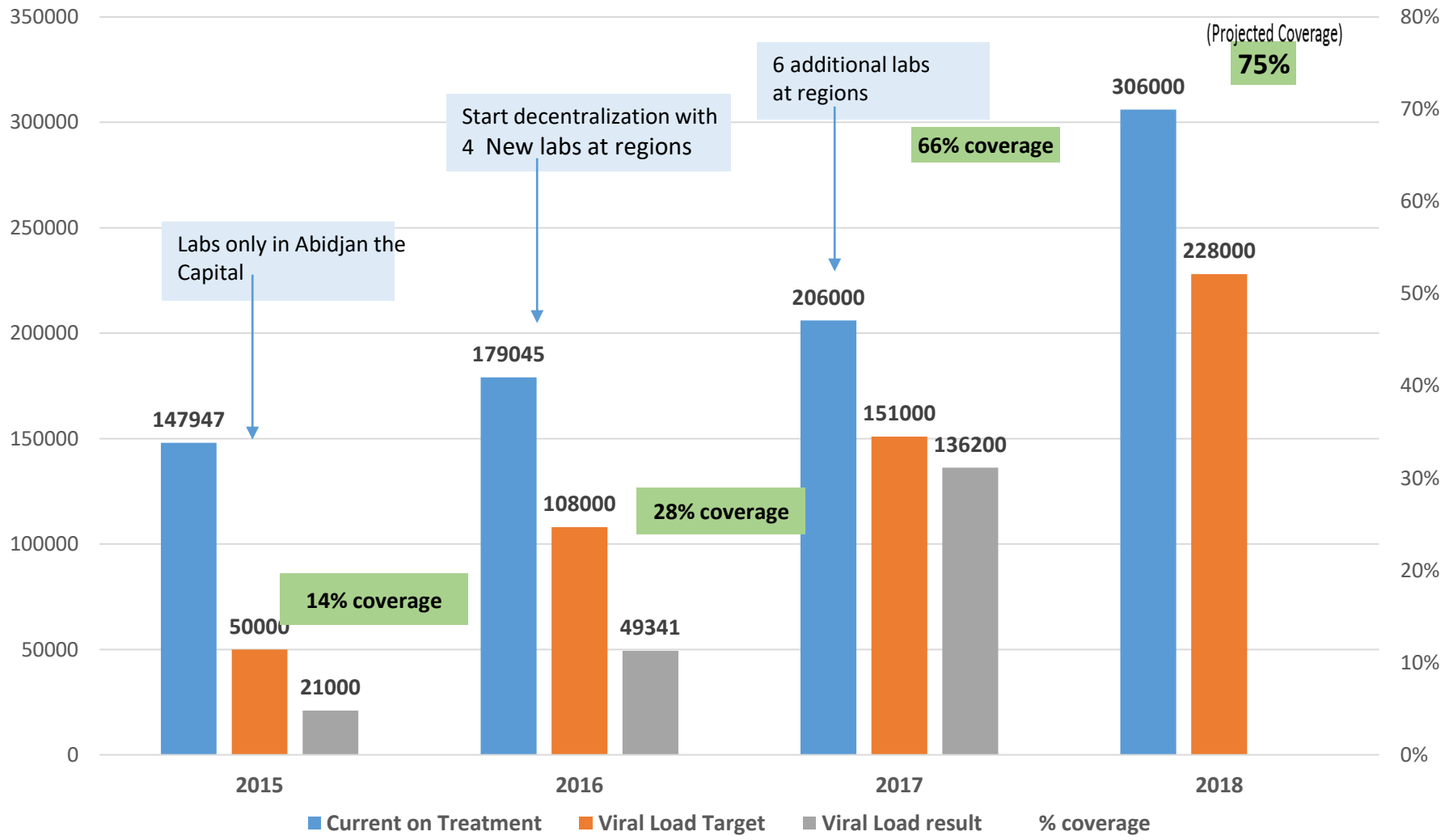
- National scale-up plan (identifies role of each stakeholder)
  - PEPFAR and ESTHER (lab, equipment and reagent)
  - Global fund laboratory reagents
  - ESTHER training of physicians
  - PEPFAR training of laboratory technicians
- All regional labs (18) to be equipped with a platform (national access)
- Preferred equipment leasing with reagent rental
- Laboratory training plan mapping the needs per region
- National external quality control program
- National VL database with a quarterly reporting to the central lab (LIS)

