

# Setting the Scene: Why are we concerned and why the need for early diagnosis

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# Overview of Presentation

1. Background
2. Programming realities
3. The way forward

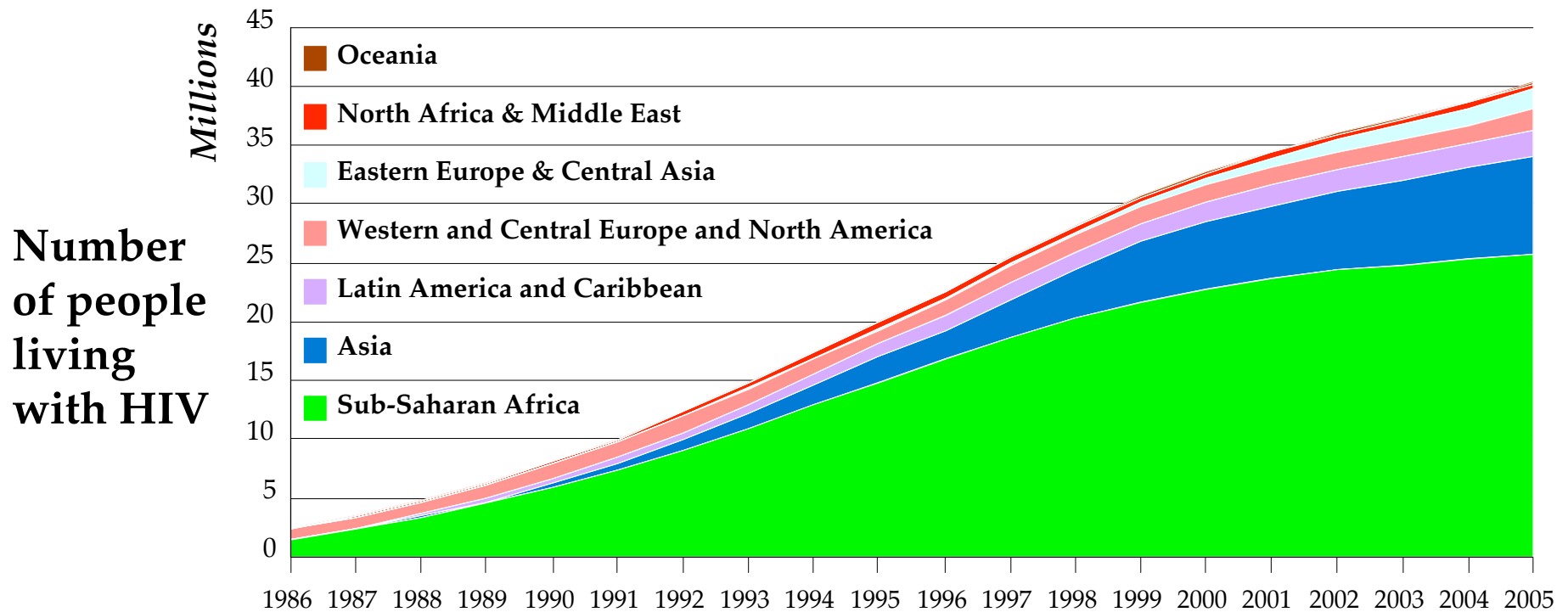


# 1. Background

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# The growing numbers of adults and children\* living with HIV (UNAIDS 2005)



\* under 15 years old



# HIV infection in children

- 2.3 million children living with HIV; 700,000 new infections occurred in 2005 - almost 2000 per day
- Over 90% of children acquire infection from their mothers
- Of the 130 million women giving birth annually, 2.3 million are HIV infected
- In BF populations, 35- 40% of HIV infected mothers transmit infection to their babies
- Only 8% of HIV+ pregnant women in resource limited settings are currently receiving ARVs for PMTCT
- Even with full coverage with short course ARV preventive treatment, children will still be infected unless:
  - HIV infection in women is remarkably reduced
  - Mothers with advanced disease have access to ARV therapy



# HIV Disease burden in children under 15 (2005)

	<b>GLOBAL</b>	<b>Sub-Saharan AFRICA</b>	<b>Industrialized countries</b>
Children living with HIV/AIDS	2.3 million	2 million	14,000
New HIV infections	700,000	630,000	700
HIV/AIDS deaths	570,000	480,000	200



