

# Towards the first and second 90: KZN Update

AWACC 2019, 28Aug2019

Elangeni Hotel, Durban

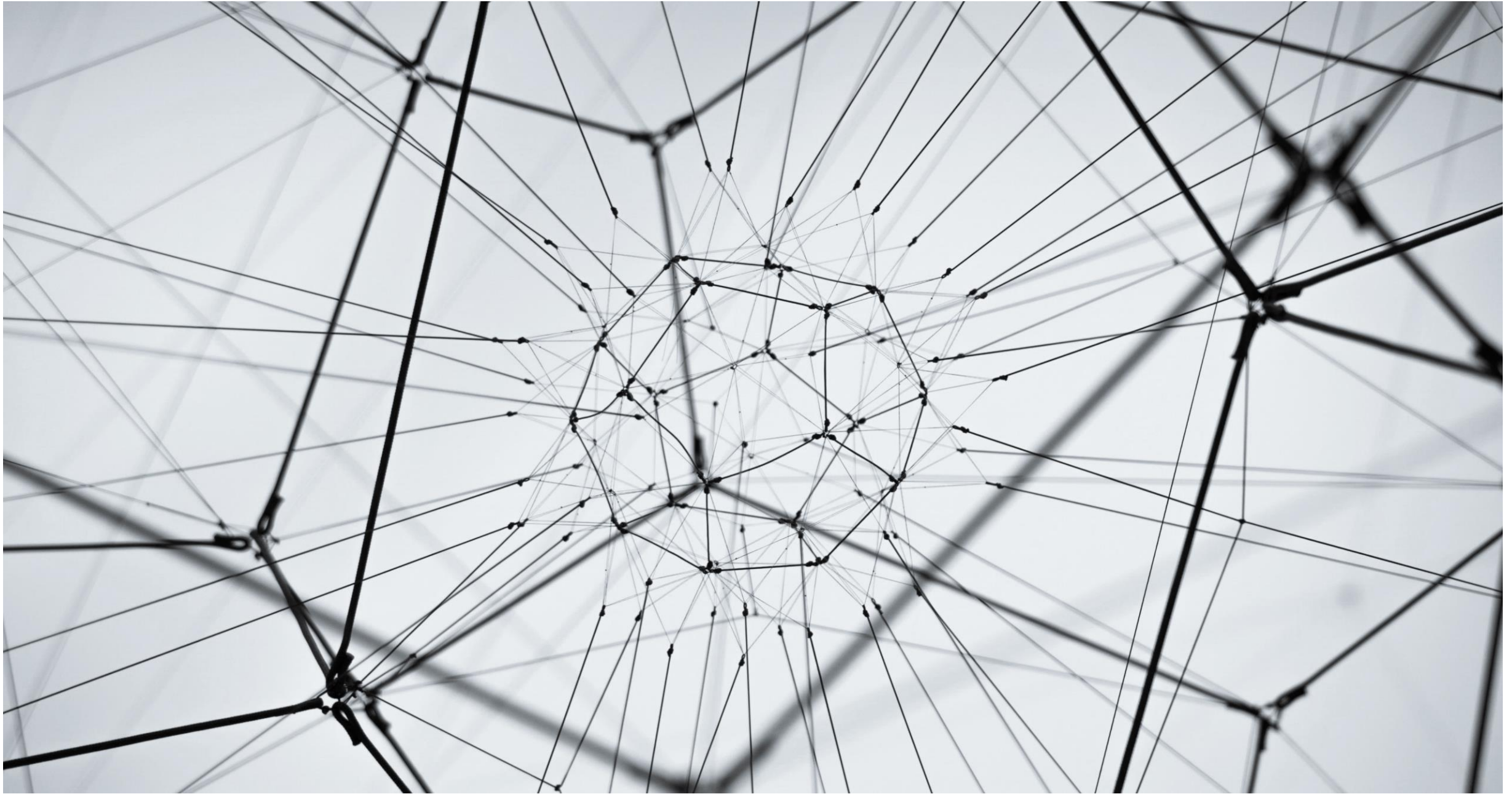
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# WHO AND HIV: 30-YEAR TIMELINE

<b>1988</b> <p>WHO celebrates the <b>first World AIDS Day</b> acknowledging the key role of civil society in mobilizing a global response.</p>	<b>1990</b> <p>WHO publishes the <b>first guidelines on the clinical management of HIV infection</b> with disease staging. <b>World AIDS Day 1990</b> calls for a global focus on <b>women and HIV</b>, for their role and contributions in the global response, as patients and carers, and in prevention of mother-to-child transmission.</p>	<b>1991</b> <p>The number of countries with national AIDS programmes rises from <b>7 to 130</b> within a year.</p>
<b>2002</b> <p>Of the 28.5 million people living with HIV in Africa, only <b>35 000</b> are accessing HIV treatment. WHO issues its first full guidelines on HIV treatment.</p>	<b>1996</b> <p>Highly active <b>antiretroviral therapy is first introduced</b> changing the mood of the HIV response from despair to great hope. WHO, together with 5 UN agencies, establishes the Joint United Nations Programme on AIDS (<b>UNAIDS</b>).</p>	<b>1994</b> <p>WHO estimates <b>13–14 million</b> people are living with HIV, with this figure projected to reach <b>30–40 million</b> by 2000.</p>
<b>2003</b> <p>WHO launches the global <b>'3 by 5' initiative</b>, to provide HIV treatment to 3 million people in developing countries by 2005.</p>	<b>2007</b> <p>Only <b>10%</b> of people with HIV knew of their diagnosis in 2005. WHO recommends a <b>revolutionary step</b> to offer provider-initiated HIV testing and counselling.</p>	<b>2014</b> <p>The world is on track to achieve the Millennium Development Goal target to treat <b>15 million</b> people with HIV by 2015.</p>
<b>2018</b> <p>HIV testing reaches <b>75%</b> of people with HIV and nearly <b>60%</b> of people with HIV are receiving treatment. Despite successes, huge disparities still exist – many populations are being left behind, particularly key populations. Half of the people living with HIV are not virally suppressed, and <b>1.8 million</b> people are newly infected every year.</p>	<b>2016</b> <p>WHO launches historic guidelines recommending <b>treatment for all</b> people living with HIV, for both prevention and treatment outcomes. Further innovations, including <b>pre-exposure prophylaxis</b> and <b>self-testing</b> are recommended.</p>	

**ENDING AIDS BY 2030 IS  
ACHIEVABLE IF WE KEEP  
OUR EFFORTS STRONG.**



Question 1: Jargon cleanser,

select the most correct option..

- A) "90-90-90" has been achieved in SA
- B) "90-90-90" = "U=U"
- C) "909090" is the most common ATM pin for HIV clinicians
- D) "90-90-90" must be achieved by 2020 to eradicate HIV



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# Ground rules



Why 90-90-90?



How do we measure it?



Understanding the measures...

Why 90-90-90?



Eradication



Elimination



Epidemic Control

# THE SPREAD AND ERADICATION OF SMALLPOX



In China, people appealed to the god Yu Hoq Long for protection from smallpox.



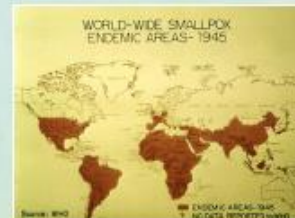
Smallpox goddess Shitata Mata, worshipped in northern India, was considered both the cause and cure of smallpox disease.



West African god of smallpox Shapona was thought to force the disease upon humans due to his "divine displeasure."



A container used to store the powdery variolation material in Ethiopia.



Worldwide distribution of smallpox and the countries in which it was endemic in 1945.

Smallpox is present in the Egyptian Empire.

Increased trade with China and Korea introduces smallpox into Japan.

Smallpox spreads to Asia Minor, the area of present-day Turkey.

Population expansion and more frequent travel renders smallpox endemic in previously unaffected Central and North Europe, with severe epidemics occurring as far as Iceland.

European colonization and the African slave trade import smallpox into the Caribbean and Central and South America.

Variolation—a process of grinding up dried smallpox scabs from a smallpox patient and inhaling them or scratching them into an arm of an uninfected person—is being used in China and India to control smallpox.

Variolation is introduced into England by Lady Mary Wortley Montagu, a wife of the British ambassador in Turkey.

In 1796, Edward Jenner, an English doctor, shows the effectiveness of previous cowpox infection in protecting people from smallpox, forming the basis for vaccination.

3<sup>RD</sup> CENTURY BCE

4<sup>TH</sup> CENTURY BCE

6<sup>TH</sup> CENTURY

7<sup>TH</sup> CENTURY

10<sup>TH</sup> CENTURY

11<sup>TH</sup> CENTURY

13<sup>TH</sup> CENTURY

15<sup>TH</sup> CENTURY

16<sup>TH</sup> CENTURY

17<sup>TH</sup> CENTURY

18<sup>TH</sup> CENTURY

20<sup>TH</sup> CENTURY

A written description of a disease that clearly resembles smallpox appears in China.

Smallpox is widespread in India. Arab expansion spreads smallpox into northern Africa, Spain, and Portugal.

Crusades further contribute to the spread of smallpox in Europe with the European Christians moving to and from the Middle East during the next two centuries.

Portuguese expeditions to African west coast and new trade routes with eastern parts of Africa introduce the disease into West Africa.

Variolation is a commonly used method for preventing smallpox in the Ottoman Empire (former Asia Minor, present-day Turkey) and North Africa.

European colonization imports smallpox into North America.

Smallpox is widespread in Africa, Asia, and South America in the early 1500s, while Europe and North America have smallpox largely under control through the use of mass vaccination.

After a global eradication campaign that lasted more than 20 years, the 33rd World Health Assembly officially declares the world free of smallpox in 1980.



Traces of smallpox pustules were found on the head of a 3,000-year-old mummy of the Pharaoh Ramses V.



Japanese woman defeats the "smallpox demon" by wearing red. In Japan, families who fell sick with smallpox set up shrines in their homes to appease the demon.



The Ottoman Empire in 1801 extended from Turkey (Anatolia) to Greece, Hungary, Bulgaria, Romania, northern Africa and parts of Middle East. Smallpox is thought to arrive here from Asia through major trade routes, like the Silk Road.



Introduction of smallpox into Mexico by the Spanish around 1520 was one of the factors that led to the demise of Aztec Empire. Franciscan missionary Bernardino de Sahagun, who lived there from 1545 until his death in 1590, illustrated this in his accounts of the Aztec history entitled "General History of the Things of New Spain."



Lady Mary Wortley Montagu, a survivor of smallpox herself, had both of her children variolated and was the foremost advocate of the technique in England.



Edward Jenner (1749-1823)



**UNDETECTABLE =  
UNTRANSMITTABLE**

**PUBLIC HEALTH AND  
HIV VIRAL LOAD SUPPRESSION**



# 90-90-90: Treatment for all

Modelling suggests that achieving these targets by 2020 will enable the world to end the AIDS epidemic by 2030, which in turn will generate profound health and economic benefits.



