

**1 December 2010  
World AIDS Day**

## **HIV/AIDS: SIMPLIFY TO TREAT MORE**

In late 2009, the World Health Organization (WHO) issued new international recommendations concerning the fight against HIV/AIDS. WHO advocates treating more patients by starting antiretroviral therapy at an earlier stage and using higher-quality drugs. These measures will result in an increase in the number of infected people eligible for treatment. While beneficial, the new recommendations pose many challenges and come amid an unfavourable global environment.

For more than a year, efforts to combat HIV/AIDS have flagged. Prevention and treatment programmes are struggling to raise the funds they need to continue their work. Against the backdrop of an "economic recession", the major funders are pleading for more efficient spending of their aid.

Meanwhile, the AIDS pandemic continues to spread, with 33 million people infected worldwide (sources: UNAIDS/WHO, 2009). Sub-Saharan African, where 70% of the population is living with the AIDS virus, remains the worst-affected area. In developing countries, seven million people still have no access to antiretroviral therapy (ARV). To meet WHO's recommendations, it is thus more relevant than ever to simplify medical follow-up care.

MSF is currently treating nearly 160,000 people in some 20 countries. Based on field experience in environments with limited resources, this paper aims to illustrate the various strategies developed by MSF to simplify patient screening and follow-up in order to increase access to treatment: decentralize and streamline treatment protocols, transfer skills, begin treatment earlier, use new biological monitoring tools, gain access to new drugs with fewer side effects and not leave out patients with complicated cases.

### **CONSOLIDATING STRATEGIES: SIMPLIFYING TREATMENT**

Current antiretroviral therapies have transformed HIV infection into a chronic disease. Many patients are very knowledgeable about their illness and can now benefit from significantly streamlined medical follow-up. The new strategies tend to place more responsibility on patients and simplify their treatment. Medical teams can then focus on treating the most complicated cases.

#### **Decentralize and delegate**

Beginning in 2003, the reduced price of ARVs led to an expansion in the availability of care and an increase in the number of patients undergoing treatment. *"Very quickly, we realized that our main hospital was overcrowded. At the same time, many people living in the region's most remote areas had no access to treatment. Most of them could not afford to take public transport"*, explains Martha Huckabee, head of mission in Malawi for the MSF project in Chiradzulu, where nearly 18,000 patients are receiving treatment.

We must therefore relieve overcrowding at our major health facilities and make it easier for patients to access treatment. Decentralizing medical care will involve transferring certain activities from the main hospitals to outlying health centres.

We also have to cope with a shortage of medical personnel. Decentralization requires delegating some of the clinician's tasks to a nurse. In Malawi, for example, nurses caring for HIV-positive patients can also start treating them with antiretroviral drugs. Screening and psychosocial support are provided by non-specialized staff who have received training.

*"In a setting like Malawi, where there are two doctors for every 100,000 inhabitants, we quickly realized that it would be unrealistic to retain a traditional model in which HIV patients absolutely had to be seen by doctors",* says Dr. Ali Ouattara, currently MSF medical coordinator in Kenya.

In many areas, access to treatment still remains a problem. In the Kenyan city of Homa Bay along the banks of Lake Victoria, MSF began treating HIV-positive patients with antiretrovirals in November 2001. Despite its long presence in the region and its free and decentralized medical care in eight outlying health centres, the situation is sometimes distressing.

*"Even here, people continue to die from AIDS",* says Anna Tavares, MSF project manager in Homa Bay, where over 7,500 patients receive ARV therapy. *"Certain areas of the province remain far removed from health centres. Some patients are screened and come get their medications once or twice, but never come back. When we try to find them, to go to their villages to get them, some of them tell us that they don't have enough money to come back on a regular basis. Others had died because they weren't able to return to the closest centre".*

### **Six-month follow-up appointment**

Many of the patients who correctly follow their treatment and do not experience any side effects are "stable". They have been undergoing antiretroviral therapy for more than 12 months, do not present any opportunistic infections and are not experiencing any major problems with taking their medications.

In an attempt to further simplify treatment, MSF is improving its protocols. Some stable patients, for example, receive medical consultations twice a year and their medications every three months. In-between, patients experiencing a problem know that they must quickly return to the health centre to be examined by a clinician.