Forecasted HIV Viral Load Testing Demand, 2015-2020



Source: WHO/CHAI

Cote d'Ivoire Forecast and Results



2 Barriers to scaling up viral load and uptake

Key Barriers to Scaling up of Viral Load at National Level

1. Viral Load Networks - Sample Referral Systems
2. Demand Creation and Uptake of Results – Role of Clinicians & Patients
3. Financing and Supply Chain Management
4. Monitoring and Evaluation
5. Human Resources

Specific to Cote d'Ivoire (PEPFAR)

1. Laboratory Infrastructure (electricity, equipment, space)
2. Sample transportation
3. Human Resources and demand creation
4. Viral load literacy (Laboratory, clinical and community)
5. Financing, Supply chain and Data collections

Barriers at Site Level

1. Lack of review and analysis of laboratory data (VL test results) for program improvement in most site
2. Limited information captured in laboratory requisition forms
3. Weak implementation of SOPs at clinics and laboratories
4. Limited optimization of workflows and absence of focal points
5. Poor understanding of VL test reporting forms by clinicians in some site :
   - target not detected
   - below level of detection and suppression
     - <20 copies/ml
     - <1000 copies/ml

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Weekly / Vol. 64 / No. 46
November 27, 2015

Scale-up of HIV Viral Load Monitoring — Seven Sub-Saharan African Countries

Shirley Lecher, MD[1]; Dennis Ellenberger, PhD[1]; Andrea A. Kim, PhD[1]; Peter N. Fonjungo, PhD[1]; Simon Agolory, MD[2]; Marie Yolande Borget MS[3]; Laura Broyles, MD[1]; Sergio Carmona, MBBCh[4]; Geoffrey Chipungu, MBBS[5]; Kevin M. De Cock, MD[6]; Varough Deyde, PhD[7]; Marie Downer, MD[6]; Sundeep Gupta, MD[5]; Jonathan E. Kaplan, MD[1]; Charles Kiyaga, MPhil[8]; Nancy Knight, MD[7]; William MacLeod, Sc.D[4]; Boniface Makumbi[9]; Hellen Muttai, MBChB[6]; Christina Mwangi, MMed[10]; Jane W. Mwangi, MMed[6]; Michael Mwasekaga[11]; Lucy W. Ng'Ang'A, MBChB[6]; Yogan Pillay, PhD[12]; Abdoulaye Sarr, DSc[5]; Souleymane Sawadogo[2]; Daniel Singer, MD[5]; Wendy Stevens, MBBCh[4]; Christiane Adje Toure, PhD[3]; John Nkengasong, PhD[1]