There are 36.9 million people living with HIV



75% know they are HIV-positive. The rest do not



Three out of five people living with HIV are on antiretroviral therapy



And only 47% have undetectable levels of HIV

## 90-90-90 HIV treatment targets

30 million people on treatment by 2020

90% of people living with HIV know their status

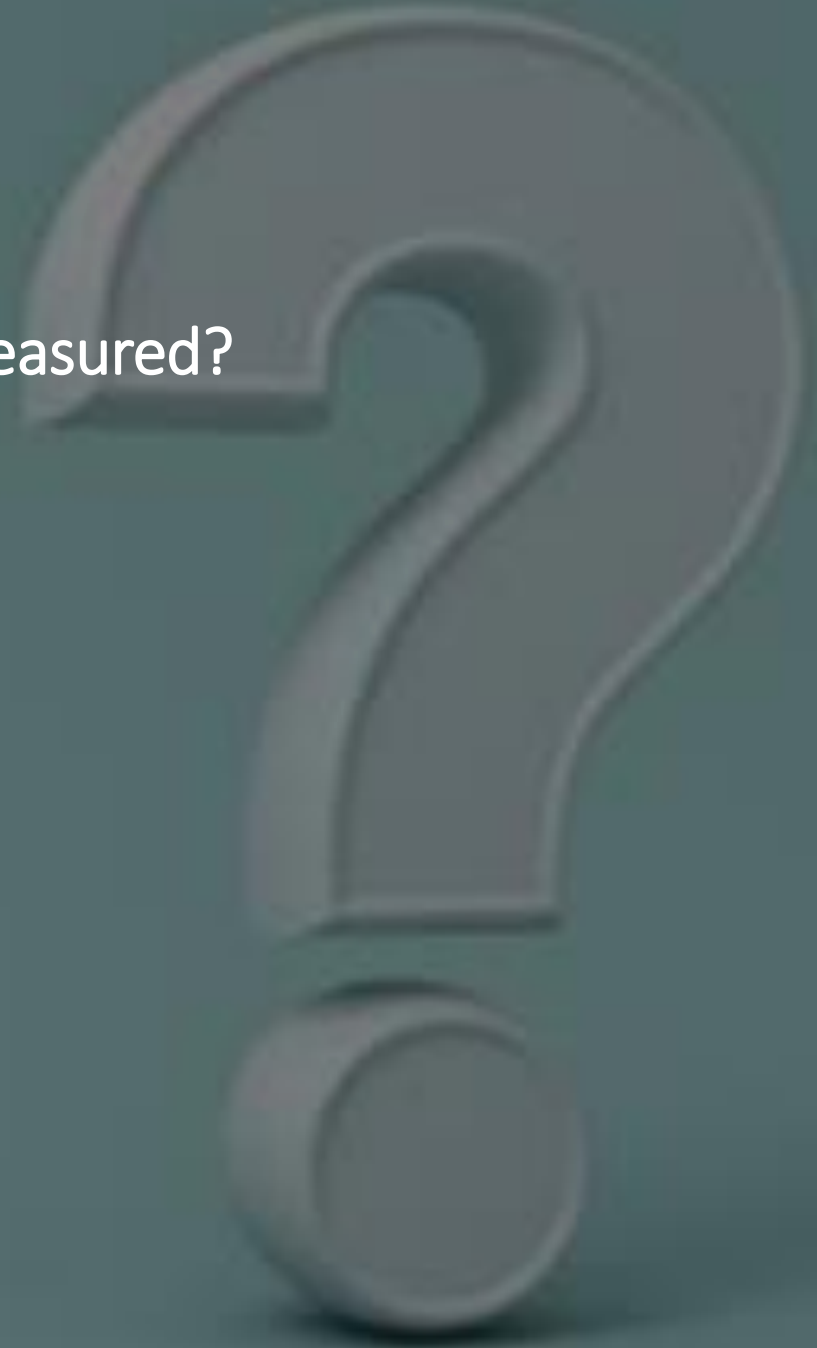
90% of people who know their status are on antiretroviral therapy

90% of people on antiretroviral therapy achieve viral suppression

Question 2: How is Epidemic Control defined/measured?

select the most correct option..

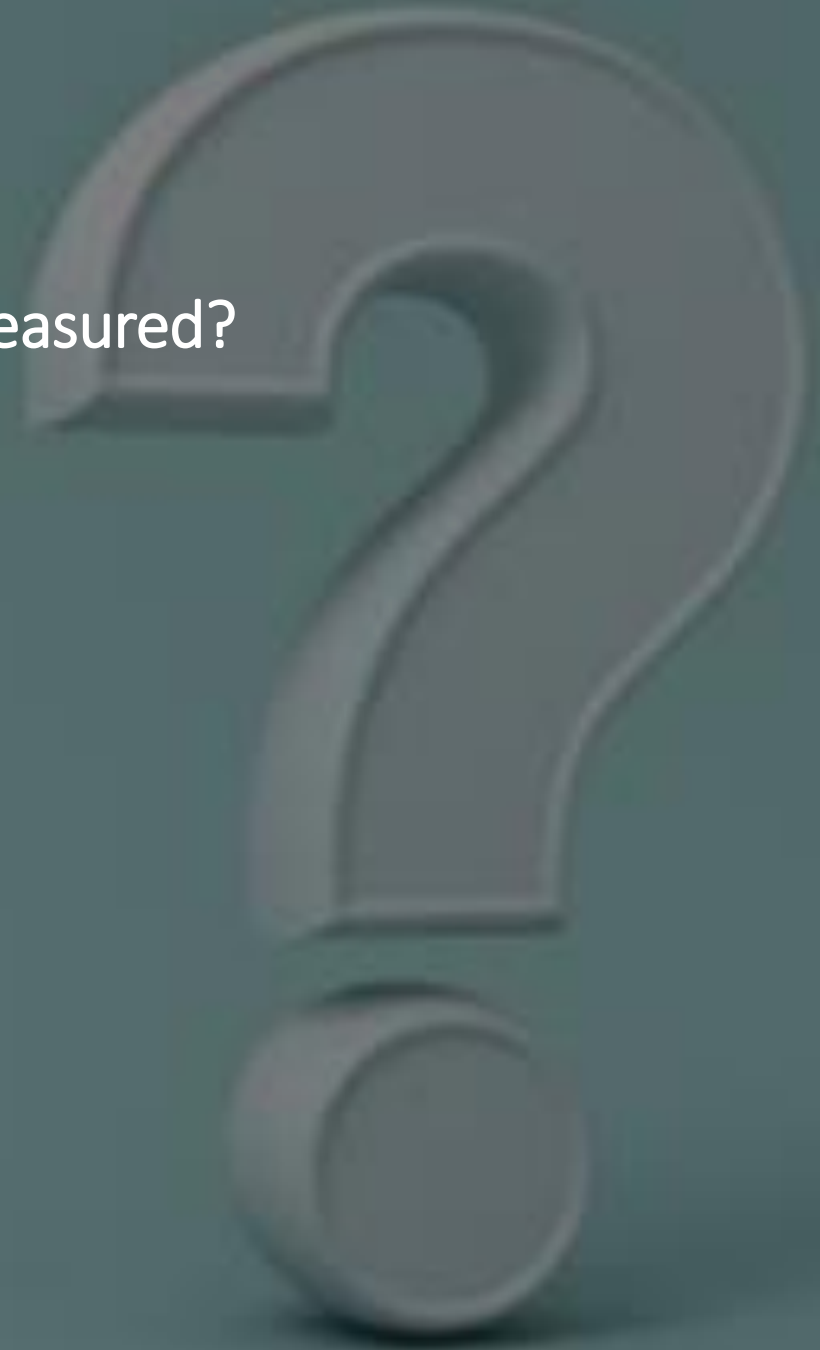
- A) Reduction in new HIV infections
- B) Reduction in HIV mortality
- C) HIV Incidence/Prevalence ratio
- D) When incidence is less than mortality ratios
- E) All of the above



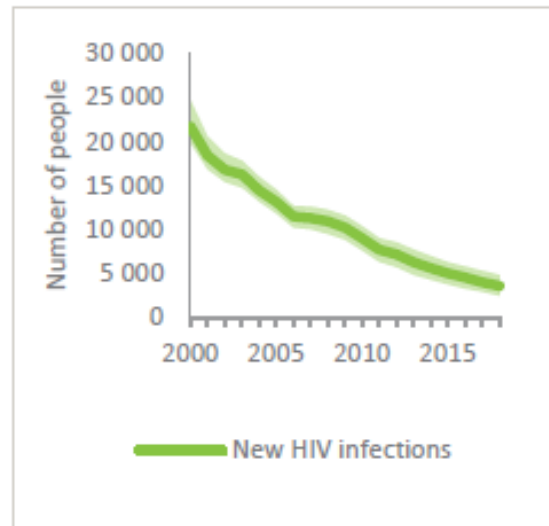
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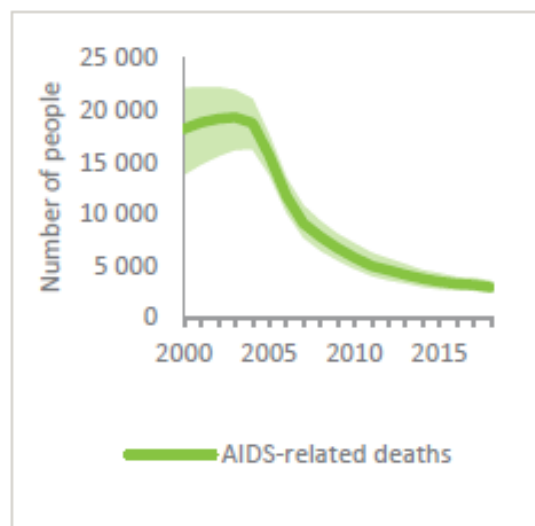
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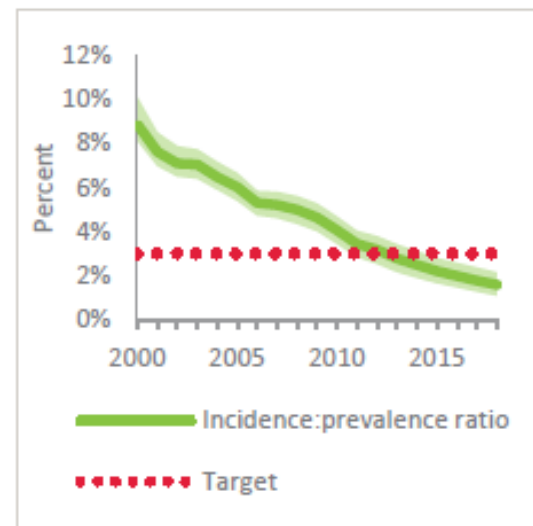
## EPIDEMIC TRANSITION METRICS



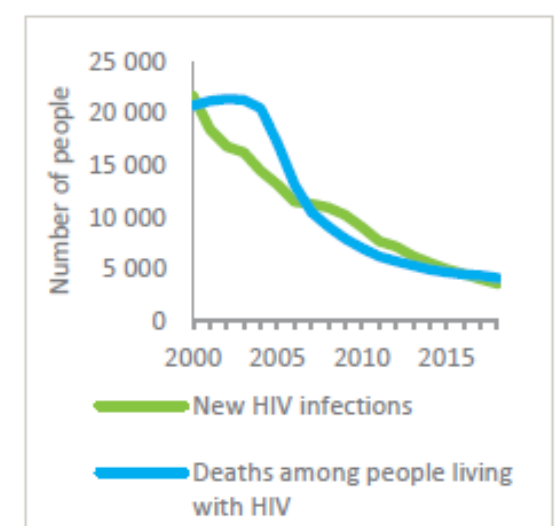
Change in new HIV infections since 2010 = **-61%**



