

# CHILDREN AND HIV/AIDS

Every minute, a child under the age of 15 is infected with HIV. AIDS kills over 1,000 children every day, and claims roughly half a million young lives every year<sup>[1]</sup>.

Photo © Sheila Shettle



In rich countries, paediatric HIV/AIDS is largely under control: prevention of mother-to-child transmission is successful, and infants and children have access to diagnostics and antiretroviral therapy. But 87% of the estimated 2.3 million children living with HIV/AIDS grow up in sub-Saharan Africa<sup>[2]</sup>, and the vast majority are beyond the reach of these health services. They are condemned to die due to lack of access to treatment.

Médecins Sans Frontières' (MSF) experience has shown that children respond very well to treatment and can get better quickly. However, practical issues make diagnosing

and treating children infected with HIV/AIDS much more difficult than adults. The impact of the HIV/AIDS epidemic on children has been, and will continue to be, devastating. More than 15 million children have lost one or both parents to the AIDS epidemic<sup>[3]</sup>, 12 million of them in sub-Saharan Africa. Most of these children are now in the care of their grandparents and other caregivers, or live in orphanages or on the streets.

Without treatment, half of all babies infected with HIV die before their second birthday. With no voice to represent them, children are the silent victims of the HIV/AIDS pandemic.

**Currently, MSF provides antiretroviral therapy (ART) to more than 7,000 children, amounting to 7% of the total patients on AIDS treatment in MSF projects worldwide.**



# MSF FACT SHEET

## Transmission

More than nine times out of ten, children become infected with HIV through mother-to-child transmission. This infection can occur during pregnancy, childbirth, or while breastfeeding.

Yet this vertical transmission of the virus from mother to child is easily preventable in rich countries. This is done by giving antiretroviral therapy to HIV positive mothers during pregnancy and to the infant within a few hours after birth; by carrying out elective caesareans; and by providing safe alternatives to breast milk.

By adopting such strategies, wealthy countries have been extremely successful in reducing mother-to-child transmission (MTCT) to below 1%. In poorer countries the transmission rate remains as high as 25 to 45%<sup>[4,5]</sup>. Developing countries are unable to replicate the success seen in the developed world because the majority of mothers do not have access to diagnostic services and appropriate intervention treatments for them or their child. And even if they do, the risk of transmission through breastfeeding remains; despite these difficulties it has been shown that transmission can be reduced to around 5%<sup>[6,7]</sup>, even in breastfeeding populations. The challenge is how to implement these interventions on a large scale.

These disparities between rich and poor explain the gap in paediatric HIV/AIDS today: of the estimated 540,000 children in the world newly infected during 2006, 470,000 live in Africa, and only 700 in either Europe or North America<sup>[8]</sup>.

## Diagnosis

Detection of HIV infection in infants is crucial so that antiretroviral therapy can be started as quickly as necessary. Diagnosis through clinical symptoms alone is not enough, as these are often not so apparent in the early stages of infection and can be confused with other typical childhood illnesses. In adults, HIV infection is commonly diagnosed through an antibody test.

But detection of antibodies in infants is not what is needed, because all babies born to women with HIV acquire their mother's antibodies. Maternal antibodies can remain in the blood as long as 18 months.

The current standard for diagnosing children less than 18 months of age is to detect the presence of viral HIV particles in the blood stream. The equipment necessary for this is very expensive, and conducting the test is complicated, requiring a well-equipped laboratory.

We urgently need a simple, affordable and rapid detection test that can be used in low-tech settings. Some improvement has been made through the 'dry blood spot' (DBS) method. This allows a patient's blood to be collected and dried on a piece of filter paper, which is sent to the nearest laboratory that has

the necessary equipment (often a laboratory in the capital city). If widely implemented, this method can largely facilitate diagnosis, but it relies on a functioning transport system and sufficient laboratory capacity to run a potentially large number of tests. Unfortunately, as test results are not available for a couple of weeks, there is an increased risk of losing these children to follow-up.

What is really needed is a test that is simple enough to be performed while the patient is waiting. Multinational diagnostic companies have not been interested in the development of such a test. A few research groups are trying to simplify the technology, including a group based in Cambridge, UK, which is working on a much-simplified test. This research needs to receive much higher priority internationally.

## Treatment

In wealthy countries, infected children and babies - diagnosed rapidly - are treated early with antiretroviral therapy, a strategy that has proven successful in reducing illness and death.

Until recently, fixed-dose combinations or FDCs - where several drugs are combined in a single pill, simplifying treatment and helping improve adherence, did not exist for children. The paediatric versions of many antiretroviral drugs (ARVs) were also considerably more expensive than adult formulations.

This has now changed. Indian generic manufacturers have developed some paediatric FDCs, and treating a child today with the first-line FDCs costs less than US\$ 100 per year. This is a great step forward for our youngest patients, who now can take adapted doses in a dispersible tablet form. A child weighing 10kg, who for many years could only rely on modified adult preparations or a variety of syrups, can now take just one tablet twice a day.

However, this does not solve all the problems. First, the standardised treatment guidelines and dosing recommendations for children have come very late. UNICEF and WHO took more than three years to give guidance on the dosages and the formulations needed to optimise treatment for children and infants. As a result, Indian generic manufacturers were developing paediatric FDCs in the absence of clear recommendations. Each of the manufacturers has produced a triple FDC for children containing different dosages - and all of them have turned out to be different from the WHO recommended dosages. Until now, no company has started production of the newly-recommended formulations.

