



**HSRC**  
Human Sciences  
Research Council

# **HIV Infection in Children Aged 5 – 14 years**

**Summary report of an expert  
group meeting**

**Pretoria, South Africa  
18-19 March 2008**



**UNAIDS**  
JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS

UNHCR  
UNICEF  
WFP  
UNDP  
UNFPA

UNODC  
ILO  
UNESCO  
WHO  
WORLD BANK



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## **RATIONALE**

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Southern Africa is the epicenter of the HIV and AIDS pandemic. Evidence from Botswana, South Africa, Swaziland and Zimbabwe suggests a substantial burden of HIV infections among children aged 2-14 years who are not yet sexually active. Ranging from 3-6% in this age group, the observed prevalence has received growing, but still insufficient, attention. Concern that these infections may not always be linked to mother-to-child transmission was the motivation for the Expert Meeting, which was hosted in Pretoria, South Africa on 18-19 March 2008 by the Social Aspects of HIV/AIDS Research Alliance (SAHARA), in collaboration with UNAIDS, UNICEF, WHO, and the South African Human Sciences Research Council (HSRC). Other organizations with expertise in the field of infant and child HIV infection in southern Africa and sub-Saharan Africa in general were also represented.

## **PARTICIPANTS**

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The meeting was attended by a trans-disciplinary group of social and biomedical experts from African research and academic institutions, and representatives of African countries and the United Nations system (UNAIDS, UNICEF, and WHO). See the List of Participants in Appendix I.

## **WORKSHOP STRUCTURE AND PROCESSES**

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Dr Olive Shisana, President and CEO of the HSRC, started the meeting with some welcome remarks. She reminded all participants that HIV infection in children is usually ignored, with preponderant attention given to infections among adults. Similarly, when attention is given to HIV infection in children, the focus is usually on vertical transmission from mother to child. The focus of this meeting should, therefore, also be on non-vertical transmission in search of answers as to why southern African children are infected in such high numbers.

### **Objectives and expected outcomes**

Dr Vincent Agu, Director of SAHARA and the host of the meeting, presented contextual information on SAHARA, as well as information on HIV Infection in Children as a core research focus of SAHARA. He also discussed the overall aim, specific objectives, expected outcomes and outputs of the meeting (see Appendix III).

The overall aim of the meeting was to discuss detailed evidence as to why children who are not sexually active are so vulnerable to HIV infection. The meeting was, therefore, structured into three plenary sessions (see the Programme of Work in Appendix II) to explore critical research questions, including:

- What is the current prevalence of HIV infection in children, and what proportion is due to non-vertical transmission?
- What are the risk factors and possible transmission methods for such infection?

- What is known, and not known, about the transmission of HIV to children?
- What studies and methodologies can be undertaken to more fully understand non-vertical transmission?
- What interventions can be undertaken to reduce it?

In examining the above questions, participants would, where possible, reach agreement on: the interpretation of available data; surveillance; the most appropriate research methodologies and study sites; collaborative mechanisms; publication and dissemination of findings; and make recommendations to influence programmes and policy.

## **DAY 1, SESSION 1**

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The first session was chaired by Dr David Alnwick (UNICEF), and featured five presentations (see Appendix III).

Reports of household surveys in Zimbabwe, Botswana, Swaziland and South Africa were respectively made by Professor Leickness Simbayi (HSRC), Dr Nnunu Tsheko (Botswana), Ms Rachel Masuku (Swaziland), and Dr Shisana.

### **Presentations on Zimbabwe, Botswana and Swaziland**

Prof. Simbayi's presentation was based on a study undertaken by SAHARA in one district in Zimbabwe as part of a 5-year multi-country and multi-site project, known as the W.K. Kellogg Foundation's OVC Care Intervention Project. In the study, the overall HIV prevalence among 2-11 year olds was 3.3%. Disaggregated by age groups, it was 2.5% among children 2-5 years old, increased to 5.8% among those aged 6-8 years, and dropped to 1.3% among those aged 9-11 year<sup>1</sup>.

