

# The HIV & AIDS and STI National Strategic Plan 2007 - 2011: a paediatric perspective

Desireé Michaels, MPhil, MSc

Brian Eley, MB ChB, BSc (Hons), FCPaed (SA)

*Paediatric Infectious Diseases Unit, Red Cross Children's Hospital, School of Child and Adolescent Health, University of Cape Town*

**Objective.** To analyse paediatric-specific goals and objectives in the HIV & AIDS and STI National Strategic Plan (NSP) for South Africa 2007 - 2011.

**Methods.** This paper reviews key interventions described in the NSP regarding HIV prevention, management and treatment in children under 14 years of age. A general overview of the plan and its implications for the health system was previously published.

**Results.** The NSP contains 4 priority areas, which were disaggregated into 19 goals. Each goal specifies several clearly worded objectives together with 5-year targets, and identifies lead agencies responsible for the achievement of these targets. Nine of the 19 goals (47%) address interventions which mention or affect children directly. Paediatric-specific objectives encompass HIV prevention and treatment, legislation, social security, education, mental health, and developmental monitoring. If implemented comprehensively, it will appreciably improve the country's chances of achieving Millennium Development Goal 4, i.e. the reduction by two-thirds of the mortality rate among children under 5 years of age by 2015. However, substantial resources are required to achieve the goals and objectives of the NSP, including legal and policy amendments.

**Conclusion.** The NSP is an important framework document, which should provide the necessary direction for addressing the paediatric HIV epidemic in South Africa.

South Africa has one of the highest antenatal HIV prevalence rates in the world, viz. 29.1% in 2006.<sup>1</sup> Most infections in children result from perinatal transmission. Mid-2006 estimates indicated that 5.4 million people in South Africa were HIV positive; of these, 294 000 were children <14 years old.<sup>2</sup> South Africa has one of the largest antiretroviral treatment programmes in the world. In November 2006, the Department of Health stated in a press release that the cumulative number of patients on antiretroviral therapy (ART) as at September 2006 was 213 828, and 21 550 were children <14 years. A further 80 000 people commenced ART in the private sector.<sup>3</sup> The revised HIV & AIDS National Strategic Plan (NSP) for the period 2007 - 2011 was approved by the South African Government in May 2007. A general review of the plan, which discussed the implications for the health system of South Africa, has been published.<sup>4</sup> In this review, we consider the child-specific components of the NSP.

## Structure and guiding principles of the NSP

The NSP is expected to cost between R39.8 and 44.9 billion. Successful implementation is projected to decrease the national HIV incidence rate by 50% and bring appropriate treatment, care and support services to at least 80% of HIV-infected people and their families by 2011. The plan acknowledges that young people, aged 15 - 24 years, constitute a priority group for intervention, especially with regard to behaviour change prevention. There is more attention to detail in the plan, particularly concerning child-specific elements, than in any of

the previous strategic plans. The plan explicitly prioritised the rights and best interests of children in all prevention, treatment and care interventions.<sup>5</sup>

The NSP contains four priority areas which comprise 19 goals. Each goal specifies several clearly worded objectives, with 5-year targets, and identifies lead agencies responsible for the achievement of these targets. Nine of the 19 goals (47%) incorporate objectives and interventions which mention or affect children directly (Table I). The document is an improvement on the previous plan with regard to child-specific objectives and interventions. The present objectives encompass HIV prevention and treatment, legislation, social security, education, mental health, and developmental monitoring (Table II).<sup>5</sup>

## Paediatric initiatives

**Paediatric HIV prevention.** South Africa is one of 9 countries where the mortality of children <5 years of age is increasing at an estimated annual rate of 1.6% (see Table III). HIV infection is the major contributing factor. An optimally functioning prevention of mother-to-child transmission (PMTCT) intervention programme is the most effective strategy for reducing the size of the paediatric HIV epidemic. Currently, absolute vertical transmission rates in South Africa range from approximately 6% to >20%.<sup>6,7</sup>

The Western Cape has a developed provincial PMTCT intervention programme. By May 2003, nearly all antenatal and child health clinics including mobile services in the province offered PMTCT interventions to pregnant women