*"In Chiradzulu district, around 700 new HIV-positive patients are screened each month. Out of these 700 patients, 350 are rapidly beginning antiretroviral therapy. Since HIV/AIDS is incurable, the number of people in treatment keeps growing. We constantly face the challenge of reducing the workload handled by the health care staff and medical facilities. (...)"*

*"By giving patients more autonomy and making them responsible for their health, we can spread out their medical consultations to every six months and thus reduce the health centres' workload. Patients who need more attention because they're sick or have complications are better able to receive special care if they need it",* says Huckabee.

In Malawi, for example, 3,000 patients are receiving streamlined treatment. This alternative will eventually be offered to as many patients as possible at all MSF projects. Simplifying medical follow-up by decentralizing and streamlining patient care is an essential strategy for freeing up caregivers to spend more time on complicated cases and to continue taking in a growing number of new cases.

### **Handing more responsibility to patients and the community**

Therapeutic patient education is an essential component of HIV/AIDS programmes. In the Chiradzulu programme in Malawi, some 30 people work full-time with patients to overcome problems and obstacles related to their disease and medications. This aspect is also a work in progress.

One of our programme's current difficulties involves changing the follow up of patients and adapting to their expectations. During the first year of treatment, patients receive about six therapeutic education sessions, two or three of which are held before they begin treatment. At the end of the first year, the patients generally feel better and most of them have a better understanding of their disease. The sessions are then given only to patients having difficulty following their treatment plan. Those who feel the need can continue to request support. More generally, the goal is to give patients greater flexibility and autonomy so that they can live a normal life.

But this balance between greater responsibility and consistent access to quality care is difficult to maintain. In Huckabee's opinion, *"The major problem we face is finding the right balance. We have to provide access to both drugs and quality care, which involves making it easier for patients to see health workers and, at the same time, giving them an opportunity to make their own health care decisions"*.

In addition to individual patient follow-up, more responsibility should be transferred to the community. *"Because AIDS affects more than the HIV-positive person, the community and families must also feel involved"*, adds Huckabee. The keys to increased commitment by the HIV-positive individual's community are helping to create patient support groups, trying to reduce the stigma and encouraging early screening of adults and children.

### **2011 PRIORITY: SIMPLE AND EFFECTIVE TESTS FOR SIMPLIFYING PATIENTS' BIOLOGICAL MONITORING**

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Two essential blood tests help control the way in which HIV affects patients: measuring the CD4 cell count and the viral load. The CD4 count provides clues to the status of the immune system and determines when to begin anti-HIV treatment. The viral load measures the number of viruses in the blood and is generally used to check the drugs' effectiveness.

*“Like all lifelong treatments, we have to make sure that the medications administered continue to be effective against the virus. Some patients develop resistance to drugs after taking them over a long period of time. So it's essential to make sure that patients are not experiencing treatment failure, that they're taking their medications and that the disease is still responding favourably to the drugs”,* explains Huckabee.

Even though the two tests are essential for initial treatment and follow-up, they are little available in most countries with limited resources. Due to the obstacles related to their use, they are largely inaccessible and difficult to perform.

#### **Tests poorly adapted to conditions in the field**

*“In Chiradzulu, we have the technical resources to conduct CD4 tests, but only in the hospital's laboratory. And to perform this test, the blood must be kept at a mild temperature. In practical terms, that means we need cold boxes and that the blood must be very quickly sent to the laboratory for analysis. We send cars every day to collect blood samples from every health centre in the district. It's a luxury that many places can't afford. (...)*

*As for measuring the viral load, there are only two laboratories in the province that can do it. Few districts are able to send blood samples there and return the results to the patients. For the time being, we're forced to limit the tests to patients we suspect are failing to respond to treatment. As a result, a patient is often tested too late and the results are very slow in coming. By being forced into this stingy use of the tests, we end up preventing the effectiveness of second-line treatments. And the patient's health sometimes gets worse as we wait for the results. If we could do the tests at the health centres, closer to the patients, it would revolutionize treatment”.*

Martha Huckabee, head of mission in Malawi

The field teams' current resources are insufficient for properly monitoring patients, particularly for regularly determining the treatment's effectiveness so as to quickly diagnose any failures. Very often, a major drop in immunodepression (CD4 count) or the appearance of opportunistic infections are the only signs warning patients and medical staff of any drug resistance. As a result, the rate of adding patients to the second line of treatment is abnormally low. Out of 160,000 patients being treated by MSF, only 1,600 are being treated with second-line drugs.

