

visit the remotest villages, people wait for us in a group. They really appreciate our visits," Razanandrianina says.

Razanandrianina's predecessor Jean Rajoaharivahoaka was one of the original health aides trained in 1978 and worked in Ambohimiarintsoa until his retirement in January 2007. He, too, cites the joys and frustrations of the job.

"Initially, the people didn't take an interest in primary health care," he says. "They were unaware of its importance. They didn't trust the health aides trained by the ministry. That was the biggest problem that meant health for all by 2000 wasn't achieved," Rajoaharivahoaka says.

"But little by little, we attracted the villagers. They began taking a particular interest in family-planning practices. Educating rural people was the real challenge, especially about drinking water and the need to build latrines." ■



Three mothers wait with their babies at the entrance to a primary health care centre for routine postnatal checkups. In the 1970s, maternal and child health took high priority in the work of Madagascar's new primary health care workers or "health aides".

WHO/R.ELISA

Uganda edges closer to AIDS treatment for all

Uganda started rolling out an innovative approach to treating AIDS three years ago. Treatment numbers have since doubled and the programme will soon benefit from locally produced medicines. But, as Musinguzi Bamuturaki reports from Kampala, the programme is dogged by inadequate staffing and logistics.

Uganda has seen the number of those accessing antiretroviral (ARV) drugs jump from 45 000 in 2004 to 121 200 in September 2007 – a bit more than one-third of some 312 000 who need it. Although drug supplies have increased in volume, the national programme faces delays in procurement and distribution, poor storage and weak quality control, stock-outs and a chronic lack of manpower.

"The management of the whole supply chain is very weak and problematic," Dr Elizabeth Madraa, manager of Uganda's AIDS Control Programme in the health ministry, told the *Bulletin*. "We are now moving slowly as a result of the stock-outs because if we spread out rapidly and ran out of drugs, it would be disastrous."

"I think Uganda is making a lot of progress with regard to access to ARVs," the World Health Organization (WHO) Representative Dr Melville George says, adding that: "This in itself calls for a number of things like a good and reliable supply of drugs ... because

if patients run out of ARVs they may develop resistance."

George suggested that Uganda needs to put in place a good community-based care system that will look at a comprehensive package to include nutrition, social support for patients, management of other opportunistic infections and other social responsibilities.

One of the beneficiaries of the government ARV programme is Elinah Kasubo. Access to ARVs has enabled the primary school teacher to live longer and continue working. But she complains of irregular drug supplies and a lack of antibiotics to fight infections that are a constant risk to people like her with weakened immune systems. "We want a stable and consistent supply of ARVs and treatment for opportunistic diseases."

Kasubo also complains of the queues teachers face when they fetch the drugs from government hospitals. "It takes a whole day lining up for ARVs in government hospitals because we are many. As if that is not enough,

pupils missing their teacher for a whole day is too much."

AIDS and malaria are the biggest threats to the health of Ugandans and account for over 50% of the national health budget, according to the health ministry. The Ugandan government has committed itself to providing free ARVs and – to treat malaria – free artemisinin combination therapy to all those who need them. This is only possible if these remedies are available at prices the government can afford.

Uganda imports most of its drugs. But that may be about to change. The first batch of locally produced generic ARVs and antimalarial drugs are expected to be delivered to the health ministry this year in a move that will see the cost of these life-saving remedies dropping from between US\$ 15 and US\$ 9 to between US\$ 9 and US\$ 2 per patient per month, Ugandan officials say.

The drugs are to be produced by a pharmaceuticals factory in Kampala, a joint venture between Quality Chemical Industries Ltd. (QCIL), a local company, and Indian generics manufacturer, Cipla. The plant – the first of its kind in east Africa – opened in October 2007 in Luzira, a suburb of the city, to manufacture mainly ARV and antimalarial drugs.

In time, the plant is expected to lower the cost of these drugs and make

them more widely available in Uganda. At one time, ARVs cost US\$ 1500 per month, far beyond the pocket of the average Ugandan. The Ugandan government and QCIL signed an agreement in 2006 committing the government to buy ARVs and anti-malarial drugs from the Luzira-based company. Approved in March 2008 by the National Drug Authority on behalf of the Uganda government, the new plant aims to produce two million tablets a day, once it achieves full capacity.