TABLE I. PRIORITY AREAS AND GOALS

<b>Priority area 1</b>	<b>Prevention</b>
Goal 1	Reduce vulnerability to HIV infection and the impact of AIDS
Goal 2	Reduce sexual transmission of HIV
Goal 3	Reduce mother-to-child transmission of HIV
Goal 4	Minimise the risk of HIV transmission through blood and blood products
<b>Priority area 2</b>	<b>Treatment, care and support</b>
Goal 5	Increase coverage of voluntary counselling and testing, and promote regular HIV testing
Goal 6	Enable people living with HIV and AIDS to lead healthy and productive lives
Goal 7	Address the special needs of pregnant women and children
Goal 8	Mitigate the impact of HIV and AIDS and create an enabling social environment for care, treatment and support
<b>Priority area 3</b>	<b>Research, monitoring and surveillance</b>
Goal 9	Develop and implement a monitoring and evaluation framework
Goal 10	Support research in the development of new prevention technologies
Goal 11	Create an enabling environment for research in support of the NSP
Goal 12	Development and promotion of research on behaviour change
Goal 13	Develop and support a comprehensive research agenda
Goal 14	Conduct policy research
Goal 15	Conduct regular surveillance
<b>Priority area 4</b>	<b>Human rights and access to justice</b>
Goal 16	Ensure public knowledge of and adherence to the legal and policy provisions
Goal 17	Mobilise society, and build leadership of people living with HIV to counter against stigma and discrimination
Goal 18	Identify and remove legal, policy, religious and cultural barriers to effective HIV prevention, treatment and support
Goal 19	Focus on the human rights of women and children

and their offspring. HIV-infected women currently receive a minimum of two antiretroviral agents (dual prophylaxis). Zidovudine (AZT) is administered from 28 weeks' gestation onwards, and a single dose of nevirapine (NVP) at the onset of labour. All HIV-exposed newborns are subsequently given a single dose of NVP and a 7-day course of AZT. For women who qualify on clinical and/or immunological grounds, triple combination antiretroviral therapy (HAART) is administered. Furthermore, for those women who elect to formula-feed their infants, milk powder is provided for the first 6 months of life. In the other 8 provinces, NVP monophylaxis remains the standard of care.<sup>8\*</sup> The World Health Organization (WHO) advocates dual prophylaxis or, where appropriate, HAART for preventing paediatric HIV infection in resource-limited settings. This approach should be implemented throughout South Africa to improve the effectiveness of current PMTCT intervention programmes.<sup>9</sup>

The NSP states that, by 2011, 95% of all pregnant women will be tested for HIV infection, optimal PMTCT interventions will be provided to 95% of pregnant women with HIV infection, and absolute vertical transmission rates will be reduced to <5%.<sup>5</sup> HIV testing uptake among antenatal clients in South Africa in 2005/2006 varied between 23.4% and 75%.<sup>10</sup> Furthermore, current PMTCT intervention coverage may be as low as 30%.<sup>8</sup>

The NSP goal of achieving a vertical transmission rate of less than 5% within the 5-year time frame is ambitious. However, Botswana, with an antenatal HIV prevalence rate of approximately 34%, succeeded in reducing its absolute vertical transmission rate to less than 4% in 2007, with a comprehensive

strategy that included dual prophylaxis. Evidence from clinical trials has shown that absolute transmission can be reduced to approximately 2% with dual prophylaxis.<sup>11</sup> Although the NSP goal is potentially achievable, substantial investments are required.

**Paediatric HIV treatment and care.** Goals 6 and 7 comprehensively address the treatment and care of HIV-infected children (Table I). Important considerations include: (i) increasing the HIV testing rate, particularly in children <6 months of age; (ii) higher HIV testing rates in children with tuberculosis (TB); (iii) improved management of children with HIV-TB co-infection; (iv) extended access to co-trimoxazole prophylaxis and HAART; and (v) maintaining viral load suppression rates at 80% after 1 year on HAART.