Second, many ARVs still do not exist in child-adapted tablet formulations, let alone in fixed-dose combinations. Most young children still have their medications administered as a liquid, either as a syrup or a powder. The powder requires reconstitution with clean safe water, which is often difficult to obtain. Additionally, both syrups and powder



formulations sometimes have an unpleasant taste that is difficult to disguise. The need for refrigeration of many of these products after reconstitution also makes them ill-suited for use in resource-limited settings.

Third, many existing ARVs are simply not tested in children. Pharmaceutical companies need to systematically include paediatric studies for new formulations. Today, there is no safety or efficacy data concerning the effects in children of tenofovir disoproxil fumarate (TDF), although this is one of the ARVs WHO recommends for first-line treatment in adults. Another ARV, efavirenz (EFV), has been registered in the US since 1998, but still has no dosing guidelines for children under the age of three.

Fourth, more paediatric formulations are needed to make sure that patients have access to a variety of different treatment options. This also includes second-line drugs that are needed when patients naturally develop resistance to their first line of treatment. Second-line regimens for children remain expensive and complex. A recommended second line costs at best US\$ 722<sup>[9]</sup> per patient per year and involves taking a variety of tablets and syrups, one of which must be refrigerated.

All of these problems are due to the fact that most pharmaceutical companies today have little interest in developing formulations for children. With the market for new paediatric formulations being limited to the developing world, there is not enough commercial incentive to stimulate action.

### MSF experience treating children with HIV/AIDS

MSF began providing antiretroviral therapy to children in December 2000. Today, MSF is treating nearly 100,000 patients with ARVs in more than 30 countries. Among these, more than 7,000 (7%) are children under the age of 15.

While working with children, MSF places considerable emphasis on adherence to treatment, an often-neglected aspect of paediatric HIV care. Explaining HIV to children and their caregivers, who are often not their parents, needs dedicated personnel. MSF is now working with professional and lay counsellors to organise children-specific support groups to improve adherence. To help overcome some of the practical barriers, MSF teams have created innovative tools, including health diaries, treatment calendars and other ways to help improve children's understanding of their disease and their treatment.

***“Because diagnosis and treatment appear to be complex, physicians and even more so treatment programmes often delay or hesitate to provide AIDS treatment to children. The younger the child, the less likely she or he will receive timely treatment. If we are serious about wanting to care for children, diagnosis, treatment and prevention of transmission need to be simplified, and child-adapted, quality, affordable drugs have to be made rapidly available. In addition, prevention of mother-to-child transmission (PMTCT) activities need to be rolled out on a large scale.”***

-- Dr. Myrto Schaefer, MSF Paediatric HIV Advisor



## MSF calls for:

### WHO and UNICEF to develop a clear strategy to ensure that greater numbers of children receive ARVs:

- Ensure clear and simple recommendations to manufacturers on needed formulations and dosages for children
- Ensure that the WHO prequalification project prioritises the assessment of these urgently-needed products
- Call on companies to make all their products in paediatric formulations
- Support the development of new diagnostic tools to ensure that they are made accessible as quickly as possible
- Increase support to national programmes in underlining the importance of adherence

### Pharmaceutical companies to facilitate access for children to antiretroviral therapy:

- Ensure new medications are systematically studied in children
- Manufacture child adapted paediatric formulations of ARVs, and provide them at the lowest possible prices
- Develop paediatric fixed-dose combinations to facilitate administration of drugs and adherence and make them available at affordable prices
- Accelerate the development of affordable laboratory tools suitable for diagnosing infants in the most remote settings

### National programmes and international donors:

- Promote the implementation of dry blood spot (DBS) testing technology
- Ensure health workers receive appropriate training to implement national paediatric treatment guidelines
- Ensure quality treatment guidelines for PMTCT are incorporated in national programmes and the human resources made available for implementation
- Include quality HIV care in comprehensive child health-care packages
- Ensure child-adapted counselling is included in treatment programmes

[1] UNAIDS: [http://www.unaids.org/en/HIV\\_data/Epidemiology/epi\\_slides.asp](http://www.unaids.org/en/HIV_data/Epidemiology/epi_slides.asp)

[2] 2006 report on the global aids epidemic, UNAIDS. annex 2: hiv and aids estimates and data, 2005 and 2003.

[http://data.unaids.org/pub/GlobalReport/2006/2006\\_GR\\_ANN2\\_en.pdf](http://data.unaids.org/pub/GlobalReport/2006/2006_GR_ANN2_en.pdf)

[3] UNAIDS, op. cit.

[4] De Cock KM et al. Prevention of mother-to-child-transmission in resource-poor countries: translating research into policy and practice. JAMA, 2000, 283(9):1175-1182

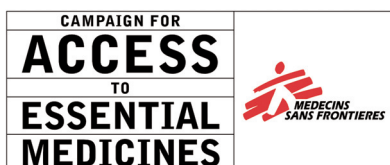
[5] Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants in resource-limited settings. Recommendations for a public health approach, WHO 2006

[6] AIDS 2005 19:309

[7] The DREAM Cohort: Antiretroviral Treatment for PMTCT Abstract: L Palombi, et al. HAART in Pregnancy: Safety, Effectiveness, and Protection from Viral Resistance: Results from the DREAM Cohort. CROI 2007, Abstract67.

[8] UNAIDS, [http://www.unaids.org/en/HIV\\_data/Epidemiology/epi\\_slides.asp](http://www.unaids.org/en/HIV_data/Epidemiology/epi_slides.asp)

[9] ABC + LPV/r + DD1;10kg child prices from Untangling the Web 10th Edition July 2007, available from [www.accessmed.msf.org](http://www.accessmed.msf.org)



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