

NOTHING BUT THE BEST

Optimizing the ART Response in Botswana

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Outline

- Background Country & Economic
- The Rational for Adopting Treat All
- The Results of the Treat All Analysis
- The Latest Implementation Update

Background

Land locked upper middle income country in the Southern African region

- Population: 2, 038,228
Census 2011 - Density of 3.5 persons/km²
- Health services delivered thru a network of 338 health posts and 277 health clinics, 34 stand alone HIV/ART clinics.
- Tuberculous & Cancer a public health concern:
 - >20% admissions
 - >10% OPD visits
 - Leading causes of death among PLWHA



Background

National ART Programme *(launched January 2002)*

- First country in Africa to implement routine viral load and resistance testing
- First country to provide triple therapy (Atripla) for PMTCT
- First country in Africa to introduce the use of Combivir (2002) and Atripla (2010/12) as first line and Raltegravir & Darunavir as third line (2008).

Date	1 st Line ART	2nd Line ART	3rd Line ART
2001 pilot	D4T DDI EFV/NVP	RIT/SQR	
2002	AZT/3TC (CBV) EFV/NVP	DDI+D4T+NEL	RIT/SQR
2008	TDF/FTC (TRU) EFV males and non-reproductive females	CBV+KAL or ALU	RAL+DAR+RIT+
	TDF/FTC NVP Reproductive females		TDF or CBV
2012	TDF/FTC/EFV	CBV/ALU <i>ATA/r as indicated For poor adherence or deranged lipids</i>	RAL+DAR+RIT+ TDF or CBV
2016	TRU/DTG ABC+3TC +/-DTG	After resistance testing CBV/TRU/ABC+3TC DTG/DAR	Drugs available: ATA/r, DAR, RAL (as indicated)

Botswana ART Regimens since 2001

Background

PMTCT Programme launched in 2009

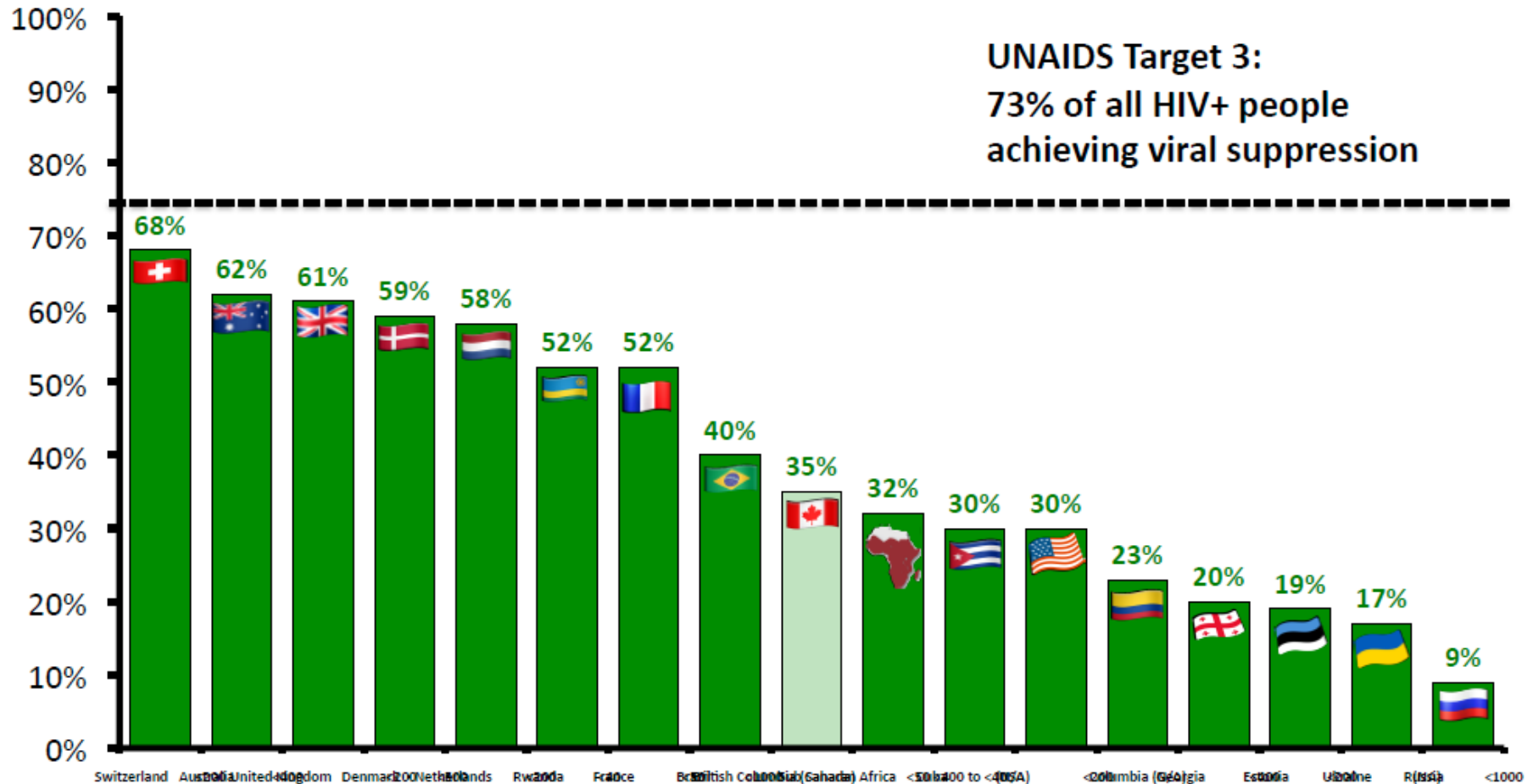
(2015 MTCT rate: 1.5%)

