

Epidemiology of HIV

Presented by

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Outline of Presentation

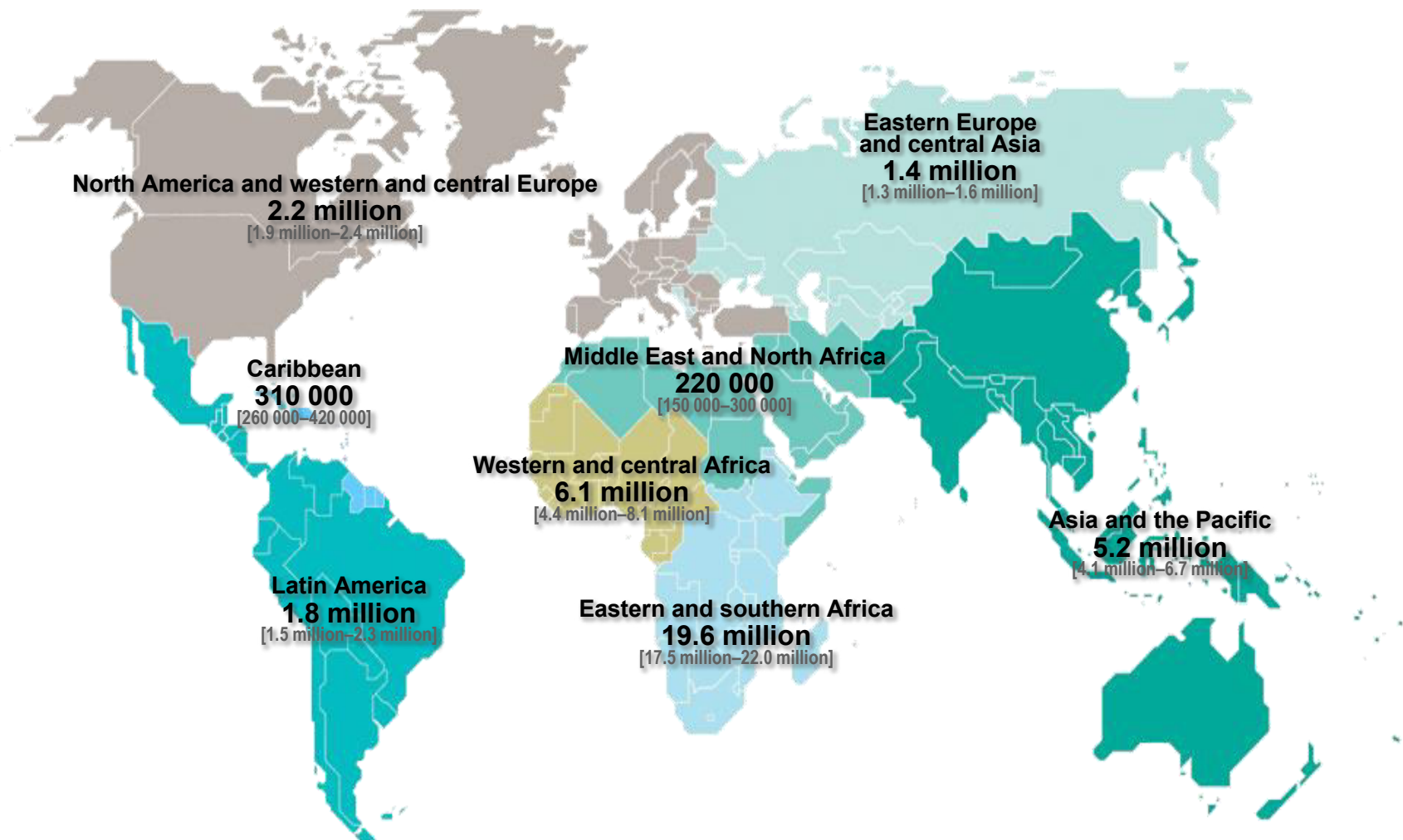
- Introduction
- Global perspective of HIV/AIDS
- Nigeria: HIV prevalence
- Estimations and projections
- Prevalence of HIV in Oyo State
- Global impact of HIV/AIDS
- HIV/AIDS
- How is HIV transmitted
- HIV disease progression
- Signs and symptoms
- Types of HIV diagnostic tests
- Means of prevention



Introduction

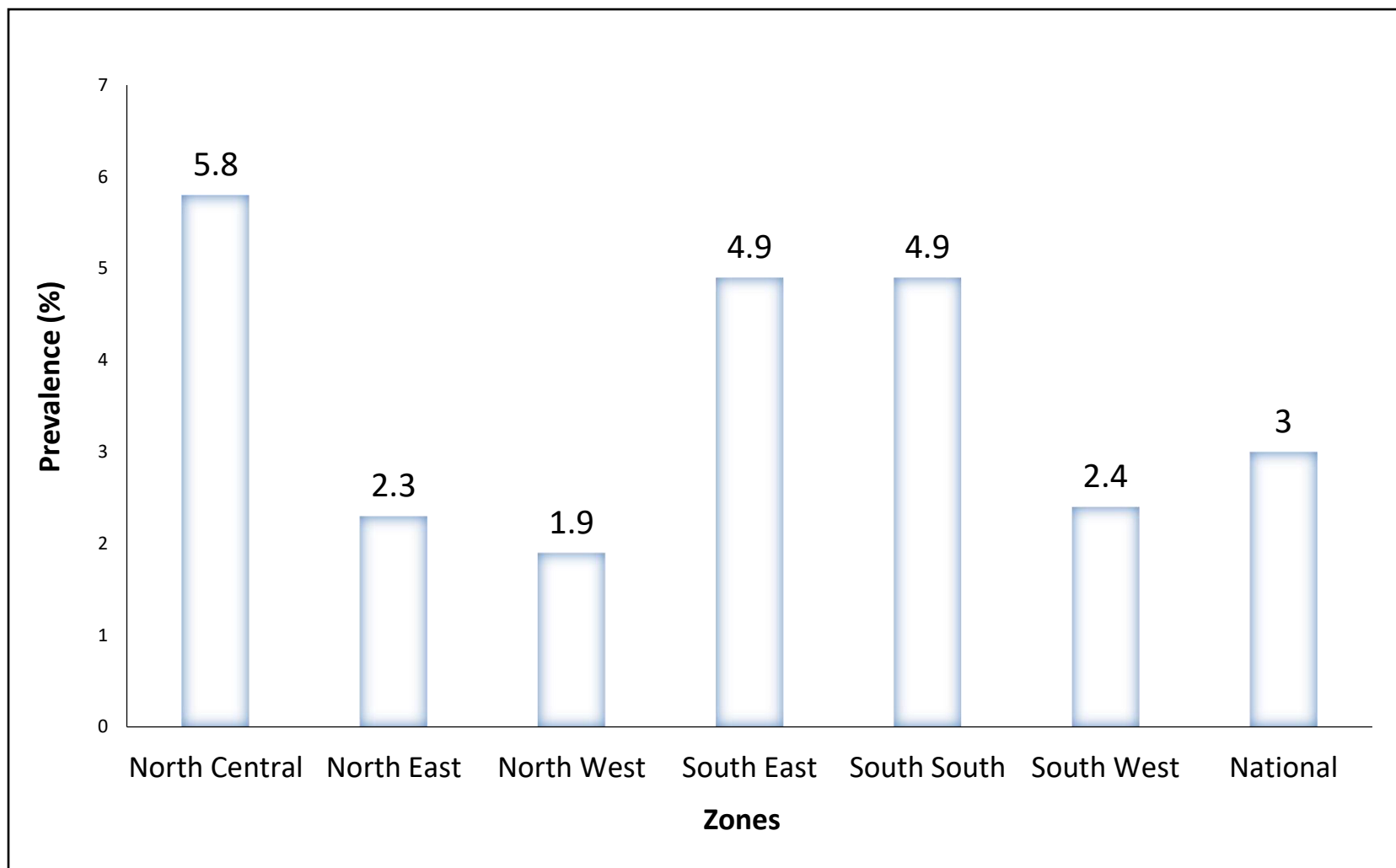
- HIV/AIDS is the greatest public health crisis facing the world, African continent ,Nigeria and indeed Oyo State today.
- Affects all the regions of the world and every segment of society (women and youth especially)
- Complicated by socioeconomic and cultural factors
- Combating HIV requires a high level of commitment and partnership at all levels

