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Data driven harmonization and lab network optimization strategies: Addressing the 90-90-90 targets

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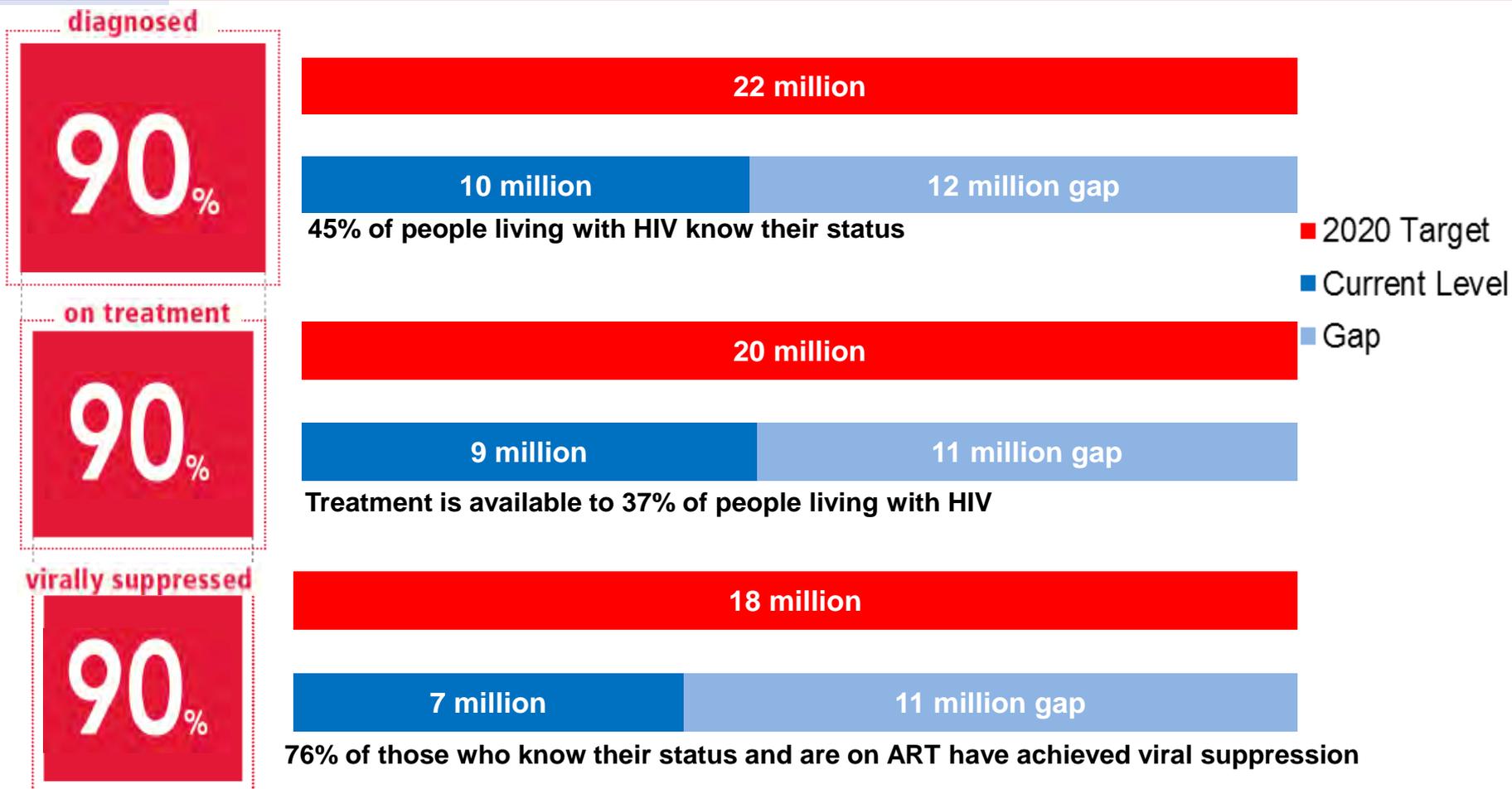
SCMS, Arlington VA, USA