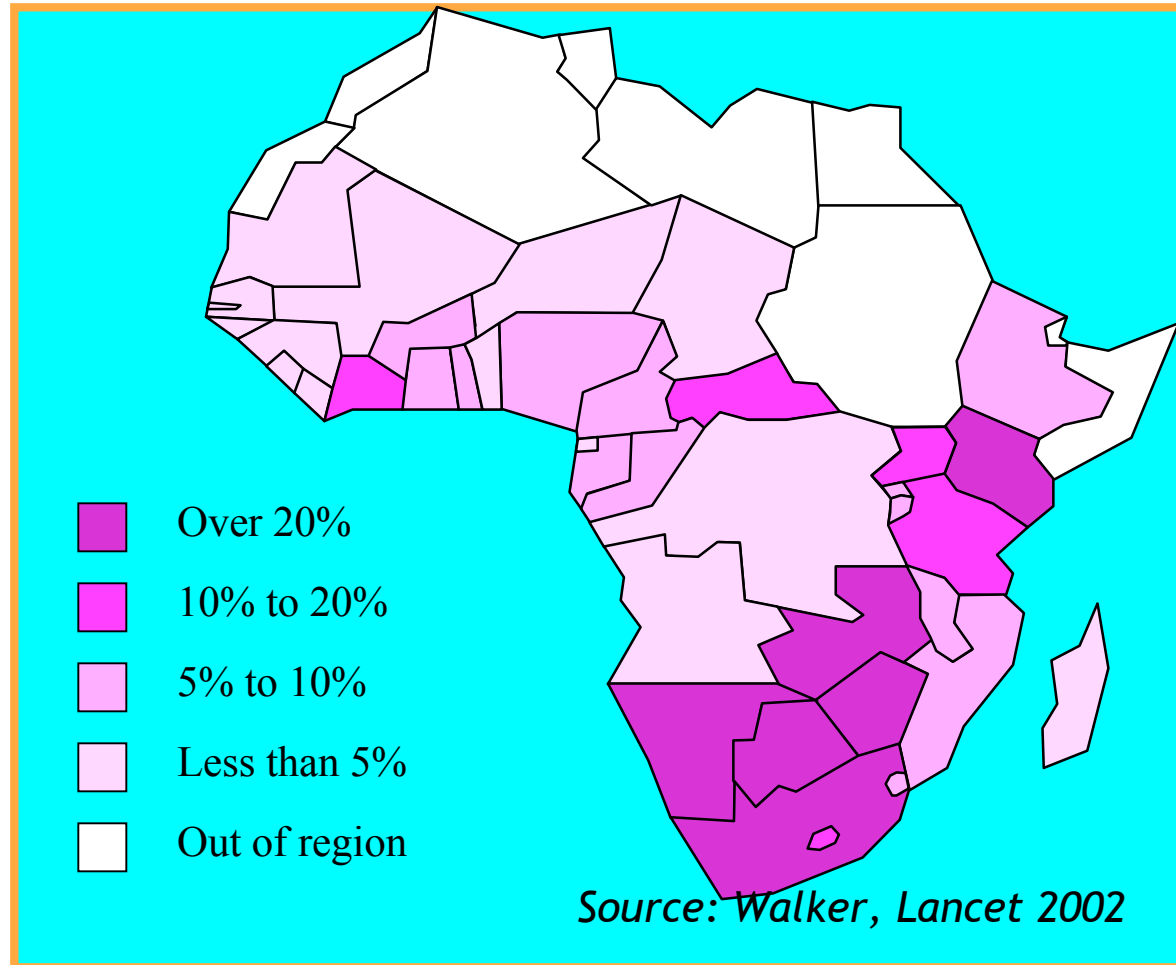
# Lack of attention to children - No treatment targets for children and child focused national responses limited

- Children are not little adults
- Disease more aggressive in children – 30% mortality at yr 1, 50% at yr 2 and 60% at yr 5
- HIV diagnosis for children below 18 months limited:
  - Clinical disease presentation non-specific
  - PCR expensive and requires sophisticated labs and expertise
- Laboratory monitoring in children under 6 years difficult – CD4% required for children below 6 years
- Capacities and expertise on care and treatment underdeveloped
- Lack of infrastructure for chronic care management of children