Combination and Improved Strategies to Overcome Barriers

ELECTRONIC DASHBOARD SCORECARD

INNOVATIVE APPROACH FOR SAMPLE TRANSPORTATION

REDUCE TAT

FAST TRACT RESULTS FOR PATIENTS FAILING ART

DEMAND CREATION

LAB HUBS AROUND REGIONAL LABS

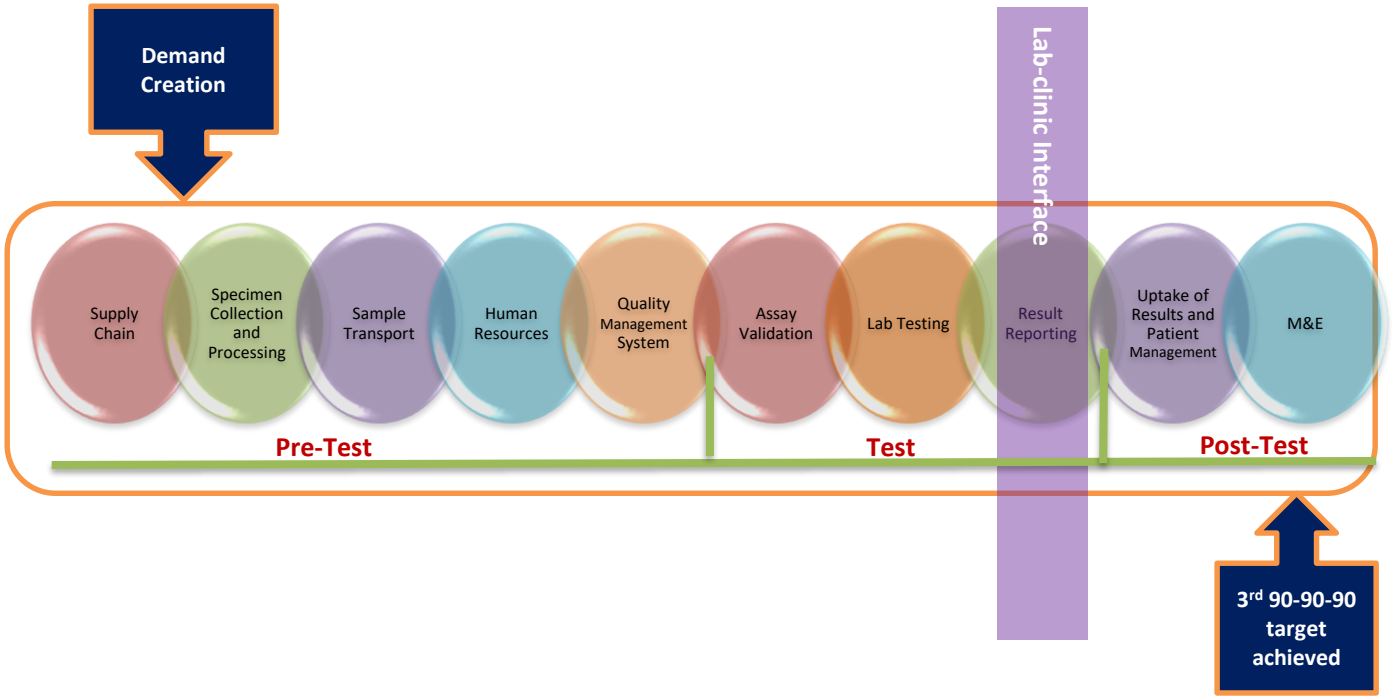
USE OF DBS & POC

DISTANCE LEARNING

COMMUNITY

LAB-CLINICAL INTERFACE

Improving Efficiencies Across the Viral Load Testing Spectrum



DRIED BLOOD SPOT SAMPLES CAN BE USED FOR HIV-1 VIRAL LOAD TESTING WITH MOST CURRENTLY AVAILABLE VIRAL LOAD TECHNOLOGIES: A POOLED DATA META-ANALYSIS

LARA VOJNOV[1*], SERGIO CARMONA[2], CLEMENT ZEH[3], JESSICA MARKBY[4], DEBRAH BOERAS[3], MARTA R. PRESCOTT[1], JESSICA A. JOSEPH[1], ANTHONY L.H. MAYNE[5], SOULEYMANE SAWADOGO[3], MARIA MERCEDES PEREZ GONZALEZ[6], WENDY S. STEVENS[2], MEG DOHERTY[6], TREVOR F. PETER[1], CHUNFU YANG[3], AND THE DBS FOR VL DIAGNOSTICS INVESTIGATION CONSORTIUM[#]

Field evaluation of Dried Blood Spots for HIV-1 viral load monitoring in adults and children receiving antiretroviral treatment in Kenya, 2013: Implications for scale-up in resource limited settings

Mary E. Schmitz, MPH[1]; Simon Agolory, MD [2]; Muthoni Junghae, PhD[1]; Laura N. Broyles, MD[2]; Muthusi Kimeu, MSc[3]; Joseph Ombayo, BSc[4]; Mamo Umuro, MSc[4]; Irene Mukui, MD[5]; Kennedy Alwenya, MA[3]; Moses Baraza, BSc[3]; Kenneth Ndiege, BSc[3]; Samuel Mwalili, PhD[1]; Emilia Rivadeneira, MD[2]; Lucy Ng'ang'a, MD[1]; Chunfu Yang, PhD[2]; Clement Zeh, PhD, MPH [1]; for VL-DBS Study Group.