Dr Tsheko's presentation was based on data from the 2004 Botswana AIDS Impact Survey. According to the data, the 2004 national HIV prevalence was 6.3% among children 1.5-4 years old, 6.0% among those aged 5-9 years, and 3.9% among those aged 10-14 years<sup>2</sup>.

Ms Masuku presented information on HIV infection among Swazi children aged 5-14 years, based on data from the Swazi Demographic and Health Survey (SDHS) – Swaziland's first national survey to use population-based testing to determine HIV prevalence. The survey interviewed residents and obtained blood samples for anemia and HIV testing in a representative national sample of Swazi households between July 2006 and February 2007. According to the data, the national HIV prevalence was 4.2% among children aged 5-9 years

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<sup>1</sup> Gomo, E. & Munyati, S. (eds.) (2006) Household Survey of HIV Prevalence and Behaviour in Chimanimani District, Zimbabwe, 2005. Cape Town: HSRC Press.

<sup>2</sup> Botswana Central Statistical Office (2005). Botswana Impact AIDS Survey II (BAIS II). Statistical Report, Gaborone: Government Printers.

and 2.6% among those 10-14 years old. Data for 2-4 year olds exists, but was not available during the meeting<sup>3</sup>.

## **Presentation on South Africa**

The presentation by Dr Shisana included three different surveys conducted in South Africa.

The first of these, the 2002 HIV Prevalence, Behavioral Risks and Mass Media Household Survey, was the first study to assess the HIV status of children at national level. Results of the survey suggested an unexpected HIV prevalence of 6.2% in children aged 2-9 years and 5.6% among children aged 2-14 years.<sup>4</sup>

This worrying finding triggered a second survey<sup>5</sup> in the Free State province of South Africa which investigated HIV risk exposure among children aged 2-9 years who were served by the Free State public health sector. The survey actually involved a series of four studies. The first was a cross-sectional study, with the objective of estimating the prevalence of discordant mother/child pairs (i.e. HIV-positive mothers who had HIV-negative children, and vice versa) among children served in the public health sector, and then determining the risk factors for HIV infection in those children. It found that 1.4% of HIV-positive children (seven in all) had HIV-negative mothers. Although the numbers are small, the implications are significant, suggesting that there is a non-vertical source of infection. Furthermore, for concordant pairs (HIV-positive children with HIV-positive mothers), it was not possible to determine when the children became HIV-positive - whether the infection was from their mothers or from other sources.

The second study investigated possible sources of infection among HIV positive children whose mothers were HIV negative, using a variety of methodologies, including qualitative assessment of infection control practices in health care settings and amongst traditional healers. Findings of the study suggest that breastfeeding by an HIV-positive non-biological caregiver is the single most important factor associated with HIV infection in children besides the most obvious route of mother-to-child transmission of HIV. The odds of having been breastfed by a non-biological mother were 17 times greater in HIV-positive children compared to the odds in HIV-negative children<sup>5</sup>. Even after controlling for factors such as age, sex, hospital admission, dental treatment, visits to traditional healers, vaccination, scarifications and being fed with milk from the hospital or clinic milk room in multivariate analysis, breastfeeding by a non-biological mother remained the most significant factor associated with non-vertical transmission of HIV.

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<sup>3</sup> Swaziland Central Statistical Office (2007). 2006-07 Swaziland Demographic and Health Survey. Preliminary Findings. Mbabane, Swaziland.

<sup>4</sup> Shisana, O., et al., (2002) Nelson Mandela HSRC Study of HIV/AIDS: Full Report South African national HIV prevalence, behavioural risks and mass media. Household survey 2002. Cape Town: HSRC Press.