Change in AIDS-related deaths since 2010 = **-50%**



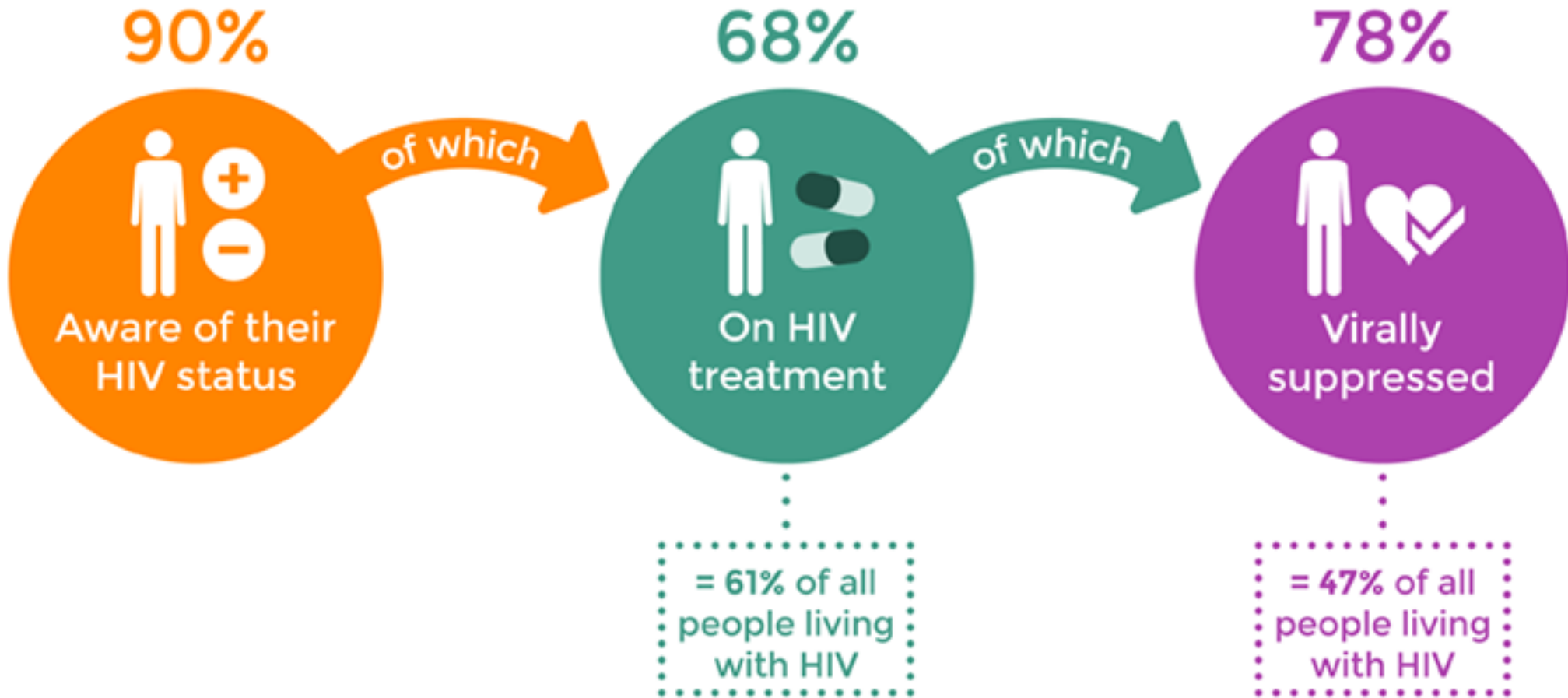
Incidence:prevalence ratio = **2%**



Incidence:mortality ratio = **0.9**

**SOUTH AFRICA**

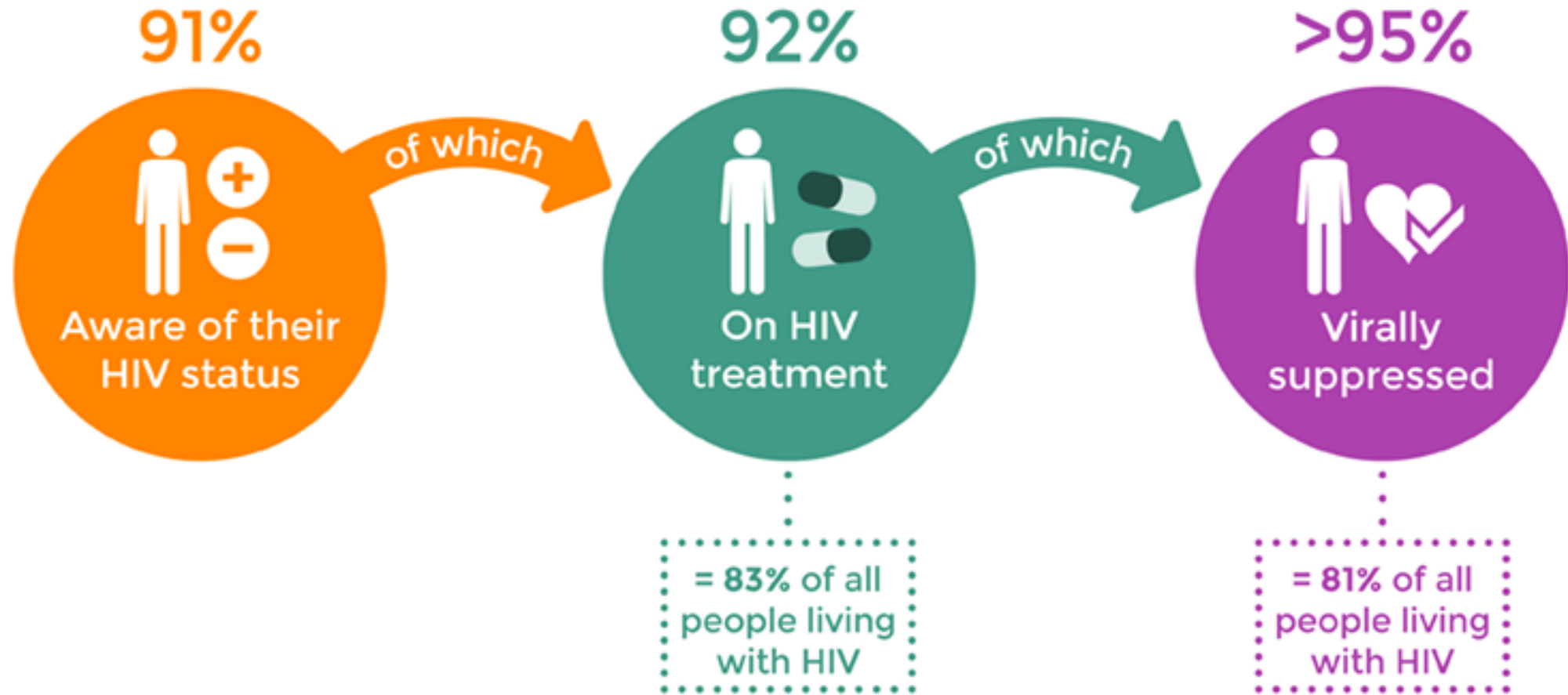
Progress towards 90 90 90 targets (all ages)



Source: UNAIDS Data 2018

**BOTSWANA**

Progress towards 90 90 90 targets (all ages)



Source: UNAIDS Data 2019

How do we  
measure it?