Overview

- Where are we in relation to 2020 targets?
- What does this mean for laboratory based monitoring?
- What are the current laboratory supply chain related challenges?
- How can we use data to guide strategies?
- Recommendations

Sub-Saharan Africa (SSA): 2020 targets, current levels and gaps

diagnosed

90%

on treatment

90%

virally suppressed

90%

22 million

10 million	12 million gap

45% of people living with HIV know their status

20 million

9 million	11 million gap

Treatment is available to 37% of people living with HIV

18 million

7 million	11 million gap

76% of those who know their status and are on ART have achieved viral suppression

- 2020 Target
- Current Level
- Gap

Source: 2014 UNAIDS GAP report

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90%
UNDETECTABLE

In Sub-Saharan Africa (SSA)

- Nearly 7 million (76%) people living with HIV who know their status and are receiving antiretroviral therapy have achieved viral suppression

- We will need to monitor 11 million more patients and move monitoring from CD4 to viral load

To achieve 90%

- Achieving this will mean more than doubling of treatment monitoring need

- Effective monitoring will identify higher treatment failure rates than currently, therefore significantly increasing viral load testing

- Availability of second and third line therapies and patient adherence (counseling) are critical factors to achieving this goal

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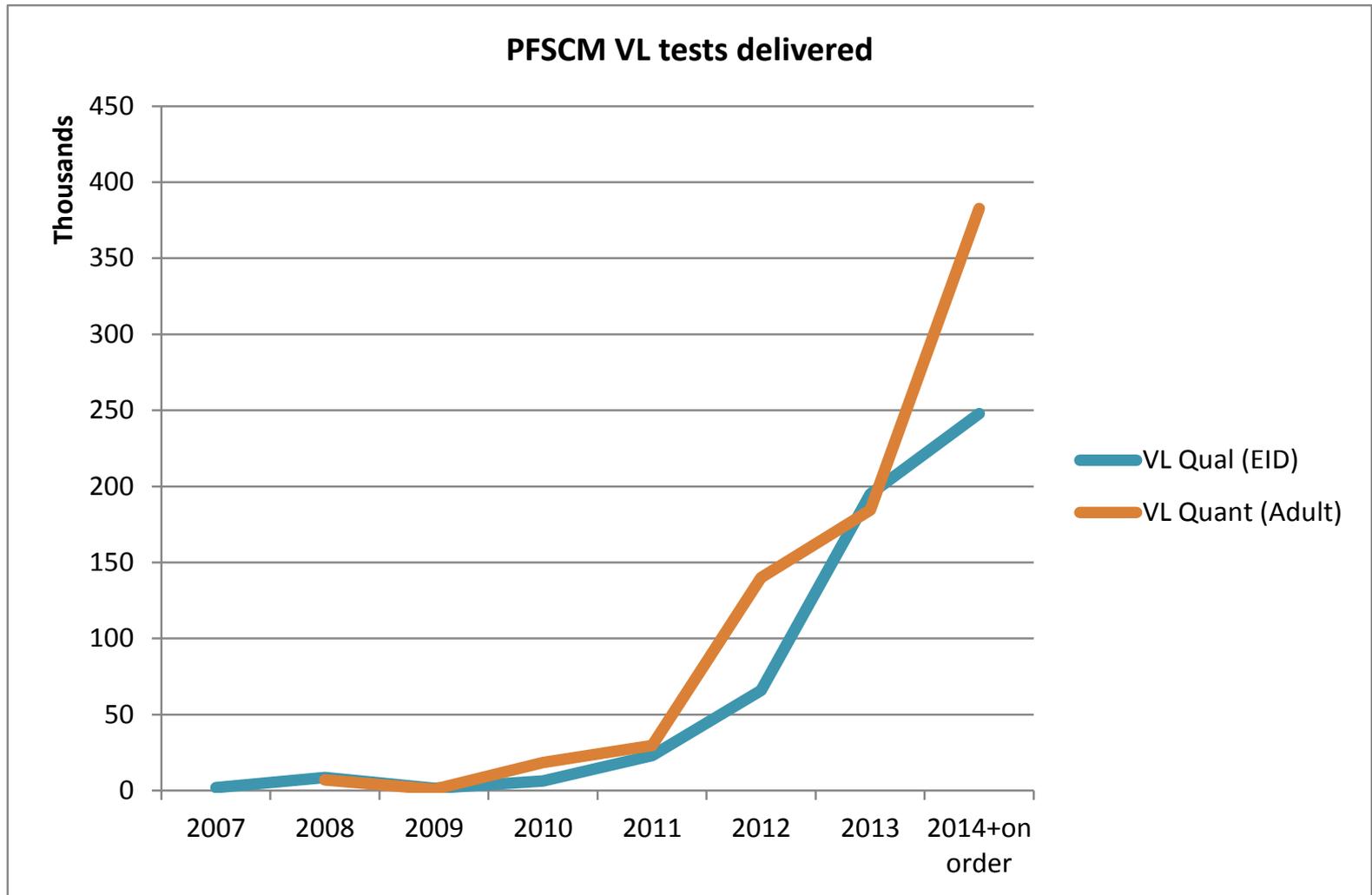
Monitoring: Current supply chain capacity

