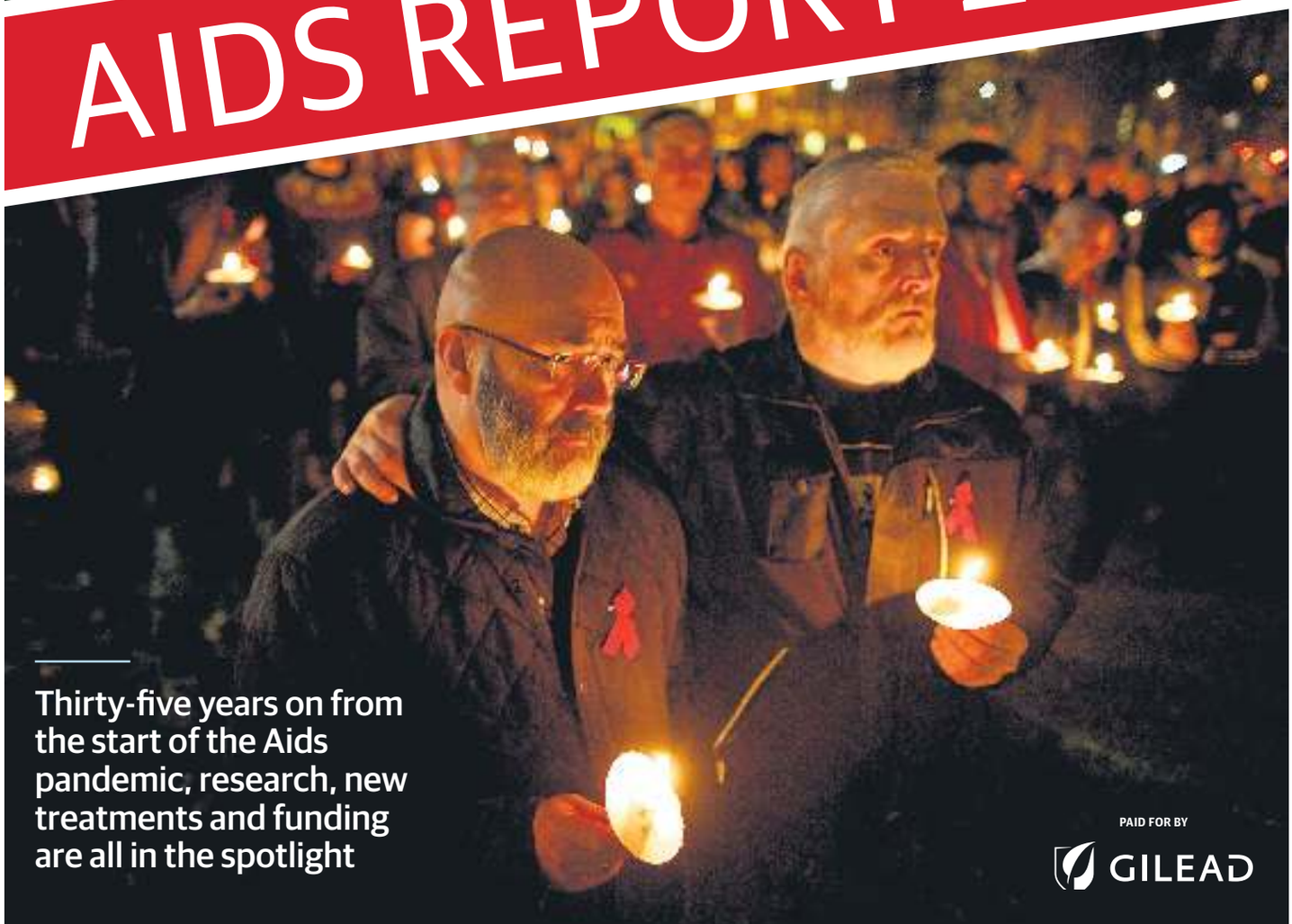
AIDS REPORT 2016



Thirty-five years on from the start of the Aids pandemic, research, new treatments and funding are all in the spotlight

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PHOTOGRAPHY: AP; GETTY IMAGES; REUTERS

STILL FIGHTING THE STIGMA

Last week - like every other first day of December since 1988 - was World Aids Day. Every year since 1988, this date has marked an opportunity to show support for and solidarity with people with HIV/Aids, commemorate those who have died, and - especially in the early years - to fight against stigma and for better treatment.