Adults and children estimated to be living with HIV | 2017

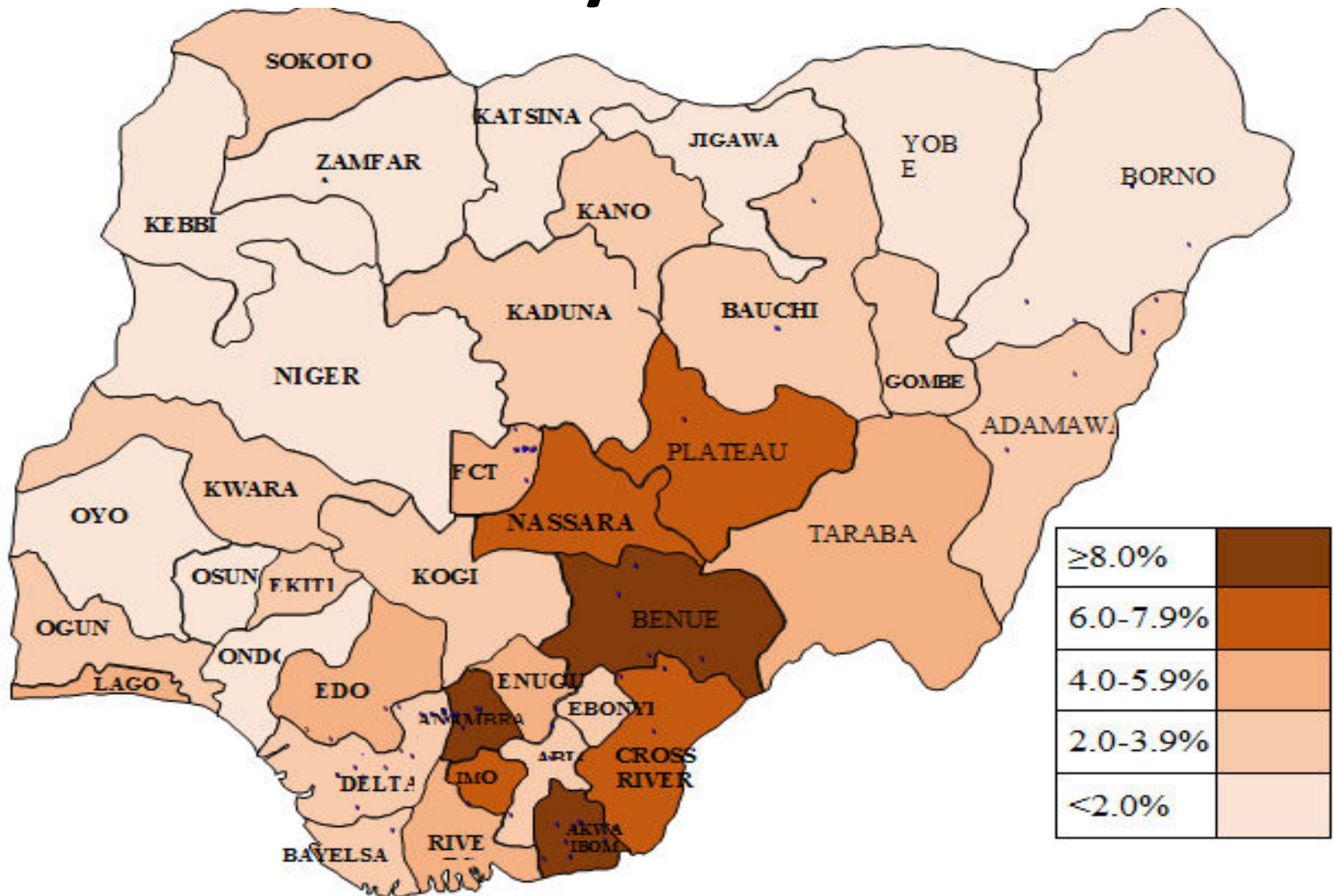


Total: 36.9 million [31.1 million–43.9 million]

