PERSPECTIVES

Keep Our Future Generation Alive: Reinforcing Routine HIV Testing and Treatment Among Children in Zambia

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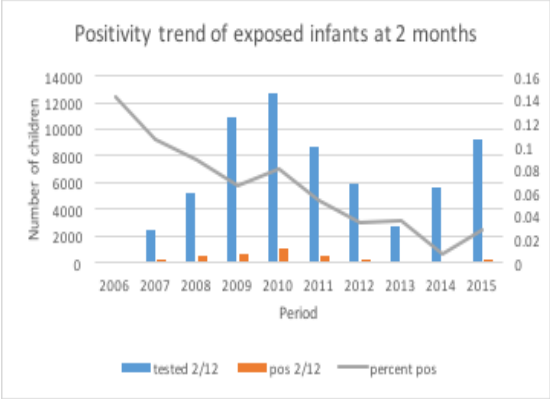
Citation style for this article:
Savory T, Mwanza M, Lumpa M, Chitala M. Keep our future generation alive: Reinforcing routine HIV testing & treatment among children in Zambia. Health Press Zambia Bull. 2017;1(2), [Inclusive page numbers]

Only 3% of children visiting clinics are tested for HIV, despite Ministry of Health recommendations to test and treat ALL children.
If unidentified and left untreated, 75% of HIV positive children die by the age of 5 years.
Reinforcement of routine HIV testing and treatment of children will increase testing up to 90 - 95%, and importantly reduce mortality by 52%.
Adding Integrated Primary School Screening will reach 5-10 year olds who were not previously tested.

The Problem

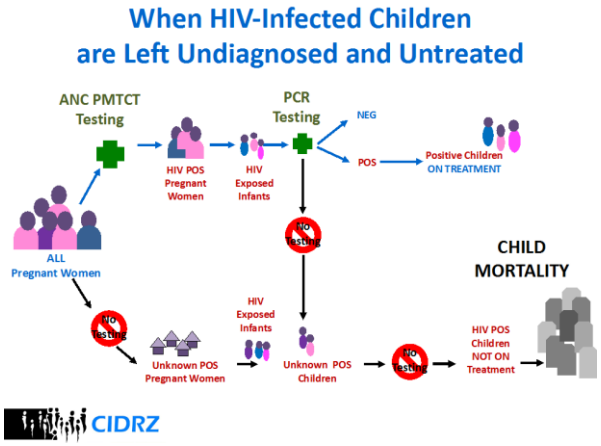
Zambia has made great strides in tackling the HIV/AIDS epidemic, initiating 58% of HIV infected people on treatment [1], prescribing more effective drugs, and delivering these services "closer to home". Over the past 10 years the prevention-of-mother-to-child-transmission (PMTCT) of HIV has changed from single dose anti-retroviral prevention to full Anti-Retroviral Treatment (ART), reducing the percentage of HIV infected children being born of HIV positive mothers from 7% to 2%. However, despite these efforts, there are approximately 36,000 HIV positive children not being identified through HIV testing annually, according to national estimate [1]. To address this child testing gap a team from the Centre for Infectious Disease Research in Zambia (CIDRZ) developed a model to estimate the number of unidentified positive children in the catchment population of 338 CIDRZ-supported facilities in the Lusaka, Western, and Eastern Provinces of the Zambia. The model results indicated that



Source: CIDRZ Annual Progress Reports 2006-2015

from 2006 through to the end of 2015, there were 30,203 HIV positive children that had died from HIV-related conditions. In addition, there was an estimated 14,348 HIV-infected children that remained untested, unidentified, and therefore untreated. Recent literature from sub-Saharan African indicates that 75% of those unidentified HIV infected children will die by the age of 5, while up to 80% will die by the age of 10, if they remain without HIV treatment [2].

Since 2008, Zambia has recommended routine HIV testing at immunization clinics



for those children born to HIV-positive mothers who attended antenatal clinics. This has increased the testing of HIV-exposed infants to 98%. But after the HIV-exposed child reaches one year of age they no longer receive regular testing. Children, of mothers who did not attend antenatal clinics and have unknown HIV status, are missed and do not receive routine HIV testing.

Though the Ministry of Health has promoted Provider Initiated Testing and Counselling (PITC) in Out-Patient departments, the uptake of child testing is very low at only 3% compared to the 40% of adult testing found in most clinics. Healthcare staff are reluctant to ask permission to test a child, especially when the accompanying adult is not the parent. Non-parent caregivers are also reluctant to give permission for testing. Mothers tend to refuse having their child being tested if they don't have the father's or the spouse's permission. This results in an "Opt-In" approach that presents many missed opportunities for child testing.

Policy options

In order to find all children living with HIV, reinforcement of routine HIV testing with community sensitization on the importance of HIV testing in children is essential. Proposed policy options to achieve these include: (1) Reinforcing Routine HIV testing; (2) Introducing Pre- and Primary School Screening Drives; and (3) Introducing Primary School Entry Screening

Reinforcing Routine HIV Testing Strategy:
WHAT: Routinely test all children for HIV, regardless of their age and condition as long as they visit a health facility with adequate information provided to the caregiver.