Summer 2016 marked 35 years since the Centers for Disease Control and Prevention in the US first reported on a form of rare pneumonia found in a small group of gay men in Los Angeles, an event which is seen as the start of the Aids pandemic. Subsequently, HIV/Aids has been noticed in all countries worldwide, with huge numbers of young and previously healthy people dying in the poorest countries.

For many years, being diagnosed with HIV or Aids seemed to be a death sentence. This was only stopped by the development of combination antiretroviral therapies (ART) in the mid-1990s. Their subsequent roll-out across the developing world meant that millions of people were able to benefit from these drugs, with more than 18 million people now accessing treatment. Now HIV is often considered as a chronic condition; people with HIV can and do live as long as those without. But problems and challenges still remain.

> WHAT IS CRUCIAL IS THAT COUNTRIES ADOPT PEOPLE-CENTRED APPROACHES TO THE HIV EPIDEMIC

As Alasdair Reid from UNAids puts it: "What is crucial is that countries adopt people-centred approaches to the HIV epidemic that include policies and programmes that are embedded in human rights - this means dismantling discriminatory legislation and ending HIV-related stigma so that everyone can access the highly effective range of prevention and treatment methods at our disposal."

Gregg Alton, executive vice president at Gilead, agrees: "Regardless of a country's economic status, stigma and discrimination against those most vulnerable to HIV, such as people who inject drugs, sex workers and men who have sex with men, will fuel the epidemic."

This supplement looks at some of the issues around HIV that remain important in 2016. First we examine treatment innovations. What is being done to expand them in countries with high rates of HIV? Next, we look at some issues coming to light now that HIV has been around for decades. What is the outlook for HIV-negative children born to HIV-positive mothers? Is a "cure" really on the horizon?

World Aids Day will still be important as long as HIV is more than just another illness. In 2016, despite the many advances that have taken place, this is still very far from being the case.

HIV FACTS

Between 1981 and 2015, more than **35 million** people around the world died of Aids-related illness.

78 million people became infected with HIV.

In 2015:

Around **1.1 million** people died.
36.7 million people were living with HIV, **25.5 million** of them in sub-Saharan Africa.

19 million of them in east and southern Africa, which saw **46%** of all new HIV infections.

2.1 million people became infected, **150,000** of them children.

17 million people were accessing antiretroviral therapy (ART).

46% of adults and **49%** of children with HIV were accessing ART.

77% of pregnant women with HIV accessed treatment to prevent HIV being passed to their babies.

Since 2005 – the peak of the pandemic – Aids-related deaths have fallen by **45%**.

HIV in the UK

103,700 are estimated to live with HIV in the UK.

17% of those with HIV may not yet have been diagnosed.

6,095 people were diagnosed with HIV in the UK in 2015.

48% of those accessing HIV care in the UK are aged 45 or older.

£360,800 is the estimated lifetime cost of treating someone with HIV.

Sources (accessed 28 November 2016):
http://www.who.int/mediacentre/factsheets/fs360/en/
http://www.unaids.org/en/resources/fact-sheet
http://www.avert.org/global-hiv-and-aids-statistics
http://www.tht.org.uk/our-charity/Facts-and-statistics-about-HIV/HIV-in-the-UK

INNOVATIONS IN 'TEST AND TREAT'

From a self-testing HIV kit to a vending machine that enables patients to pick up their drugs, recent developments aim to improve care while reducing pressure on healthcare providers

A growing number of countries around the world now offer people who test positive for HIV to be put on treatment immediately, rather than wait for their immune system to deteriorate past a certain point. One benefit of this "test and treat" approach, promoted by the World Health Organisation since 2015, is that it reduces the amount of virus in carriers' bodies and so lowers their chances of passing it on.