Submitted to JAIDS for consideration of publication

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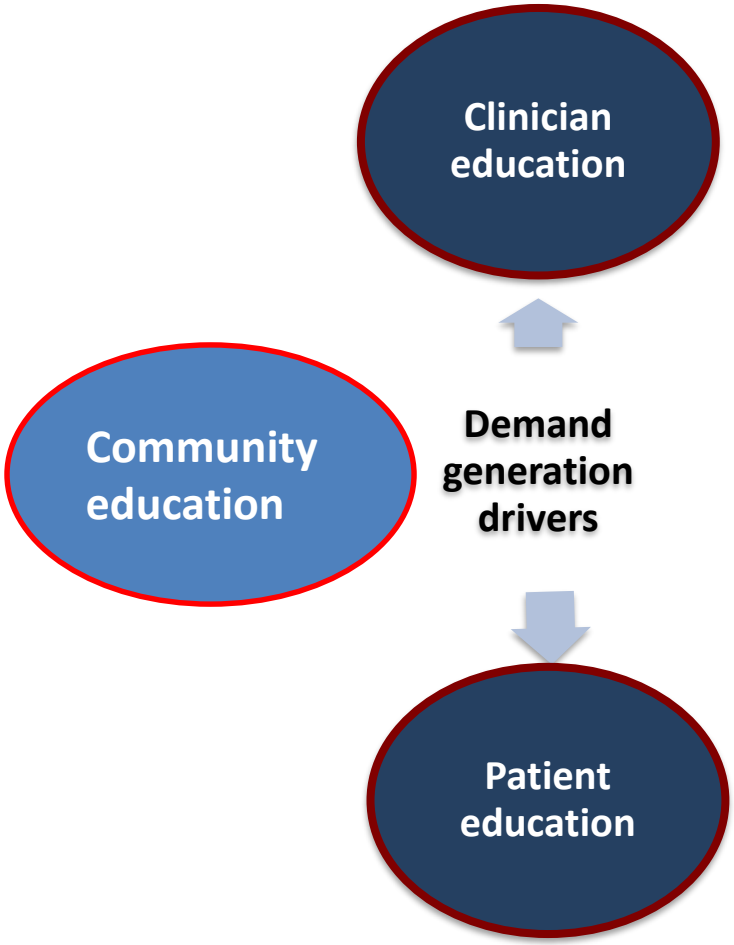
Demand Creation and Monitoring and Evaluation

Creating the Demand for Viral Load



Challenge

- Lack of effective dissemination and translation of the guidelines into accessible job aids
- Awareness campaigns for patients and communities on the benefits of VL testing and its difference from CD4

Solutions

- Tools to help countries increase demand for viral load and to educate patients, community and clinicians on the use of viral load
- Identify focal points a each clinics and community with SOPs
- Improve Laboratory reagents supply chain

Source: Randy Allen

Monitoring and switching of first-line antiretroviral therapy in adult treatment cohorts in sub-Saharan Africa: collaborative analysis

Andreas D Haas, Olivia Keiser, Eric Balestre, Steve Brown, Emmanuel Bissagnene, Cleophas Chimbetete, François Dabis, Mary-Ann Davies, Christopher J Hoffmann, Patrick Oyaro, Rosalind Parkes-Ratanshi, Steven J Reynolds, Izukanji Sikazwe, Kara Wools-Kaloustian, D Marcel Zannou, Gilles Wandeler, Matthias Egger, for IeDEA southern Africa, east Africa, and west Africa*

- Even when routine viral load monitoring was in place, around 44% of patients with confirmed virological failure were not switched

- 22% of patients under routine viral load monitoring and 30% of those receiving targeted viral load monitoring switched regimen without any evidence of virological failure.

Lancet HIV 2015; 2: e271-78

CDC VL/EID Laboratory Weekly Monitoring and Reporting Tool

Week of September 20th

VL/EID Laboratory Name	VL # Sample Received	VL #Sample Tested	VL Pending	EID #Sample Received	EID #Sample Tested	EID #Sample Pending	Stock VL Kits	Number VL Kit used this week	Stock Kits EID	Number EID Kit used this week
TOTAL	4919	7032	22065	379	460	483	1612.5	158	218	13.5