Surveys

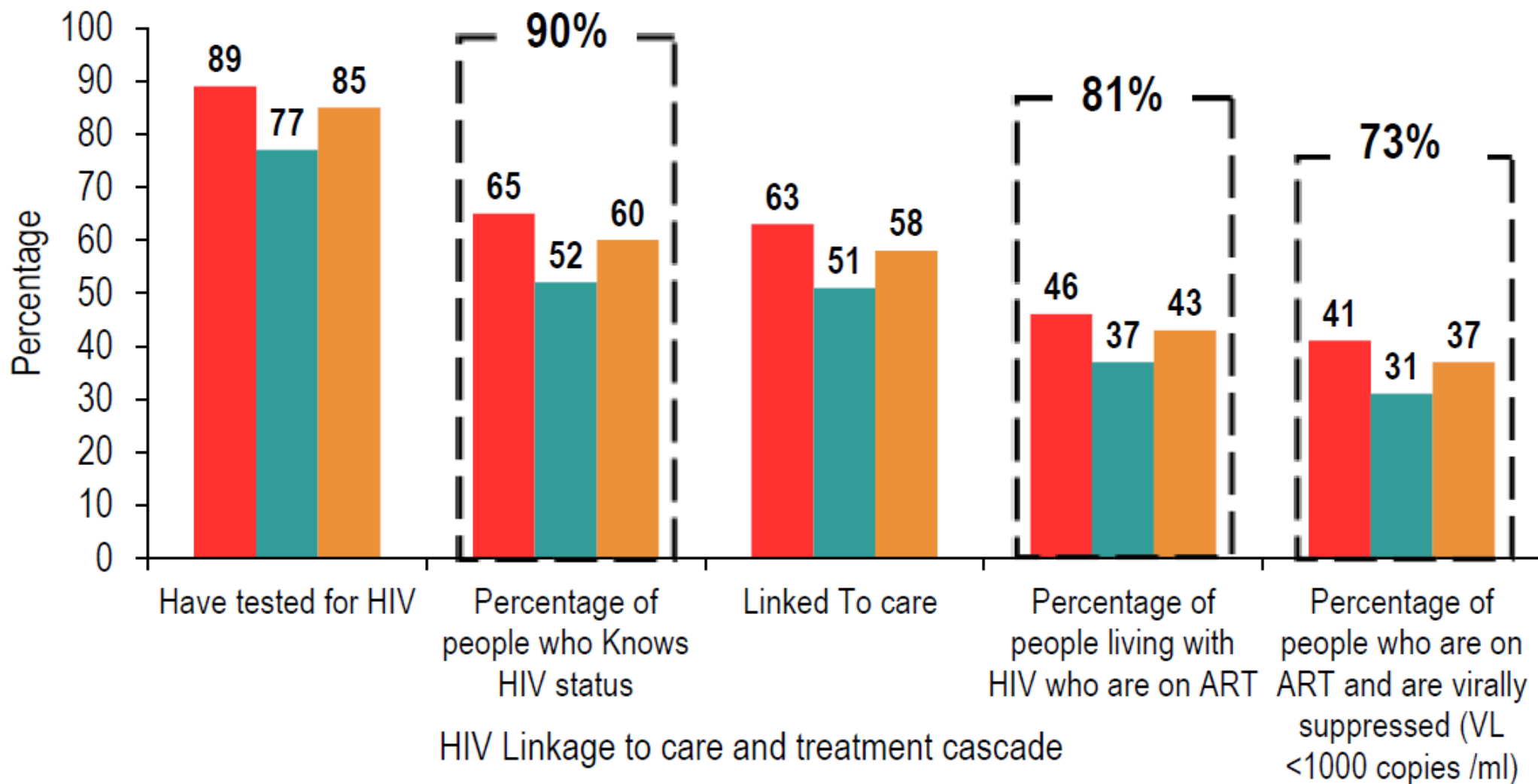


Routine Data



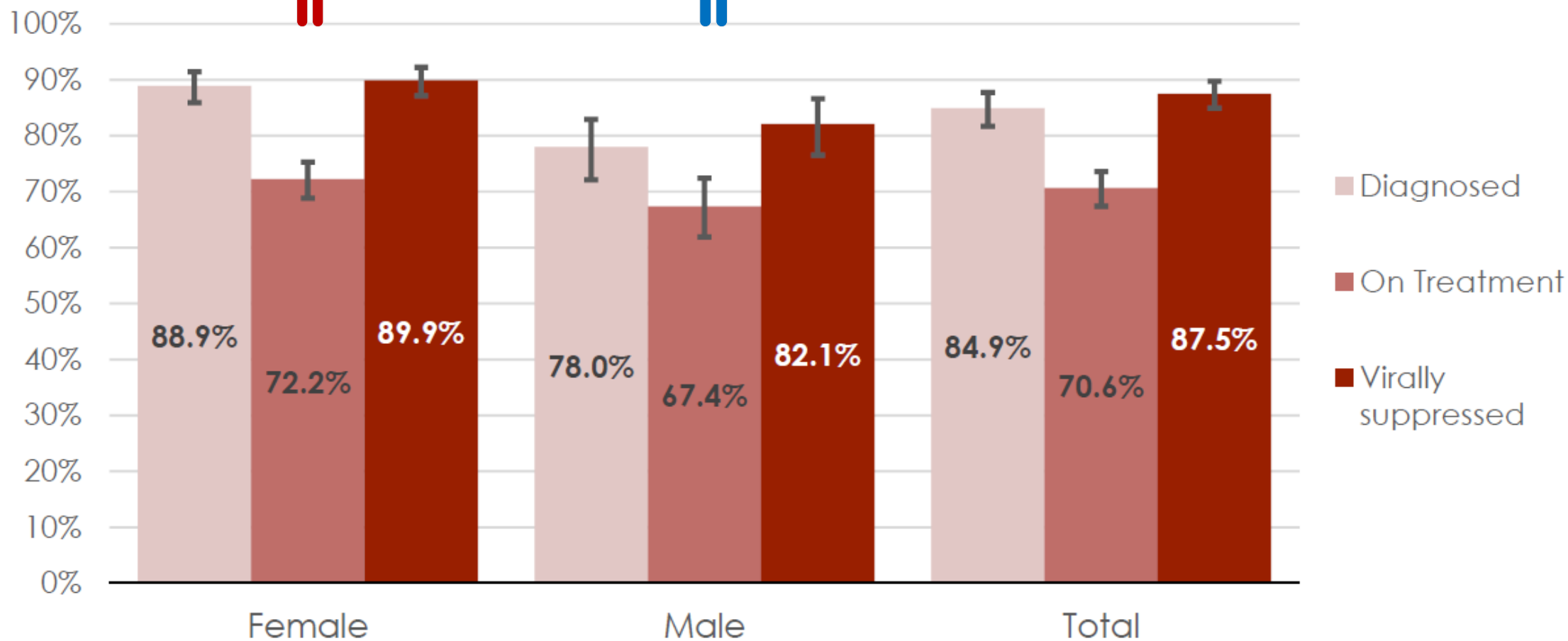
Mathematical Modelling

SURVEY



■ Females ■ Males ■ Overall

SURVEY



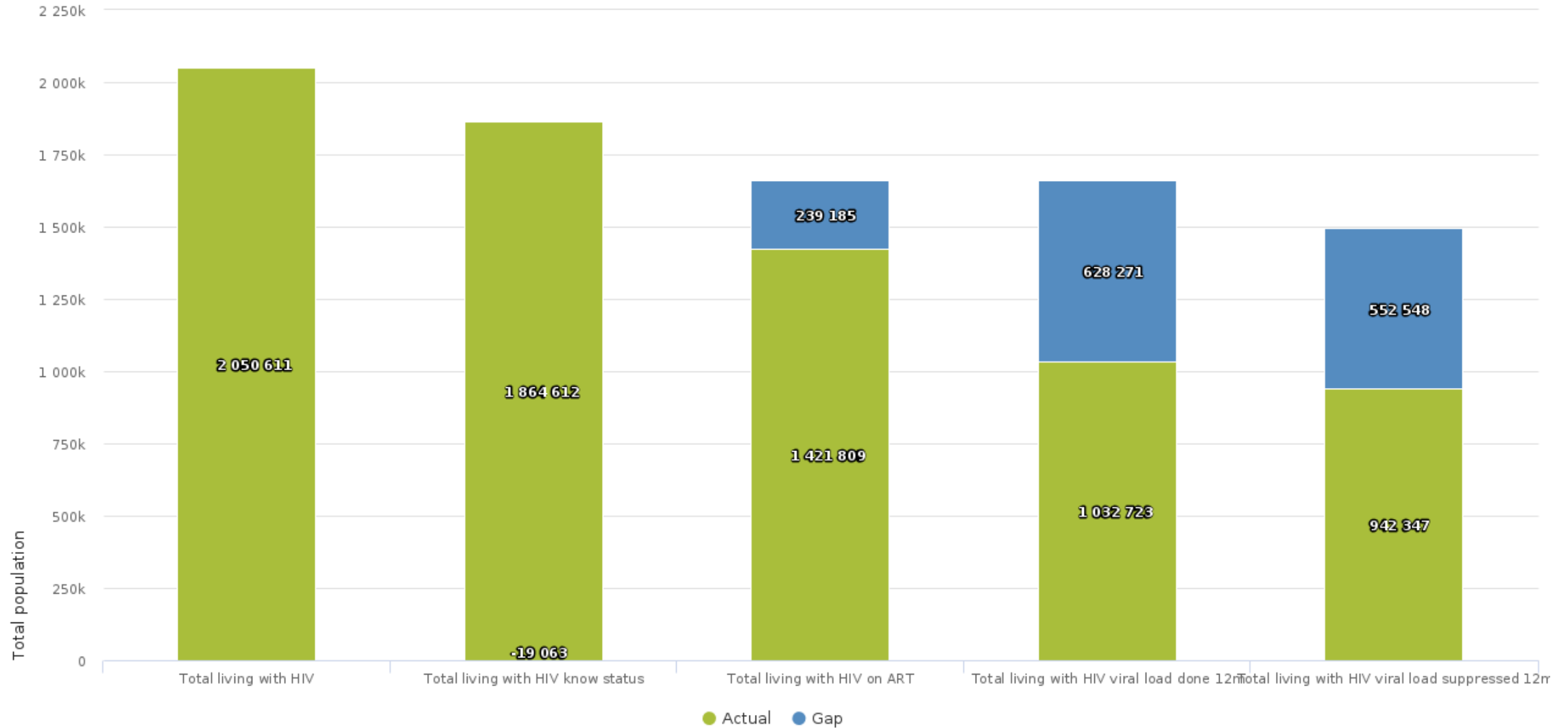
eThekwini Estimate

96.7	[93.4,98.4]	76.6	[65.4,84.9]	77.4	[66.3,85.6]
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# ROUTINE DATA

## Total cascade 90-90-90 - Progress against Targets

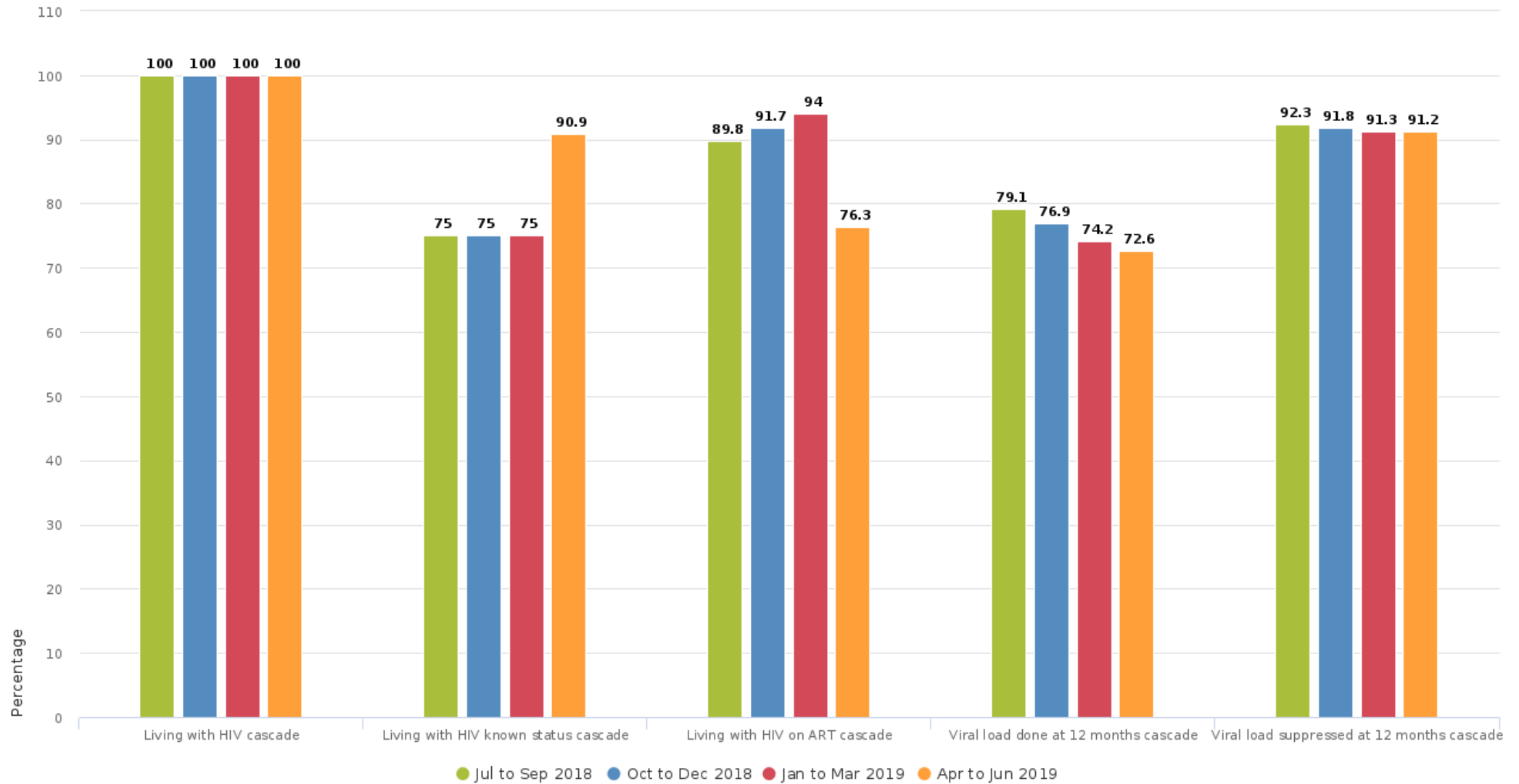
kz KwaZulu-Natal Province - Apr to Jun 2019



# ROUTINE DATA

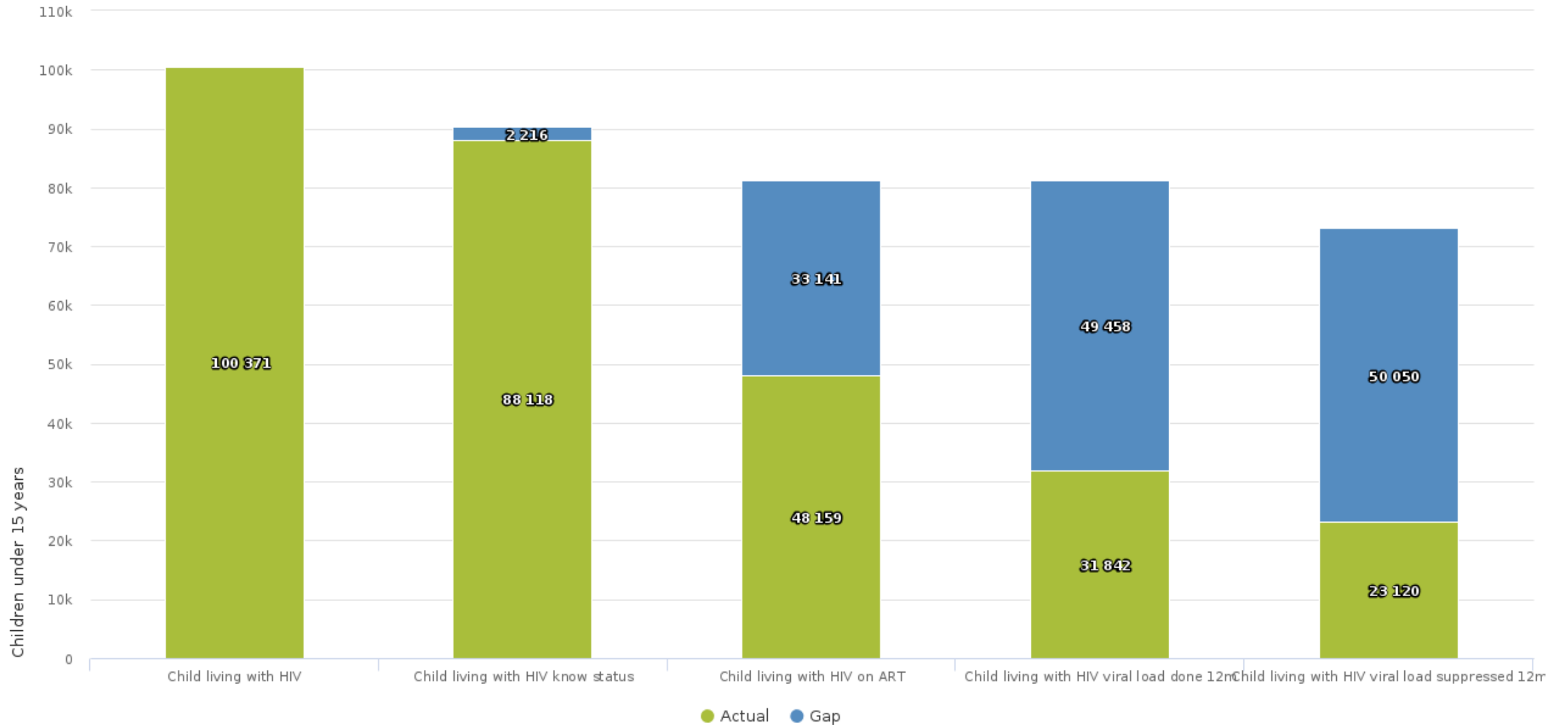
## 90-90-90 cascade rates for KwaZulu-Natal\_Last 4 quarters