But despite big health benefits, the "test-and-treat" approach throws up new challenges for countries with large HIV epidemics. In South Africa, where more than three million people take antiretrovirals daily, it doubles the number of those eligible for treatment - with implications on how this will be funded. Local reports suggest that since the approach was adopted the number of people on treatment is rising fast.

There's a need for innovations to reduce the pressure on health systems, while still ensuring patients get quality care. One example was unveiled in July 2016 at the International Aids Conference in Durban: a vending machine, developed by South African health NGO Right to Care, that allows patients to collect their drugs at shopping centres or transport hubs.

Another resource-saving innovation is the do-it-yourself HIV test, which works like an over-the-counter pregnancy test. There's been some concern that these might lead to lower enrolment for treatment or more personal anguish among those who test positive, than tests overseen by a health worker. But in a pilot in Vietnam this year, all those who tested positive with the self-testing kit progressed smoothly on to HIV treatment. A large project is now evaluating self-testing in Malawi, Zambia and Zimbabwe. Home-testing kits are now also available in the UK. They can be bought online, or through some pharmacies.

A woman with HIV is visited at home in Ethiopia

Pharmaceutical firms have a role to play in improving access to treatment, says Nick Francis, UK spokesperson for Gilead. The company is working with the Vatican and other partners on a test-and-treat demonstration project in northern Tanzania, to test 300,000 people for HIV and link those diagnosed to treatment. In 2015 Gilead gave nearly US$500m to 2,000 organisations worldwide to improve access to HIV services.

But new solutions will only reach their full potential if the secrecy attached to HIV infection is reduced, says Mitchell Warren, executive director of New York HIV advocacy network AVAC. "While reaching 17 million people with treatment has been a tremendous success story, the 20 plus million more who need treatment - and the millions at risk who need high-quality prevention services - will only be reached if we acknowledge and address the vast stigma related to HIV infection and behaviours associated with it."

COMMENT

THE CHALLENGES ARE ONGOING

Baroness Gould is an Honorary Fellow of the British Association for Sexual Health and HIV

PHOTOGRAPHY: ALAMY; DAVID MANSELL

Care and treatments for people with HIV have changed radically over recent decades. Back in the 1980s, the goal of people living with HIV was survival.

However, as a result of research and development into innovative medicines, together with measures to increase testing, reduce late diagnosis and access to effective care, the health of people living with HIV in the UK is better than could have been imagined.

Many people living with HIV can expect to have a near normal life expectancy, if diagnosed and treated early.

But we face real challenges:

- The number of people with HIV continues to increase and more must be done to address prevention.
- As more people with HIV enjoy longer lives, many face complex health challenges and co-morbidities.
- The stigma of HIV is such that there are those who still see infection as a consequence of risky behaviour and thus try to set funding for HIV treatments against other conditions.

If we are to continue with the successes of recent decades, it is essential that new innovations in care and treatments are developed, and that adequate HIV funding is maintained so that people have access to worldbeating care and treatments.

People with HIV have the right to live longer and healthier lives.

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HIV POSITIVE FOR OVER 20 YEARS

One in three people accessing HIV care in the UK are over 50, thanks to the introduction of antiretroviral combination therapy in the 1990s

PHOTOGRAPHY: ANTONIO ZAZUETA OLMOS

When Trevor Banthorpe was diagnosed with HIV in 1991 he told himself "two healthy years, and I'll be happy".

Banthorpe - now 55 - first knew that he was positive when his then-partner, Ken, was diagnosed with full-blown Aids. He gave up work to care for Ken, who died in 1995. "I thought I'd seen my own death played out," Banthorpe says.

But he didn't die, and has never been seriously ill with HIV. That's because everything changed with the introduction of antiretroviral combination therapy in 1996. HIV is now seen as a chronic health condition and people who are HIV positive can look forward to a normal lifespan. Indeed, Public Health England reports that one in three people now accessing HIV care in the UK are over 50, and that number is expected to rise.

However, because this is the first generation of people growing older with HIV, there is much that is not known about their future health. Research from the Foundation for Aids Research suggests that there may be increased risks of cardiovascular and kidney disease, and various cancers.