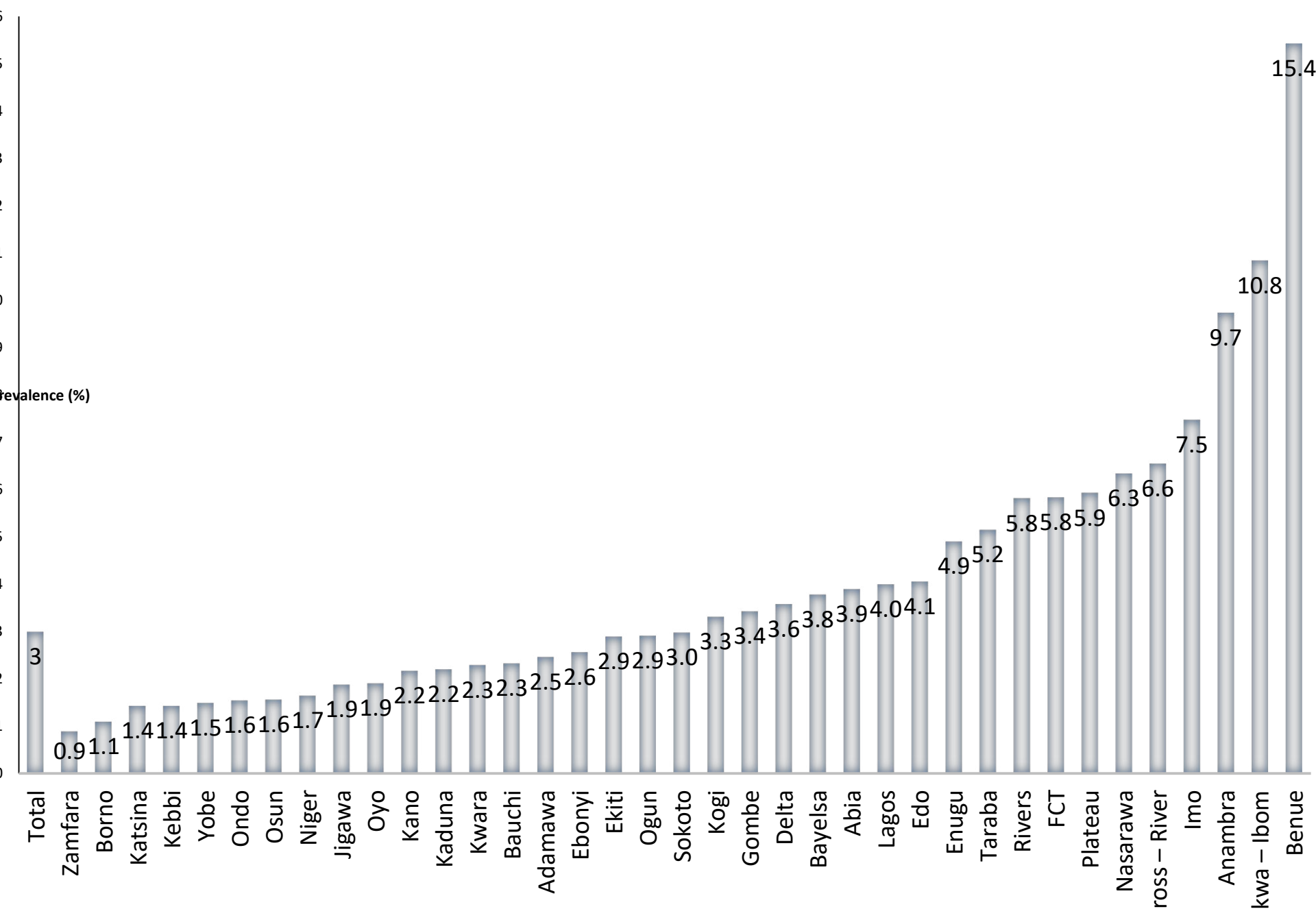
Nigeria: HIV prevalence by Zone (HSS 2014, FMoH, Abuja, Nigeria)



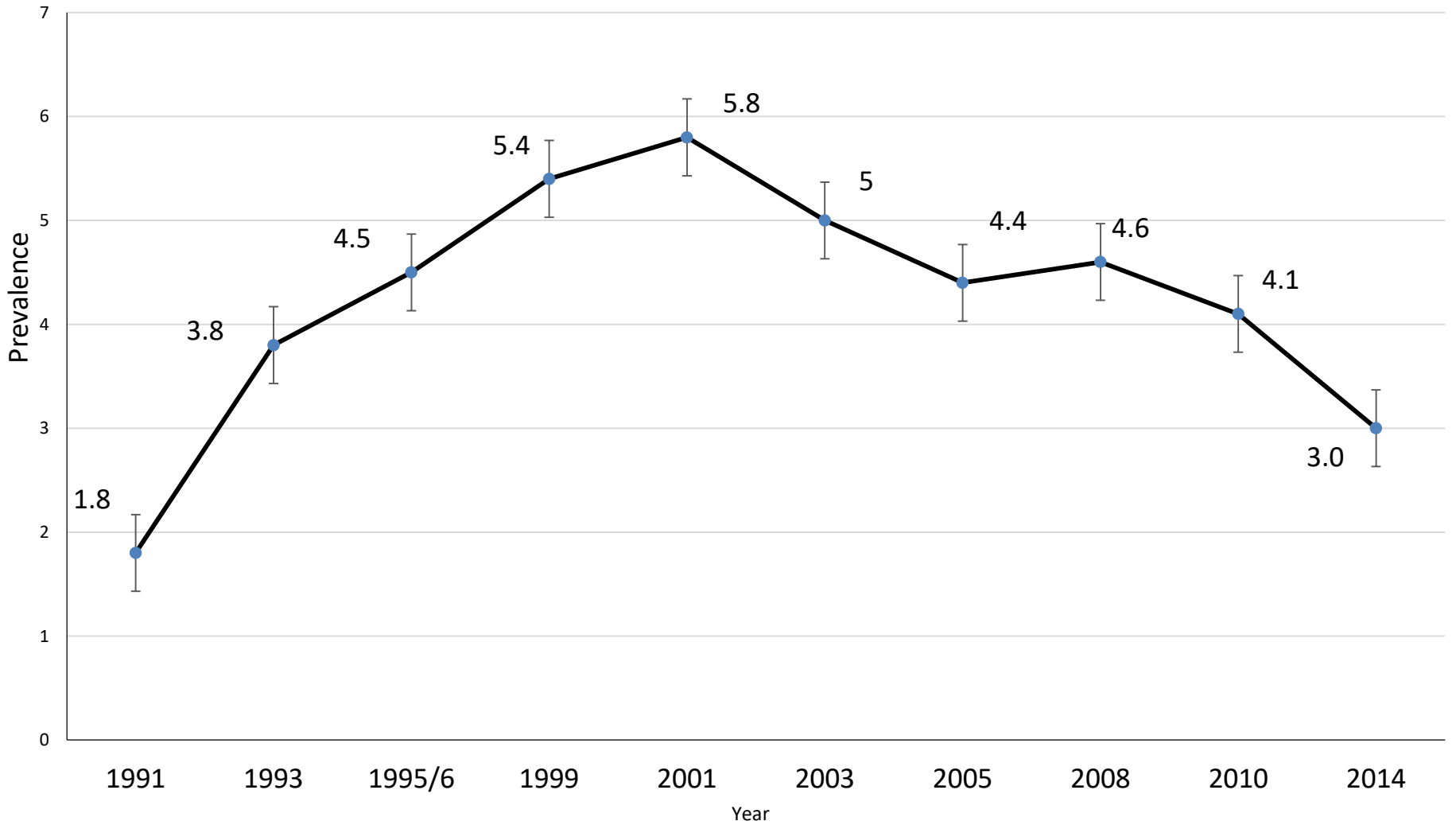
Map of Nigeria showing Prevalence by states



Nigeria: HIV prevalence by State (HSS 2014, FMoH,)



