of such variants in vivo might affect sensitivity to other reverse transcriptase inhibitors used at present. Although the evidence for HIV-1 reverse transcriptase evolution in people treated with aciclovir in vivo has never been reported, this possibility should be addressed.

We are convinced that, in view of the new data on aciclovir suppression of HIV reverse transcriptase, new studies and new targeted clinical trials are needed to understand these newly discovered features of the interaction between HSV and HIV, and of the herpes-suppressive drugs in patients infected with HIV-1. Also, acknowledgment of the necessity for such trials is a rare point upon which both of the teams engaged in this discussion in *The Lancet Infectious Diseases* agree.

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1 Van de Perre P, Segondy M, Foulongne V, et al. Herpes simplex virus and HIV-1: deciphering viral synergy. *Lancet Infect Dis* 2008; **8:** 490–97.
2 Cheng RG, Nixon DF. Herpes simplex virus and HIV-1: deciphering viral synergy. *Lancet Infect Dis* 2009; **9:** 74.
3 Barbour JD, Sauer MM, Sharp ER, et al. HIV-1/HSV-2 co-infected adults in early HIV-1 infection have elevated CD4+ T cell counts. *PLoS ONE* 2007; **2:** e1080.
4 Nagot N, Ouedraogo A, Foulongne V, et al. Reduction of HIV-1 RNA levels with therapy to suppress herpes simplex virus. *N Engl J Med* 2007; **356:** 790–99.
5 Zuckerman RA, Lucchetti A, Whittington WL, et al. Herpes simplex virus (HSV) suppression with valacyclovir reduces rectal and blood plasma HIV-1 levels in HIV-1/HSV-2-seropositive men: a randomized, double-blind, placebo-controlled crossover trial. *J Infect Dis* 2007; **196:** 1500–08.
6 Watson-Jones D, Weiss HA, Rusizoka M, et al. Effect of herpes simplex suppression on incidence of HIV among women in Tanzania. *N Engl J Med* 2008; **358:** 1560–71.
7 Celum C, Wald A, Hughes J, et al. Effect of aciclovir on HIV-1 acquisition in herpes simplex virus 2 seropositive women and men who have sex with men: a randomised, double-blind, placebo-controlled trial. *Lancet* 2008; **371:** 2109–19.
8 Lisco A, Vanpouille C. HSV-2 suppression and the incidence of HIV. *N Engl J Med* 2008; **359:** 535.
9 Cohen J. AIDS research: promising prevention interventions perform poorly in trials. *Science* 2007; **317**: 440.
10 Hudson CP. Effect of aciclovir on HIV-1 acquisition in HSV-2-positive patients. *Lancet* 2008; **372:** 1298.
11 Lisco A, Vanpouille C, Tchesnokov EP, et al. Acyclovir is activated into a HIV-1 reverse transcriptase inhibitor in herpesvirus-infected human tissues. *Cell Host Microbe* 2008; **4:** 260–70.
12 McMahon MA, Siliciano JD, Lai J, et al. The antiherpetic drug acyclovir inhibits HIV replication and selects the V75I reverse transcriptase multidrug resistance mutation. *J Biol Chem* 2008; **283:** 31289–93.
13 Amini H, Javan M, Gazerani P, Ghaffari A, Ahmadiani A. Lack of bioequivalence between two aciclovir tablets in healthy subjects. *Clin Drug Investig* 2008; **28:** 47–53.
14 Weller S, Blum MR, Doucette M, et al. Pharmacokinetics of the acyclovir pro-drug valaciclovir after escalating single- and multiple-dose administration to normal volunteers. *Clin Pharmacol Ther* 1993; **54:** 595–605.
15 Gupta R, Wald A, Krantz E, et al. Valacyclovir and acyclovir for suppression of shedding of herpes simplex virus in the genital tract. *J Infect Dis* 2004; **190:** 1374–81.
16 Tchesnokov EP, Obikhod A, Massud I et al. Mechanisms associated with HIV-1 resistance to acyclovir by the V75I mutation in reverse transcriptase. *J Biol Chem* (in press).

Abuse of HIV/AIDS-relief funds in Mozambique

Before medical school I spent 3 years as a Peace Corps volunteer in Mozambique. A beautiful country filled with potential, Mozambique is at present in the epicentre of the AIDS epidemic. It also faces endemic AIDS-related corruption.

Mozambique was one of the last African nations to win independence from colonialism. In 1975, the Portuguese fled the country, and a new socialist government took control. Peace was brief, because Mozambique plunged into two decades of civil war characterised by child soldiers, rape, and other human rights violations.[1] During and immediately after the war, there was a steadily increasing presence of aid organisations in the country. These non-governmental organisations (NGOs) filled a gap left by the young government and had widespread influence across the country.[2] Although NGOs have worked hard to improve lives, lack of oversight has led to substantial opportunities for corruption.[3]

The investment of over US$228[4] million into Mozambique in 2008 alone—by the US President's Emergency Plan for AIDS Relief—increased the influence of NGOs, the gatekeepers for much of that money. One result has been an exponential increase in the number of people on antiretroviral drugs and an increase in HIV-prevention programmes. There is more money available for HIV/AIDS than can reasonably be spent, especially given Mozambique's poor infrastructure and large geographical area. Unfortunately, one side-effect has been an associated increase in corruption.