kz KwaZulu-Natal Province



## Child cascade 90-90-90 - Progress against Targets

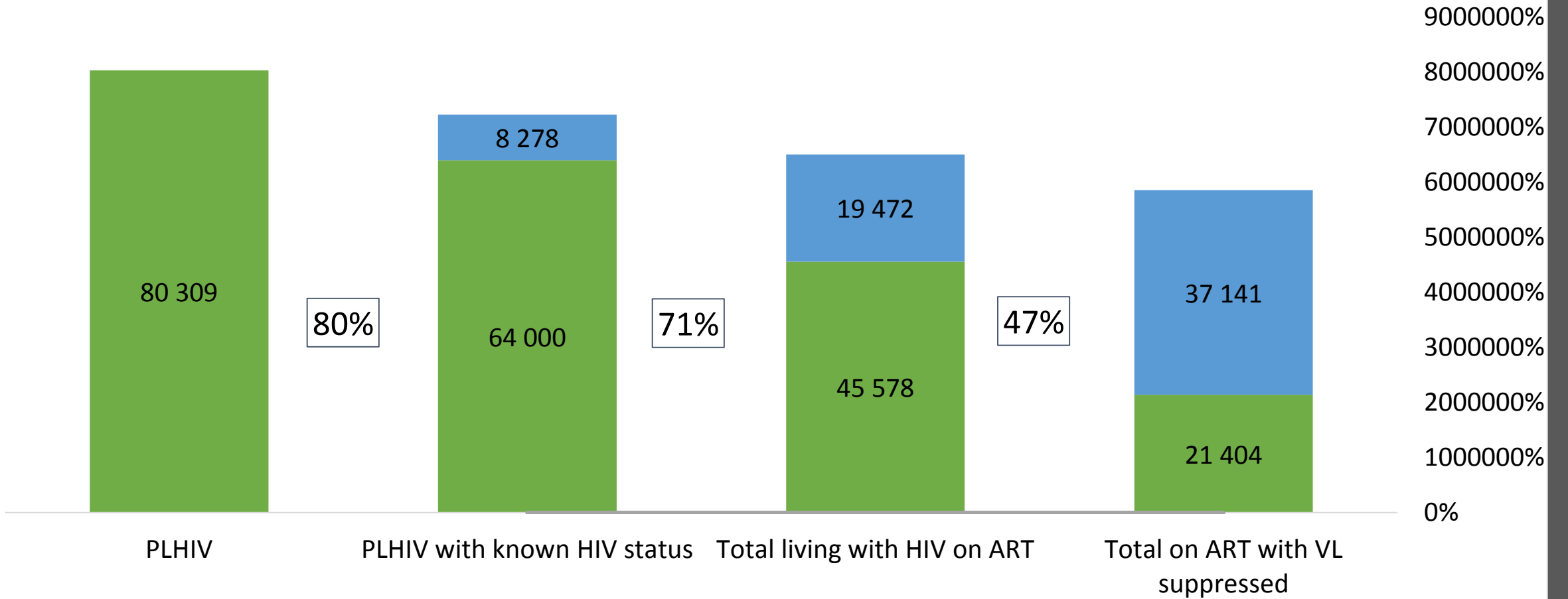
kz KwaZulu-Natal Province - Apr to Jun 2019



MATHEMATICAL MODEL

KZN Children Cascade (<15)