<sup>5</sup> Shisana, O., et al., (2005) HIV risk exposure among young children: a study of 2-9 year-olds served by public health facilities in the Free State, South Africa. Cape Town: HSRC Press

The third study also involved a quantitative assessment of infection control practices in the dental, maternity, and paediatric services of 25 public hospitals, 54 primary health care clinics, and 3 community health care centres. Particular attention was given to the knowledge levels of the health care providers, to try to estimate the proportion of facilities with full implementation of standard universal precautions. Poor cleaning techniques and protective policies as well as poor sterilization practices existed<sup>5</sup>. Some of the facilities did not even have autoclaves. It was found that 24.6% of dental instruments and 24% of maternity and paediatric instruments were contaminated with invisible or visible blood, raising the possibility of transmission of blood-borne viruses, including HIV. Furthermore, the procedures for preparing and storing expressed milk were often flawed, with inadequate labelling. Mixing of milk from different mothers was common in a context where 29.7% of breast milk samples tested HIV-positive. Six milk samples had a high viral load, raising the possibility that children might also be infected through expressed breast milk which is distributed in the province from milk rooms

The fourth study involved a qualitative assessment of infection control practices among traditional healers and traditional birth attendants, with the aim of identifying selected traditional practices that may expose children to blood-borne pathogens. History of prior hospital admission and having been seen by a traditional healer, as well as scarification are associated with HIV infection. However, the nature of the association is not clear.

The third survey (the 2005 Household Survey)<sup>6</sup> found that the HIV prevalence among children aged 2-4 years was 4.9% for males and 5.3% for females. For children aged 5-9 years, it was 4.2% for males and 4.8% for females. For children 10-14 years old, it was 1.6% for males and 1.8% for females. The survey also confirmed the importance of nosocomial (hospital-derived) HIV infection, and pointed to sexual abuse and breastfeeding by HIV-positive non-biological mothers as possible sources of HIV infection in children. Other risk factors studied included travelling to and from school, and safety measures at school. Sexual harassment of girls in school was also found to be a serious problem.

## **Presentation on Southern Africa**

Dr Eleanor Gouws (UNAIDS) presented an analysis of data on HIV infection among children in southern Africa as a whole. Though different in approach, this presentation was complementary in reviewing and applying mathematical models to the South African, Swaziland and Botswana national survey data.

Two different mathematical models were used to estimate the numbers of infections in children (up to the age of 14 years) as a result of mother-to-child transmission. When survey data from the three countries were superimposed, the age-specific patterns were consistent, although higher rates of child HIV infection were observed in Botswana and South Africa, compared to the prevalence estimates derived from the modeling exercise (i.e. assuming MTCT only). Modeled estimates of prevalence in the three age groups (2-4, 5-9 and 10-14 years) in Swaziland were similar to the observed survey prevalences.

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<sup>6</sup> Shisana, O., et al., (2005) The South African National HIV Prevalence, HIV Incidence, Behaviour and Communication Survey. Cape Town: HSRC Press

When adjusted for test specificity, modeled and observed prevalence estimates in the three countries were similar. However, it was unclear whether the difference between observed and modelled estimates are related to test specificity or to other potential risk factors. It is therefore critical that the accuracy of HIV tests be known very precisely. Nonetheless, if false positives in the region of 1% are assumed, then the survey rates approximately coincide with the modeled estimates, indicating that transmission to children occur mainly as a result of mother to child transmission. This research emphasized that more studies and data are needed to determine accurately the number of infections among children not related to mother to child transmission.

## **Discussion: current knowledge on HIV infection in children**

The five presentations and discussions that ensued reflected what is currently known about HIV infection in children in the four countries.