HIV Trend Analysis 1991 - 2014



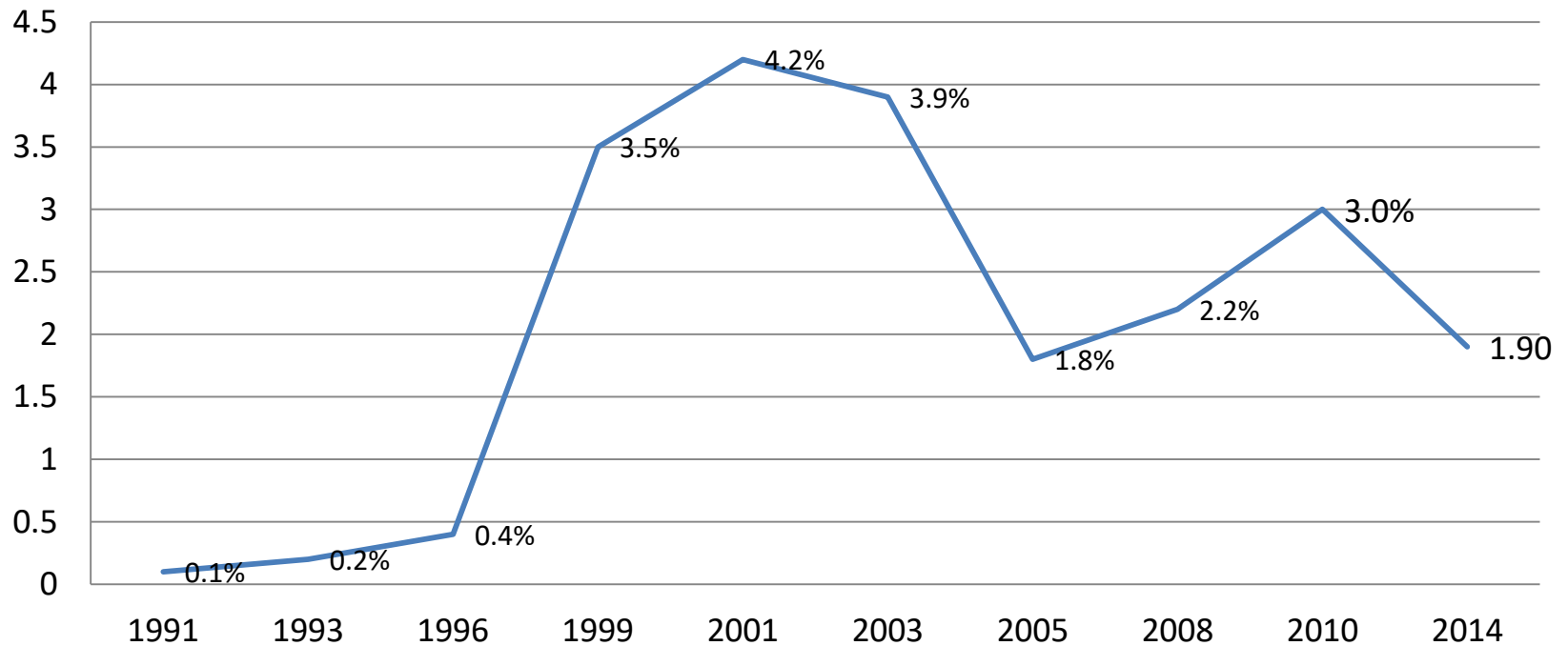
Estimations and projections 1

HIV Estimates and Projections	2015	2016	2017
HIV population (All)			
Total	3,448,893	3,504,618	3,553,414
Males	1,472,213	1,483,795	1,495,717
Females	1,976,681	2,020,823	2,057,696
Total Adults (>=15yrs)	3,082,924	3,149,112	3,210,198
Male	1,283,343	1,300,306	1,318,579
Female	1,799,580	1,848,807	1,891,619
Total Children (<15yrs)	365,970	355,505	343,216
Male	188,869	183,489	177,138
Female	177,101	172,016	166,078
Prevalence (15- 49)	3.13	3.08	3.01

Prevalence of HIV in Oyo State

- The state HIV prevalence rate rose progressively from 0.1% in 1991 to peak at 4.2% in 2001.
- Since 2001 the HIV prevalence decreased progressively due to the various interventions (fig next slide). The present prevalence in Oyo state is 1.9% as at 2014.

Oyo state prevalence trend 1991-2014

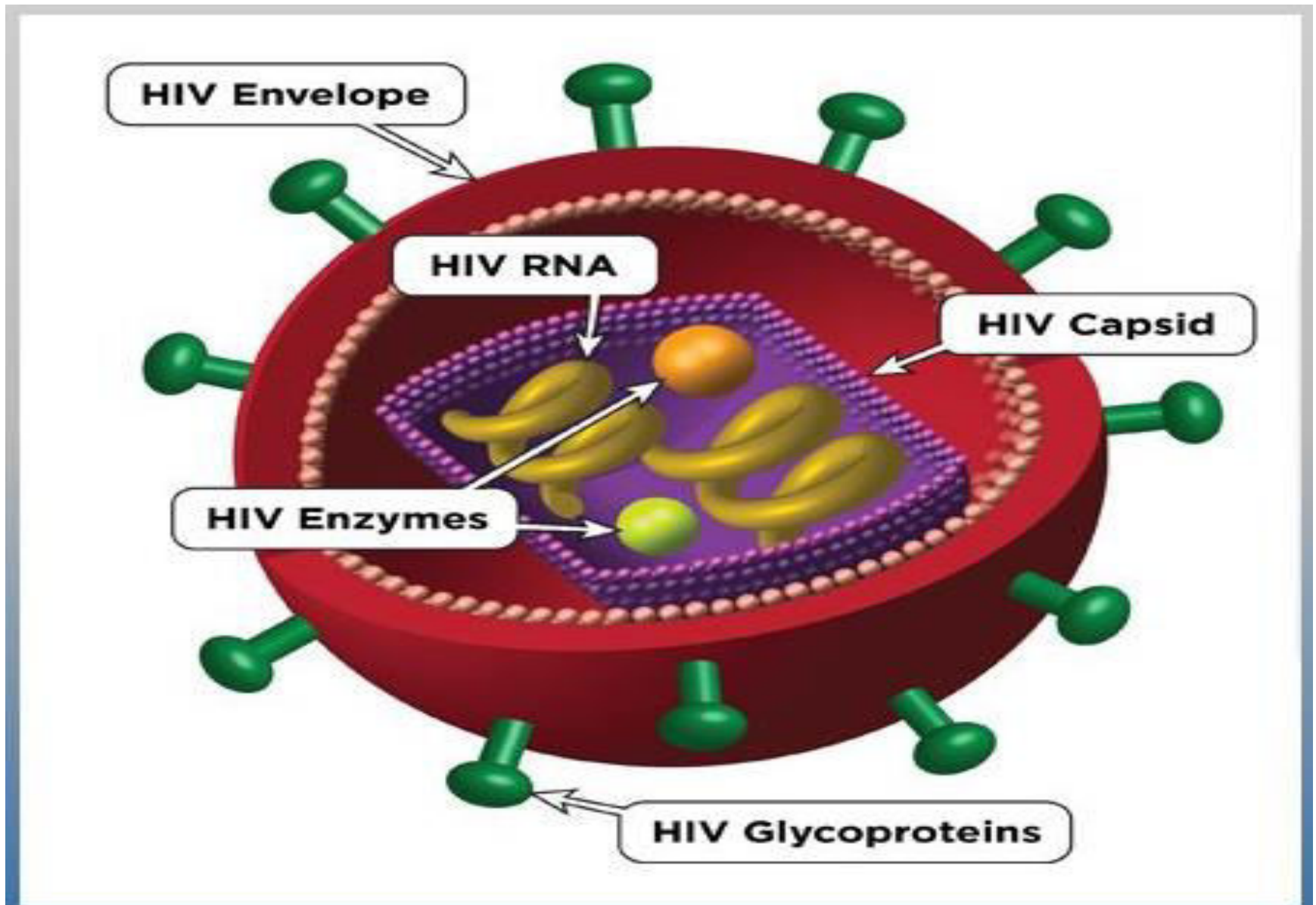


Global impact of HIV/AIDS

The global impact of the HIV and AIDS pandemic is severe in resource-constrained settings and results in the following:

- Negative impact on countries' economic development
- Overwhelmed healthcare systems
- Decreased life expectancy
- Deteriorating child health and survival
- Increased number of orphans

HIV



HIV vs. AIDS

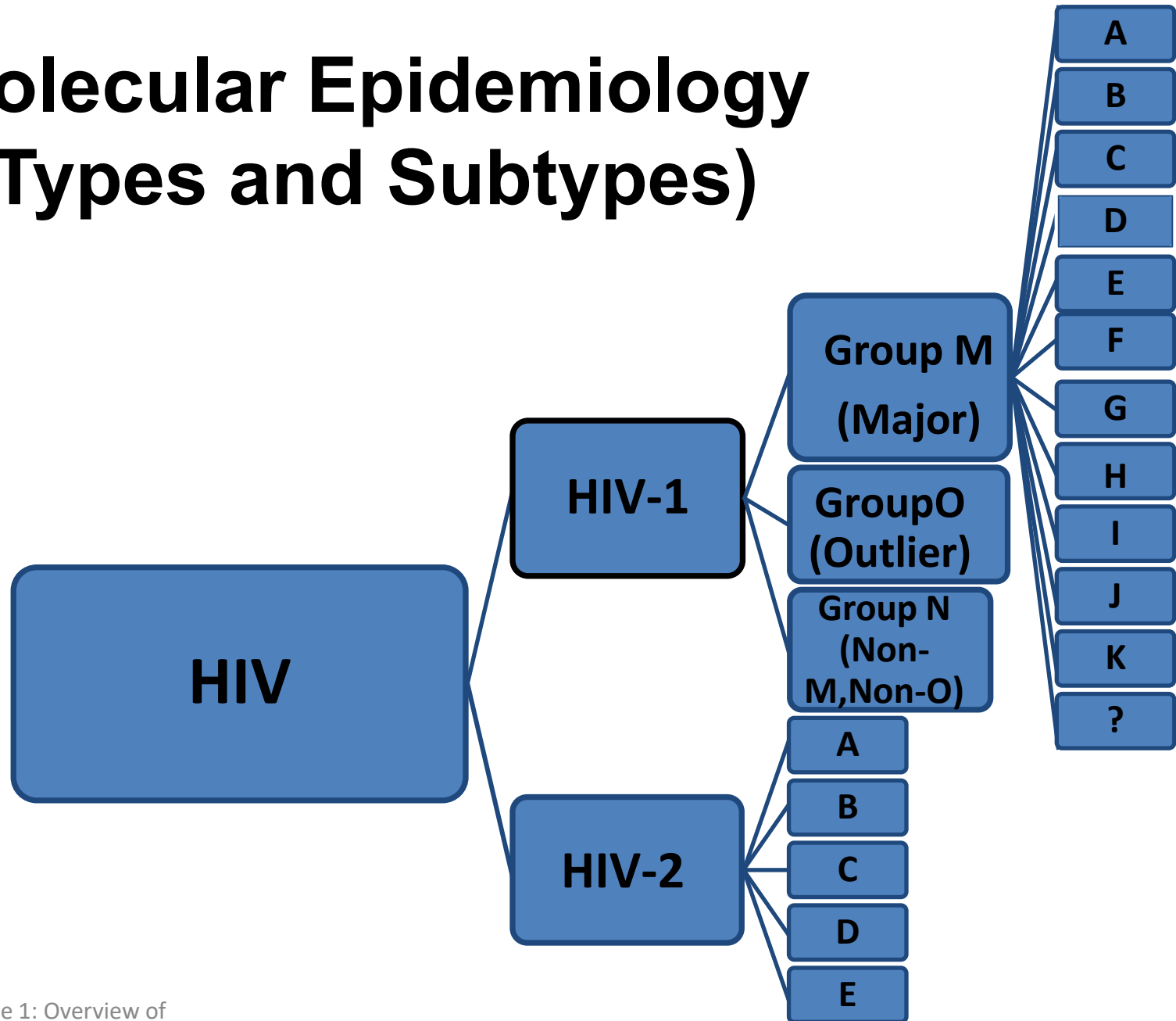


- HIV is the virus that causes AIDS.
- Not everyone who is infected with HIV has AIDS.
- Everyone with AIDS is infected with HIV.
- AIDS is the result of progression of HIV Infection.
- Anyone infected with HIV, although healthy, can still transmit the virus to another person.

HIV Types

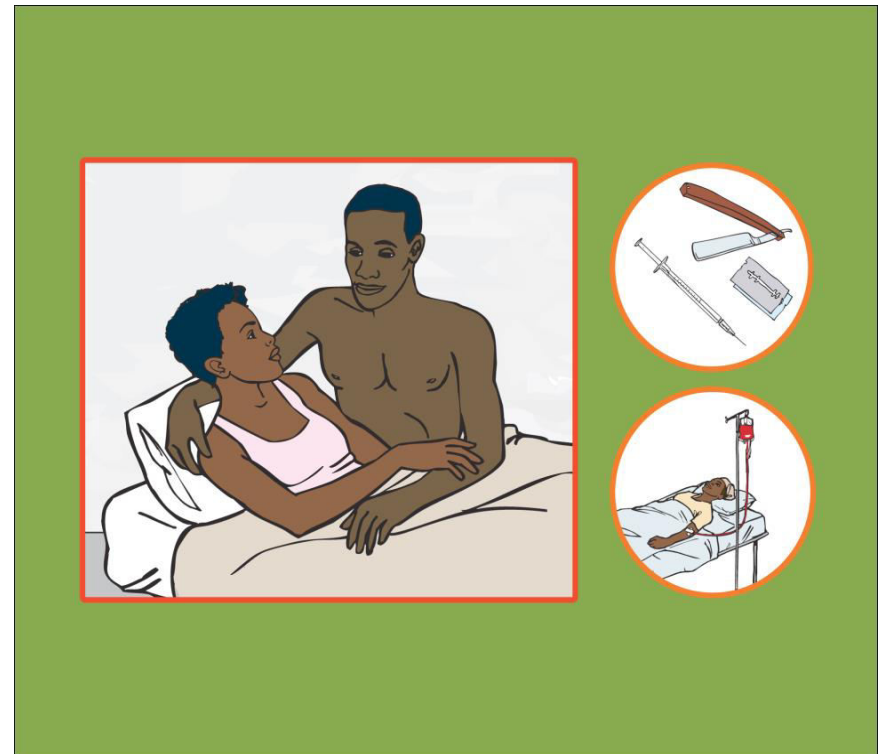
- There are two types of HIV (1&2).
- Modes of transmission and capability of causing severe immune suppression leading to AIDS are similar.
- HIV 1 is more easily transmitted and progresses faster to AIDS than HIV-2.
- **HIV-1** is the virus type responsible for the global pandemic.
- **HIV-2** is primarily localized to Africa especially West Africa