90-90-90 Targets close to achievement in 2016

(Programmatic data: 83% -87%-96%)

**Highest ART Coverage and Viral Load Suppression
in Africa (possibly in the world).**

% of HIV-Infected Persons with Viral Suppression, Selected Countries *Jake et al IAS 2015*



Monitoring Drug Resistance:

Cumulative Adult 1st Line Failure

- 2004 First systematic chart review for Adult 1st line failure rates completed at PMH-IDCC
4811 patient charts = **3.5%** (66% *private sector referrals*)
- **2002-2007** Five Year Review completed PMH-IDCC
- 11,683 patient charts = **3.6%** (44% *private sector referrals*)
- **July 2009** National Site Directors Reporting
48,558 patients reported (40 clinics) = **2.18%**
- **June 2013** National Site Directors Reporting
119,085 patients reported (50 clinics) = **5.3%**
- **June 2016** Chart review active patients (n=90,000) = **2.71%**

Quik View ART Programme

At the end of 2015:

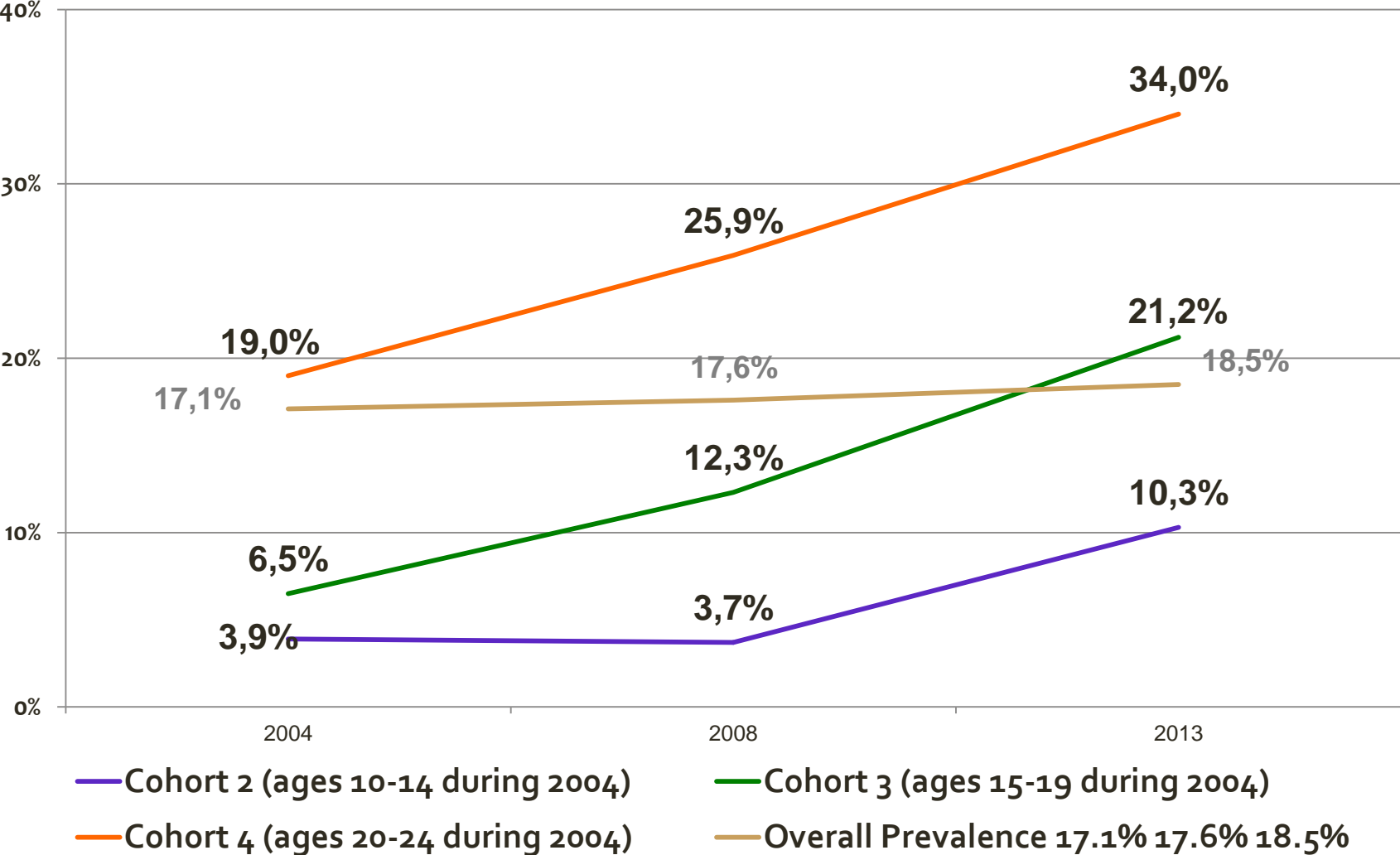
- 270,000 patients on treatment
- All cause use of PIs = 12%
- 40% of all patients still on regimens initiated before 2008 (CBV/ EFV or NVP)
- 60% on TRU based regimens
- Aging population, increasing comorbidities
- Advanced training in HIV care lagging behind.
- HR capacity on all levels remains problematic
- Now beginning to significant increases in the lipodystrophies to AZT containing regimens.

Economic Background

- By 2012, growing global economic uncertainty, decreases from diamond revenues and continued decreases in international donor support, required that urgent action be taken to ensure the long-term financial sustainability of the National HIV Response.
- *Average economic growth projected at 3.3% thru the 2020s (down from previous 9% a few years ago).*
- *Mineral revenues expected to fall from 14% of GDP to 6% in 2030.*
- *Total government revenues projected to fall from 36% in 2014 to around 25% by 2030.*
- *Requiring spending cuts of 12% from 2014 levels by 2030*