- Data on HIV prevalence in children are now available from representative national household surveys in South Africa, Botswana and Swaziland. These data also confirm that it is feasible to measure HIV prevalence in young children, and possibly to link data on children with those on their mothers.
- Available data from the four countries confirm the assumption that the majority of HIV infections in children below 15 years of age is due to vertical transmission.
- There were points of convergence in the data presented on the four countries. In the Zimbabwe community survey, the patterns of prevalence were different from what one would expect in vertical transmission. These included the uneven distribution of infections in the 5-14 age-group, with a decline in prevalence from high levels in the very young, followed by an increase in older children 5-9 years, and a decline in children 10-14 years. These patterns suggest that there are other possible routes of transmission among children aged 5-9 years, and that vertical transmission may not be the only source of infection in young children. In Botswana and South Africa, the patterns of age specific prevalence of HIV among children were consistent (albeit at slightly higher levels) with what would be expected through vertical transmission, with high prevalence levels among 2-4 year olds, and lower prevalence among older children as a result of AIDS mortality. The higher than expected prevalence levels could either be related to test specificity or to infections from other causes. In Swaziland, observed survey prevalence in the different age groups was similar to what is expected from mother-to-child transmission.
- Although HIV prevalence in older children between the ages of 5 to 9 years is estimated at around 4-6%, the burden of the disease in terms of the number of children affected (estimated at about 192,000 in South Africa alone) is of great concern, especially since this group is being overlooked in current intervention programmes.

## **Discussion: knowledge gaps and how to address them**

- The extent of non-vertical transmission (i.e. transmission other than from mother to child) is not fully known. The evidence for such transmission, in the words of one participant, is “disquieting, but not conclusive”. It is known that most infections are from mother to child; however, it is not clear what proportion is due to non-vertical transmission.
- Although valuable data for at least the four countries exist and facilitate understanding of the disease in this age group and formulation of programme interventions, further studies are needed to establish clear epidemiological patterns. For example, survival rates of children from HIV infection to death need to be more carefully studied by following cohorts of HIV-positive children for several years. At the same time, confounding factors that could affect the spread of the virus should be studied, including social, political, bio-medical, economic and child-rearing issues.
- The sub-epidemic among children has global implications. It is vital that research should advance on a broad front, and that researchers and policy-makers should work together (through strong scientific and health policy networks) to incorporate the results of latest research, in search of ways of dealing with the epidemic
- The risk factors associated with non-vertical transmission have not been identified conclusively. Further empirical research is needed to identify them. Surveillance measures are necessary, as the basis for policy formulation and programme development. A number of areas of investigation have been identified, including: the need for more extensive and specific surveys to study patterns of infection among children and more intensive modeling of the spread of the virus in children; the importance of safe hygiene practices in health and dental facilities; the extent of breastfeeding of children by non-biological mothers; safety of blood supplies; factors effecting vulnerable groups such as street-children and child laborers; levels and practice of scarification; child sexual abuse in the family and neighborhood context, or in relation to sex tourism; and some traditional medical practices. The bearing of these on policy and research options will be discussed later in this report.

## **DAY 1, SESSION 2**

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In this session, research methodologies for assessing HIV-associated risk exposures among children, as well as critical research questions and study settings were discussed. It was chaired by Dr Susan Kasedde (UNAIDS). Because of their central importance, some of these issues were also dealt with in Session 3.

### **Research methodologies**

The meeting explored ways of investigating HIV infection in children in the region. Participants agreed that while there is sufficient evidence to show that the major mode of transmission to children is through infected mothers, transmission through other ways (though insufficiently investigated) appears significant. The question is how to investigate

this phenomenon, and how to develop the methods required to measure the incidence of non-vertical HIV infection in children.