Although the plan encourages HIV testing of patients with TB, combined targets are presented for adult and paediatric patients. This approach was used to present other objectives including viral load suppression rates and CD4 monitoring, and therefore paediatric-specific targets were not clearly defined with respect to these variables. To extend services to more children, nurses will be trained to do HIV testing and treat stable children with HAART in primary health care settings. This approach to expand paediatric care is progressive when compared with previous strategic plans.

The major challenge is overcoming existing treatment barriers. These barriers, described in the previous national strategic plan, include a lack of sufficiently trained health care personnel; inadequate facilities; and the complexity of treatment recommendations, drug regimens and formulations. Children are particularly vulnerable because of their social circumstances and frequent changes of caregivers. Failure to integrate health services results in the attrition of patients at

\* Government announced on 25 January 2008 that the National Policy Committee have adopted the policy to implement dual therapy for PMTCT as recommended by the WHO, on a national scale.

TABLE II. CHILD-SPECIFIC TARGETS OF THE NSP

Target	2007	2011
<b>Prevention targets (PMTCT)</b>		
Increase the proportion of public sector antenatal services providing PMTCT	85%	100%
Increase proportion of pregnant women tested through implementation of provider-initiated VCT for all pregnant women	70%	95%
Increase the proportion of the estimated population of HIV-infected pregnant women in need who receive PMTCT services	60%	95%
<b>Paediatric HIV management targets</b>		
Increase the number of new children starting ART	17 000 children	40 000 children
Increase the proportion of children receiving cotrimoxazole	30% of facilities	90% of facilities
Implement provider-initiated HIV testing for children of HIV-infected adults	30% of facilities	95% of facilities
Increase the proportion of immunisation facilities offering HIV PCR testing for infant diagnosis	40% of facilities	100% of facilities
Increase the number of exposed children tested with HIV DNA PCR testing	45% of facilities	90% of facilities
Increase the proportion of symptomatic children tested for HIV attending primary care and hospital facilities	50% of facilities	90% of facilities
Increase the proportion of children receiving cotrimoxazole and a CD4 test at the time of diagnosis	35% of facilities	90% of facilities
Increase the proportion of HIV-infected children not on HAART who had a CD4 count according to guidelines	30% of infected children	80% of infected children.
Increase the proportion of HIV-positive and exposed children receiving cotrimoxazole	65% of children	100% of children
<b>Child-specific targets in respect of education, social security and mental health</b>		
Development of guidelines for HIV training in schools	Completion of guidelines	80% of target groups reached
Develop capacity in schools to provide psychosocial, educational and adherence support to children in need	15% of schools	80% of schools
Access to grants and benefits at social services level for OVCs and child-headed households	30% (in 2008) of OVCs	100% of OVCs
Provision of psychosocial support for children and adolescents including counselling for bereavement, disclosure, adherence and sexual aspirations	10% of sub-districts	100% of sub-districts
Implementation of biannual developmental screening for all children <5 yrs	6% of children <5	60% of children <5
Increase capacity of health facilities to identify children with developmental delay for appropriate referral	60% of facilities	90% of facilities

each stage during the work-up before HAART is initiated. As a consequence, relatively few children benefit from existing treatment services.<sup>12</sup>

The plan aims to build capacity of health workers and managers to provide comprehensive care, treatment and support. By the end of 2007, 45% of primary health care staff members will be

TABLE III. UNDER-5 MORTALITY RATES: ESTIMATES FOR 2003

State	Per 1 000 live births	Uncertainty	Annual average percentage change		
			1990 -1994	1995 -1999	2000 -2003
Botswana	112	96 - 128	2.6	8.9	3.5
Cambodia	140	124 - 158	0.9	2.4	1.2
Côte d'Ivoire	193	161 - 223	2.2	1.5	0.7
Kenya	123	108 - 138	2.7	1.6	0.8
Kuwait	12	11 - 13	-	-4.0	2.1
South Africa	66	58 - 74	-0.3	1.3	1.6
Swaziland	153	140 - 166	0.0	5.2	2.5
Turkmenistan	102	93 - 112	-1.7	2.2	1.0
Zimbabwe	126	111 - 141	2.4	5.4	2.5

Note: Kazakhstan (73/1 000 live births) had a projected annual increase of 1.7% for 1995 - 1999 with no further (0.0) increase in projections for 2003.