Clive Blowes, from the London-based Terrence Higgins Trust (THT), is the national coordinator for its Health, Wealth and Happiness Project. "So much is unknown. How will the medication from 20 or 30 years ago affect your body in the long-term or in combination with other drugs?" he asks.

On an emotional and practical level, though, some trends are emerging. "A lot of people didn't expect to get this far, or know what it might mean to live longer with HIV," he says. "We are providing people with skills and confidence to face living longer."

Trevor Banthorpe - one of the first generation to grow older with HIV

However, some people who are long-term HIV survivors do feel left out, he says, as the focus turns to living healthy lives with HIV, with much of the history of HIV/Aids in the 1980s and 90s potentially forgotten.

Another area of Blowes' work focuses on social inclusion, as older people with HIV may be isolated, and the project offers peer support, coaching and skills training for those who want it. Banthorpe was part of a THT Work Positive programme. He went back into education, and eventually got a job at THT as the London volunteer administrator.

"That route back to work helped me take control of my life," he says.

Terrence Higgins Trust has received funding from Gilead

CASE STUDY

A LONGTIME ACTIVIST

Juno Roche is a writer, campaigner and patron of UK-based cliniQ, which provides holistic sexual healthcare for all trans people

I was diagnosed in the early 90s at the end of my first year at university. My partner became very ill with an Aids-defining illness and I knew instantly that I was positive too. At that time, when you were diagnosed, you were given an "entitlement to death benefits" form because you weren't expected to live more than six months. How can you get back from that? I told my tutors and they didn't want me to finish. Everyone was worried about insurance policies – if you got cut, who would clean up the blood? My dentist covered every surface with cling film. It was an awful time, horrible. It was a time when HIV was seen as this thing sweeping through society – an immoral plague and you were part of that. My activism began because I was determined to stay at university. For me, that was the start of my fight for life.

Things have changed but there is still terrible stigma. A few years ago you couldn't talk about being trans and HIV. I don't want anyone else to go through what I did. So many trans women around the world have HIV but there is little research for or about us. My current work is focused on changing that.

IS A CURE ON THE HORIZON?

With effective medication already available as a result of antiretroviral drugs, research continues around new treatments and the eradication of HIV

No matter what the disease, reports of "miracle cures" always attract attention. That was what happened in October 2016, with reports that a man had been "cured" of HIV. But as is so often the case with such reports, the truth was far more nuanced.

One man taking part in the ongoing River Trial - conducted by the Cherub Consortium with teams from five UK universities - had no signs of HIV in his body. The intensive treatment he takes is designed to flush out HIV from "reservoirs" in his body that conventional treatment cannot reach.

But he is also taking conventional antiretroviral drugs and, like most people on this treatment, HIV was undetectable in his bloodstream (known as the "viral load").

BREAKTHROUGH STUDY

Other projects deal with the impact of having undetectable levels of HIV. One of these, the Partner study, involved couples having condomless sex a total of 58,000 times. Researchers found no instances of HIV transmission between a positive partner and a negative one, when the viral load of the former was undetectable.

Trevor Banthorpe (pictured above left) and his partner Javier took part in the study. "This is a huge break-through," says Banthorpe. What the study seems to show is that - if they are on effective medication, and the virus is undetectable - the positive partner will not transmit HIV to the person who is negative.

> IN THE SHORT TERM, NEW MEDICINES ... COULD PLAY AN IMPORTANT ROLE IN DEVELOPING COUNTRIES

Antiretroviral combination therapies have been central to these improvements but there is plenty of work still to be done around many different aspects of HIV treatment. Andrew Cheng, executive vice president, clinical research and development operations at Gilead, says: "We're approaching HIV eradication research from many angles. One potential strategy is to stimulate HIV expression in latently infected cells, exposing them to the body's immune system."

Greg Perry, executive director, Medicines Patents Pool - an organisation working to improve access to treatment in poorer countries - sees many promising developments on the horizon. He believes that, in the short term, new medicines could play an important role in developing countries. These could have "improved efficacy, lower side effects and the potential to lower prices".