Molecular Epidemiology (Types and Subtypes)



HOW IS HIV TRANSMITTED? (1)

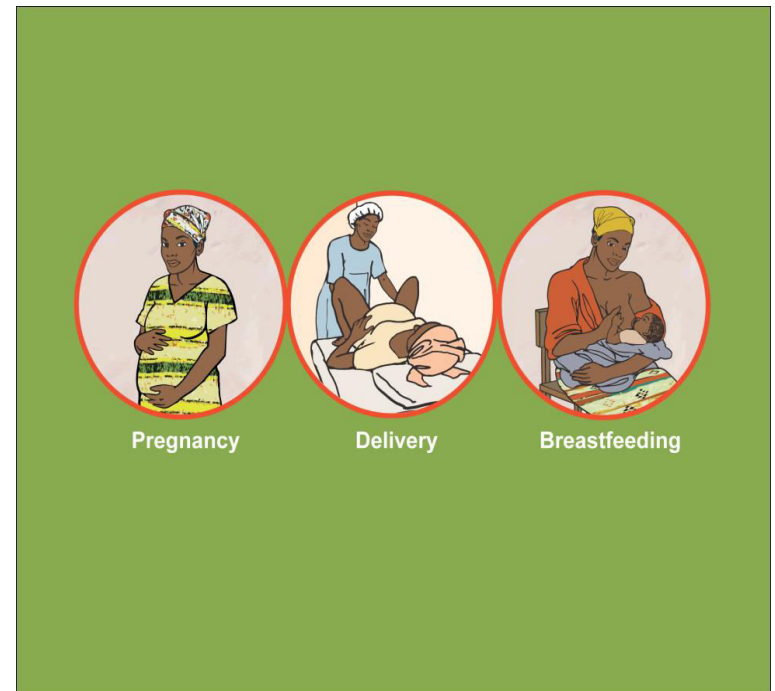
- Unprotected sexual contact with an infected partner (anal > vaginal > oral)
- Transfusion with HIV-infected blood
- Injection using needles or syringes contaminated with HIV-infected blood
- Accidental cuts with blood contaminated sharp instruments
- Exposure of broken skin or wound to infected blood or body fluids.



HOW IS HIV TRANSMITTED?

(2)

- From HIV-infected mother to infant during, pregnancy, labor and delivery, or breastfeeding.
- Some infants will be born with HIV infection and others will acquire HIV through breast-feeding



HIV is not transmitted through....

- HIV is **not** transmitted by the respiratory route: coughing, sneezing
- By casual contact in any setting, whether household, social, work, school, or prison.
- HIV is not transmitted by food, water, toilets, swimming pools, shared eating and drinking utensils, or other objects such as second-hand clothing or telephones.
- Blood sucking insects such as mosquitoes do not transmit HIV.

Effects on the Immune System

- The pathogenesis of HIV is basically a struggle between HIV replication and the immune responses of the individual.
- The viral burden directly and indirectly mediates CD4+ T-cell destruction.
- The end result of this destruction is failure of T-cell production and eventual immune suppression.

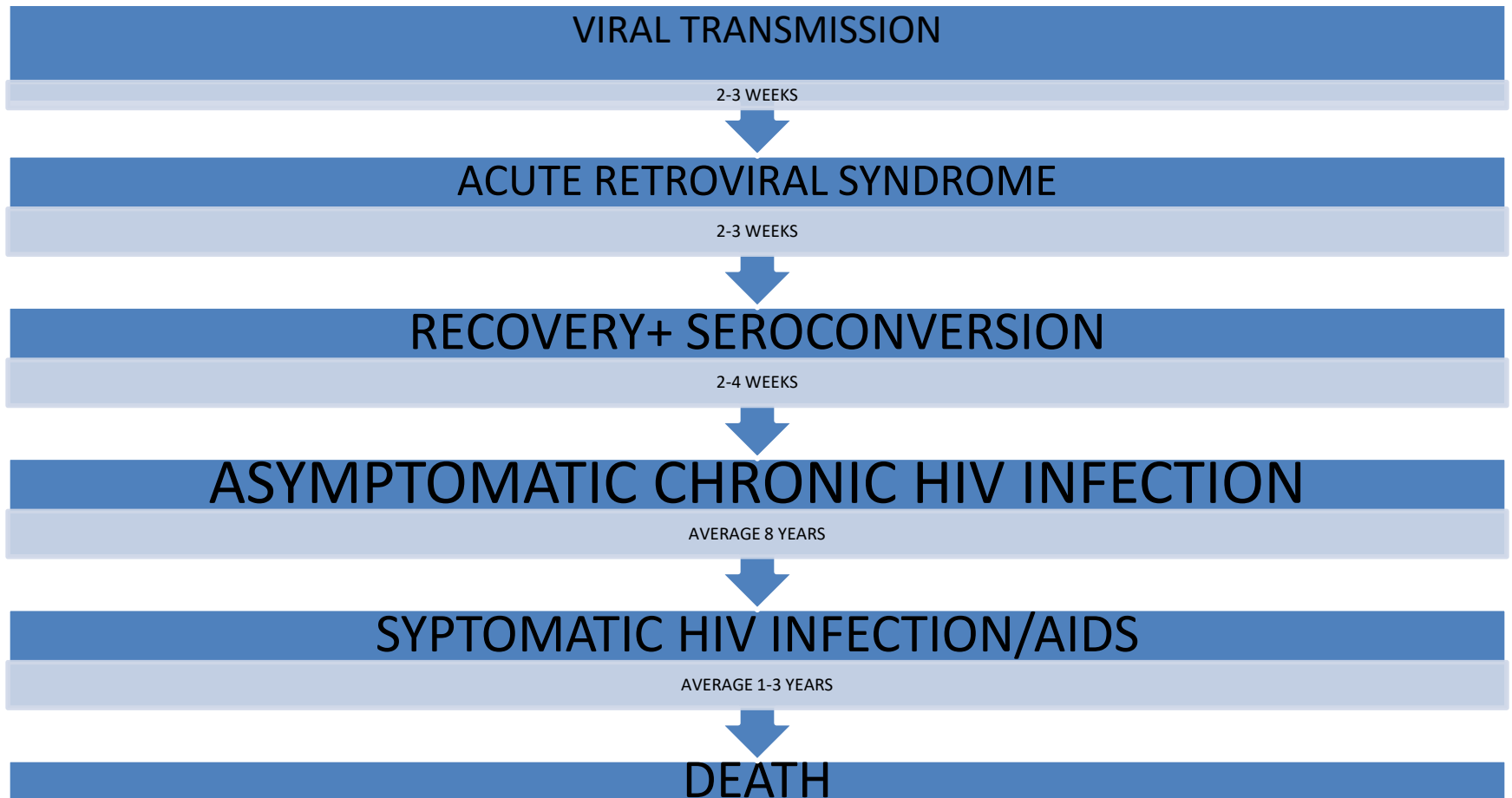
HIV DISEASE PROGRESSION

- HIV infection generally does not cause AIDS or death immediately
- People can be infected for many years before becoming ill.
- However, even if they are healthy, infected people can transmit HIV virus to others.