Source: World Health Organization. Excerpt from Annex Table 2a, [http://www.who.int/whr/2005/annex/annexe2a\\_en.pdf](http://www.who.int/whr/2005/annex/annexe2a_en.pdf) (accessed 12 November 2007).

capacitated and by 2011, 90% should be trained. The targets for the number of patients initiated on ART by nurses refer to adult patients. These targets are not explicitly paediatric-specific. Failure to create specific targets for children may undermine initiatives to strengthen paediatric care and overcome the competing interests of adult care.

**Education.** Educational objectives include the development of national guidelines to promote the right of children to access HIV and AIDS information and support in schools; guidelines for health care workers about the right of children to access HIV services including voluntary counselling and testing; and interventions to develop the capacity of schools, educators and early childhood development centres to be able to provide psychosocial, educational and adherence support to children with HIV infection. These programmes encompass all children, including orphaned and vulnerable children (OVCs). The programmes were targeted for development during 2007 and implemented incrementally over the 5-year period so that, by 2011, at least 80% of target groups should receive the information. In addition, the plan includes the introduction, evaluation and customising of curricula and interventions for different target groups including young people out of school, primary school children and secondary school children. The programmes are aimed at strengthening existing behaviour change programmes and interventions to curb the sexual transmission of HIV. The Department of Education is expected to take responsibility for implementation. Achievement of these objectives among schoolgoing children will place an additional strain on manpower resources within this sector, which has not escaped the epidemic. It was estimated that 21% of teachers in South Africa in 2006 were HIV-positive.<sup>13</sup>

**Social security.** Social security for OVCs is a priority. In the course of 2008, 30% of OVCs and child-headed households should be able to access grants and social benefits and, by the end of 2011, 100% should receive social support. To achieve these targets, mechanisms to identify OVCs and child-headed households and link them to grants and social benefits at local level will be developed. The Department of Social Services should identify the reasons for not addressing the issue successfully, in order to develop feasible mechanisms for identification of OVCs and child-headed households in future.

In addition, guidelines for providing core services to OVCs and child-headed households will be developed. Core services

include exemption from school and health service fees, child support grants and birth registration. The Department of Social Services was tasked to implement these programmes. A limiting factor is the capacity of governmental departments to respond, including the ability of the Department of Home Affairs to issue identity documents and birth certificates to unregistered children. It is estimated that only half of the children in South Africa are currently registered. Recently created birth-registration units in 3 provinces have increased registration rates substantially, and an online birth-registration project has enabled an additional 650 registrations per month.<sup>14</sup>

**Nutritional support.** The comprehensive care and treatment package includes the provision of food support to 400 000 eligible households in 2007, and 700 000 households by 2011. The food support package includes food parcels and nutritional supplements, development of food gardens, guidance on good nutritional practices and enhancement of household food security. The document is vague regarding the realisation of these goals. Several lead agencies are specified as responsible for implementation, including the Department of Health, the private sector, non-governmental organisations (NGOs), community-based organisations, and traditional healers.<sup>5</sup> Failure to devolve responsibility and accountability for implementation and the establishment of criteria for 'eligibility' to a single agency may create delays and prevent the achievement of this goal.

**Mental health.** During 2007, at least 10% of all sub-districts should provide psychosocial support for children and adolescents, including counselling for bereavement, disclosure, adherence and sexual aspirations. By 2011, all sub-districts should be provided with these services through the Department of Health. At present, fewer than 1 in 5 South Africans with a mental health disorder receive appropriate treatment.<sup>15</sup> Given this reality and the absence of an implementation strategy for building up mental health services, it is questionable whether the goals in the NSP are attainable during the proposed timeframe.

