



Unplanned ART treatment interruptions in southern Africa: What can we do to minimise the long-term risks?

Adherence to antiretroviral therapy is crucial to prevent illness and death and limit the development of drug resistance. It is compromised under a number of situations in the countries most heavily affected by HIV/AIDS. The question for this brief is: 'How to keep people on treatment?' Its focus is on southern Africa. Its insights are derived from an extensive literature review and case studies of three specific crises that affected patient's access to ART.

Why is it important to maintain adequate levels of adherence?

At the individual level, failure to realise adequate levels of adherence generally results in a high viral load. This in turn impedes the ability of the immune system (measured by CD4 counts) and so leads to a poorer clinical prognosis. In other words, ART patients who are unable to remain adherent on their medication ultimately face higher risks of becoming ill and dying¹.

Resistance of HIV to certain drug classes is another concern and one which is potentially more complicated. For an individual it means that the virus will not be optimally suppressed and drug regimens need to be changed to ensure treatment remains effective. Drug resistance can become a public health issue when drug resistant viral strains are transmitted to an increasing proportion of people in a certain population.

Current levels of drug resistance are higher in areas (such as North America) where treatment

¹ See for example:

García de Olalla, P., Knobel, H., Carmona, A., Guelar, A., Lopez-Colomes, J. L. and Cayla, J. A. (2002). Impact of adherence and highly active antiretroviral therapy on survival in HIV-infected patients. *Journal of Acquired Immune Deficiency Syndromes*, **30**(1): 105-110.

Hogg, R. S., Heath, K., Bangsberg, D., Yip, B., Press, N., O'Shaughnessy, M. V. and Montaner, J. S. (2002). Intermittent use of triple-combination therapy is predictive of mortality at baseline and after 1 year of follow-up. *AIDS*, **16**(7): 1051-1058.

coverage has been superior and many patients started out receiving antiretroviral treatment consisting of only one or two drugs². Unfortunately it is almost inevitable that as the developing world scales up ART programmes, drug resistance will slowly rise there too, particularly given the challenges to health care delivery. The World Health Organisation has developed methods of surveillance to monitor the situation³, but the cornerstone to limiting such resistance is ensuring patients adhere to treatment.

What types of situations might compromise ART adherence?

Countries in southern Africa (and the broader region) are plagued with health system constraints which affect ART programmes and impact on a patient's ability to remain adherent on treatment. These are made worse by various crises. This brief is premised on the understanding that, by looking at the nature of these crises and how they are weathered by both patients and health care providers, we can make suggestions on how to help keep patients adherent on treatment under difficult circumstances.

Importantly, crises are of different natures, durations (short term vs long term) and geographical spread. The three types of crises we draw examples from are outlined below.

Nature of crisis	Case study	Major effect of crisis	Duration of crisis	Extent of crisis
1. Natural disasters	2008 floods in Mozambique	People forced to move, health system infrastructure damaged	Short to medium term	Localised
2. Political and economic failure	Ongoing situation in Zimbabwe	Poverty, migration, health system collapse	Long term	Widespread
3. Health service or system failure	2007 public sector strike in South Africa	People unable to access necessary health services	Short term (but similar nature crises can be longer term)	Widespread (but similar nature crises can be localised)

In the case of **natural disasters**, health concerns are often dominated by sanitary problems and overcrowding in temporary camps, which increase the risks of diarrhoeal diseases, cholera, measles, and malaria⁴. In Mozambique the situation was no different, with cholera being the greatest concern documented in all assessments of the impact of the 2008 floods. Other longer term risks were however identified, including: 1) poor access to food supplies, potentially resulting in malnutrition, and 2) poor access to health care, potentially resulting in worse maternal and child

² Shekelle, P., Maglione, M., Geotz, M. B., Wagner, G., Wang, Z., Hilton, L., Carter, J., Chen, S., Tringle, C., Mojica, W. and Newberry, S. (2007). Antiretroviral (ARV) drug resistance in the developing world. *Evidence Report - Technology Assessment* (156): 1-74

³ Bennett, D. E., Myatt, M., Bertagnolio, S., Sutherland, D. and Gilks, C. F. (2008). Recommendations for surveillance of transmitted HIV drug resistance in countries scaling up antiretroviral treatment. *Antiviral Therapy*, **13 Suppl 2**: 25-36.

⁴ See for example:

Ahern, M., Kovats, R. S., Wilkinson, P., Few, R. and Matthies, F. (2005). Global health impacts of floods: epidemiologic evidence. *Epidemiologic Reviews*, **27**: 36-46.

health outcomes and inadequate management of both acute and chronic diseases⁵. Clearly, any situation that results in the displacement of large numbers of people will mean that those on ART may not be able to access the medication they require. In the case of Mozambique, only one reference was made to HIV and TB patients who went missing during the floods and in this instance teams were sent out to find them⁶.

Political and economic failure is by far the most complicated type of crisis, with widespread implications for the health system which are a lot harder to manage and control. Health care provision can become more difficult due to the lack of drugs and medical supplies, as well as insufficient numbers of health workers. In Zimbabwe this resulted in the closure of some of the country's largest hospitals⁷. Even where drugs were free and health services available, patients struggled to access them due to obstacles such as high fuel and transport costs⁸. Poverty and threats of violence have forced ART patients to trade-off basic necessities and migrate. There have been reports of ART patients missing drug doses, sharing drugs, selling their drugs and changing regimens to try and cope with inadequate drug supplies and poor economic circumstances. On a more positive note, aid agencies and donors have been aware of the need to keep patients on treatment and have played an important role in ensuring the provision of drug supplies for the ART programme in particular.