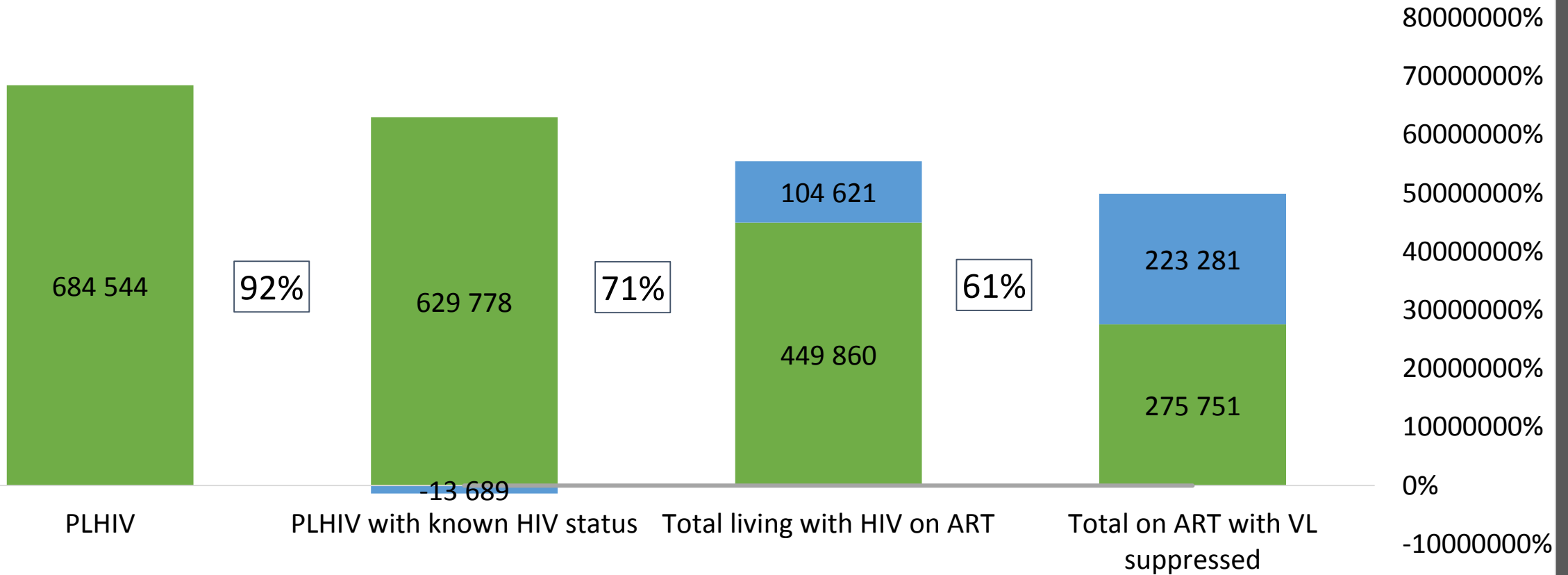
Actual Gap Reach against 90-90-90



MATHEMATICAL MODEL

KZN Male Cascade 15+

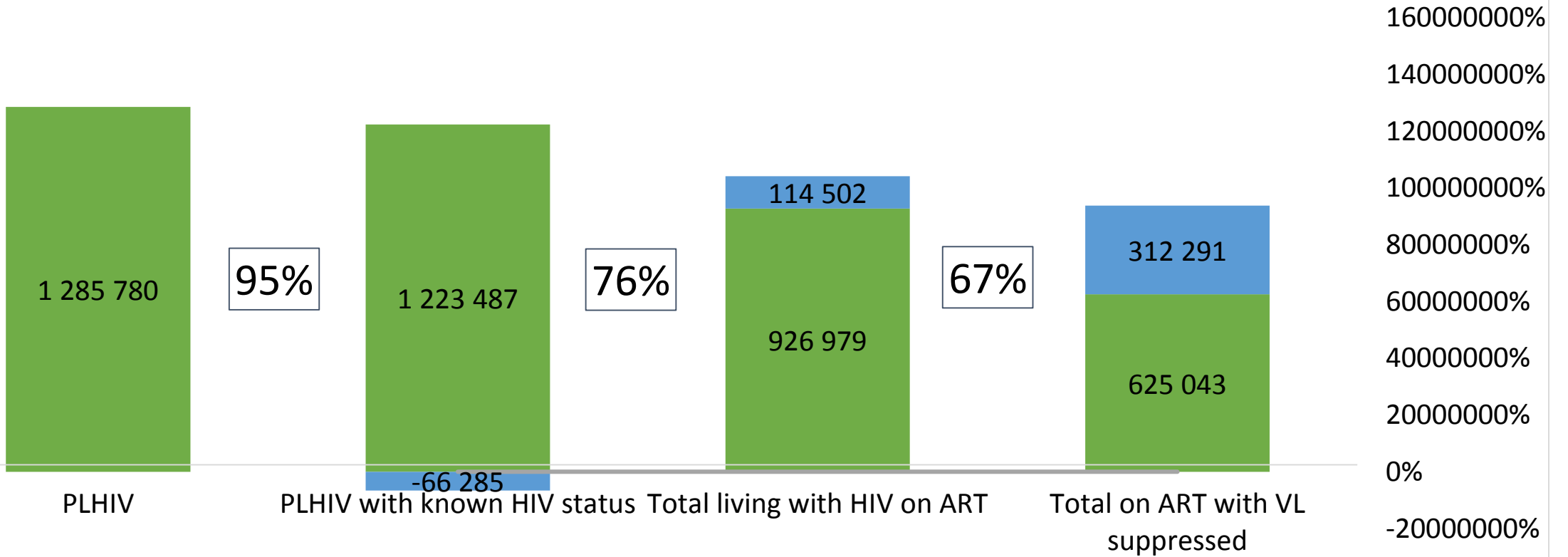
Actual Gap Reach against 90-90-90



MATHEMATICAL MODEL

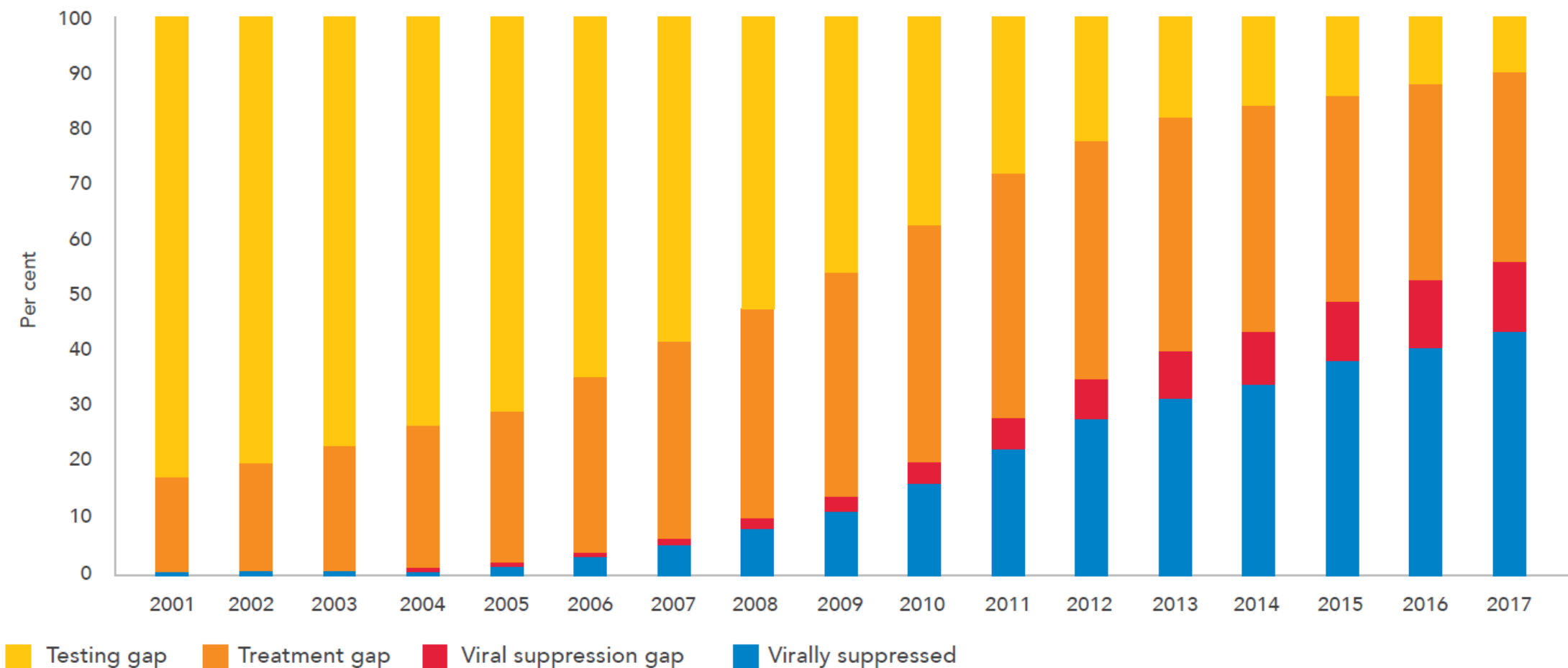
KZN Female Cascade 15+

Actual Gap Reach against 90-90-90



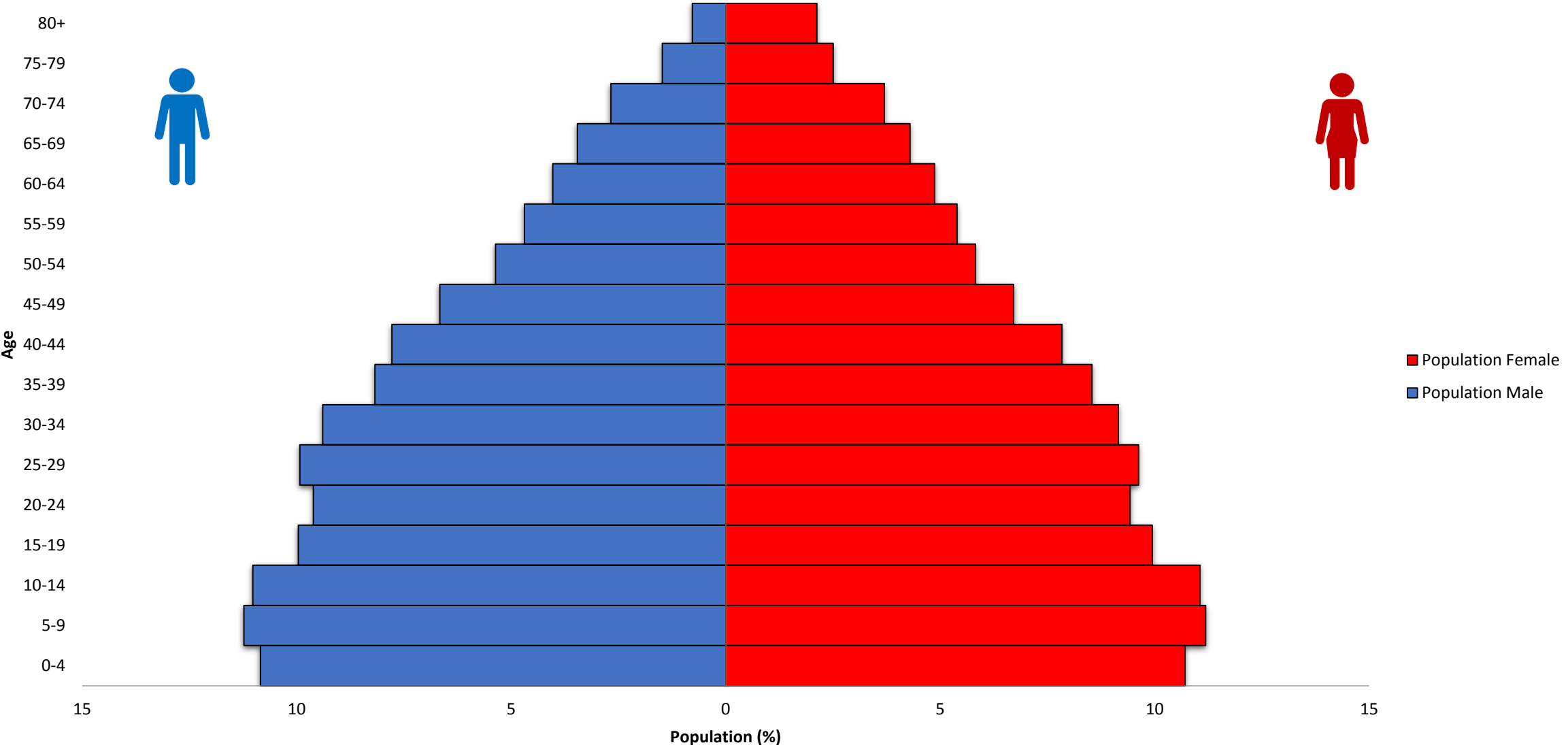
## TRENDS IN GAP to VIRAL SUPPRESSION

Knowledge of status, treatment and viral suppression gaps, South Africa, 2001–2017