We must urgently develop simpler, more effective tools to continue providing long-term quality care. To do so, it will be necessary to conduct the tests directly in health centres while taking into account the obstacles we face in countries with limited resources.

## **INNOVATE TO SIMPLIFY**

**New, simpler test techniques are under review in Chiradzulu, Malawi.**

**A fast, effective, easy-to-use CD4 test (a point-of-care test).** The CD4 cell percentage determines when to begin treatment and assesses the patient's immune function. This biological test is essential for initial and follow-up treatment, but at present can only be conducted in laboratories with a high level of technical expertise.

MSF is currently working with the Malawi health authorities to evaluate a new CD4 test developed by the company, Zyomyx, as part of an initiative undertaken by the Imperial College of Medicine in London.

The goal of this study is to assess the new test's feasibility and reliability. The test is being conducted under field conditions by non-medical staff in health centres. If the results turn out to be satisfactory, the large-scale availability of this new test could radically change initial and follow-up treatment capacities. The CD4 count could be directly provided during the consultation. The staff could thus immediately decide to initiate treatment and assess the patient's immune function, which is often used as an indicator of how well the patient is responding to treatment.

This new test provides results in 10 minutes with a simple visual reading. It works without power in an area where few health centres have electricity. The test simply involves taking a blood sample from a fingertip drawn by capillary action.

**A quick-to-use viral load test in non-specialized laboratories.** Key to determining whether drugs are effective, the viral load test is largely unavailable in most developing countries. It must be conducted in highly specialized laboratories.

The SAMBA test (Simple AMplification Based Assay) was developed by a Cambridge University research unit. MSF, in collaboration with the Malawi Ministry of Health, will be participating in the prototype's clinical trial. This test detects the presence of virus above a certain threshold (1,000 copies of virus per millilitre of plasma). A higher viral load may indicate the beginning of drug resistance. It is important to quickly detect treatment failure so as to avoid an accumulation of mutations, which makes second-line therapy less effective.

So it's easy enough to operate and doesn't require the expertise of a lab technician. The results are interpreted visually by reading a strip. But in its current state of development, the test requires the use of three electrical devices, which is a major reason it is still exclusively used in laboratories.

*“Even though the test only works with a conventional energy source for the time being, we're hoping that even simpler technology will eventually be available so that we can use it at health centre level. The feasibility and reliability study is beginning soon and if the outcome is positive, we'll be putting it into practice as quickly as possible.*

*The test would lead to an enormous improvement in patient care and should also allow the more highly skilled lab technicians to focus on more sophisticated tests”.*

Monique Gueguen, MSF clinical biologist

## **TENOFOVIR: BETTER TREATMENT TO SIMPLIFY FOLLOW-UP**

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*"Simplifying treatment doesn't mean practicing second-rate medicine or providing medical care on the cheap."*

Dr Ali Ouattara, MSF medical coordinator in Kenya.

In 2010, the World Health Organization (WHO) issued new recommendations for treating HIV/AIDS patients. One of the main issues concerns a new first-line treatment with a new drug called Tenofovir (TDF).

### **Fewer side effects, simpler follow-up**

In developing countries, Stavudine (D4T) is one of the antiretrovirals most widely used as a first-line treatment. Combined with other medications in fixed-dose combinations, this drug has saved the lives of thousands of patients. But it has many side effects, including peripheral neuropathy, lipodystrophy and lactic acidosis, which significantly limits its length of use.

### **Major Stavudine-based (D4T) side effects of current treatments**

Sensitive peripheral neuropathy: damage to peripheral nerves that causes severe pain and can lead to loss of mobility.

Lipodystrophy: fat redistribution leading to fat wasting in the limbs and face or an accumulation of fat around the stomach, shoulders and neck. This is a distressing side effect of therapy that is often poorly tolerated by patients.

Lactic acidosis: an often fatal disorder of the body's acid-base balance.

In developed countries, Stavudine-based (D4T) therapies have been replaced by drugs with fewer side effects. As a result, the widespread use of these drugs should result in a reduced workload due to the prevention of undesirable effects caused by the former medications.