- Manufacturing capacity
  - Capacity available to provide centralized lab instrumentation
  - Evolving technology (low-throughput VL) scale up is unknown; no VL POC capacity at this time
- International supply chains can meet need
- In-country viral load service delivery capacity cannot meet current demand
- In-country supply chains at- or over-capacity
  - Rural infrastructure/transport capacity is limited (getting DBS specimen / results to/from regional labs), effective sample transport and results dissemination systems will need to be improved
  - Current reagent supply chain methodologies require cold chain handling
  - Warehousing/storage capacity is stretched

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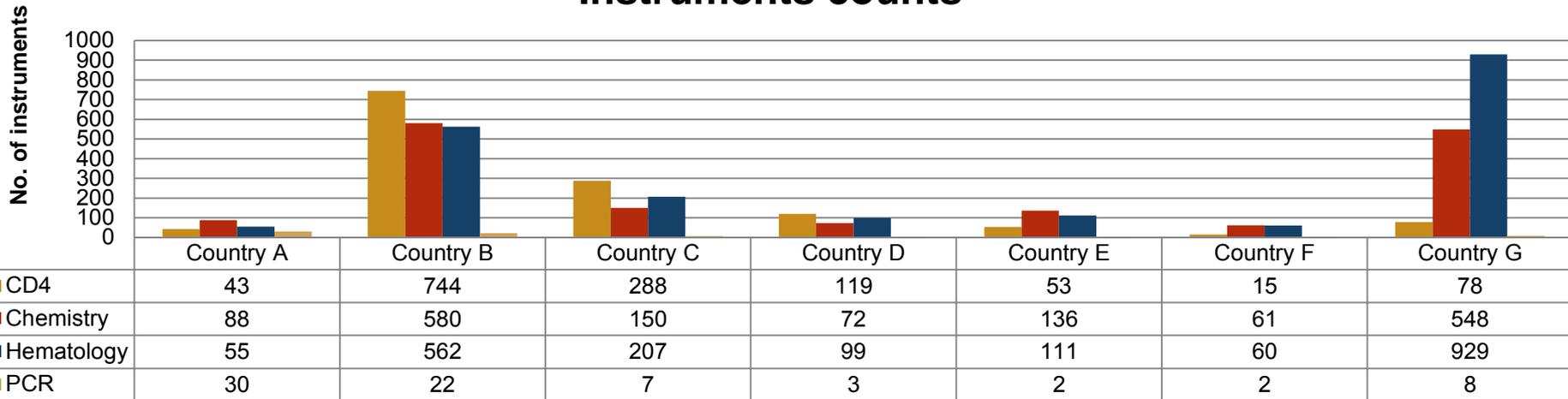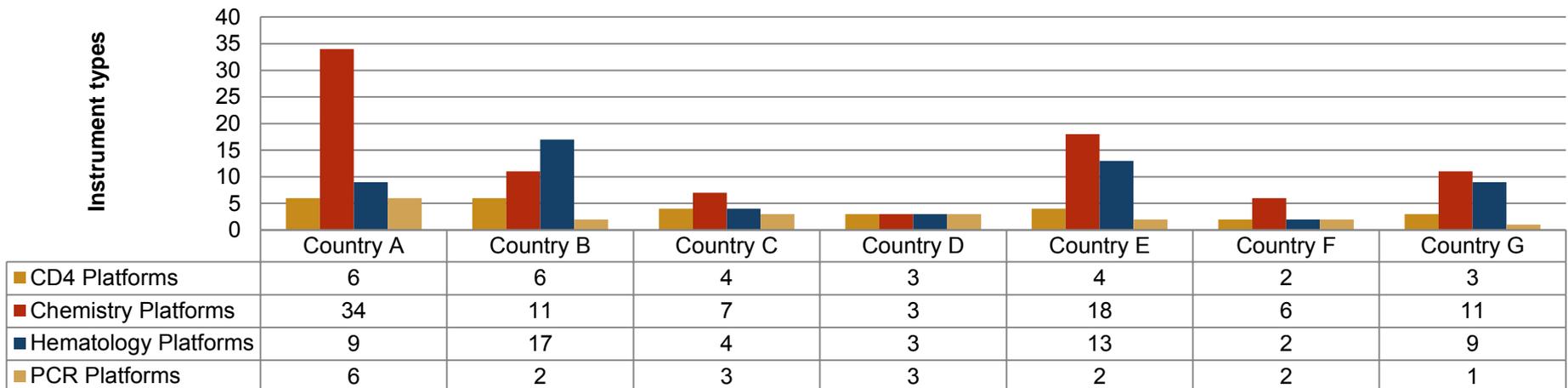# Procurement of tests on the rise (PFSCM tests delivered)