- It is important firstly to consider data that are already available. The presentation on southern Africa as a whole was an example of the use of existing data to analyze the problem under consideration. This data can then be used systematically to perform secondary analysis in an attempt to address particular research questions.
- The use of the BED assay<sup>7</sup> for estimating the incidence of HIV infection in children was discussed. This method is known to overestimate HIV incidence in adults by a factor of 2 to 3. Correction factors to adjust for this over-estimation have been developed, and are currently being validated in the field. BED has, however, not been used or validated for estimating HIV incidence in children. Participants agreed that this matter should be taken up by the CDC/WHO Working Group on HIV Incidence Assays. This is an urgent matter, as several countries are planning to use the BED assay for estimating incidence among children, and it has already been used in at least one study in the region.
- There is a need to undertake in-depth studies of mother and child discordant pairs to determine why and how a child whose mother is HIV-negative became infected.
- Greater effort should be made to provide antiretroviral therapy to HIV infected children as soon as possible after infection to improve survival rates.
- An approach to investigating non-vertical infection that avoids some of the pitfalls of surveys could be confidential “ethnographic” enquiries. For example, a specified number of children at schools could be asked to keep diaries, recording their social activities, backed up with HIV testing. A large body of valuable qualitative data on the lives of young people and on factors that involve the risk of HIV infection could be collected in this way.
- The meeting participants discussed ethical issues and problems related to research on children. Ideally, researchers want to interview children in order to understand the magnitude of sexual violence against children, which can lead to improvements in child protection programmes. However, ethics committees often do not allow these types of investigations involving children for reasons related to child protection. Ethics committees should be encouraged to balance the ethical imperatives with the practical considerations of investigating and promoting the health and survival of children and young people. Some have, indeed, advanced in this direction.
- Studies of other biomarkers that are related to HIV (e.g. hepatitis B), along with associated risk factors, could be used to provide valuable information on risk factors associated with HIV infection in children.
- There is also a need for case-control studies to identify possible risk factors.

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<sup>7</sup>Parekh BS, Kennedy MS, Dobbs T, Pau CP, Byers R, Green T, *et al.* Quantitative detection of increasing HIV type 1 antibodies after seroconversion: a simple assay for detecting recent HIV infection and estimating incidence. *AIDS Res Hum Retroviruses* 2002; 18:295-307.

- Confidential inquiries are another way of providing valuable information on risk factors associated with HIV infection in children.

## **Study settings**

Linked both to methodological and ethical questions is the issue of study settings in which to carry out research on HIV infection among children. So far, data on HIV among children have come mainly from work in medical facilities and from household surveys. Other contexts for useful and meaningful research work were considered by the participants.

- “Sentinel sites” at schools could be included in surveillance efforts. Most children attend school, especially the primary schools that cover most of the age-range with which the meeting was concerned. An advantage of school-based studies is that they would be relatively inexpensive to conduct.
- Settings that allow the linking of mother and child pairs may also be useful, e.g. population household surveys.
- Child-minding facilities, such as crèches.
- Medical facilities (e.g. tuberculosis clinics) may be sites where research on discordant mother/child HIV transmission can be carried out relatively easily and inexpensively.
- Other settings might include: communities of street children; areas with high tourist industry visited by sex tourists, including pedophiles; truck stops; etc.

## **Research questions**

Specific research questions were discussed. Some were implicit in the country presentations and in the perceived gaps in our knowledge, and are summarized below. While emphasizing the need to address these questions, the expert group cautioned that these research questions should be posed in such a way as not to divert attention from mother-to-child transmission, which remains the more important area.

### **Need for more surveys of HIV incidence in children**

- The Nelson Mandela Foundation/Human Sciences Research Council report on HIV-AIDS amongst children in the Free State provided valuable and focused information. Bearing in mind that the situation may be different in different regions, similar surveys (with questions made relevant to the different contexts) should be carried out in other parts of South Africa and the region. However, the difficulties of measuring incidence among children were appreciated.

### **Exact role of lactating mothers and wet-nurses**

This has two dimensions:

- More needs to be known about the practice and extent of the feeding of babies by women who are not the biological mothers. This practice has obvious implications for the possible spread of the HIV virus.
- Practices relating to expressing and storing milk in hospitals and clinics need to be examined. Though there is no reason to suppose that this is confined to South Africa, the South African country study indicated inadequate labeling, pasteurizing, storage, and distribution. This introduces the risk of milk from HIV-positive mothers being given to HIV-negative babies. There are obvious dangers to children which need to be urgently investigated. Remedial action also needs to be taken by health facilities, through strict adherence to universal precautions procedures.