**Source:** Estimates from the Department of Health, South Africa, Thembisa model, 2018.

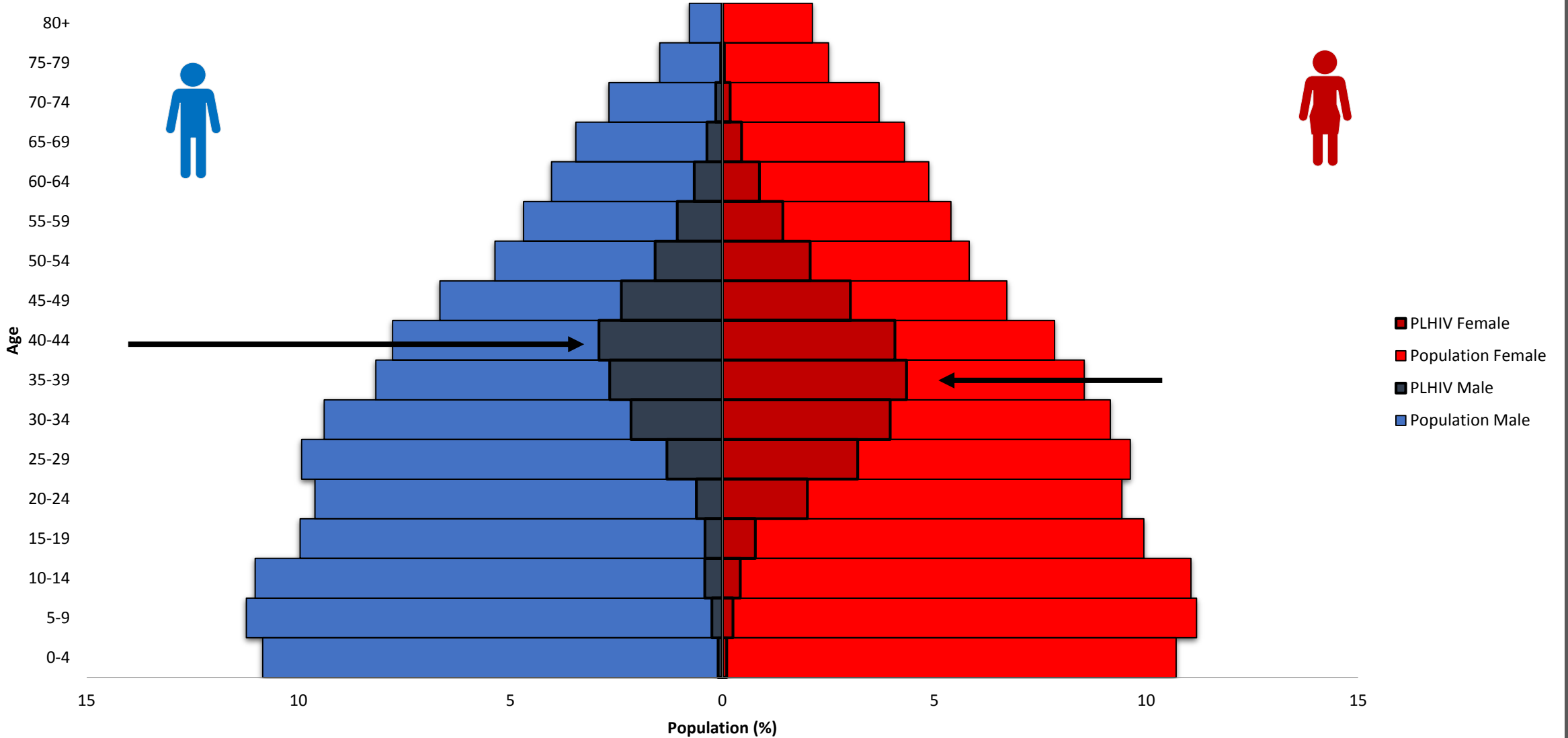
### eThekweni Population Pyramid



Population Female  
Population Male

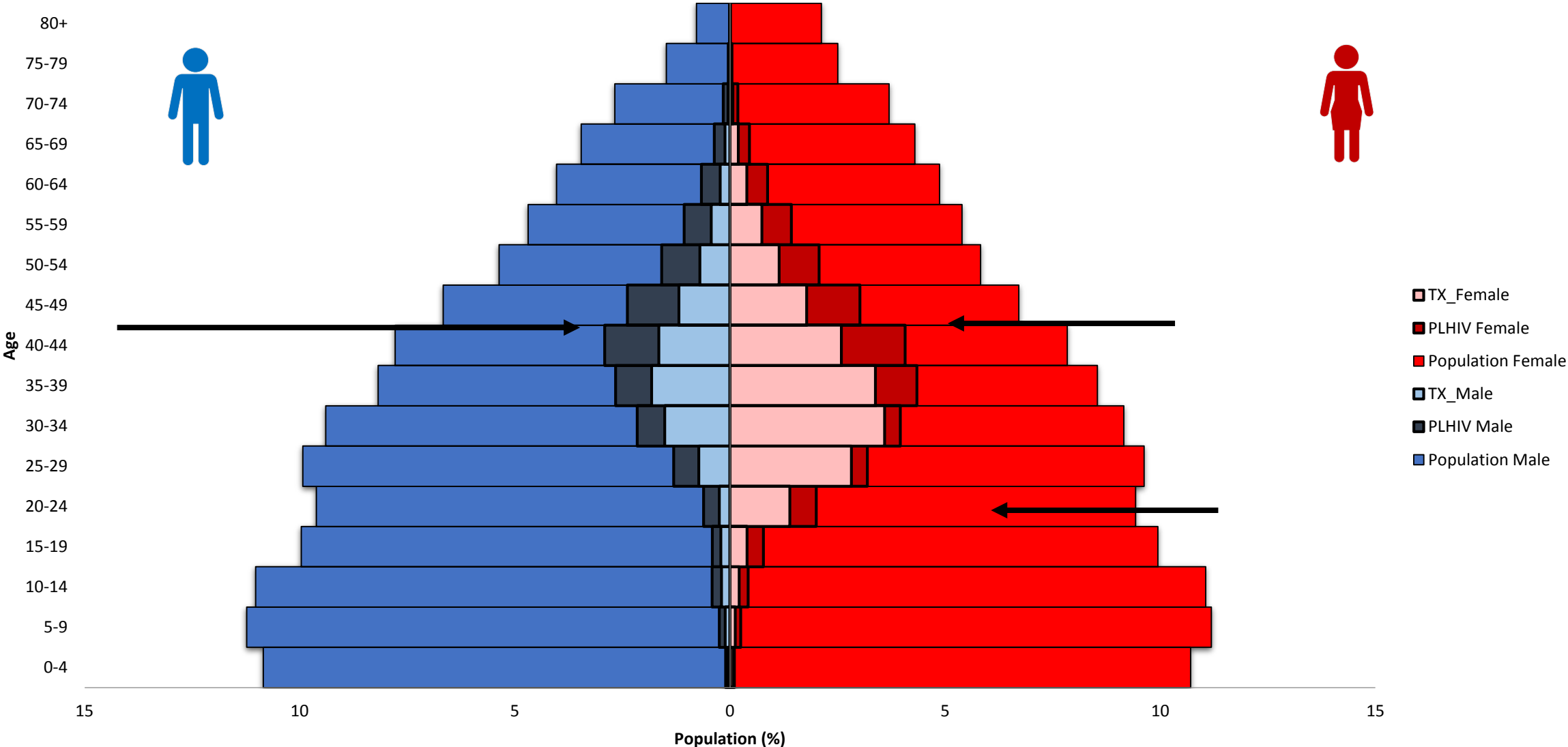
# CASE STUDY: WHO makes up the treatment gap

## eThekweni Population, PLHIV

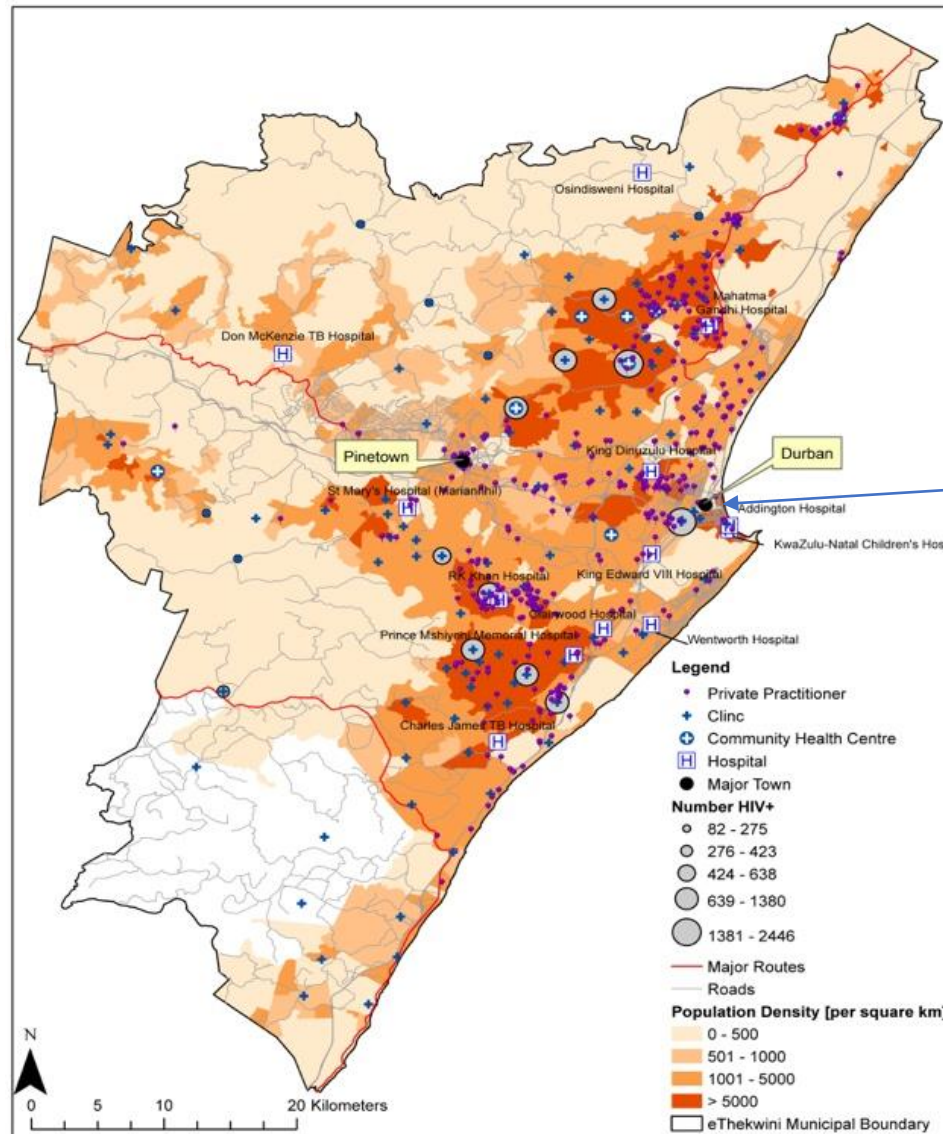


Source: StatsSA, Themisa Model

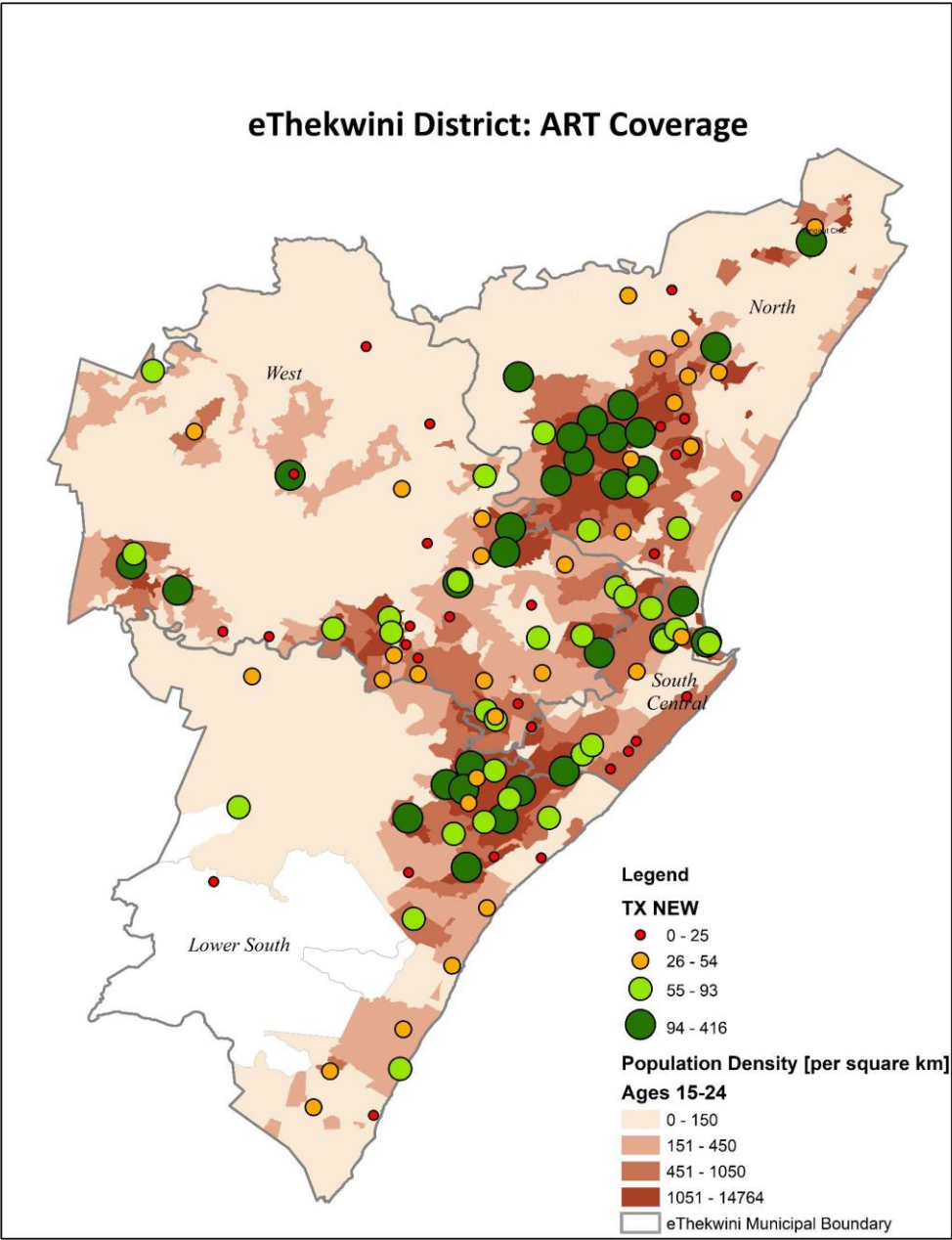
### eThekweni Population, PLHIV & ART coverage



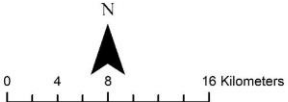
# CASE STUDY: Where is the treatment gap?