PFSCM VL tests delivered

Current instrument coverage

Instruments counts

	Country A	Country B	Country C	Country D	Country E	Country F	Country G
CD4	43	744	288	119	53	15	78
Chemistry	88	580	150	72	136	61	548
Hematology	55	562	207	99	111	60	929
PCR	30	22	7	3	2	2	8

Instrument diversity

	Country A	Country B	Country C	Country D	Country E	Country F	Country G
CD4 Platforms	6	6	4	3	4	2	3
Chemistry Platforms	34	11	7	3	18	6	11
Hematology Platforms	9	17	4	3	13	2	9
PCR Platforms	6	2	3	3	2	2	1

Existing laboratory challenges

- Reliance on demographic and target-based forecasting to determine instrument needs
- Poor adherence to care and treatment guidelines
- Disconnect between treatment budgets/ambitions and laboratory capacity
- Limited standardization and updated/current test offerings by tiered levels (standard packages of care/laboratory policies)
- Isolated IP, donor, stakeholder instrument procurements – limited long-term planning/budgets
- Sub-optimal instrument deployments (low instrument utilization/high numbers of instruments)
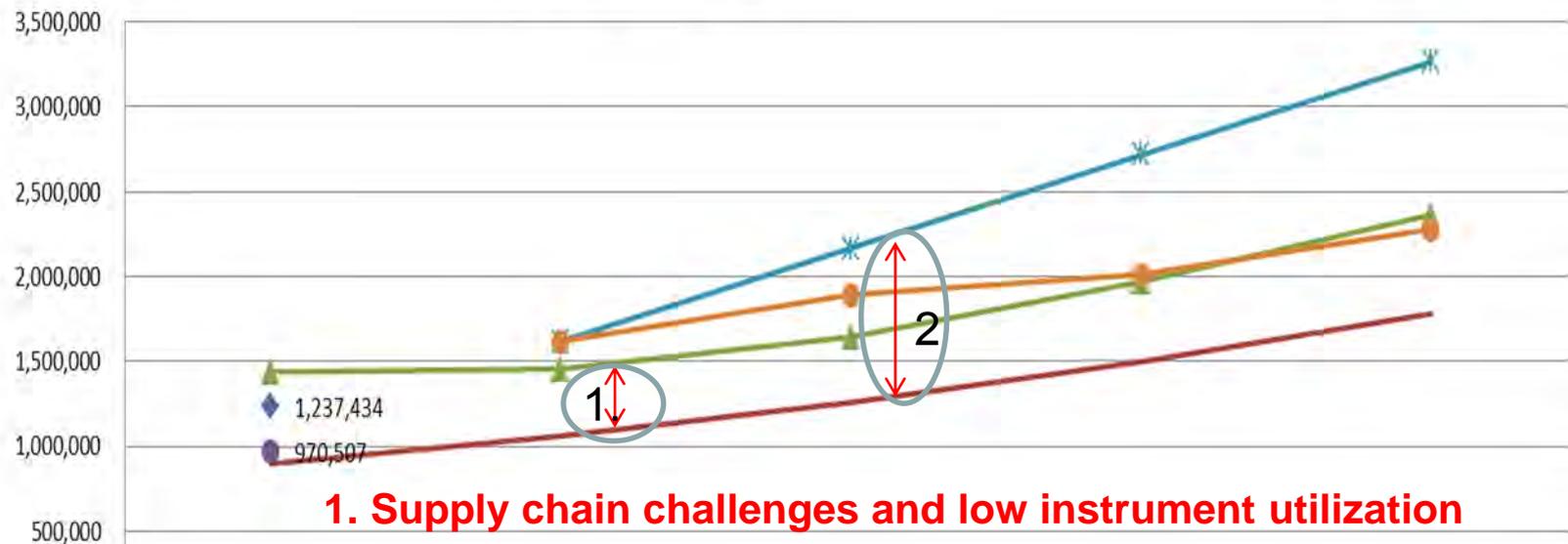- Outdated and inefficient sample referral networks

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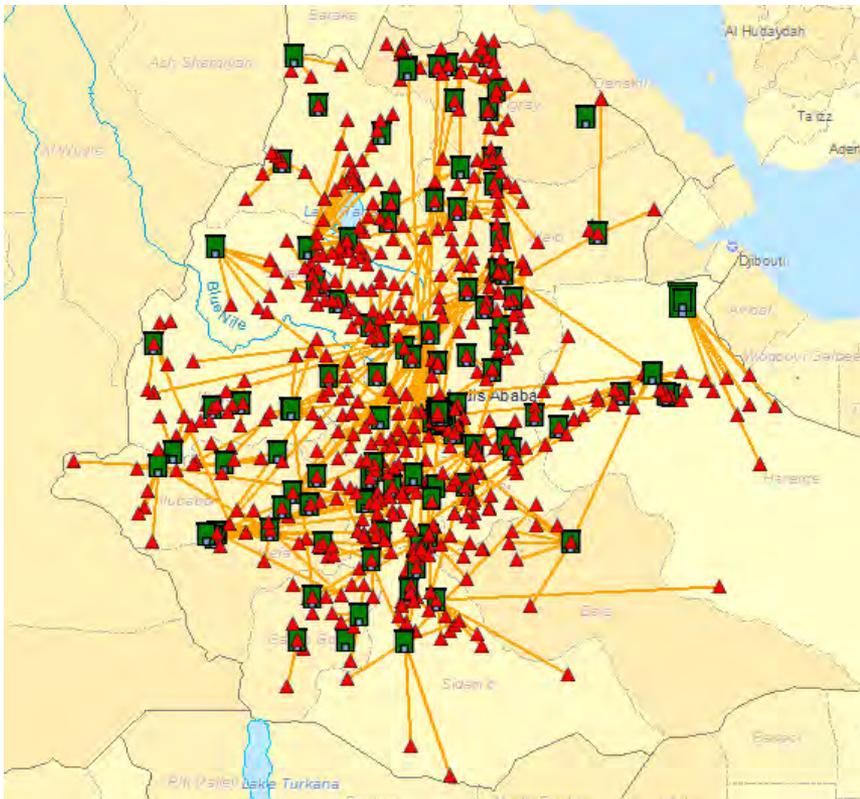# Need for forecasting comparative review