VL/EID Laboratory Name	Quality Indicator 1: TAT Délai d'exécution des analyses (Nbre de jours ouvrables depuis la réception de l'échantillon jusqu'à la mise à disponibilité des résultats d'analyse)	Quality Indicator 2: Sample rejection rate Nombre d'échantillons rejetés dans la semaine en précisant les motifs. (exple: 5 rejets dont 3 échantillons insuffisants / 2 coagulés)	Quality Indicator 3: Out of service due to reagent stockout Nombre d'interruptions de service dues à une rupture de stock de reactifs (preciser le nombre de jours)	Others Human ressources; Equipment Breakdown; Electricity Issues; Others consumables stock out
RETROCI	EID : 5 jours VL: 45 jours	0	RAS	Echec : CAP/CTM : 2 plaques EID C6800 : 2 plaques
CHU YOP	18.5	0	RAS	RAS
CHU Bouake	Non applicable: Pas de tests réalisés cette semaine	37rejets dont 10 insuffisants, 9 codes discordants, 6 VIH2, 5 coagulés, 3 hémolysés, 2 éch. sans fiches, 2 fiches sans éch	RAS	Panne AmpliPrep depuis le 06/09/2017
CHR Abengourou	CV= 10	RAS	RAS	RAS
CHR SAN-PEDRO	4 Jours	0	RAS	RAS
CHR Yamoussoukro	EID 7 jours / CV 10jours	4 rejetés dont 2 echantillons insuffisants et 2 VIH 2	RAS	RAS
CePRef Yopougon	47	0	RAS	RAS
CHR Korhogo	TAT=47.7	23 réjets dont 5 échantillons insuffisants / 13 coagulés 1 VIH2 ; 4 prelevements non parvenus	RAS	Equipement en panne: AMPLIPREP
HOPITAL Soubre	3	0	RAS	RAS
HOPITAL Gagnoa	31 jours ouvrables	2 rejets dont 1 pour discordance de numéro entre le tube et le bulletin/1 pour retard d'acheminement au labo	RAS	blocage du S tube dans le griper occasionnant la perte d'une plaque
CHR Man		0	RAS	
INSP Adjame	NON RENDU	9 Rejets dont 2 insuffisants/ 3 coagulés/ 1 hémolysé/ 3 de statut VIH non renseigné	RAS	RAS
IPCI	19	5 (2 echecs QS invalide et 3 ech coagulés)	RAS	RAS