### **Scarification**

- Some cultural groups in southern Africa, especially in more remote rural areas, scarify children in various ways. This involves creating cicatrices or other marks on the body that may involve bleeding. This practice introduces a possible risk for HIV infection, and needs to be investigated.

### **Aspects of the formal medical services**

- As with the handling of expressed mothers' milk, there are serious concerns in both South Africa and throughout the region about levels of sterilization and cleanliness of medical equipment and about unsafe practices in maternity and pediatric sections of health facilities. Administration of injections, use of autoclaves, blood transfusion, and vaccination should at all times follow universal precautions. Inadequate hygiene is a threat to general health, and increases the risk for the spread of HIV among children.
- Standards of dentistry are another area of concern where research must be followed by remedial action. Concern was raised about sterilization and cleanliness of dental equipment and apparatus in South Africa as a possible risk factor for HIV transmission not only to the general population, but specifically to children.

### **Issues within the family and community**

The group highlighted issues about which we have little information, and which require investigation

- Child sexual abuse and the spread of HIV: Dr Jama Gulaid (UNICEF) presented a paper<sup>8</sup> on a recent study of the abuse of women in Swaziland, which revealed high rates of coercion of women and girls to consent to sexual intercourse from an early age. The focus of this research was not on the transmission of HIV per se, and there is no reason to suppose that the findings are unique to that country. The sexual coercion revealed has obvious implications for possible transmission of HIV. It

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<sup>8</sup> "National Survey on Violence Experienced by Female Children and Youths in Swaziland", conducted by Government of Swaziland, UN agencies and non-governmental organisations (2007).

suggests that the issue of sexual violence should be looked at from this perspective in all the countries of the region.

- The powerlessness of certain groups (such as street children and child laborers) makes them prey to sexual abuse, and, consequently, to HIV infection. This is an area that also requires investigation.

## **DAY 2, SESSION 3**

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This session was chaired by Dr Francis Onyango (WHO), and started with a recapitulation of the previous day's discussions by the rapporteur (Dr Seán Morrow). This session also featured three presentations (see Appendix III). The presentation by Dr Gulaid has been discussed above.

### **Collaborative and publicity mechanisms**

Dr Kasedde made a presentation on Collaborative Mechanisms for Effective Research on HIV in Children. She discussed various models of collaboration: Inter-institutional Collaboration (e.g. the Joint Learning Initiative on Children and HIV/AIDS); Institutionally-led Technical Assistance to Implementers (such as the Elizabeth Glaser Pediatric AIDS Foundation - International Family AIDS Initiative); Branded Affiliations – that is, initiatives tied to particular companies and universities - such as the Baylor International Pediatric AIDS Initiative; and other models of collaboration (for example, various other United Nations agency-led initiatives, and African initiatives, such as SAHARA and the Dakar-based Council for the Development of Social Science Research in Africa - CODESRIA).

Reference to these models may enable southern African researchers to identify appropriate partners. There are also more immediate, local imperatives:

- Available fora – conferences and journals – should be used to correlate and disseminate data. To have an effective impact on programmes, data must be valid at various levels and in various localities – thus, as noted above, surveys should be repeated in a number of contexts, and there should not be sole reliance on national averages.
- Existing coordination mechanisms within countries need to be identified so that data, and lessons drawn from them, inform policy. This was agreed to have specific implications for the work and outreach of the participants at the expert group meeting.
- International sources of support, such as the Gates Foundation, should be drawn upon. This is an example of a foundation with existing links in the region, and with a track-record of support for regional initiatives.
- The expert group emphasized that publicity in the popular, as well as the professional and scholarly, media is essential. For example, *The Lancet* may be interested in a series of two or three reports on “Have we served our children well?” It would take a year or more to put together such a series of papers, but it would be

valuable to do so. Should *the Lancet* decline to publish the articles, SAHARA's bilingual Journal of Social Aspects of HIV/AIDS (see [www.sahara.org.za](http://www.sahara.org.za)), which has a continent-wide focus, would do so. SAHARA's 2009 Conference in South Africa would be an additional strategic opportunity to publicize these reports.