WHY: 80% of children up to 2 years of age, and 50% of children up to 5 years of age visit a health facility,

No Intervention in 2015			
Age (yrs)	**NEW on ART**	**NOT on ART**	**Died**
1	132	915	1081
2	324	1411	317
3	195	2154	239
4	124	1869	221
5	107	1323	159
6	116	1360	94
7	117	1253	87
8	151	1570	110
9	115	1283	89
10	119	1209	85
Total	**1500**	**14348**	**2483**

but currently only 3 out of every 100 children are tested for HIV in Outpatient Departments. Routine testing removes the responsibility for the decision of testing from healthcare workers and parents/caregivers. According to literature in Zimbabwe [3] and Tanzania [4] this strategy has increased child testing up to 90%. In our model, applying reinforcing routine HIV testing in 2015 for 0-10 year olds would have identified an additional 39% untested HIV-positive, and would have prevented 52% of child deaths.

FEASIBILITY: MEDIUM to HIGH This strategy builds on the government's decision to identify HIV positive children. It will require a reinforced **legal framework**,

Reinforcing Routine HIV Testing in 2015		
NEW on ART	**NOT on ART**	**Died**
1265	425	439
1415	538	98
1055	1379	153
860	1219	135
635	858	95
638	876	56
601	804	51
760	1007	64
609	825	53
589	775	49
8429	**8707**	**1195**

community sensitization, placement of more trained counsellors, and an increase in HIV test kits.

Introducing Screening Drives at Pre- and Primary Schools

WHAT: Conduct integrated screening drives for Pre-School and Primary School children, assessing development, eyes, ears, and dental, immunization status, and testing for malaria, TB and HIV.

WHY: 80% of children in Zambia attend Pre or Primary school. This strategy will find the

5 to 10-year-old HIV positive children that have been missed during usual health services. In our model, applying School Screening Drive in 2015 for school-goers would have identified, 50% of untested HIV-positive children (5-10-year-old), and will reduce 5-10-year child deaths by 54%. Additional benefits of school screening include reducing absenteeism and improve school performance [5].

ESTIMATED COSTS BY OPTION	Option 1 Routine Testing	Option 2 Pre & Primary School Drives	Option 3 Pre-School Entry Screening
Positive Children Found in 1 yr	6,929	4,311	528
Lives Saved in 1 yr	1,288	336	64
Annual Testing Cost (testing, HR, training, community sensitisation)	$1,289,722	$2,375,951	$493,476
Testing Cost Per Positive Child	$186	$551	$934
Annual Treatment Cost (testing, HR, training, community sensitisation)	$1,216,060	$1,133,911	$138,967
Treatment Cost Per Positive Child	$176	$263	$263
Political Feasibility			
Operational Feasibility			

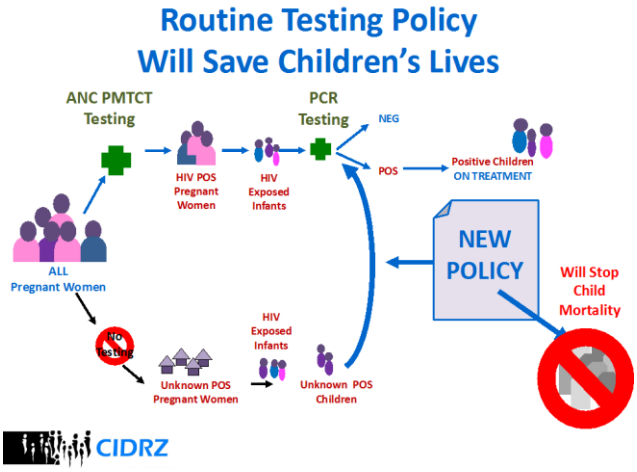
FEASIBILITY: HIGH This strategy will require community sensitization, funds, transport, and human resource, including orientation in school screening for nurses in collaboration with Ministry of Education and other key stakeholders.

Introducing Primary School Entry Screening

WHAT: Conduct integrated screening for new children entering Primary School, assessing development, eyes, ears, and dental, immunization status and test for malaria, TB and HIV before the child is enrolled.

WHY: 80% of children in Zambia attend Pre- and Primary School. In our model, this strategy will identify 35% of the 5-year-old HIV positive children who were missed in the health facilities, and will prevent 40% of death among 5 year olds. Additional benefits of school screening include reducing absenteeism and improve school performance.

FEASIBILTY: HIGH This strategy builds on health services already available at the clinic for children. Children can visit the clinic for school entry testing. Nurses will require orientation on screening activities, and collaboration will be needed with the Ministry of Education and other key stakeholders.



Recommendations

Reinforcing Routine HIV testing is the most cost effective and feasible option to increase HIV testing among children with unknown status, as recommended by the WHO [6] and the CDC [7]. Implementation of routine HIV testing will identify the majority of HIV-positive children in Zambia, reduce HIV-related mortality and promote long-term control of the epidemic. In addition to a legal framework and collaboration amongst stakeholders this strategy will require:

- Additional test kits, more trained counsellors, and a robust referral system to link children to treatment.
- Ministry of Health to intensify community sensitization and trainings for healthcare providers.
- Ministry of Finance to ensure sufficient resources so all identified children can be placed on treatment.
- Additional school screening will identify children who were missed at the health institutions

Available literature

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7.CDC 2006, Revised Recommendation for HIV testing of adults, adolescents and pregnant women in Health Care setting: home/HIV/AIDS Basics/Prevention: HIV Testing: Opt-Out Testing