# Contribution of HIV to child mortality

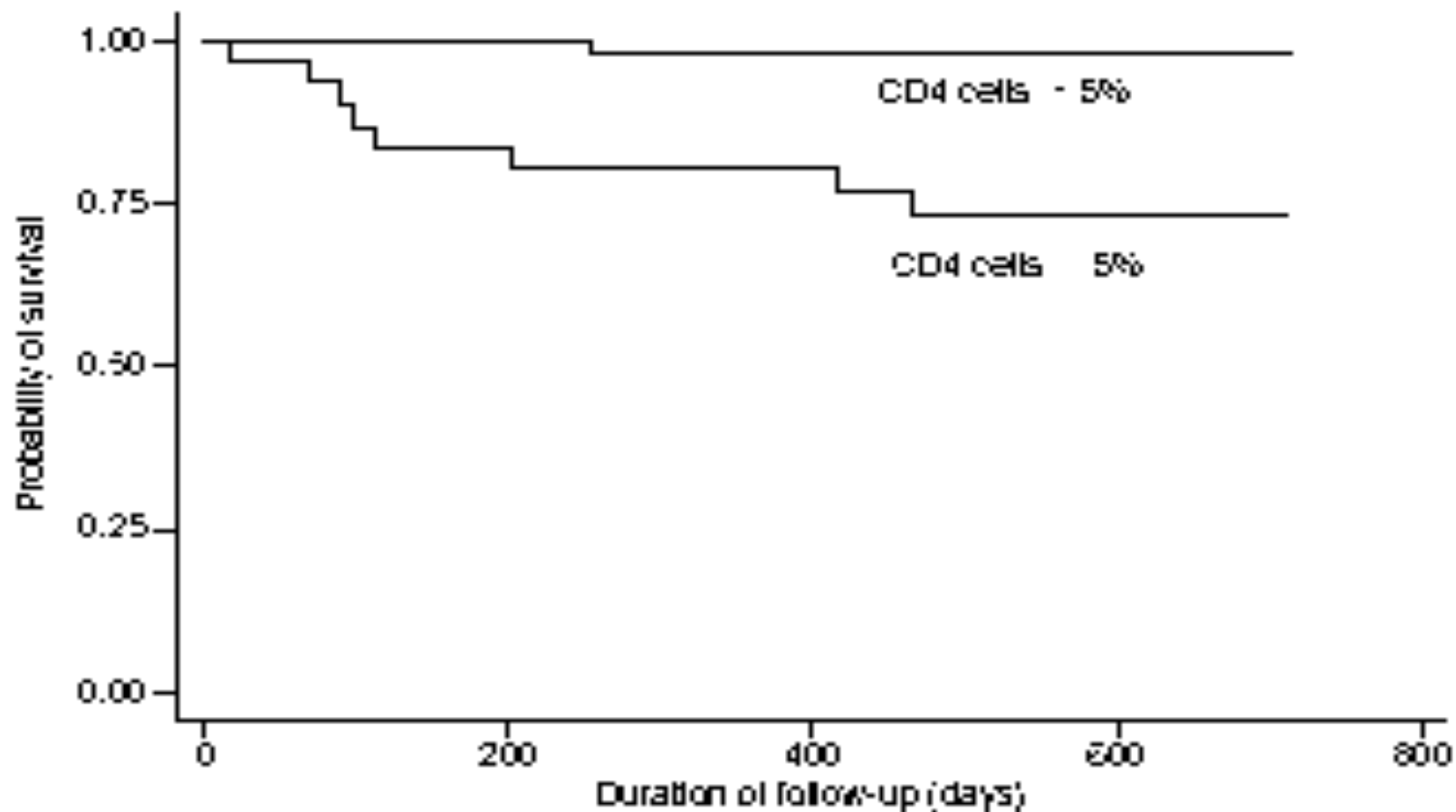
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# Children do well on treatment: Evidence from a randomized trial

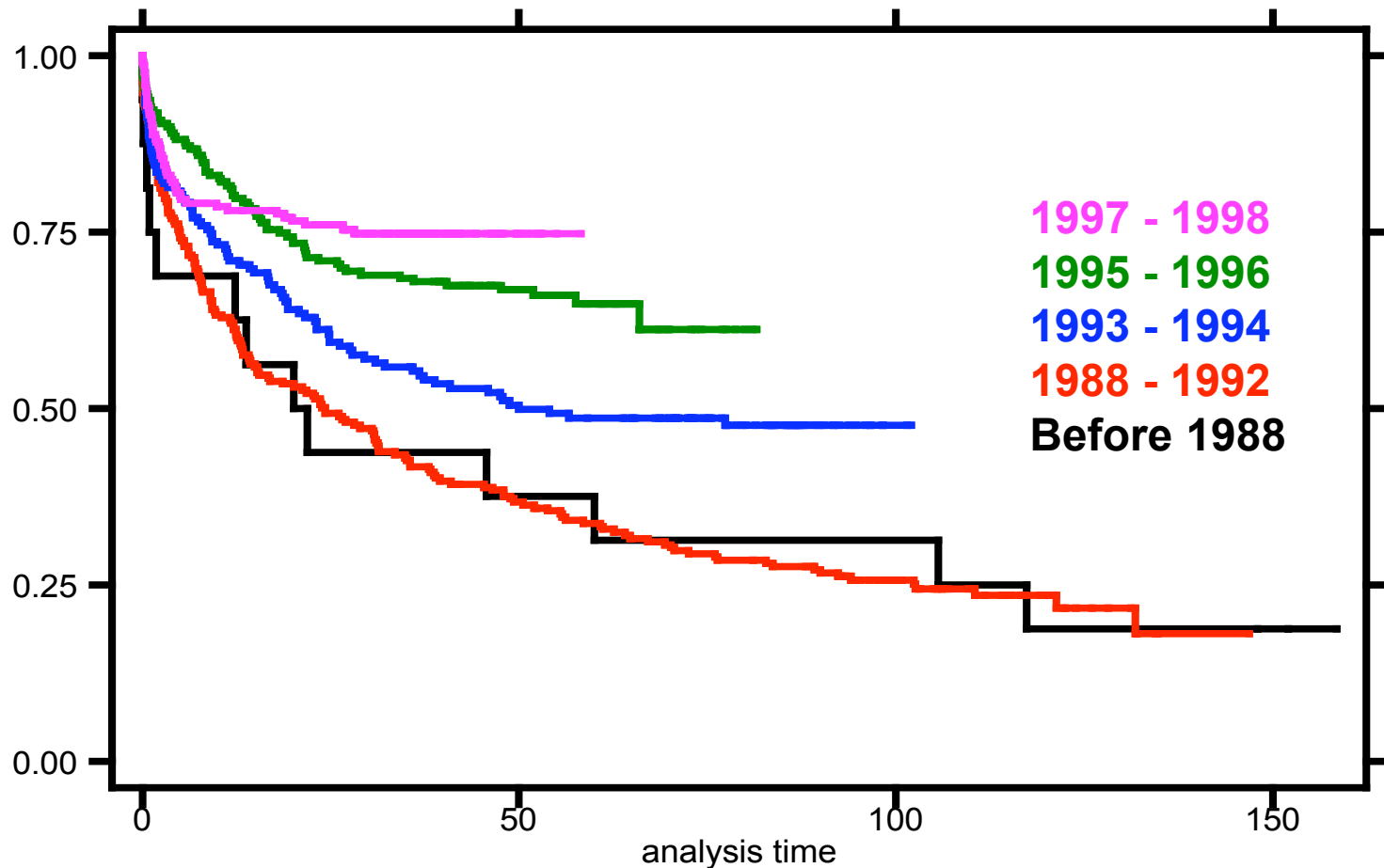
P Fassinou et al AIDS 2004, 18:1905 -1913