Botswana BAIS Surveys

Synthetic Cohort-level HIV Prevalence: 2004-2013



2015 Botswana Incidence Patterns

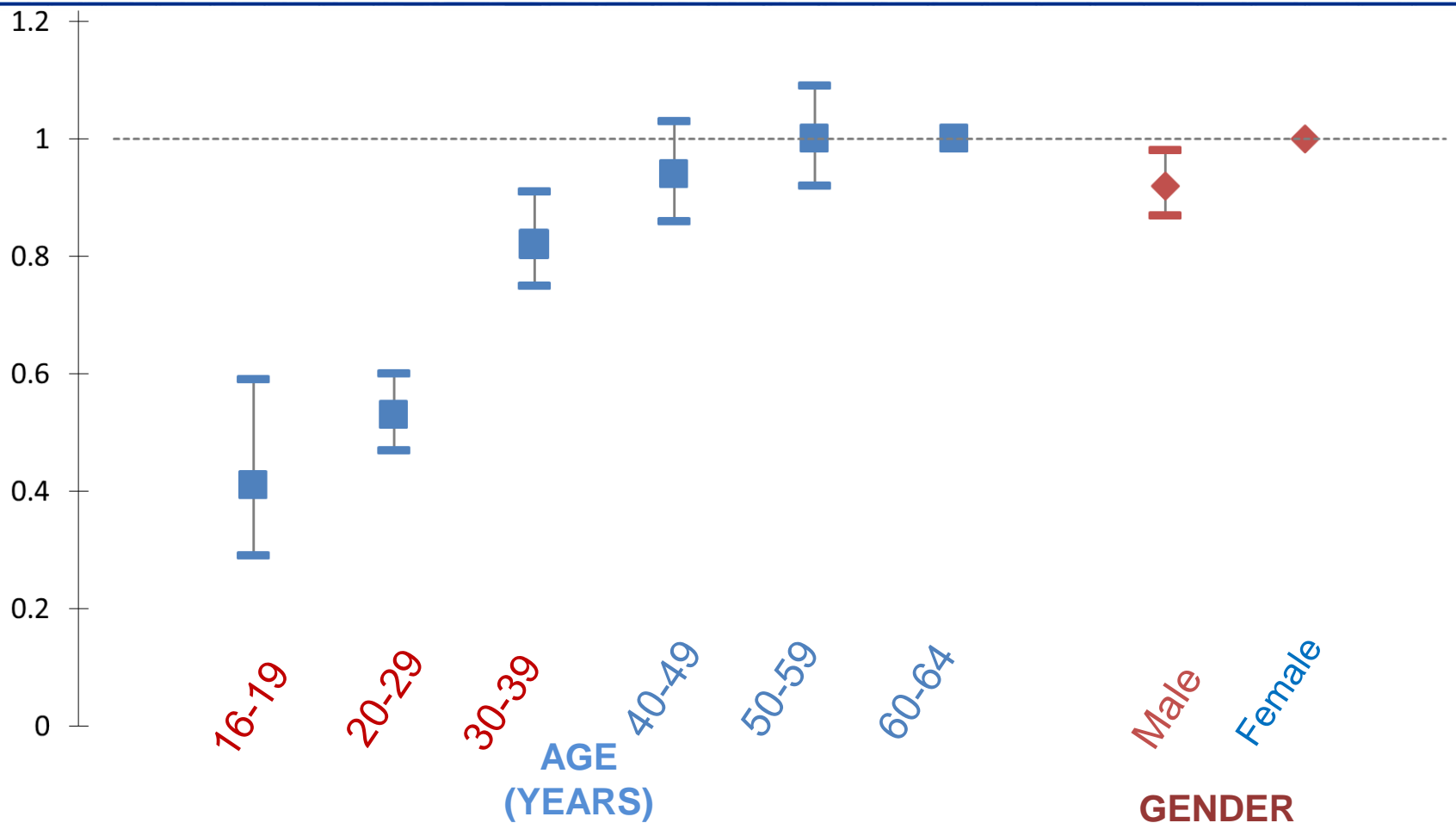
Modeling Pilot Results

The analysis indicated where new HIV infections will be concentrated in 2016:

- Together, never married men and women <25 years old will account for over 35% of all new HIV infections.
- In most districts over 50% of new HIV infections in sexual unions happen among sero-concordant unions.
- Never married women under 25 contribute a high proportion of new infections in most districts.

Overall, new HIV infections will be concentrated in young women and men & in sero-concurrent negative couples.