To give a recent example, many NGOs offer support programmes for people living with HIV/AIDS.[5] By distributing food, goods, and extra income, they help those with AIDS to live healthy, normal lives. However, financial and material incentives are very attractive in a society as poor as Mozambique. One unintended result is the identity theft of HIV-positive status. The current price for a forged HIV test result is 200 meticais (about $8).

Bribing health-care workers is not difficult—government salaries are frequently paid months late while hospital workers struggle to make ends meet. According to a report on corruption in Mozambique by the US embassy in Maputo, "major corruption and mismanagement problems in the public health system stand as obstacles to continued improvement in health care delivery".[6]

The price for falsified health documents can be quickly recouped—one programme in northern Mozambique offers goats, worth $20–30 each, to HIV-positive people. The drive to fake one's own HIV-positive status is even stronger for government employees, who are eligible for a substantial salary increase for testing positive.

A second area of widespread corruption involves HIV prevention. Prevention activities necessarily occur in remote villages, where they are difficult to monitor. A growing trend in Mozambique has been to request grants for rural education programmes (such as taking a theatre group to a rural primary school). However, because of a lack of monitoring—almost a technical impossibility in a country as vast and as lacking in infrastructure as Mozambique—it is common practice to pocket the money and falsify reports of having done prevention work.

Not only is aid money misspent, but the data collected on the number of people reached by prevention programmes are inaccurate. The process of monitoring and evaluation is confounded by false data and an inaccurate picture of the progress in HIV/AIDS prevention results. NGOs have outreach targets and require statistics to report to donors, so there is little motivation to investigate fraud.

Money remains available because the total funds available outpace the amount being spent. There have been many benefits from the influx of money for HIV/AIDS into Mozambique. Over 460 000[7] people that are HIV-positive have benefited from support and care, and many times that benefit from well run and well intentioned prevention programmes. However, abuse of HIV/AIDS money has become widespread in Mozambique, detracting from the overall public health effort.

Although the detrimental effects of low-level corruption are not enough to seriously derail the HIV/AIDS effort in Mozambique, the situation is a cause for concern. For example, suspect data and subsequently inaccurate project evaluations make resource allocation, as well as monitoring and evaluation, difficult. The possibility that small-scale innocuous corruption will set the stage for large-scale systemic corruption is also a concern. Possible solutions might include stronger monitoring and auditing by donors and stricter controls on project monitoring and evaluations. A requirement for individuals to take antiretroviral drugs to qualify for wage increases or material incentives might help reduce the number of people with a falsified HIV status. In the end, careful and creative resource management will be needed to maximise aid efficiency and limit corruption.

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1 Lautze S, Leaning J, Raven-Roberts A, Kent R, Mazurana D. Assistance, protection, and governance networks in complex emergencies. *Lancet* 2004; **364:** 2134–41.
2 Finnegan, W. A complicated war: the harrowing of Mozambique. CA: University of California Press, 1993.
3 Hanlon, J. Do donors promote corruption?: the case of Mozambique. *Third World Q* 2004; **25:** 747–63.
4 PEPFAR. FY2008 country profile: Mozambique. http://www.pepfar.gov/press/countries/profiles/116237.htm (accessed March 6, 2009).
5 PEPFAR. FY 2007 Mozambique partners. http://www.pepfar.gov/partners/103020.htm (accessed March 6, 2009).
6 USAID. Corruption assessment: Mozambique. Washington, DC: United States Agency for International Development, 2005. http://maputo.usembassy.gov/uploads/images/q3naBGGSYz8BsCXguSD5Pw/Final_Report-Mozambique__Corruption_Assessment-without_internal_rec.pdf (accessed March 6, 2009).
7 PEPFAR. Mozambique FY 2007 Country Operational Plan (COP). http://www.pepfar.gov/about/82448.htm (accessed March 6, 2009).

The potential emergence of leptospirosis in Sri Lanka

Leptospirosis became a notifiable disease in Sri Lanka in 1991. The number of cases every year reported by clinicians to the Sri Lanka Epidemiology Unit of the Ministry of Health in the decade leading up to 2007 remained around 1000–2000 cases, with an incidence in 2007 of 11·0 per 100 000 population (figure). This was followed by a substantial increase in reported cases to 35·7 per 100 000 during 2008.[1] Documented increases occurred in at least nine districts (Colombo, Gampaha, Kaluthara, Kandy, Galle, Matara, Kurunegala, Kegalle, and Matale), representing a large area of west, south, and central Sri Lanka (figure). The case fatality rate for reported cases was 2·8%.