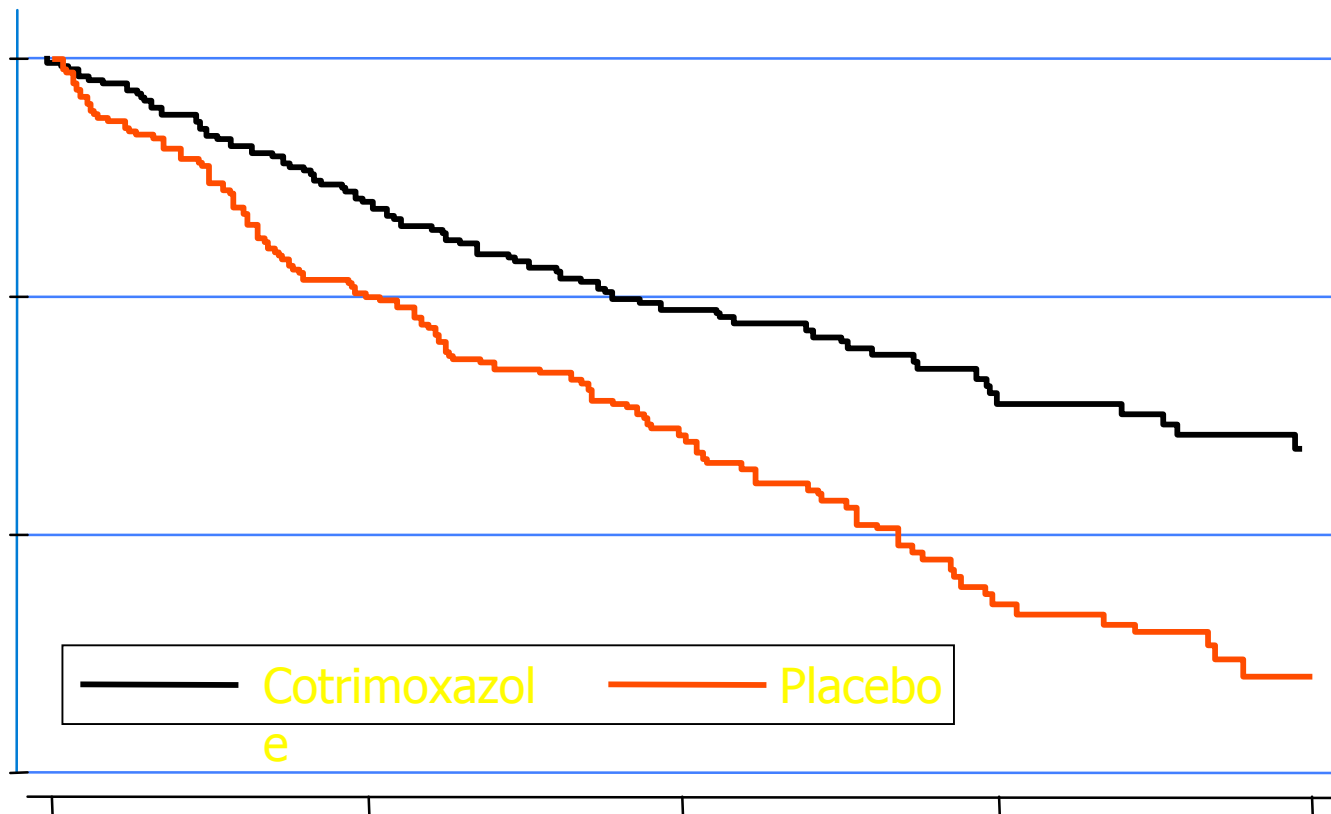
# Children do well on treatment: Mortality of paediatric AIDS cases, Brazilian National Program (n= 1,147)

(Matilda I. et al 2002)

Kaplan-Meier survival estimates, by anodiag



# Systematic delivery of cotrimoxazole prophylaxis can improve outcomes - CHAP Trial (Chintu et al Lancet 2004)



269

Years from randomisation

232	177	106	47
211	143	72	29

# Current coverage and needs by 2010

Intervention	Current Coverage	Number in need in 2010	Costs in US\$ (through 2008)
Care and support for OVC	15%*	19.7 million	6 Billion
PMTCT (prong 3)	3%	2.9 million	800 million
Cotrimoxazole prophylaxis	1%	5.1 million	
ART for children	2%	1.2 million	
<b>All prevention</b>			<i>29 billion</i>
VCT	1%	51.5 million	1.7 billion
Harm Reduction	4%	7.2 million	440 million
SW interventions	16%	17.6 million	1.6 billion
MSM interventions	11%	21.8 million	1.2 billion
Youth in school	50%	122 million	313 million
Youth out of school	<10%?	145 million	2.8 billion