Total CD4 Tests

1. Supply chain challenges and low instrument utilization
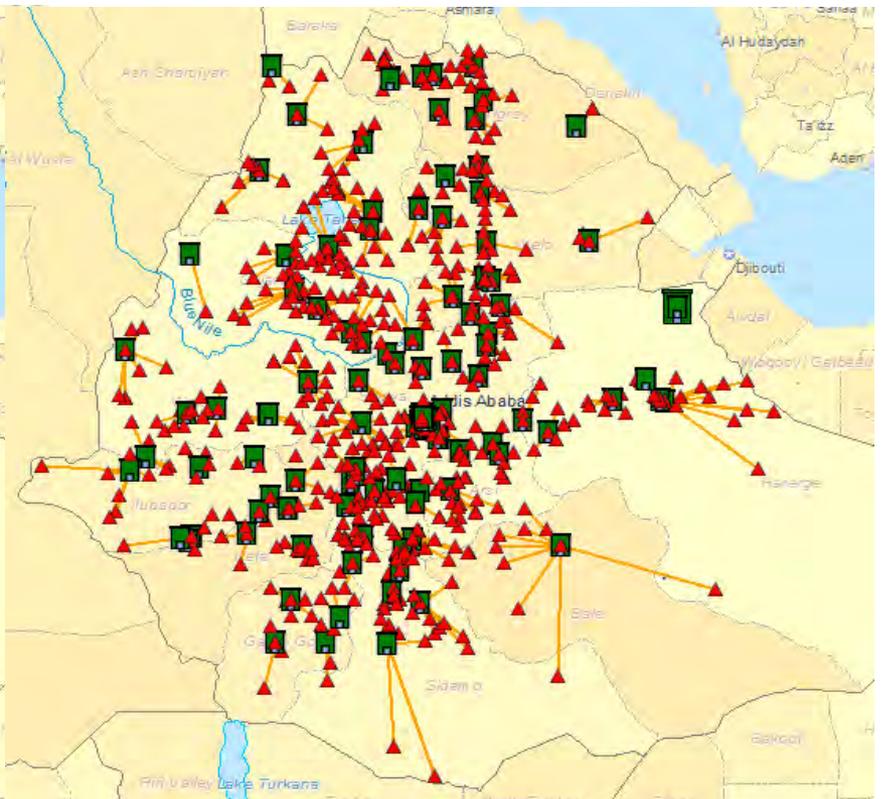
2. Programmatic service delivery gap