This year the government budgeted for an extra 50 000 patients out of the expected production in Luzira.

Uganda's ARV programme is 95% donor funded which raises the issue of sustainability. The programme is funded by the Global Fund to fight AIDS, Tuberculosis and Malaria, and the USA President's Emergency Plan for AIDS Relief.

Results from the 2004–2005 Uganda HIV/AIDS Sero-Behavioural Survey indicate that 6.3% of the adults aged 15–59 were infected with HIV. The HIV prevalence among men was lower (5.2%) than among women (7.3%). Prevalence for both men and women increases with age until it reaches the peak of 12.1% among women aged 30–34 years and 9.3% of men aged 40–44 years.

With about one million people with HIV in Uganda, more than 312 000 people need antiretroviral treatment and about 121 200 have access to the life prolonging drugs with close to three-quarters as self-paying



Health-care workers training to provide HIV/AIDS treatment, taking the IMAI (Integrated Management of Adolescent and Adult Illness) approach in Hoima, Uganda.

WHO/Michael Jensen

patients. Uganda also faces the challenge of establishing treatment formulations specifically for children with HIV. Ugandan government officials estimate that 10% of those in need of ARV treatment are children. Experts in Uganda are concerned that children with HIV are not adequately represented on the national antiretroviral programme. Currently they estimate that only about 8532 children are receiving this essential intervention.

“Children are very difficult to diagnose and identify because many are either with grandparents or guardians who may not be in a position to travel to health facilities. The paediatric formulations have not been user-friendly for the old grandparents or guardians to administer, coupled with [problems due to] measurements, poor storage, wastage and handling,” Madraa says. As a result of the stigma attached to being HIV positive, many children are not benefiting, George adds.

The Ugandan government says it has yet to reach everybody who needs treatment. As of December 2007, 302 hospitals and health centres were providing ARV treatment. The plan is then to embark on health centres at sub-county level.

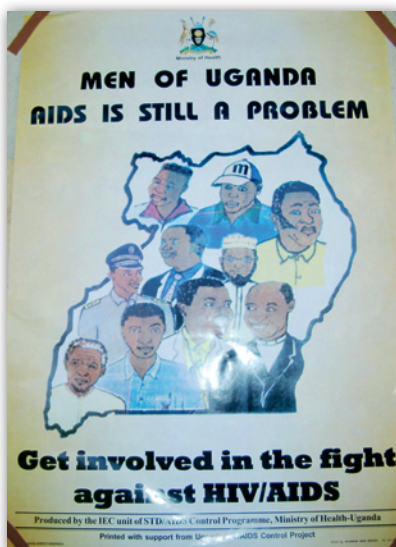
According to the health policy advocacy officer, Uganda Coalition for Access to Essential Medicines, Mr Aron Muhinda, people on the ARV programme have to travel long distances to access treatment, those on the government-run programme are not provided with a follow-up service and they do

not have food supplements which puts their lives at risk. “There are no diagnostic materials like CD4 Count Machines up-country and where they are available people have to pay dearly,” Muhinda noted.

Madraa says that, although Uganda has registered a treatment adherence rate of over 90% in its ARV treatment programme, monitoring mechanisms need to be put in place. “We need to constitute mechanisms to monitor those on treatment, because when you start treatment, you need a follow-up. The numbers not adhering may be as a result of transfers or deaths. Vigorous monitoring will handle issues, such as drug fatigue and resistance, and toxicity.”

Through blood sampling, the Uganda Virus Research Institute has started researching to find out if there are any forms of drug resistance to ARVs, using the latest equipment purchased by WHO with Global Fund money.

Uganda has been chosen as a WHO Regional Centre of Excellence, known as the Eastern and Southern Africa Knowledge Hub, comprising six Ugandan institutions using the Integrated Management of Adolescent and Adult Illness (IMAI) guidelines by WHO. Over 2000 health workers have received training from the ministry of health and its partners in providing basic HIV and paediatric care using the IMAI approach. The training started in Uganda in 2004 with clinical teams. The Knowledge Hub has also been



Ugandan poster to raise awareness among men about HIV/AIDS.