So has anyone been cured of HIV, or were October's reports premature? The only person who has ever been considered "cured" so far is Timothy Ray Brown, who had stem-cell transplants. Research into other possible cures through immunotherapies, vaccines and small-molecule combination therapy have shown mixed results, but scientists are hopeful that, through these avenues, we are making progress to one day cure HIV.

PHOTOGRAPHY: REUTERS/ALAMY; GETTY

Antiretroviral drugs are packed at a laboratory in Brazil

HIV AND CHILDREN

In the early days of HIV, doctors on the frontline felt like they were fighting a raging inferno with a child's water bucket. Without effective treatment for HIV, there was frustratingly little they could do for the sick and dying.

The development of successful antiretroviral therapies has brought new hope to patients. But while these drugs have changed the face of the epidemic - for example, by reducing the risk of HIV-positive mothers passing on HIV to their babies to below 1% – their use has resulted in new health problems coming to the fore.

State health programmes in South Africa are stopping the spread of HIV to babies

Researchers are now turning to study how HIV affects communities more widely. One group of interest is HIV-negative children born to HIV-positive mothers.

"There is mounting evidence in southern Africa and Europe that children exposed to, but uninfected by, HIV through their mothers experience greater childhood mortality and infectious morbidity than unexposed, uninfected children," says Amy Slogrove, a paediatrician at Stellenbosch University in South Africa. While this doesn't mean pregnant mothers should fear taking antiretrovirals while pregnant – after all, it's what's keeping their babies from becoming infected – it does raise the question of whether current treatment regimes are optimal.

Quite why these kids fare badly is not yet understood. Children born into communities with high levels of HIV often face other challenges to their health, such as poor sanitation, bad nutrition and high exposure to diseases such as tuberculosis. But scientists think more is at play than that, and are working on insights that might result in new guidelines for treatment. The important thing for HIV-positive mothers-to-be to remember is that their children's health is best served by taking antiretrovirals as directed. With correct management, they have a more than 99% chance of having an HIV-negative baby.

December 2016, 001/UK/16-11/NM/1699

THE IMPORTANCE OF PREVENTION

Safe sex initiatives have been largely successful in reducing the number of cases of HIV in the last 20 years, but drug treatments and policies grounded in human rights are needed to further the cause

In countries where there is ready access to treatment, being HIV positive has become something to live with, and not the terminal diagnosis it used to be.

But having HIV is also a serious lifelong health condition that requires treatment and management, and transmission rates are no longer dropping. That's why the United Nations Programme on HIV/Aids (UNAids) - which has as its goal the ending of the HIV epidemic by 2030 - has taken prevention as its central focus for World Aids Day 2016.

HIV transmisson rates went down between the late 1990s and 2010, but this is no longer the case. According to UNAids, new cases of HIV among people over 15 around the world have stayed at 1.9 million a year since 2010.

So what can be done to scale-up prevention? One of the keys to HIV prevention is testing. Knowing if individuals are positive or not is important so that they can get treatment, which will, in turn, reduce the viral load in their blood.

"When antiretroviral therapy is effective in a person living with HIV, the virus becomes undetectable in the person's blood and the risk of transmitting the virus to a partner approaches zero," says Alasdair Reid from UNAids.

However, many people don't know they are HIV positive, and risk passing the virus on to their partners. In the UK, the figure is estimated as one in six of those with HIV. That is why campaigns, such as National HIV Testing Week, run (in England) by HIV Prevention England, are so important.

PHOTOGRAPHY: AFP/GETTYW

The way many people around the world have avoided HIV transmission has been through practising safer sex, especially by using condoms. It is estimated that 45 million people worldwide have avoided contracting HIV due the use of condoms since 1990. But condoms are not always available, or affordable, to people who are very poor - and these are people who very often are most in need of access to them. In South Africa, for instance, which has the biggest HIV treatment programme in the world, figures show that 53% of men have never used condoms. UNAids has estimated that there is an annual "gap" of more than 3bn male condoms across sub-Saharan Africa.