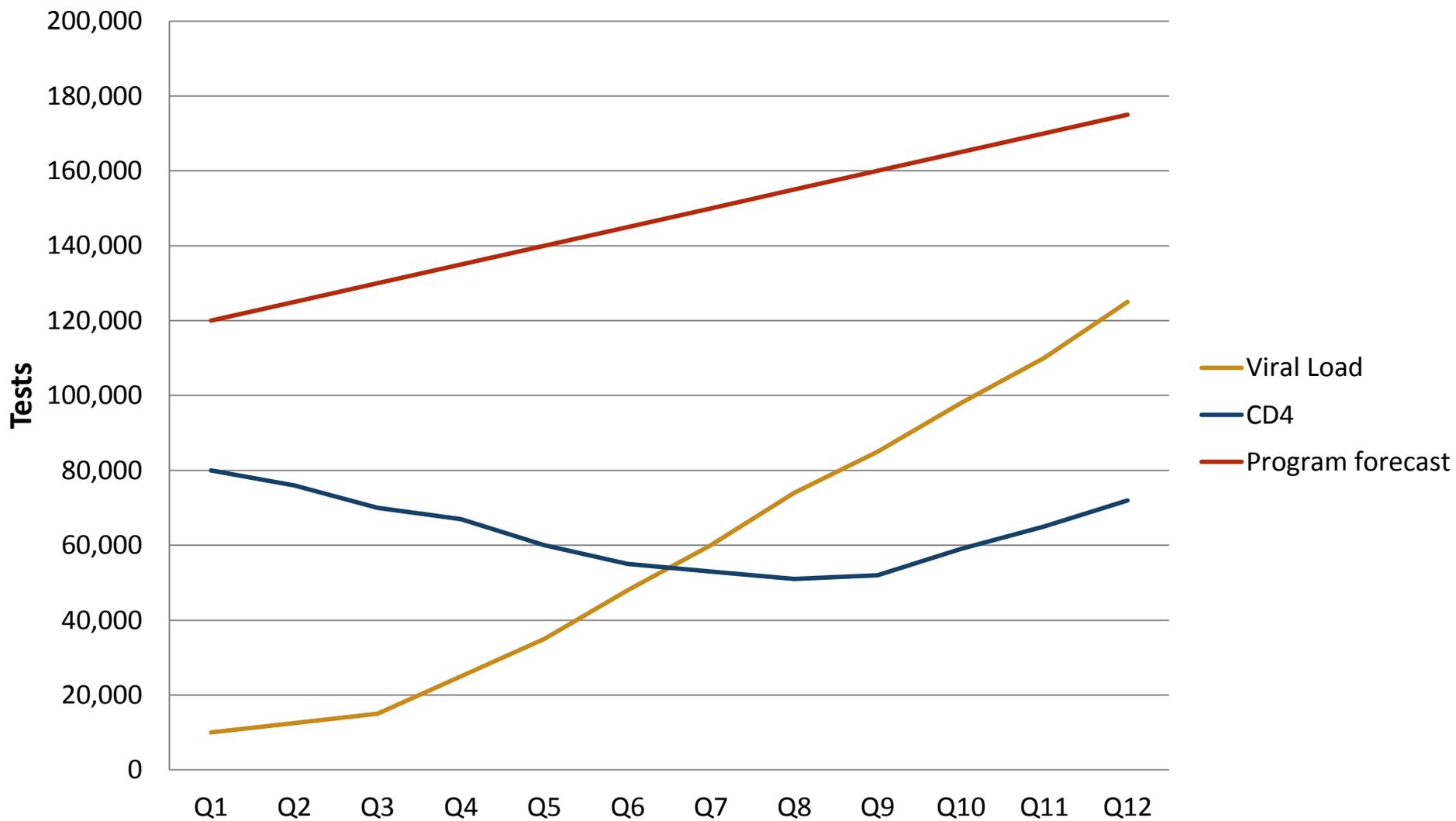|	2012	2013	2014	2015	2016
Service Forecasted 2012 (2011)	1,237,434				
Service Estimates	899,589	1,063,502	1,261,371	1,498,813	1,783,744
Service Adjusted stockout/downtime	970,507				
Consumption	1,436,700	1,452,504	1,640,711	1,968,854	2,362,624
Achievable Target		1,614,462	2,166,161	2,717,035	3,268,605
NSP Target		1,614,462	1,892,579	2,008,904	2,275,736

Need to optimize referral networks

Baseline

Optimized

Consider current EID/VL referral networks – VL scale-up

What will transitions look like?
Need for active monitoring

Monitoring: Recommendations

90%
UNDETECTABLE

- Support country-level plans for the managed introduction of new viral load testing equipment (one EID/VL plan)
- Implement mixed centralized/decentralized models for viral load testing capacity
- Establish effective sample referral networks down to the last mile
- Develop integrated patient and lab information management systems
- Seek opportunities for private sector growth and national health insurance to promote private sector investment and increase service access

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Monitoring: Recommendations

- Consider long term costs (maintenance)
- Ensure data capture measures are in place for active program monitoring
- Develop appropriate instrument placement strategies *before* procurement

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Thank you

Questions