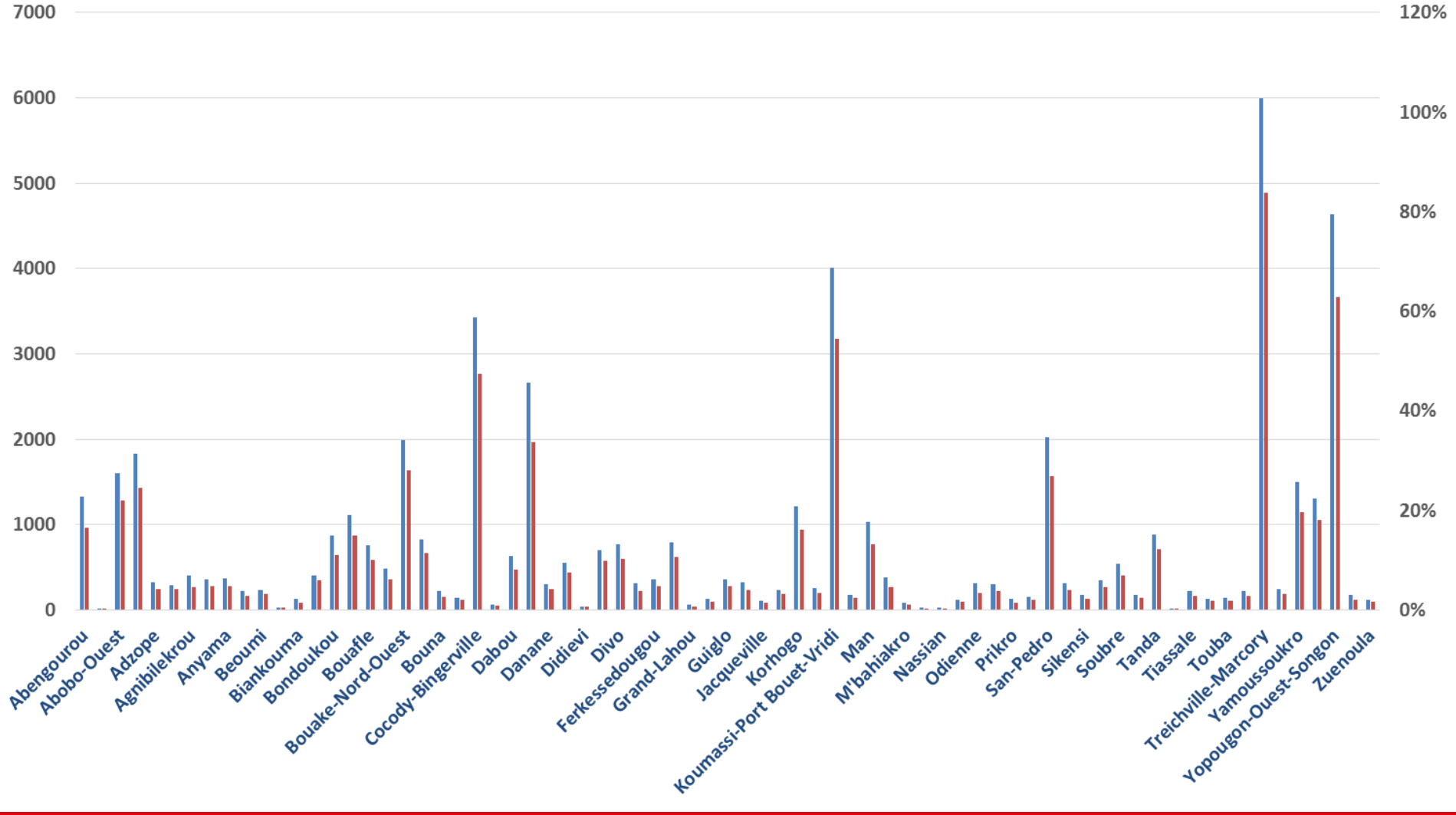
Laboratory

Clinicians

Collection
Processing
Results return

Documentation
Utilization for patient management

Distribution of Patient with at Least one VL by District June 2017



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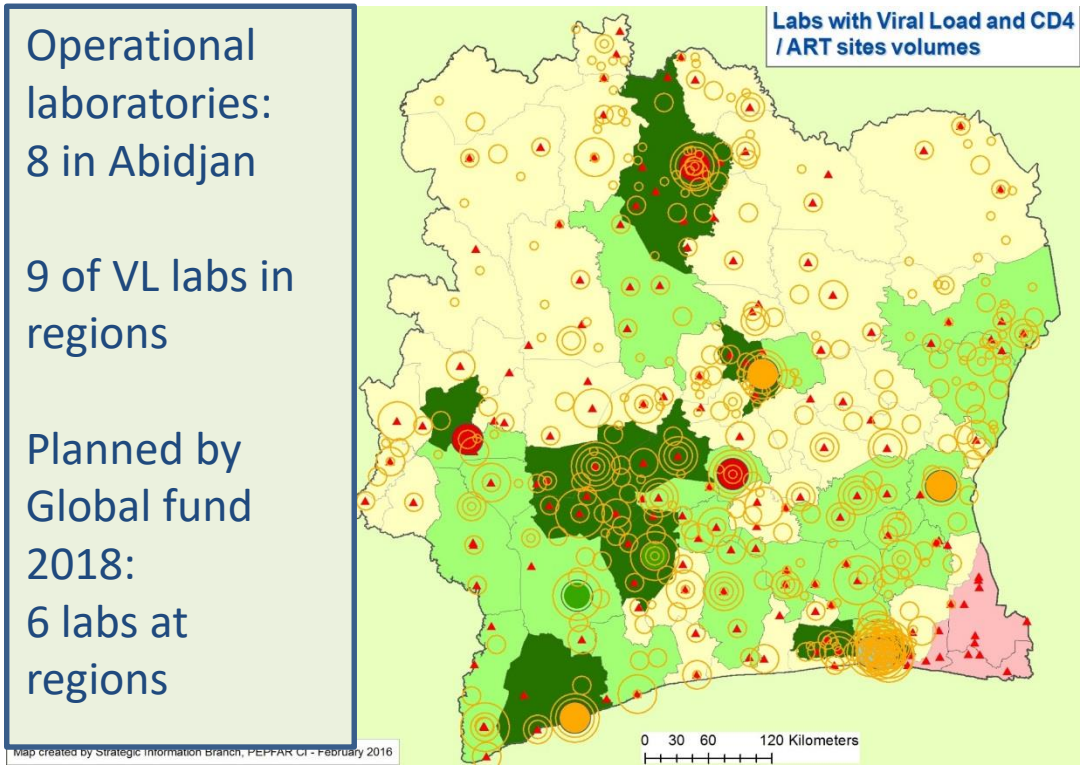
Conclusion

Operational laboratories:
8 in Abidjan

9 of VL labs in regions

Planned by Global fund 2018:
6 labs at regions



Conclusion

- Country National Plan
- Collaborative and multidisciplinary approach to scaling up viral load in National Plan
- Strong laboratory Network and Networking and best strategy for equipment and electricity management
- Focus on improving efficiencies
- Demand creation - Clinicians, Community, Laboratory Personnel and Patients as drivers
- Scorecard or Tools to measure progress
- Strong Monitoring System