**Developmental screening and monitoring.** Implementation of biannual developmental screening for all children <5 years old was planned to commence in 2007; by 2011, 60% of HIV-infected children should be routinely screened. A complementary goal is to increase the proportion of children diagnosed with neurodevelopmental delay by 90% by the end of 2011. The

lack of baseline data on the prevalence of neurodevelopmental delay among children aged <5 years increases the difficulty of interpreting this target at an operational level. Unless accompanied by increased staff complements, training and appropriate research, these goals appear somewhat idealistic and unattainable. Immunisation visits present some opportunities for performing developmental screening. However, a shift towards increasing the administration of HAART to children <12 months of age will in future increasingly shift the responsibility for neurodevelopmental screening to clinical staff at antiretroviral treatment services.<sup>16</sup>

## Human rights and access to justice

Children's right to information about HIV infection and the provision of services is acknowledged in Goal 16. The aim is to develop and distribute national guidelines on the rights of children in schools and to health service providers, reaching 80 - 90% of schools and 90% of health service providers by 2011. One of the aims of the plan is to ensure a supportive legal environment for the provision of HIV and AIDS services to marginalised groups. Development of information materials on rights to HIV prevention, treatment and support that respond to the special needs of *inter alia* children with disabilities and all children, are targeted to reach 80% of organised groups by 2011. Monitoring tools and the establishment of systems for collecting information are just some of the intervention strategies planned to ensure protection of human rights and access to justice.

## Threats to implementation of the NSP

The NSP is an important coherent framework for addressing the paediatric HIV epidemic in South Africa. If implemented comprehensively, it will appreciably improve the country's chances of achieving Millennium Development Goal 4, viz. the reduction by two-thirds of the mortality rate among children <5 years of age by 2015.<sup>17</sup> However, the plan is ambitious and will require substantial resources to be realised, including legal and policy amendments.

A significant threat is the lack of skilled personnel in the health sector in general, and specifically in managing paediatric HIV infection. The plan recommends that regulatory and policy barriers to task shifting should be identified. In addition, the scope of nursing practice should be amended and appropriate training programmes for health care workers established. Some personnel challenges, such as the reluctance of health professionals to treat children and obtain blood samples from them, can be overcome through sustained outreach mentorship programmes directed by experienced child health professionals and paediatricians.<sup>12</sup> The plan calls for a task-shifting strategy which increases the scope of practice of lay counsellors to include services such as HIV testing. In some provinces, e.g. the Western Cape, lay counsellors are employed by non-governmental organisations (NGOs) and contracted to work at health service facilities. They fulfil vital functions including counselling, education and adherence support. Dependence on voluntary workers who remain 'outside' the employment structures of the health system may perpetuate variable service standards due to differences in requirements for employment, selection criteria and training among different NGOs. The incorporation of lay counsellors in the formal public health service should receive careful consideration by policy makers.

Vital aspects of successful implementation, addressed in the NSP, are monitoring and evaluation; 4 - 7% of the total implementation budget was allocated for this activity. Progress will be reviewed every 6 months by the South African National AIDS Council. In addition, a mid-term review is planned during 2009, and a 5-year review envisaged during 2011. The NSP is an overarching strategic plan involving several government departments and other lead agencies. It may be expedient therefore to appoint external agencies to monitor and evaluate the operationalisation and progress of the plan.

The omission in the past of monitoring systems (prior to 2005) should not be repeated in respect of children, where no standardised (national) routine data on adherence, retention, viral load suppression, clinical status, mortality or side-effects were available for children accessing ART through the public health services.<sup>8</sup>

Practical challenges include whether stakeholders and lead agencies can 'catch up' and achieve the targets set for 2007 (since the finalised plan was only released in June 2007), and whether there is sufficient willingness by all role players to realise the key goals by 2011. Another operational challenge is the lack of baseline data for many of the indicators, which could hamper the realisation of targets stated in the plan.

## Conclusion

Notwithstanding the enormous challenges facing the health care system and the rising burden of HIV infection, resources exist in South Africa to improve HIV prevention, care and treatment, and implement the HIV/AIDS and STI Strategic Plan successfully. However, the attainment of the goals and objectives as defined in the plan requires strong leadership and judicious use of resources.

Desirée Michaels is funded by PEPFAR (USAID) through the Perinatal HIV Research Unit, University of the Witwatersrand. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID or PEPFAR.