Natural Progression of HIV Infection

- The natural progression of untreated HIV infection in an average patient from the time of infection to death is approximately 10-11 years.
- This can be divided into the following stages
 - **Acute retroviral syndrome (2-3 weeks)**
 - **Recovery plus Seroconversion (2-4 weeks)**
 - **Asymptomatic chronic HIV infection (8-10 years)**
 - **Symptomatic HIV infection/AIDS (1-2 years)**
 - **Death**

Natural History of HIV infection



SIGNS AND SYMPTOMS

- There are **minor** and **major** signs
- At first most people don't show any signs of illness but can still pass HIV to others.
- It may take months for symptoms to appear
- Symptoms may include: fever, night sweat, rapid weight loss, swollen glands, loss of appetite and frequent diarrhea.

SIGNS AND SYMPTOMS

- **Major Signs/Diseases (WHO)**
- Weight loss of 10 percent or more of body weight
- Chronic diarrhea
- Prolonged fever for more than one month
- Tuberculosis

TYPES OF HIV DIAGNOSTIC TESTS

- Antibody detection
 - ELISA
 - Rapid Test
- Antigen detection
 - p24 Antigen
- Molecular Biology
 - DNA PCR

MEANS OF PREVENTION

- No single method is fully protective against HIV, but when they are used in combination—and supported by structural changes that improve human rights protections, gender equality and socioeconomic conditions—they can be remarkably effective.

Pillars of prevention

- Combination prevention for adolescent girls, young women and their male partners
- Combination prevention with key populations
- Comprehensive condom programmes
- Introduction of pre-exposure prophylaxis
- Voluntary medical male circumcision and sexual and reproductive health services for men and boys

UNAID's 90-90-90 goal/HIV epidemic control

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Goals and Targets

- Goal: Ending the global HIV epidemics by 2030.
- Target by 2020 (UN 90 90 90)
 - 90% of all people living with HIV will know their HIV status.
 - 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy.
 - 90% of all people receiving antiretroviral therapy will have viral suppression.
- 90% reduction in transmission of HIV through MTCT (Nigeria responsible for 30% of global MTCT burden)

Targets for ending the AIDS epidemic

by 2020 **90-90-90**
Treatment

500 000
New infections among adults

ZERO
Discrimination

by 2030 **95-95-95**
Treatment

200 000
New infections among adults

ZERO
Discrimination

HIV epidemic control

- Unfortunately, there is no "one size fits all" recipe for controlling HIV
- Achieving 90/90/90 targets & epidemic control with the current global budget requires delivering the
 - Right Things
 - In the Right Places
 - Right Now
 - In the Right Way



Right Things

- HIV Testing
- ART (adherence, retention, viral suppression)
- VMMC
- PMTCT/Option B+
- Condoms
- Test and START
- PrEP



Right Things in the Right Way

- Analyzing Investments in Health Systems
- Developing Country Operation Plan (district priority, crucial to epidemic control, funding areas, linkages to lab, sustainability)
- Health Systems Strengthening (HSS)



Right Places - Focusing Programs

- Highest burden States and LGAs (Prevalence & number of PLHIV)
- States and LGAs with greatest unmet need for service
 - Among general population
 - Among specific neglected populations (KP)
- Analyzing data to target our programming geographically & among neglected populations (e.g. OVC programming should align with the epidemic)
- Highest volume facilities
- Analyzing site-level data to prioritize support to facilities and communities with greatest need (Prevalence & number of PLHIV)

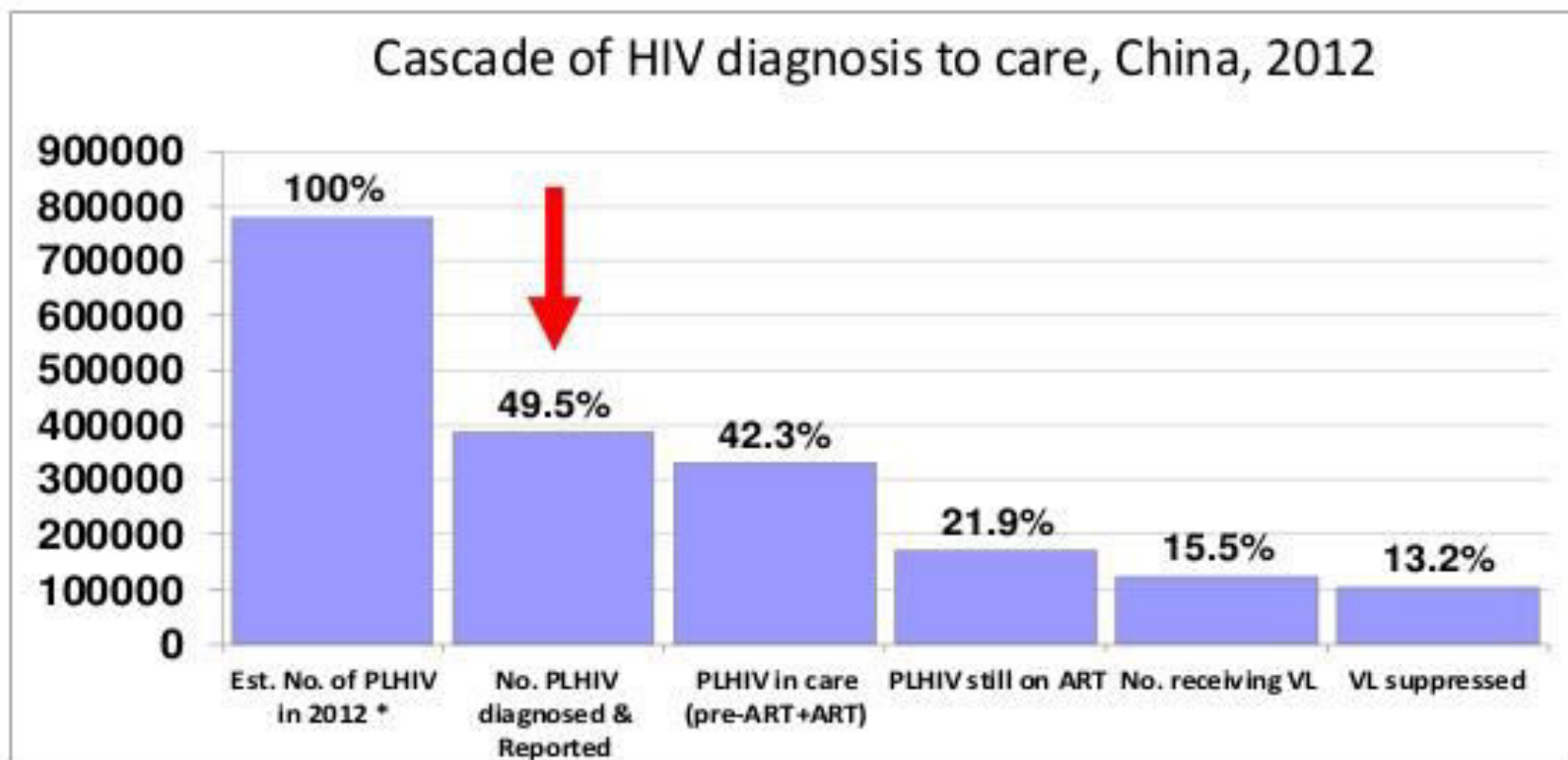
90:90:90 is within our reach

- Increase in HIV Testing by targeting highest burden populations to maximize positive yield
- Increase in New Patients on ART (acceleration & scale-up of treatment services for adults and children) **fast tracking HIV treatment and care**
- Ensure Adherence and retention in care
- Viral suppression which is the desired control to reduce transmission of HIV within communities.