\* Estimated to receive some services, not full package



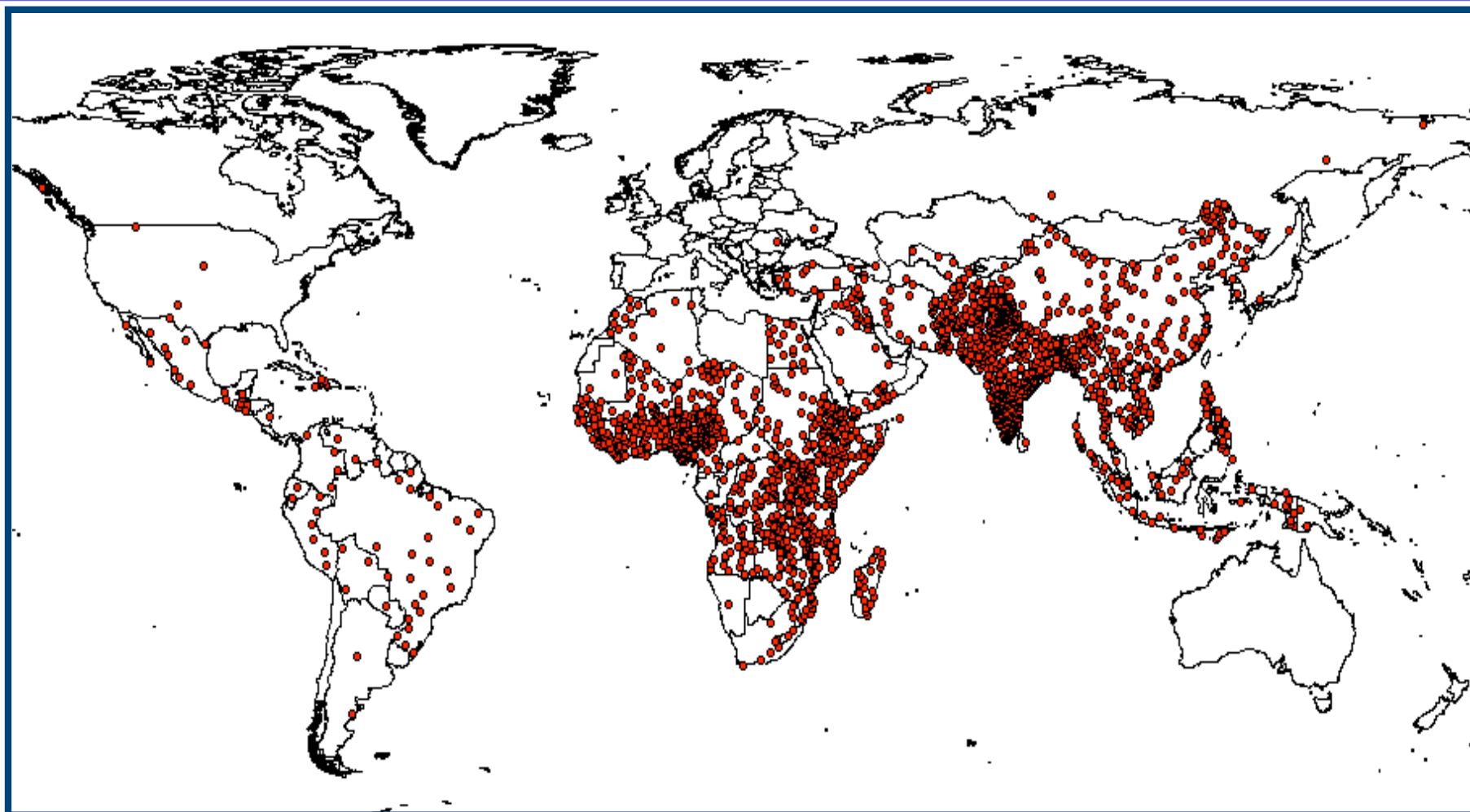
## 2. Programming Realities

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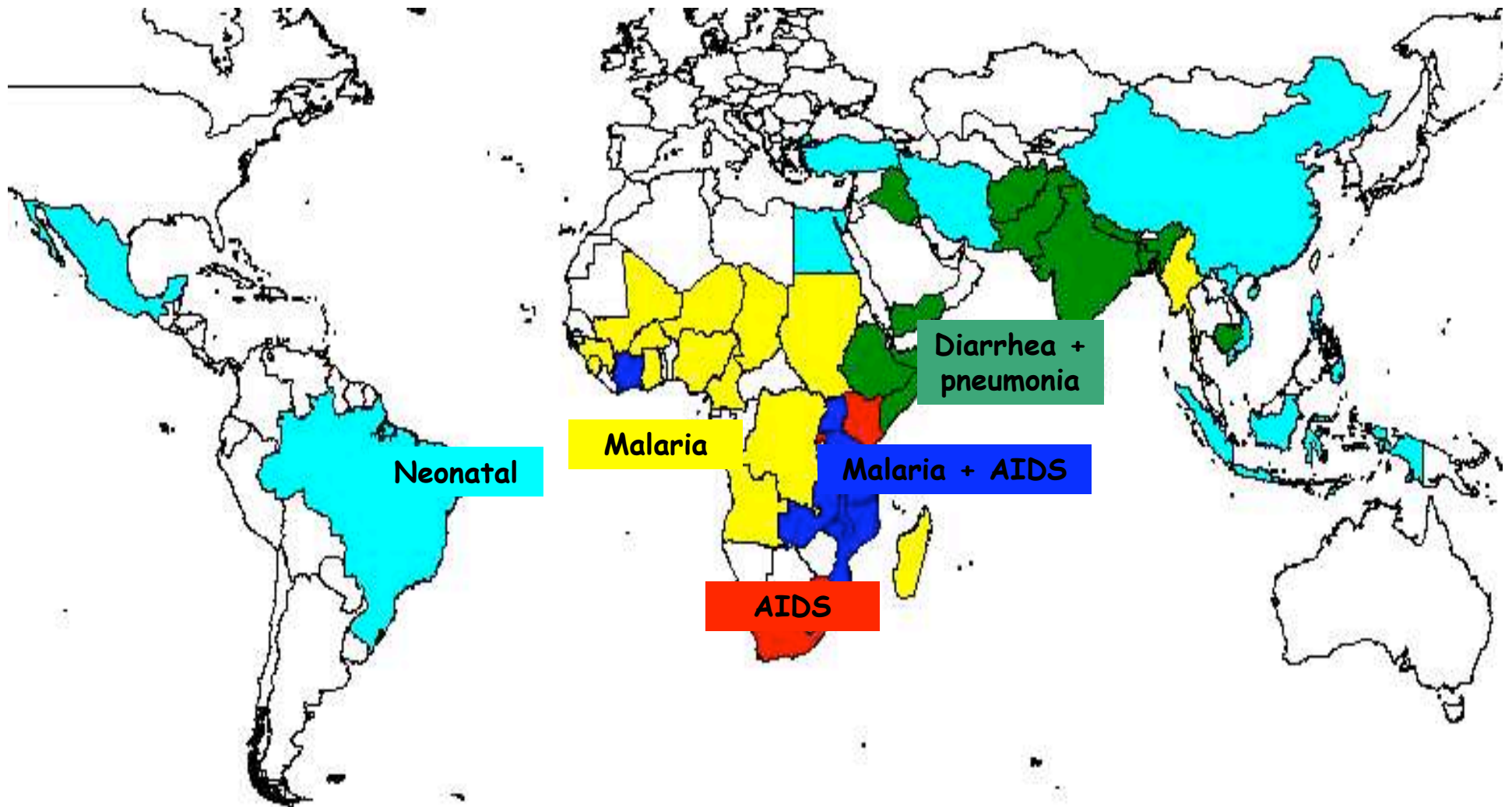


# Prioritizing HIV/AIDS

Where are 10.8 million child deaths occurring?



# Cause of mortality disease profiles in the 42 high mortality countries with 90% of u-5 mortality



# Paediatric Burden of Disease Estimation

- Targeting and projecting care and treatment needs has been problematic due to paucity of data to inform estimation of:
  - Children progressing to serious clinical disease and death at different time points
  - Children reaching immunological and clinical cut-offs for initiation of ART.