The category of **health system or service failure** is somewhat all encompassing as it can manifest in many ways. Some common examples are health worker strikes or drug stock-outs. For the purposes of this brief, we are concerned primarily with shorter term failures that are not symptomatic of broader political and/or economic collapse. These generally result in patients not accessing necessary drug supplies, as was the case during the month-long South African public sector strike in 2007⁹. In this instance, there were mixed reports over the extent of the disruption. Patients with buffer drug stocks were reportedly able to manage the situation better and the Southern African HIV Clinicians Society issued press statements on how treatment interruptions should be dealt with¹⁰. However, it is unlikely that this information reached many of the ART patients who needed it.

What strategies should we be considering to keep ART patients adherent on treatment?

Two key messages contained in this brief are:

- We need to be planning for and managing various crises impacting on ART delivery; and
- There are a number of strategies that could be considered.

⁵ World Health Organisation (2008). Health actions during flooding in southern Africa. Southern African Humanitarian Crisis Situation Reports.

http://www.who.int/hac/crises/international/safrica/southern_africa_floods_16jan2008.pdf

⁶ Medecins Sans Frontiers (2008). More flooding in Mozambique adds to number of displaced. MSF Article, 22 January 2008. http://www.msf.org/msfinternational/invoke.cfm?objectid=A231D8CF-15C5-F00A-2581DCC184CC743F&component=toolkit.article&method=full_html.

⁷ Physicians for Human Rights (2009). Health in ruins: a man-made disaster in Zimbabwe. Physicians for Human Rights, Cambridge. <http://physiciansforhumanrights.org/library/report-2009-01-13.html>.

⁸ Medecins Sans Frontiers (2007). Political and economic turmoil sparks health-care crisis in Zimbabwe. MSF News and Special Reports, 20 December 2007.

http://www.msf.org.hk/public/contents/news?ha=&wc=0&hb=&hc=&revision_id=23485&item_id=23484.

⁹ Sidley, P. (2007). Strike cripples health services in South Africa. *British Medical Journal*, **334**(7606): 1240-1241.

¹⁰ Southern African HIV Clinicians Society (2009). Press statement on interrupting antiretrovirals and other HIV-related drugs. Treatment Action Campaign Electronic Newsletter, 12 June 2007. <http://www.tac.org.za/community/node/2153>.

Many shorter term crises can be anticipated – neither the public sector strike in South Africa nor the floods in Mozambique sprung completely unannounced. This indicates a need for planning and preparedness. Longer term crises on the other hand, while anticipated, cannot be planned for so easily because of the chronic erosion to the health system and the long time taken to potentially restore services. In these cases, proactive management is needed to alleviate the effects of the crisis on patient treatment, care and support, as well as a carefully designed recovery plan to restore health system functioning as quickly as possible.

Just as shorter term crises will be easier to weather than longer term crisis, so too will localised disruptions when compared to widespread upheaval. Careful management and some reorganisation of existing services may suffice with localised disruptions. Widespread upheaval on the other hand, may benefit most from an increased involvement and co-ordination of health sector partners, be they private, donor, NGO or faith based.

One of the most important requirements for proactive management of crises in health care delivery is access to information. Health information systems need to be sensitive enough to alert managers to change (such as when fewer patients start presenting for follow up or drug shortages are imminent) and detailed enough to give a fairly complete picture of what is happening. In situations where large numbers of people are displaced or simply mobile, patient information systems should ideally also facilitate tracking and patient's collection of drugs from various locations.

In crisis situations there is always a need to prioritise; this often results in immediate concerns eclipsing those with longer-term consequences. HIV/AIDS is by nature a long wave disease and failure to maintain treatment coverage will not immediately result in large numbers of deaths like the spread of many infectious diseases (such as cholera). Unfortunately this does not necessarily mean that the consequences will be less severe – only that they will play out for years to come. Responding strategically to the various threats posed by a crisis therefore calls for careful consideration and co-ordination, rather than a knee-jerk response. The comparative advantages of various health sector players need to be utilised to their fullest potential, to ensure that a range of concerns are addressed concurrently.

A number of strategies were considered or employed to keep ART patients on treatment during the strike in South Africa, the protracted political and economic upheaval in Zimbabwe and the floods in Mozambique. Many may have been 'too little, too late' and there has been almost no evaluation as to their effectiveness. Nonetheless, they point to a number of simple measures that could be taken in the future to prepare for and manage a range of eventualities:

- 1 Good patient education is essential. Thorough ART adherence counselling should include discussion on what to do in case of being unable to access drugs. Treatment interruptions are undesirable, but if properly managed may be less likely to result in drug resistance than practices such as sharing drugs, reducing drug doses or taking only one or two types of drugs.
- 2 Clinicians should be trained in managing treatment interruptions and kept informed about potential disruptions to service delivery. If drugs stock-outs are a problem but patients are still able to access health services, then clinicians can stagger the time at which different drug classes are stopped to avoid the development of NNRTI resistance in particular. If clinicians are aware that services may be temporarily disrupted (such as during flood times), then it may be appropriate for them to dispense drug supplies that can last for more than the usual one-month period.
- 3 The private health sector, donors and NGOs can all help in various ways to keep ART patients adherent on treatment in times of crisis. If these partners are engaged and prepared prior to the time, then their assistance is more likely to be effective.

- 4 Support for ART patients may need to be more holistic during widespread crises in particular. When the socio-economic circumstances of households become compromised, then simply ensuring ongoing service delivery may not be sufficient to maintain ART adherence. In such cases extra support may be required to manage the indirect costs of seeking care, such as transport costs, and to avoid a situation where people are having to trade-off basic necessities.

ART programmes in resource poor countries will be challenged by crises. How we plan for and manage them could strongly influence treatment outcomes in the years and decades to come.

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