## **Policy and programmatic recommendations**

Dr David Alnwick (UNICEF) made a presentation on the policy and programmatic implications of the discussions on HIV infection in children. The expert group affirmed the recommendations made in his presentation, which aim to generate a clearer picture of HIV infection in children and the modes of transmission. This will enable effective policy and programmatic actions needed to contain the disease.

### **The need for effective surveillance**

Recent household surveys in the region have confirmed the feasibility of determining HIV prevalence in young children, and of linking child with maternal data. Therefore:

- Household surveys of the DHS+ type in high prevalence countries in eastern and southern Africa should consider including children from birth onwards. However, it is recognized that sample sizes of national surveys will have to be considered very carefully to ensure that the numbers of children are large enough to estimate HIV prevalence with a reasonable level of confidence.
- Providing that data on mother and child pairs are available, analysis of such surveys could allow estimation of the proportion of child infections *not* due to vertical transmission. The first opportunity for this will be from data already collected for Swaziland, which allows for the linkage of data on mother and child pairs.
- Research can be done to determine prevalence and incidence in school-age children – perhaps through school-based surveys.
- National registers should be established to assess the levels of mother/child HIV discordance. Information should be entered in these registers routinely, and discordant pairs followed up individually, using existing demographic surveillance systems. They should provide information on different patterns and levels of infection across the country.
- As noted above, research, such as the Free State study, should be replicated in local and multi-country studies, and could involve existing partners in South Africa, such as the HSRC, and other local and regional actors, particularly drawing on SAHARA network partners in the region as a whole.

### **The special needs of children aged 5 - 14**

At present most infected children in southern Africa do not know their HIV status, nor do they have access to treatment or other services, or support. Thus:

- National AIDS plans and strategies need to be reexamined and modified to ensure that HIV-infected children have access to treatment, care and support.

### **Minimizing pediatric infection through mother-to-child transmission**

As one of the expert group participants put it, “more of the same will not do”: there must be more effective action in this area.

- All efforts to increase coverage of preventative measures and treatment, and their uptake and efficiency, need to be given the greatest possible support. The large number of older children currently living with HIV is a direct result of the slow scaling up and inefficiency of past programmes. Greater efforts need to be made to ensure that political leaders are accountable for ensuring good quality services in preventing mother to child transmission.
- Prevention of infection in young women (the future mothers), pregnant women, and breastfeeding women must be a priority.

### **A focus on the dangers of non-mother-to-child transmission of HIV**

This requires:

- Reinforcement and reinvigoration of universal precautions in health care settings, including dentistry.
- More awareness of the dangers of careless management of expressed breast milk in health care settings.
- Safe blood supplies.
- Discouraging of ‘wet nursing’. There is a need for more research on its prevalence and associated reasons; but, it is already clear from South Africa that it exists.
- Prevention of child sexual abuse for various reasons, including the risk of HIV transmission. There should be a search for opportunities of linking legal efforts to eliminate abuse with greater awareness of the associated risks and prevention of HIV infection.

### **Need for support on the measurement of HIV incidence**

- There should be clear guidance to countries on ways of measuring HIV incidence, in adults and in children, with support for innovative approaches as well as technical solutions.
- Better understanding of the longer-term natural history of HIV-related disease in children in the sub-region is required. What is the prognosis for HIV positive children with aggressive, light or no management?

- Clarity is required on the accuracy (sensitivity and specificity) of HIV tests used in child-related surveillance.
- The issue of BED assay needs to be resolved, as research teams in various countries are embarking on research on HIV in children using this method. It was recommended that the CDC/WHO Working Group on HIV Incidence Assays reach a conclusion as rapidly as possible, and inform the research community about their findings.