WHO

instrumental in supporting more than 20 countries in Africa and beyond to roll out IMAI training. This simplified approach to providing ARV treatment has been scaled-up in Ethiopia, Kenya, Sudan and the United Republic of Tanzania.

According to Dr Beatrice Crahay, WHO Medical Officer for HIV/AIDS

in Uganda, the IMAI approach includes the task-shifting concept, meaning that jobs performed by doctors can be delegated to lower-level cadres under proper supervision. "And the people living with HIV have an important role to play in increasing the quality of care including adherence support and follow-up, treatment, literacy for

people who have to go on ARVs, pre and post-test counselling," Crahay said.

"We are thinking of formalizing the task-shifting approach because of the human resource constraints," Madraa says. "The whole issue of management, counselling and testing, treatment, follow-up and supervision requires manpower," George said. ■

No vaccine for the scaremongers

Millions of deaths are prevented by vaccination every year, yet public anxieties and vaccine scares that ignore rigorous science continue to hamper immunization programmes. Jane Parry reports.

For most children in the developed world, immunization against a range of infectious diseases is a form of health protection often taken for granted. These children benefit from vaccines against more than 20 diseases, while new vaccines continue to be developed, most recently for rotavirus and human papillomavirus.

In developing countries, however, getting routine vaccinations to the people who need them remains a key public health challenge, with the lack of health-care infrastructure, high costs and delays between their introduction in developed countries and their rollout in the developing world cited as the main barriers.

Despite these barriers, global vaccination has evolved as a result of rigorous scientific research. According to the World Health Organization (WHO) and the United Nations Children's Fund's (UNICEF) 2007 *Immunization Summary*, more than 2.5 million deaths a year are prevented in all age groups owing to vaccination against four diseases – diphtheria, tetanus, pertussis (DTP) and measles. Global coverage of infants with the DTP vaccine reached 79% in 2006, up from 20% in 1980, while the uptake of several under-used vaccines, including hepatitis B, rubella and yellow fever, is increasing.

Smallpox has long been hailed as the ultimate vaccination success. It was declared eradicated in 1979, the only disease affecting humans to be eliminated deliberately. Polio has been eradicated in WHO's American, European and Western Pacific Regions,

while the number of countries where polio is deemed a serious public health problem has dropped from 125 in 1988, when the eradication drive was launched, to only four – Afghanistan, India, Nigeria and Pakistan – where the disease remains endemic.

There have been many other successes, such as the 99% reduction in the incidence of bacterial meningitis caused by *Haemophilus influenzae* in the United States of America (USA) which introduced vaccination against the disease in 1988, according to its Centers for Disease Control and Prevention. The Republic of Korea, with 99% vaccination coverage for measles, declared the killer disease eradicated in 2006.

Despite these successes, vaccine anxieties continue to periodically impede this highly effective public health measure. In certain industrialized countries, most notably the USA, public concern has shifted its focus from the diseases vaccination can prevent, to the risks of the vaccines themselves. The Internet has become a significant channel for anti-vaccination views. The popular video-sharing web site YouTube offers a plethora of anti-vaccination clips. The Internet has also become a forum for alternative medicine practitioners to present their anti-vaccination ideas and promote alternative products.

While parents in developing countries have, for example, first-hand experience of measles and welcome vaccination against it, the uptake by parents for the combined measles, mumps and rubella vaccine in many developed countries has yet to recover



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Dr Jonas E Salk, who developed the first vaccine against poliomyelitis in 1955, gives a boy a polio vaccine shot during the mass inoculation trial in Pittsburg, Pennsylvania, in the United States of America (USA). Salk developed his successful vaccine around the time of the Cutter incident, when thousands of people in the USA developed polio after being given vaccine containing live virulent polio virus from Cutter Laboratories.

almost 10 years after a study linking it to autism, even though the original study has long since been discredited and there is overwhelming scientific evidence that refutes the link.

A similar scare linking the mercury compound vaccine, thiomersal, to autism led to its elimination from most USA and European vaccines that contained it, despite the lack of scientific evidence to support this measure. Indeed, five large-scale studies failed to find a link between thiomersal and autism, and, according to some studies, the incidence of autism has risen after discontinuation of thiomersal use in vaccines.

Anti-vaccination scares can have lasting, harmful effects. Pertussis (or whooping cough) vaccination was