Predictors of Achieving Overall 90-90-90 Target



- Younger age was the strongest predictor of being undiagnosed, not on ART and not virologically suppressed.
- Male gender, being single or never married, and higher levels of education were also significantly associated with lower levels of coverage for the overall target

Recognizing Renewed Hope

- ❖ Clinical **Trial 052** (Botswana based data) showed a **93% reduction in HIV transmission** with the initiation of early ART.
- ❖ The study also demonstrated a **96% reduction in HIV transmission in sero-discordant couples** with early initiation of ART.
- ❖ Use of the **integrase inhibitor Dolutegravir**, significantly reduced adverse side effects and greatly prevented the development of HIV drug resistance in most clinical trials to date.

TAKING ACTION

In response, a **Treat All Task Force** was established in November 2015 to complete a thorough programmatic and economic analysis of what benefits a Treat All approach would offer Botswana, building upon the results of the **2015 Investment Case.**

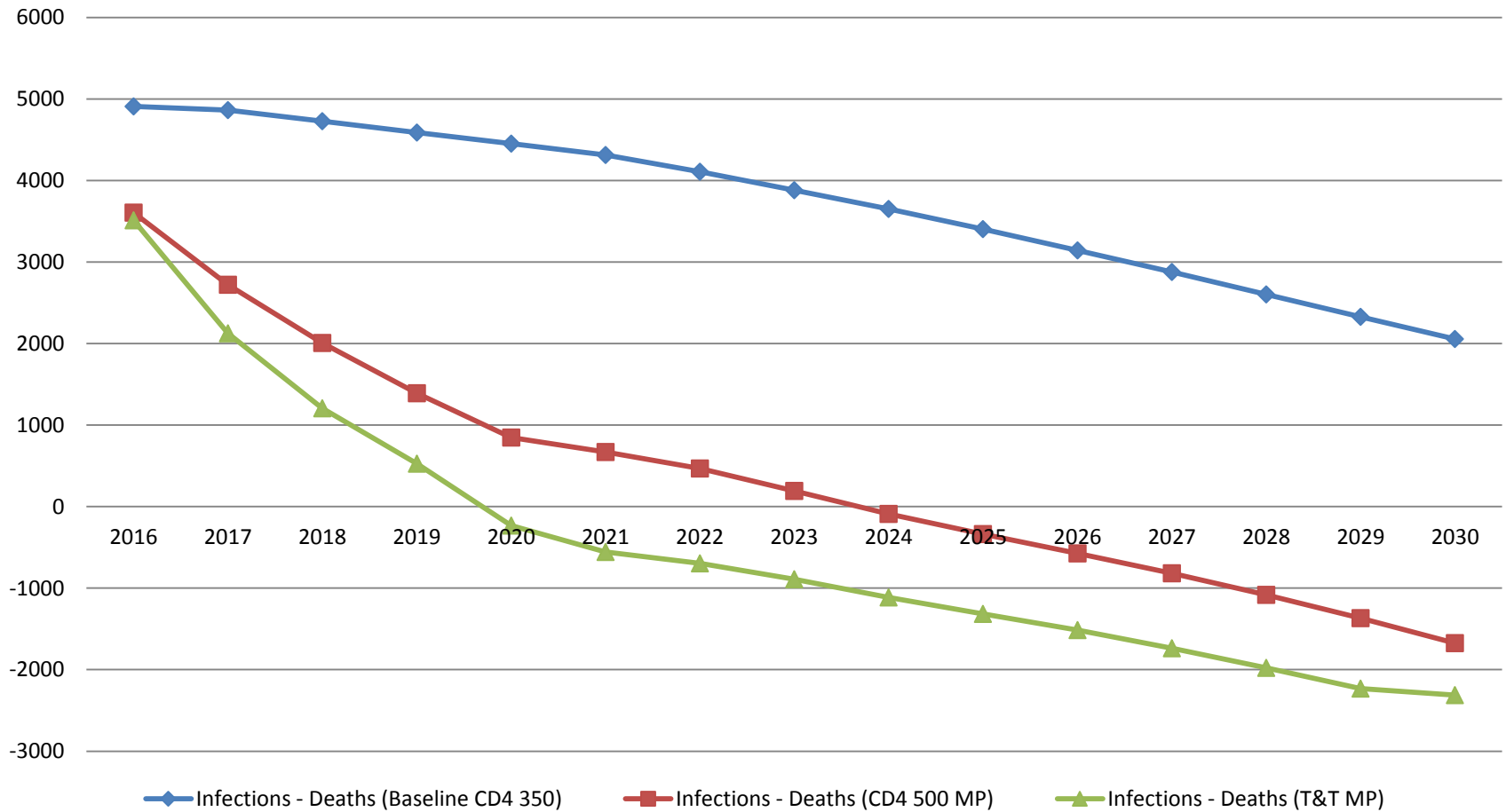
Methodology

- Using Spectrum (version 5.4) programmatic inputs were determined with broad stakeholder involvement and informed by available START data.
- More than 50 models versions were presented and critically reviewed.
- Models varied in terms of 1st line failure rates, hospitalizations and prevention targets.
- Available normative costing were used and revised when necessary.
- A TWG provided reviewed results and provided critical debate.

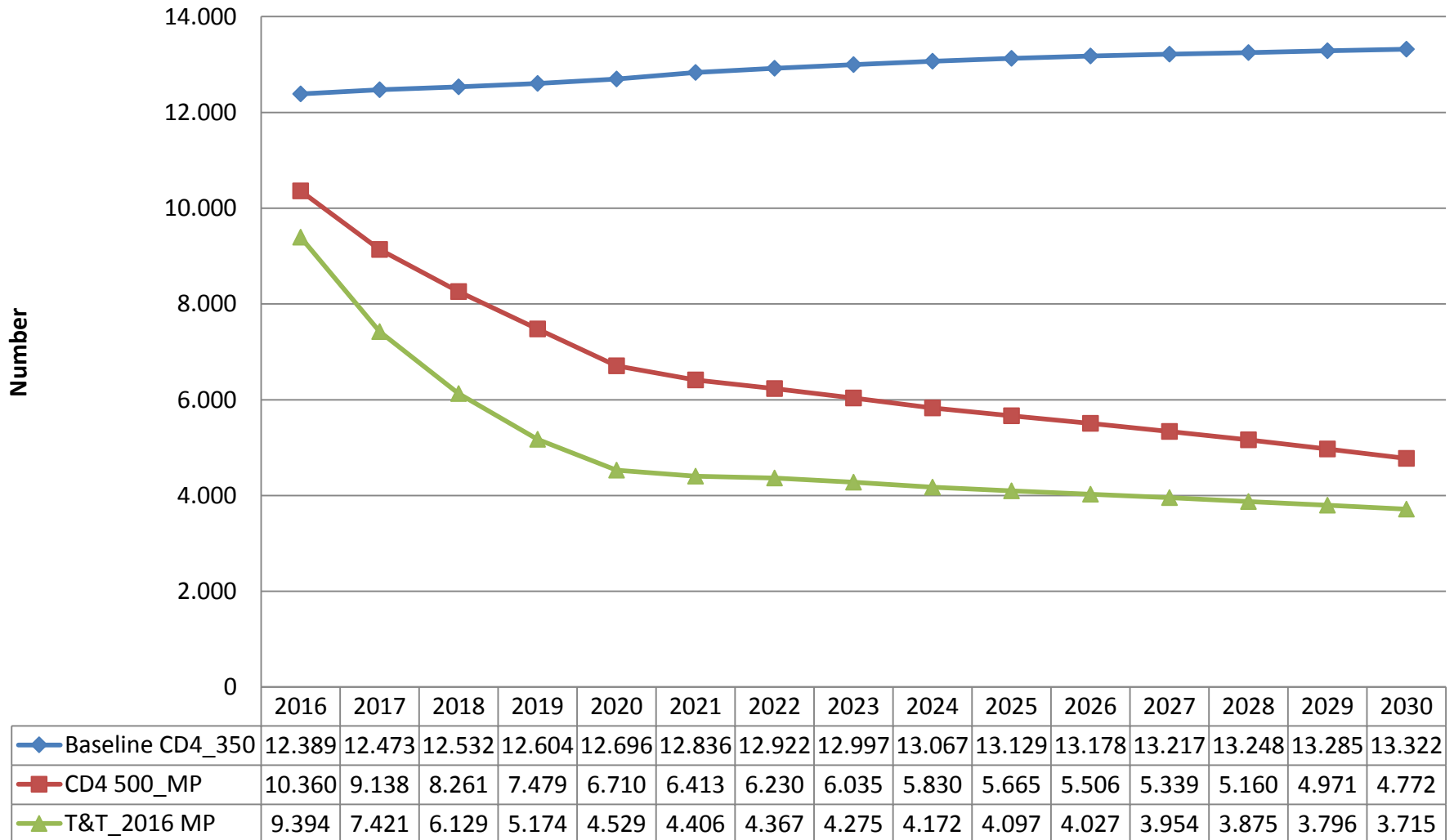
Results: Implementation Treat All with Optimized ART Regimens:

1. The most cost-effective option to support the sustainability of Botswana HIV Response.
2. The greatest reduction in the number of new HIV infections.
3. The greatest decreases in annual AIDS deaths.
4. The largest decrease in the number of TB cases.
5. The largest decreases in ART associated toxicities and treatment failure.
6. Epidemiologic control of HIV as early as 2020

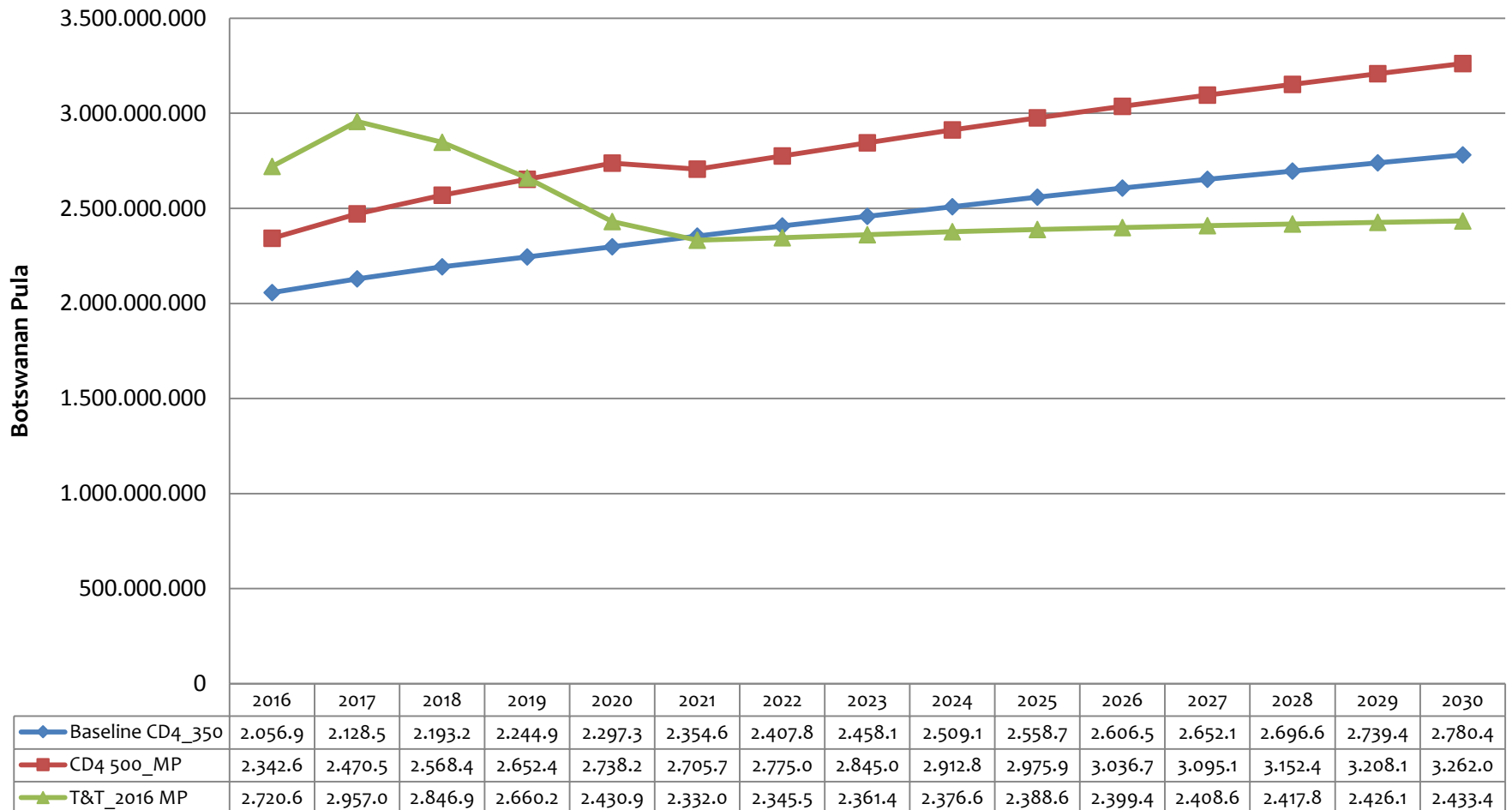
Epidemiologic Control per Strategy



Number of New HIV Infections 2016-2030



Total Cost in BWP by Strategy: 2016-2030



Additional Cost Savings and Benefits

- The T&T Strategy is the single most effective intervention to decrease TB cases, to levels less than those recorded before the HIV epidemic.
- Cumulative TB cost savings of up to \$33.7 million from 2016 through 2030.
- Significant savings expected from decreases in AIDS related and non-AIDS related Cancers.
- Decrease in HR requirements for labs & clinics.
- Decrease in productivity losses.

TAKING ACTION

T&T Task Force Objectives

- Provide oversight of the National Treat All Implementation Strategy and prioritize Health System Strengthening
- Direct economic requirements to determine and monitor funding gaps, maintain strategic information, monitor efficiency gains and reduce duplication of efforts.
- Mitigate implementation risks.
- Chaired by the Permanent Secretary

Implementation Plan in Collaboration with District Health Management Teams

Using Existing Infrastructure begin a phased approach over the next 3 years to:

Initiate approximately 100,000

- **2016/17:** Focus on Youth
- **2017/18:** Focus on Community Interventions
- **2018/19:** Focus on Surveillance & Mental Health

Implementation Plan

DTG initiations

- 2016 : All new initiations TRU/DTG
- 2017: Switch all patients off LPV/r to DTG
- 2018: Begin to switch off CBV and EFV/NVP containing regimens