## References

1. *National HIV and Syphilis Antenatal Sero-prevalence Survey in South Africa 2005*. Pretoria: Department of Health, 2006.
2. Dorrington R, Johnson L, Bradshaw D, Daniel TJ. *The Demographic Impact of HIV/AIDS in South Africa: National and Provincial Indicators for 2006*. Cape Town: Centre for Actuarial Research, South African Medical Research Council and Actuarial Society of South Africa, 2006. <http://www.mrc.ac.za/bod/DemographicImpactHIVIndicators.pdf> (accessed 12 October 2007).
3. Correction: More than 235 000 benefiting from ARV Programme. Pretoria: Department of Health, 2006. <http://www.doh.gov.za/docs/pr/pr1117-f.html> (accessed 11 December 2006).
4. Venter WF. The South African National Strategic Plan: What does it mean for our Health System? *Southern African Journal of HIV Medicine* 2007; June: 8-11.
5. *HIV & AIDS and STI National Strategic Plan 2005-2011*. Pretoria: South African National AIDS Council, 2007.
6. Coetzee D, Hildebrand K, Boule A, Draper B, Abdullah F, Goemaere E. Effectiveness of the first district-wide programme for the prevention of mother-to-child transmission of HIV in South Africa. *Bull World Health Organ* 2005; 83(7): 489-494.
7. Rollins N, Little K, Mzolo S, Horwood C, Newell ML. Surveillance of mother-to-child transmission prevention programmes at immunization clinics: the case for universal screening. *AIDS* 2007; 21(10): 1341-1347.
8. Myers T, Sherman G, Moultrie H, Eley B, Cotton M. Management of HIV-infected children. In: Ijumba P, Padarath A, eds. *South African Health Review 2006*. Durban: Health Systems Trust, 2006. <http://www.hst.org.za/generic/29>

9. *Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants: Towards Universal Access. Recommendations for a Public Health Approach*. Geneva: World Health Organization. <http://www.who.int> (accessed 6 November 2007).
10. Barron P, Day C, Monticelli F, et al. *District Health Barometer 2005/2006*. Durban: Health Systems Trust, 2006. <http://www.hst.org.za/publications/701> (accessed 6 November 2007).
11. Lallemand M, Jourdain G, Le Coeur S, et al. Single-dose perinatal nevirapine plus standard zidovudine to prevent mother-to-child transmission of HIV-1 in Thailand. *N Engl J Med* 2004; 351(3): 217-228.
12. Michaels D, Eley B, Ndhlovu L, Rutenberg N. Exploring current practices in pediatric ARV rollout and integration with early childhood programs in South Africa: A rapid situational analysis. *Horizons Final Report*. Washington, DC: Population Council, 2006. <http://www.popcouncil.org/pdfs/horizons/sapedssa.pdf> (accessed 28 August 2007).
13. The Impact of AIDS on people and societies. In: *UNAIDS 2006 Report on the Global AIDS Epidemic*, Chapter 4. Geneva: World Health Organization. [http://data.unaids.org/pub/GlobalReport/2006/2006\\_GR\\_CH04\\_en.pdf](http://data.unaids.org/pub/GlobalReport/2006/2006_GR_CH04_en.pdf) (accessed 17 September 2007).
14. UNICEF, South Africa. Geneva: World Health Organization, 2007. [http://www.unicef.org/infobycountry/southafrica\\_877.html](http://www.unicef.org/infobycountry/southafrica_877.html) (accessed 23 October 2007).
15. Stein DJ, Seedat S, Herman A, et al. *Findings from the first South African Stress and Health Study*. Cape Town: SAMRC, 2007. <http://www.mrc.ac.za/policybriefs/stresshealth.pdf> (accessed 24 October 2007).
16. Violari A, Cotton M, Gibb, et al. Antiretroviral therapy initiated before 12 weeks of age reduces early mortality in young HIV-infected infants: evidence from the Children with HIV Early Antiretroviral Therapy (CHER) Study. Proceedings of the 4th IAS Conference, 22-25 July 2007, Sydney, Australia. <http://www.ias2007.org/pag/Abstracts.aspx?AID=5557> (accessed 2 November 2007).
17. *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals*. Overview. United Nations Millennium Project 2005. <http://www.unmillenniumproject.org/documents/overviewEng-LowRes.pdf> (accessed 27 August 2007).