# Estimates of children in need of ARV treatment and cotrimoxazole (UNAIDS/UNICEF 2005)

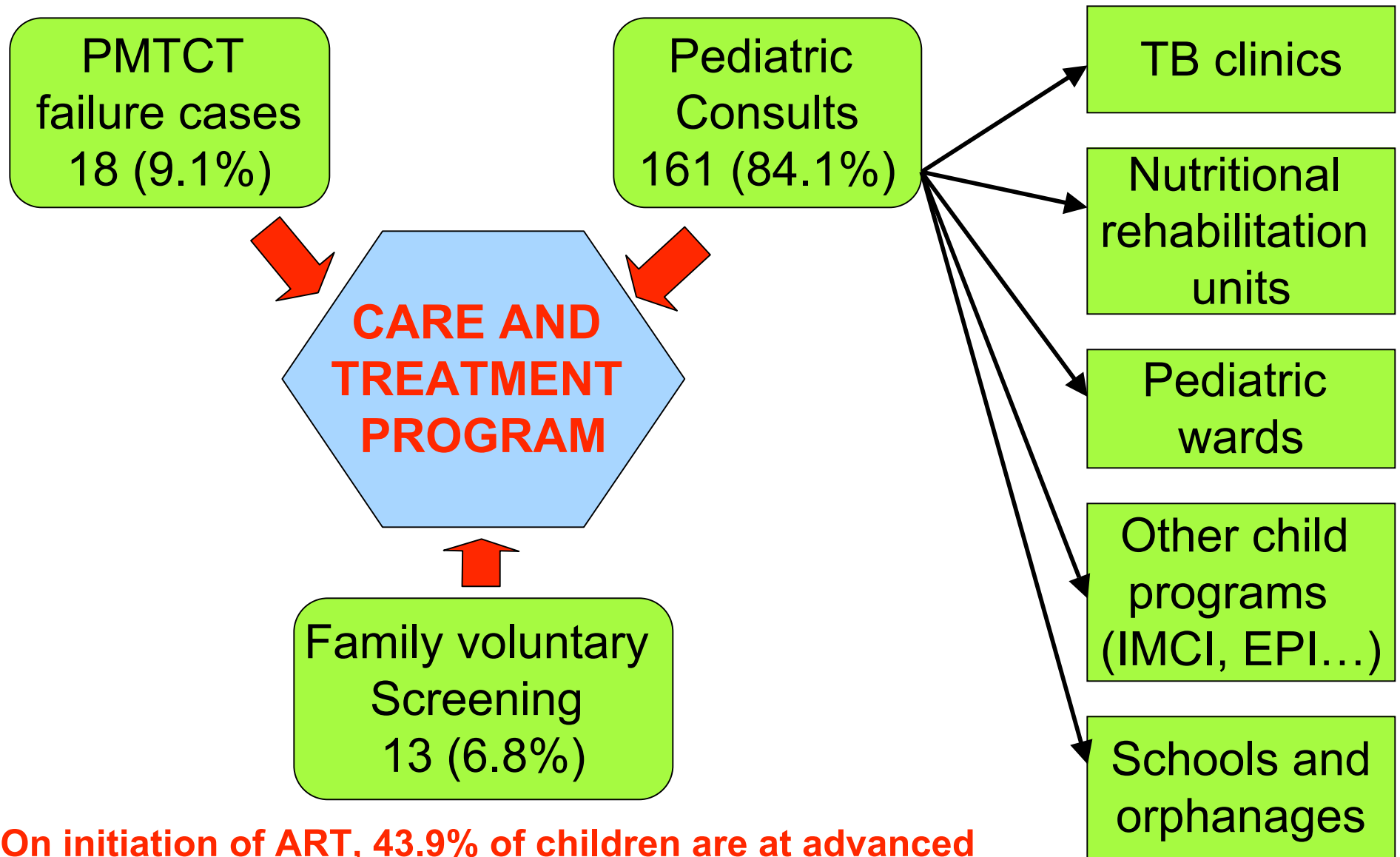
<b>2005 estimates</b>	<b>Child (0-14 years) deaths due to AIDS</b>	<b>Children (0-14 years) in need of ART</b>	<b>Children (0-18 months) in need of ART</b>	<b>Children (0-14 years) in need of cotrimoxazole - diagnosis at 18 months</b>	<b>Children (0-14 years) in need of cotrimoxazole - diagnosis before 18 months</b>
<b>Global</b>	<b>410,000</b>	<b>660,000</b>	<b>270,000</b>	<b>4,000,000</b>	<b>2,100,000</b>
<b>Caribbean</b>	<b>3,100</b>	<b>5,100</b>	<b>1,800</b>	<b>29,000</b>	<b>15,000</b>
<b>East Asia</b>	<b>1,500</b>	<b>1,900</b>	<b>1,700</b>	<b>17,000</b>	<b>7,600</b>
<b>Eastern Europe &amp; Central Asia</b>	<b>1,100</b>	<b>1,600</b>	<b>1,100</b>	<b>18,000</b>	<b>6,200</b>
<b>Latin America</b>	<b>6,000</b>	<b>8,600</b>	<b>400</b>	<b>70,000</b>	<b>35,000<sup>b</sup></b>
<b>North Africa &amp; Middle East</b>	<b>5,300</b>	<b>7,600</b>	<b>4,400</b>	<b>59,000</b>	<b>18,000</b>
<b>Oceania</b>	<b>&lt;500</b>	<b>&lt;500</b>	<b>&lt;500</b>	<b>2,000</b>	<b>&lt;1000</b>
<b>South &amp; South East Asia</b>	<b>26,000</b>	<b>37,000</b>	<b>21,000</b>	<b>290,000</b>	<b>130,000</b>
<b>Sub-Saharan Africa</b>	<b>370,000</b>	<b>600,000</b>	<b>240,000</b>	<b>3,500,000</b>	<b>1,900,000</b>
<b>PEPFAR countries</b>	<b>250,000</b>	<b>410,000</b>	<b>200,000</b>	<b>2,400,000</b>	<b>1,300,000</b>
<b>Asia</b>	<b>28,000</b>	<b>39000</b>	<b>23000</b>	<b>310,000</b>	<b>140,000</b>
<b>Latin America &amp; Caribbean</b>	<b>6,000</b>	<b>8,600</b>	<b>400</b>	<b>70,000</b>	<b>35,000<sup>b</sup></b>

# Delivery Systems and management structures

- Paucity of scientific data on effective models for delivery of pediatric care in resource limited settings
- Chronic care management of chronically sick children limited in most settings
- However, best practices from programmatic experiences emerging



# Entry points into ART for children and respective contribution at the MCC/CBF



**On initiation of ART, 43.9% of children are at advanced clinical stage of disease and 77.3% severely immuno-compromised**