To date, the most common side effect associated with Tenofovir is impaired renal function. Occasional biological tests are therefore necessary to ensure the kidneys are functioning properly. In countries with limited resources, access to these laboratory tests is not always easy. It is thus important to also develop fast, simple tests that can be used in health centres. But the drug's lower toxicity profile argues largely in its favour and will allow medical staff to simplify follow-up care.

*"It's very easy to administer this drug: one tablet a day, with few side effects. So we're hoping to see fewer complications among our patients. That will reduce our workload because there will be fewer complicated cases to manage, so we'll be able to treat more patients",* says Huckabee.

The current D4T-based line of treatment is effective, but the serious side effects make it difficult for patients to comply with the regimen over the long term. It is therefore essential to provide a simple, effective and well-tolerated first-line therapy. It will also allow us to monitor a growing number of patients.

## Implementation challenges

This summer, in MSF's Mathare project in Kenya, 40% of patients who were taking the old drug (D4T) switched to Tenofovir. The change was fast and conclusive for many patients who, so far, are experiencing positive effects. But what is possible to achieve for a 2,500-patient cohort is much less feasible on a large scale. In Malawi, for example, MSF is providing ARV therapy to some 18,000 patients. The new line of treatment could be more complicated and raise many medical, political and organizational questions.

*"Some of our patients are very well-informed; they know that better therapies exist. But we're not going to be able to change the way we treat all of our patients in just one day. It will really be necessary to provide information and explain how the change is being made",* says Huckabee.

Cost could also be a problem. Tenofovir is a more expensive drug. A tritherapy containing Tenofovir costs about \$180 a year for each patient compared to \$80 for the previous Stavudine-based (D4T) drugs. These prices generate significant increased costs for our field projects. Recent studies, however, tend to demonstrate that the additional cost at purchase should be offset by the prior cost of managing side effects and by simplifying medical follow-up.

On a more general level, the cost issue remains unresolved. In many countries, governments are going to face a major dilemma. Malawi's example is fairly representative of the questions raised by the introduction of these new lines of treatment. *"This year, we know that the Global Fund Against Malaria, Tuberculosis and AIDS has not received enough funding to meet its needs. That's really disappointing. For a country like Malawi, that means, in very practical terms, that they're going to have to decide who will be given priority in receiving the new drugs. That's not a fair decision",* says Huckabee.

### **What are the benefits of beginning treatment earlier?**

The new WHO recommendations also state that patients should be treated at an earlier stage after they are infected and during the development of the disease. More specifically, they should start taking medications when the CD4 cells, which monitor the status of the immune system, are not too low. MSF is currently initiating ARV therapy when this percentage is below 250 per millilitre of plasma, except for pregnant women and symptomatic patients, who begin treatment earlier. This threshold has been raised to 350 based on the new recommendations.

In concrete terms, that means the number of patients eligible for treatment will rise. In Chiradzulu district in Malawi, where MSF is providing ARV therapy to 18,000 patients, the teams are expecting an increase of at least 10% in the number of HIV-positive patients. While the implementation of the treatment protocol will eventually have beneficial effects on the simplified medical follow-up, it remains to be seen how we will manage this sudden spike in cases.

In the short and medium term, this early therapy should result in fewer patients developing opportunistic diseases, such as tuberculosis. Beginning treatment late is frequently a factor in the development of other AIDS-related pathologies. While the number of patients eligible for

the therapy may rise at first, the mortality and hospitalization rates should eventually fall. And while this may require a certain number of adjustments in the way the medical teams operate, the large-scale implementation of this new recommendation should considerably simplify the care of patients already undergoing ARV therapy, while enabling other HIV-positive people to receive treatment as well.

## **Conclusion**

The treatment provided to four million people has significantly reduced their mortality and morbidity rates. The wider expansion of treatment has also led to a decline in overall mortality and to the streamlined management of health care systems.

Initiatives undertaken in the fight against HIV/AIDS, however, have yet to break the pandemic's momentum. So as not to discourage major donors, some are advocating universal access to treatment for everyone living with AIDS. In practice, developing countries are coming up against limited financial, human and organizational resources, while international fundraising efforts are stagnating.

More than ever, MSF's fight against AIDS relies on simplifying patient medical care. Rather than an end in itself, it requires enabling as many people as possible to gain access to treatment.