## **CLOSURE AND WAY FORWARD**

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Dr Shisana (HSRC) gave the closing remarks.

The meeting agreed on the following steps:

- The expert meeting is a necessary first step in the process of understanding and taking action on HIV infection in children. Research questions and findings are of urgent public and scientific concern. The expert group recognizes that these must be publicized widely even when there may be little prospect of there being the resources or time to work on the full range of issues.
- Participants will review and electronically comment on a draft report of the meeting before finalization. The final report will be useful in encouraging research, advocacy, informed policy making and HIV-Aids scholarship in general and in particular in relation to HIV infection in children in southern Africa and Africa as a whole
- Using the recommendations as building blocks, SAHARA will produce a policy brief to be used by key partners (such as UNICEF, UNAIDS, WHO and HSRC) in strategic advocacy for further research on gaps identified in the meeting and for immediate actions to be taken to minimize “non-vertical” transmission of HIV in children.

## Appendix I: List of participants

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### Human Sciences Research Council (HSRC)

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5. Dr M. Ali Dhansay  
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6. Dr Sean Morrow  
Rapporteur

## Appendix II: Programme of work

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### Day 1, 18 March

09:00 - 10:00	Registration of participants
<b>Session 1 Chair:</b>	David Alnwyk (UNICEF)
10:00 - 10:10	Welcoming remarks (Olive Shisana, HSRC)
10:10 – 10:20	Objectives & expected outcomes of the meeting (Vincent Agu, SAHARA)
10:20-10:35	Confirmation of the agenda (Chair)
10:35 - 11:00	Coffee/tea break
11:00 - 12:15	Current state of HIV infection in children <ul style="list-style-type: none"><li>• Zimbabwe (Leickness Simbayi)</li><li>• Botswana (Nnunu Tshenko)</li><li>• Swaziland (Rachel Masuku)</li><li>• South Africa (Olive Shisana)</li><li>• Southern Africa (Eleanor Gouws)</li></ul>
12:15 - 13:15	Questions and answers, and discussions on: <ul style="list-style-type: none"><li>• Gaps in current knowledge (What we know and What we don't know)</li><li>• Immediate actions needed to minimize “non-vertical’ infections</li><li>• Ways of addressing the gaps in current knowledge</li></ul>
13:15 - 15:00	Lunch break
<b>Session 2 Chair:</b>	Susan Kasedde (UNAIDS)
15:00 - 15:15	Research methodologies for assessing HIV-associated risk exposures among children
15:15 – 16:00	Discussion
16:00 – 16:30	Coffee/tea break
16:30 - 17:30	Research questions and study settings

## **Day 2, 19 March**

**Session 3 Chair:** Francis Onyango (WHO)

08:00 – 08:30 Recap of day 1 (Sean Morrow -- Rapporteur)

08:30 – 11:00 Research questions and study settings (cont'd)

11:00 – 11:30 Coffee/tea break

11:30 - 12:00 Collaborative mechanisms for effective research on HIV in children  
(Susan Kasedde)

12:00 – 12:30 Policy and programmatic implications, beyond the research agenda  
(David Alwyk)

12:30 – 13:30 Closure and way forward (Olive Shisana)

## **Appendix III: Presentations**

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The following presentations are included in this appendix:

### **Objectives & expected outcomes of the meeting - Vincent Agu**

#### **Current state of HIV infection in children**

- Zimbabwe - Leickness Simbayi
- Botswana - Nnunu Tsheko
- Swaziland - Rachel Masuku
- South Africa - Olive Shisana
- Southern Africa - Eleanor Gouws

#### **Collaborative mechanisms for effective research on HIV in children - Susan Kasedde**

#### **Policy and programmatic implications, beyond the research agenda - David Alwyk**