Pregnant women already on ART remain on those regimens, newly dx'd pregnant women begin DTG

TAKING ACTION

Treat All Implementation

- ❖ Increase HIV Testing Capacity in all public & private health settings (pilot home HIV testing)
- ❖ Establish functional linkage to care to ART facilities upon positive HIV test results (pilot same day initiations).
- ❖ Contact all patients whose CD₄s are being monitored to begin treatment (~38,000).

TAKING ACTION

Treat All Implementation

- ❖ Restructure M&E systems incorporating SMS technology and real time reporting.
- ❖ Focus on community support for tracking & adherence support.
- ❖ Sensitize the public and HCW on the HIV treatment paradigm shift.
- ❖ Change the current HIV narrative

Developing a New HIV Narrative

- No one EVER should become ill from HIV again!
- Botswana on the road to Epidemiologic Control of HIV!
- New HIV Medications with Less Side Effects!
- People with HIV have the same Life Expectancy as the General Population!
- Life long ART is easier to take than treatment for Hypertension or Diabetes!

Test Early, Treat Early, Live Long!

Implementation Update

Treat All Campaign launched by President 3rd June.

- Approximately 2,800 initiated first month (monthly average before launch ~1,300), without a significant IEC campaign.
- M&E system restructured.
- 2016 Clinical Care Guidelines updated.
- SRH & TB & NCD service integration ongoing.

In Conclusion

By implementing a Treat All Strategy with optimized ART regimens the Government of Botswana will realize:

- The greatest cost savings;
- Epidemiologic control of HIV;
- Significantly decrease HIV mortality and morbidity

The financial benefits of decreased HIV infections, mortality and morbidity will far outweigh the initial investment.

Many Thanks

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BUMMHI

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