# Programming Infant Diagnosis

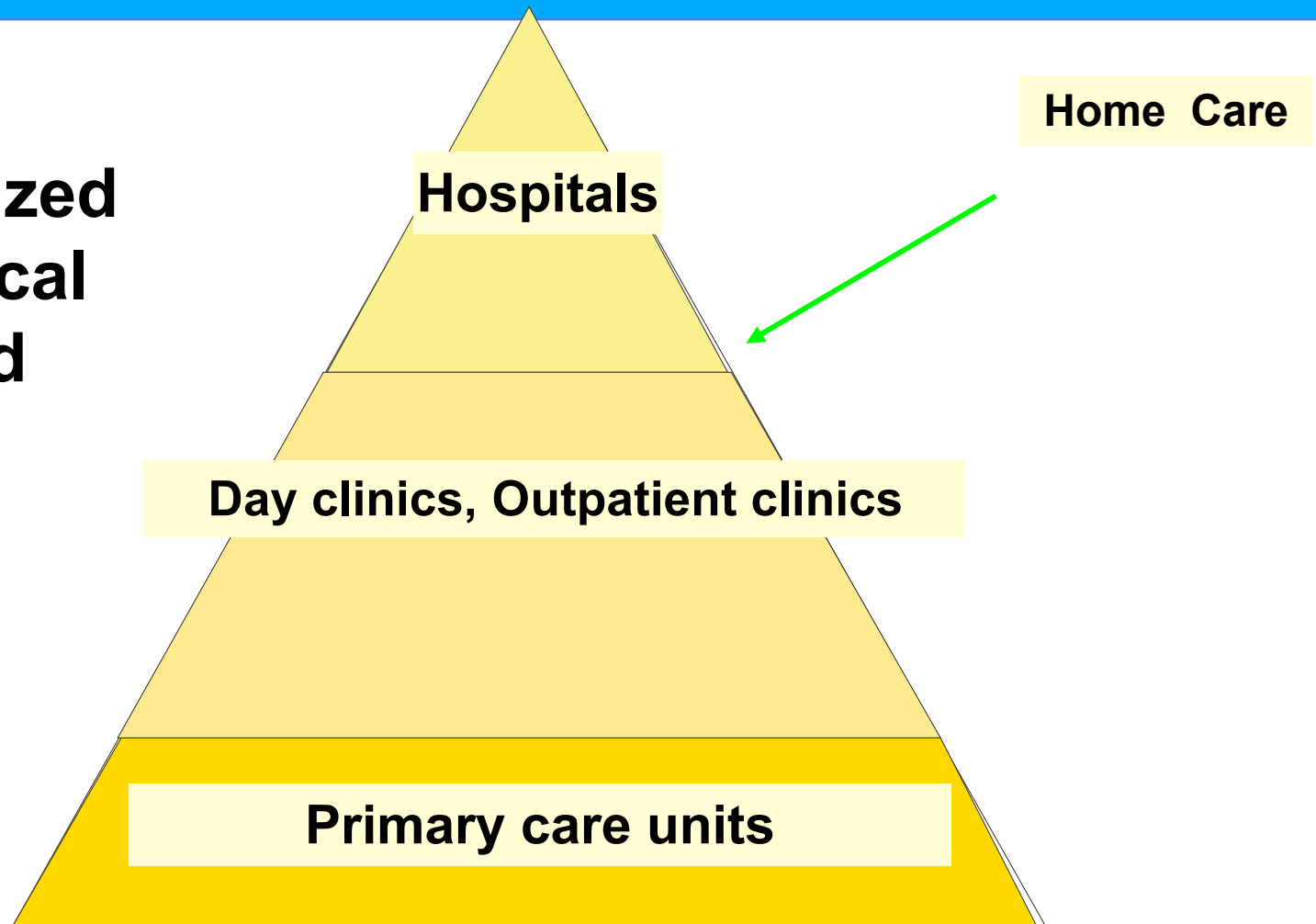
- Currently, available antibody tests used to diagnose HIV in adults cannot be used in children <18 months
- PCR or virological tests are expensive and require more complex laboratory equipment
- DBS can make tests more available, but transportation systems will need to be developed; training provided, etc.
- Scale up has happened in several countries (S. Africa, Rwanda, Botswana)
- Opportunities of bulk purchasing



# HIV/AIDS Care in Brazil

## Decentralised model

- **Universal**
- **Regionalized**
- **Hierarchical**
- **Integrated**



# 3. The Way Forward

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# Making Early Diagnosis a Reality ...

- Early diagnosis can play a pivotal role in averting excess morbidity and mortality
- In many countries there is a brief window of opportunity for testing to occur before loss to follow up.
- There is a moral imperative increase equity for children
- Scale up is possible, but operational questions need to be addressed. We need to learn from those who have done it successfully.
- Systems issues will need to be addressed to make this a reality:
  - Training, cost, platform, SOPs, etc.
  - Role of national government vs. donor community
  - Role of manufacturers in reducing cost and increasing availability



## **Our question for today .....**

**Understanding the impact of early diagnosis in reducing increased morbidity and mortality among HIV-infected infants and children, what strategies can we identify and promote that will make infant diagnosis a practical reality for larger parts of the world?**





Thank you!

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