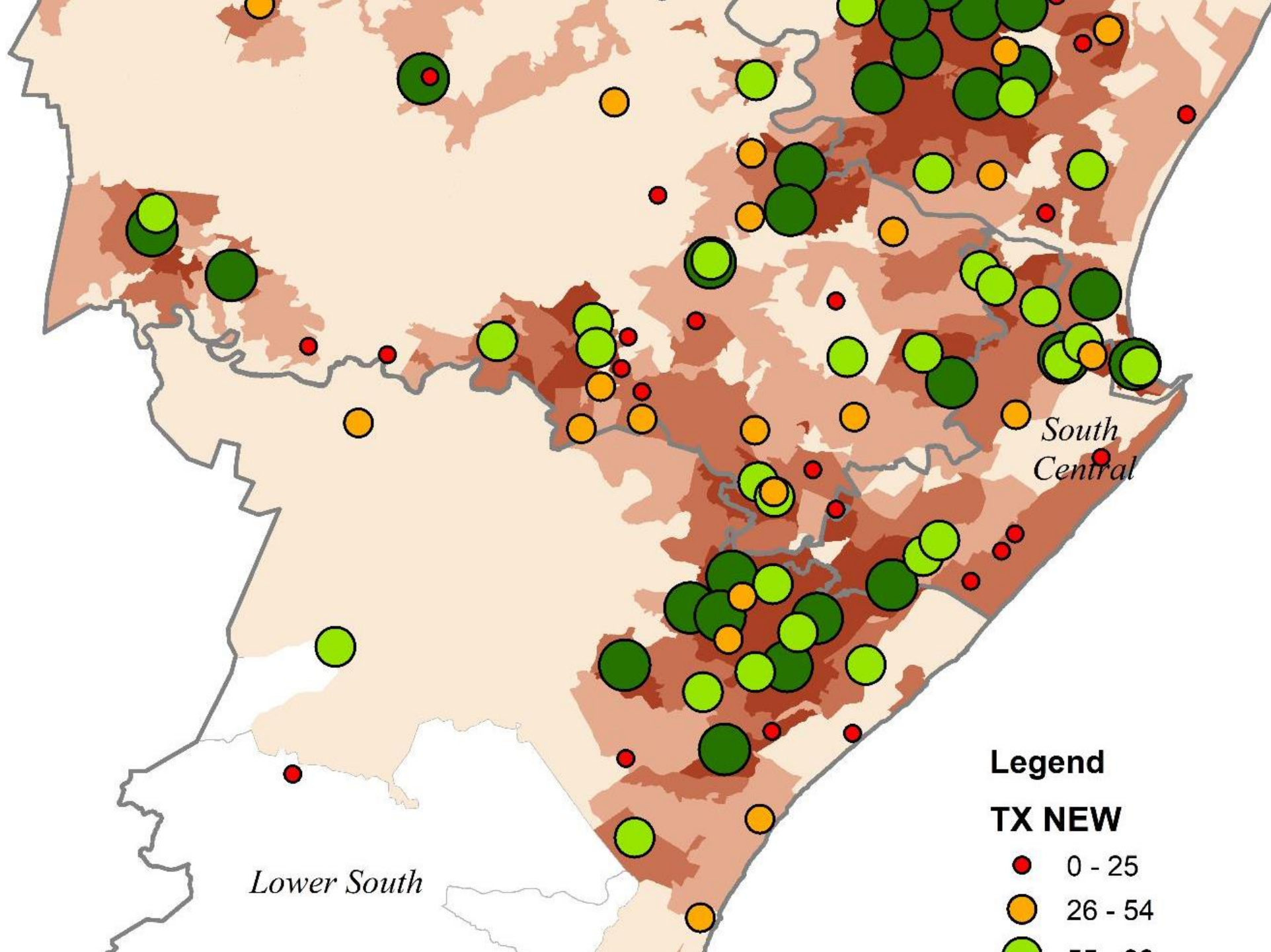


CASE STUDY: Where is the treatment gap? AGYW



**MatCH**  
Maternal, Adolescent  
and Child Health  
Project Coordinator - GIS  
28 August 2019





**Legend**

**TX NEW**

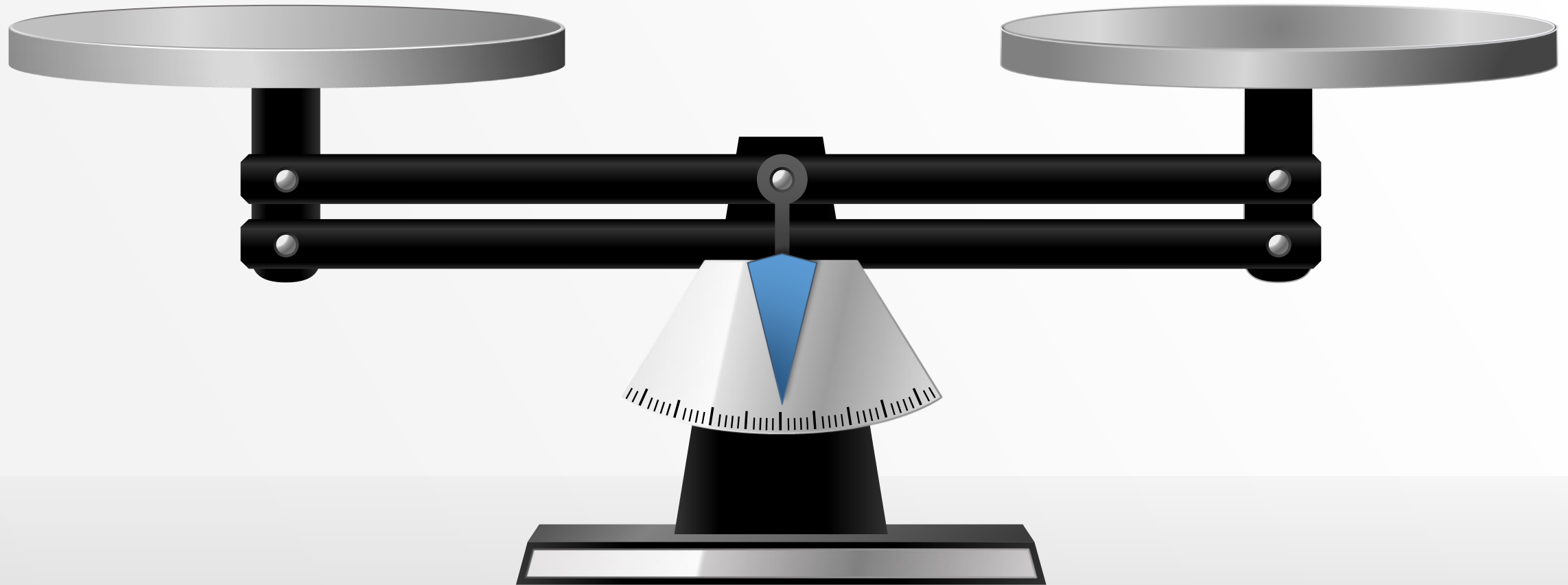
● 0 - 25

● 26 - 54

● 55 - 100

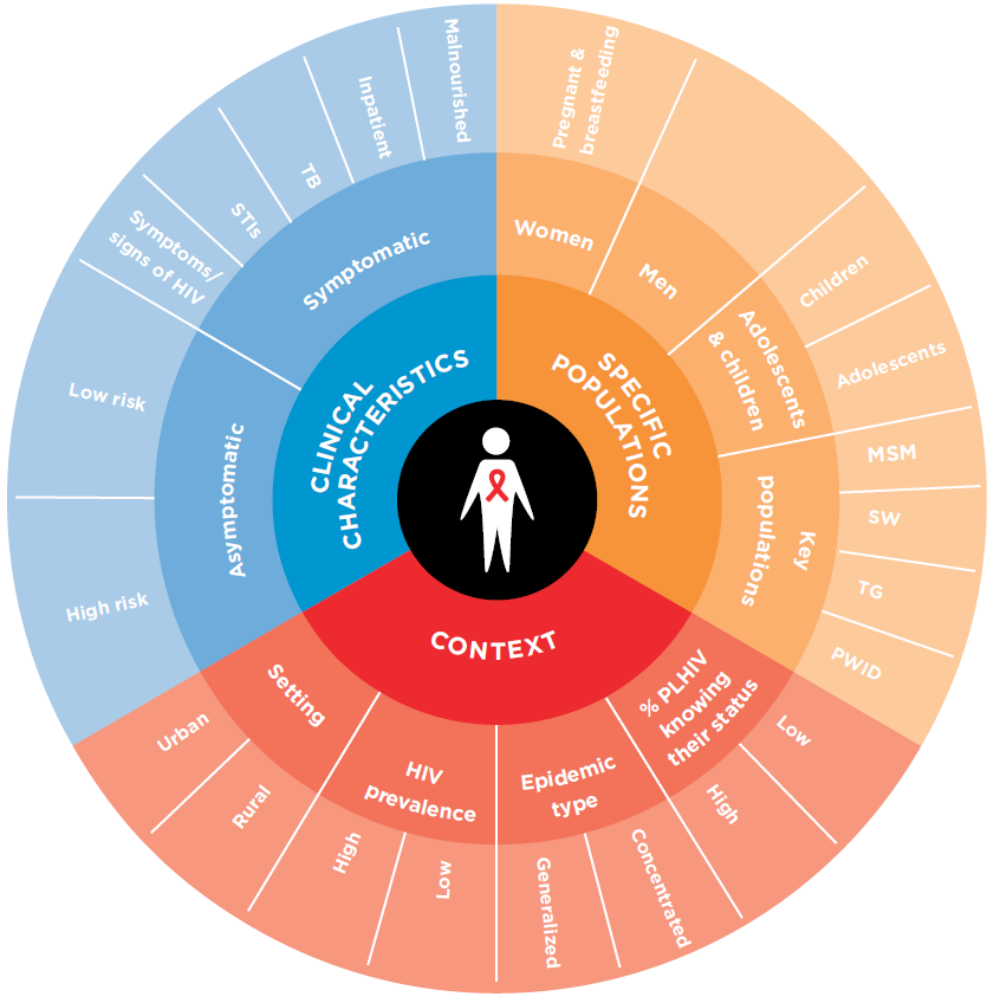
**Differentiated Care**

**Public Health**



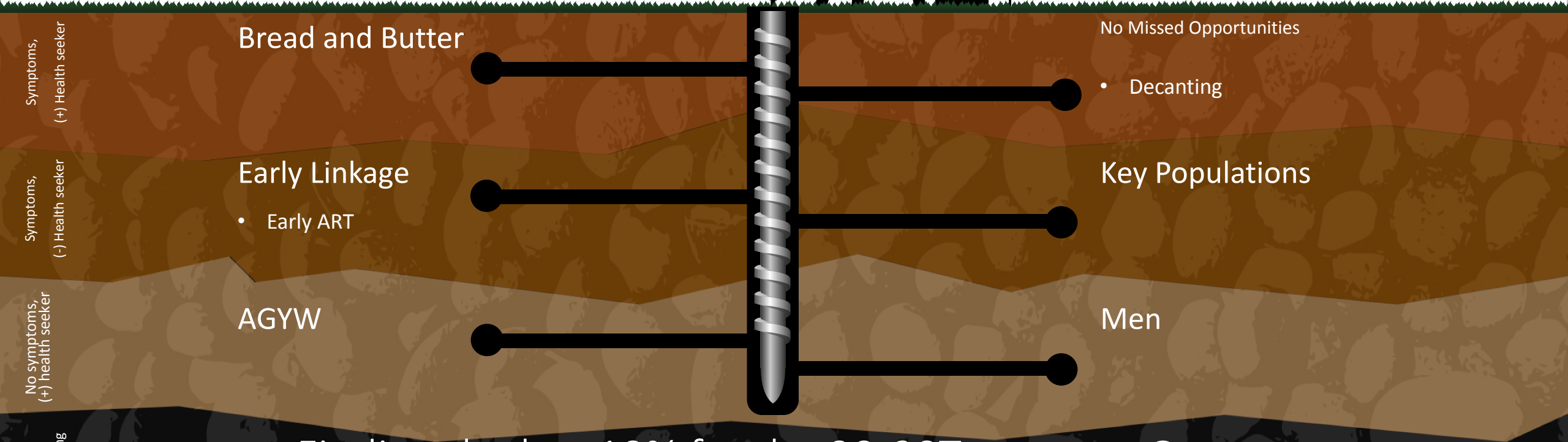
Find the Gap

# Putting the client at the centre of our health system



# Responsive Health System

Responsive Clinicians



## Finding the last 10% for the 90-90 Treatment Gap

Differentiated HIV testing services (Where, When, How, Who)

4. Largest gap for the 2<sup>nd</sup> 90 overall, linkage and Early ART are key. NB. Key groups including Men and AGYW

3. Remember your ground rules when reviewing Clinical Cascades and 90-90-90 progress

2. ARTGap = 1.1 million by Dec2020

1. National epidemic control target for 90-90-90 = 6.1 million on ART



5. Retention in Care, Patient Tracking, Clinical Chart audits and updates, TIER.net updates to increase TROA reported in TIER.net should be ongoing

6. Timelines for facility targets, 80% Same Day Initiation, and the others within 7days

7. Clinicians must understand how their individual contributions fits into the puzzle of their facility achieving targets and improved performance

8. Stakeholders working together towards the common goal – DoH, Partners, Private, Community