being implemented by Persepolis.[9] The service provides needle-exchange, methadone maintenance, general medical care, voluntary counselling and testing for HIV, and referral. It runs drop-in centres for street-based injecting drug users as part of a continuum of care, and services extend to the provision of food, clothes, and other basic needs.

The implementation of harm-reduction in Iran still faces many challenges. We need to achieve high enough intervention coverage to reverse the trends in HIV prevalence and show effects to convince critics. The supply of methadone and other materials is disrupted. And we lack human resources, both technical experts and field workers without whom these early harm-reduction initiatives will fail to reach the necessary minimum threshold for effectiveness. To scale-up and sustain support of its progressive harm-reduction policies, which should help stem the HIV epidemic in the region, especially if bordering countries adopt and reinforce similar policies, Iran needs to establish strong monitoring and assessment systems for existing interventions and programmes, including assessment of the effect of the programmes that they are spearheading. We also need support strategies aimed at preventing HIV transmission from injecting drug users to their spouses and other sexual partners. We need to scale-up existing programmes for street-based injecting drug users, incorporating quality standards for harm-reduction services to ensure sustained effectiveness. And we need to strengthen the capacity of non-governmental organisations and other community-based groups to reach the most vulnerable population groups. As elsewhere, there is a need for comprehensive and coordinated harm-reduction, including the engagement of faith-based organisations and religious leaders who are well placed to address the stigma that can undermine efforts to scale up.

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Fight AIDS as well as the brain drain

Leaders in international health have begun to address the critical shortage of professionals in the poor regions of the world with the highest disease burden. The report *Human Resources for Health: Overcoming the Crisis*[1] was issued by the Joint Learning Initiative in 2004. The *2006 World Health Report: Working Together for Health* emphasised the need to expand the supply of health workers in poor countries.[2] But many articles on the loss of health professionals in sub-Saharan Africa highlight migration to higher paying jobs in wealthier countries as a major cause of the shortage of health professionals.[3,4] In fact, emigration is not the greatest drain on the supply of health professionals in some countries severely affected by AIDS. Death is depleting the ranks of health professionals more rapidly than recruitment abroad.

We documented an annual death rate of 3·5% for nurses and 2·8% for clinical officers in Zambia's Lusaka and Kasama districts. Over a decade, these death rates would account for the nurse vacancy rate of 37% in the institutions studied. Death claimed more nurses and clinical officers (68%) than resignation (23%) or normal retirement (9%). The median age at death was 38 years,

***Panel:* Components for governments to reduce premature deaths in civil service**

- Effective education and outreach in all public services that includes testimony by HIV-positive individuals who are receiving antiretrovirals.
- Access to confidential testing and counselling, structured so that the individual has no fear that test results will reach co-workers and supervisors.
- Good-quality treatment programmes, readily available to civil servants but located outside employing institution. HIV-positive employees must be able to obtain care outside normal working hours. Preferred method might be contract with selected private and public clinics* for treatment of all civil servants. Costs could be defrayed by government, donors†, or by insurance scheme.
- Special provision for treatment in remote locations. Absence of effective AIDS care is yet another reason for civil servants to avoid remote rural postings. Facilites could include mobile clinics or distribution of drugs by post or government courier.

*If such public clinics have appointment system and/or offer extended hours of service. In many major cities, main public-health institution has private-service window for fee-paying patients, and this is where civil servants should be directed. †Contribution by donor nations would be fitting offset to benefit donor nation receives when professional trained at expense of African government emigrates for work in donor country.

suggesting that AIDS, rather than diseases of advancing age, is responsible for most of the deaths.[5]

If the same death rate applied to all 8500 nurses and midwives serving in the public-health service in 2000,[6] the number of deaths (298) is nearly double the number of Zambian nurses (169) who applied for registration in the UK in 2003–04.[1]

Policymakers might be tempted to focus on stopping emigration as the best strategy to strengthen the African civil service. Undoubtedly, the pay of health professionals is low and the burden of disease in the population makes the job difficult. But the dead do not complain about conditions of service. It is time to put more effort into keeping HIV-positive professionals alive and serving in national institutions.

The general expansion of access to antiretroviral therapy in countries with high levels of HIV-positive professionals is not an adequate response. In Zambia, the Government has so far directed civil servants to use public clinics. The need to queue for such AIDS care will increase absenteeism, already a major problem. Zambian nurses also tell us that stigma makes HIV-positive staff reluctant to report for treatment at their own institutions. If a nurse delays testing until her CD4 count is very low, the risk increases that treatment will fail.

Some nations are taking steps to provide access to HIV/AIDS care for civil servants. US$30 a worker a year would cover the cost for an HIV/AIDS insurance plan for civil servants and their families in Uganda. The plan would give access to HIV/AIDS services at selected public and private providers.[7] In Namibia, public servants already participate in a medical scheme that gives broad access to private providers.

Governments can reduce premature deaths in the civil service by making antiretroviral therapy available and convenient. Governments should consider programmes with the components listed in the panel. Antiretroviral therapy extends the survival of HIV-positive patients,[8] and there is increasing evidence that patients receiving antiretrovirals are active and productive.[9] If the death rate of Zambian nurses could be cut by 60%, Zambian health institutions would benefit more than they would from a total ban on recruitment to the UK. Stopping the brain drain requires an unprecedented level of co-operation. Keeping HIV-positive professionals alive and at work in their home countries is a simpler task, and one that we know how to do.

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