90-90-90

An ambitious treatment target
to help end the AIDS epidemic

Example of cascade analysis (1): Too many people are not aware of their HIV status



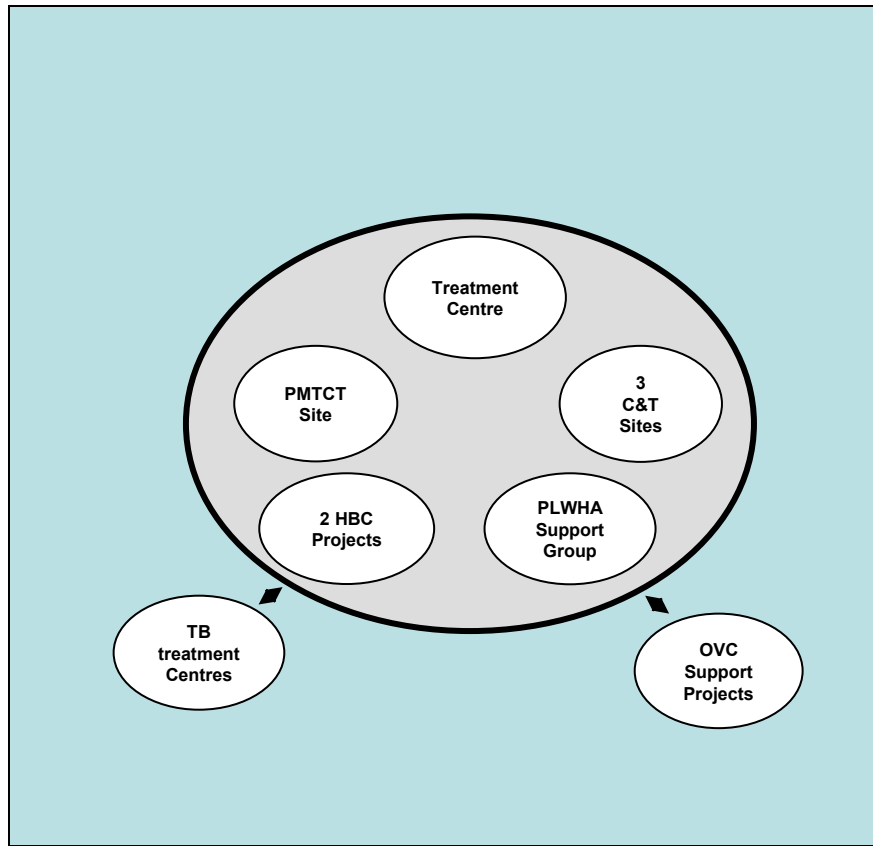
Source: * UNAIDS 2013, NCAIDS China, WHO-UNAIDS National AIDS Programme Managers Meeting, Feb 2013

Approach to HCT

- Client Initiated approach
- Provider Initiated Testing and Counselling (PITC) approach
- Community-based HIV Counselling and Testing approach
- Index testing



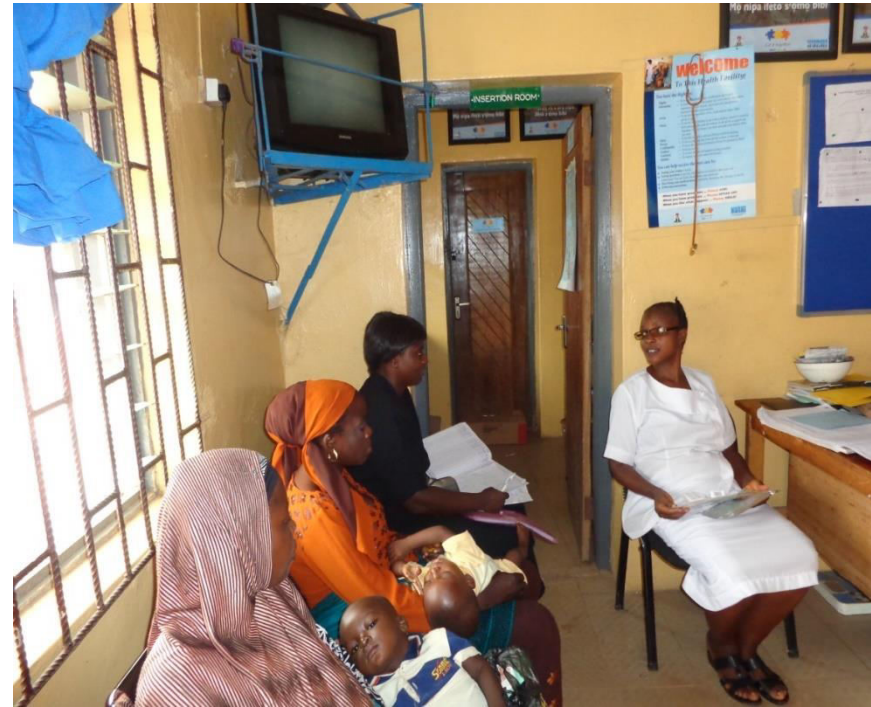
Cluster of Comprehensive HIV/AIDS Treatment, Care and Support



- Treatment centre (ART, OI, STI, HIV/TB)
- Counseling & Testing (C&T) sites
- PMTCT centre
- PLWHA support group

Approach to PMTCT

- Primary prevention of HIV infection in women of reproductive age and their partners
- Prevention of unintended pregnancies among HIV positive women
- Prevention of HIV transmission from infected mothers to their infants
- Provision of appropriate treatment, care and support to HIV- infected mothers, their infants and family.



Conclusion

To achieve the UN 90 90 90 target and HIV epidemic control we need to **focus on:**

- **Children:** Without lifesaving antiretroviral therapy for HIV-infected children, 50% will die before their 2nd birthday. 80% will die before age 5.
- **Key populations:** Ensuring Access, Addressing Stigma & Discrimination
- **Improving Prevention and treatment services**
- **Young women & adolescent girls:** Preventing new HIV infections
- **Partnering with Civil Society**
- **Expanding access**
- **Educating staff & providers on HIV comprehensive service delivery**

True partnership for an AIDS-free generation

- We have the opportunity to control the HIV/AIDS epidemic in our country and Oyo State by doing the right things in the right places right now in partnership with Stakeholders

Thank You