Increased use of condoms has led to a substantial drop in HIV transmissions since 1990

HIV AND HUMAN RIGHTS

It is clear that - across the world - the most marginalised people, those who live in poverty and with stigma, are the most likely to contract HIV. They may not have access to condoms, or may be unable to insist on their usage. Girls and young women in sub-Saharan Africa are being infected at twice the rate of boys and men their age. Across a range of developed and middle-income countries, "key populations" - such as sex workers, men who have sex with men, injecting drug users, prisoners, trans people - and their sexual partners, were far more likely than others to be HIV positive.

"What is crucial is that countries adopt people-centred approaches to the HIV epidemic that include policies and programmes that are embedded in human rights," says Reid. "This means dismantling discriminatory legislation and ending HIV-related stigma so that everyone can access the highly effective range of prevention and treatment methods now at our disposal."

COMMENT

TESTING REMAINS VITAL

Matthew Hodson is executive director at NAM/aidsmap

Figures recently released by Public Health England showed a small decrease in the number of people in the UK diagnosed with HIV. Of particular interest in this set of figures was that the number of gay and bisexual men diagnosed with HIV dipped, albeit only slightly.

This marked the first drop in diagnoses in this group since the 1990s. This reduction in diagnoses may well reflect the power of HIV treatment to reduce the risk of HIV transmission.

If levels of the virus fall below detectable levels the likelihood of HIV transmission is negligible; it may well be that there is no risk at all. This is why testing is so vital. HIV treatment not only saves lives, it prevents new infections.

Condoms remain a valuable tool for sexual health and the prevention of HIV transmission, but lifestyle strategies, including sexual delay or sero-sorting (choosing partners who share the same HIV status) also play a role. The introduction of preventative medicines has also increased our prevention armoury. Just as combination therapy works by hitting the virus from different directions, so prevention works best with a combination approach.

We need to embrace the benefits of treatment at the point of diagnosis. We need to make use of all prevention technologies, so that those who are not able to maintain condom use can still protect themselves. We could move from a post-Aids era to a post-HIV era within a decade. It will require commitment and investment but the prize is so great we can't afford to let the opportunity slip away.

NAM/aidsmap has received funding from Gilead

ADOLESCENT GIRLS

Since the early days of the southern African HIV epidemic, researchers have grappled with a mystery: why do teenage girls in the region have such high infection rates, while men become infected in their mid-20s? Girls and young women account for 71% of new HIV infections among adolescents in sub-Saharan Africa. In some parts of South Africa, the ratio of teenage boys to girls with HIV can be as high as eight to one.

The obvious – and troubling – answer to the riddle is that teenage girls are contracting HIV from older men. Until recently, there was little proof to back up this theory. But in July this year South African scientists published data showing how the virus is passed around.

Using genetic sequencing, researchers at the Durban-based Centre for the Aids Programme of Research In South Africa mapped virus transmission paths. They found there was a "cycle" of transmission: young women under the age of 25 acquired HIV from older men aged 25-40. As these women age they transmit HIV to men their own age, who, in turn transmit the virus to younger women.

It's also likely that many of these young women are poor, and sleep with older men in exchange for gifts and other benefits. Solutions must therefore focus on empowering young women to make healthier choices as a starting point.

PHOTOGRAPHY: GETTY

A young girl takes part in an anti-Aids ceremony in rural South Africa

This is something that the $385m Pepfar Dreams programme – supported by Gilead – launched on World Aids Day in 2014 by the US government and other partners, tries to do. This year, the Dreams Innovation Challenge programme gave grants of $40m to projects to keep girls in sub-Saharan Africa in secondary school. In Botswana, girls who stayed in school for 10 years instead of nine cut their HIV infection risk by half. Other projects will help young women find work.

ON BOARD WITH FUNDING

Governments of middle-income countries are putting more money into their HIV/Aids programmes. Are innovative funding schemes cutting the shortfall too?

In September 2016, donors, governments and companies committed nearly US$13bn towards the Global Fund to Fight Aids, Tuberculosis and Malaria. While this is encouraging news for countries that depend on the Global Fund for HIV/Aids finance, it is only 80% of what's needed to fulfil the ambition of ending these epidemics by 2030.

So who or what will fill this funding gap? The idea is that governments of the countries involved will stump up the money - and some are already doing so.

The Global Fund is specifically intended for poor countries with high disease burdens. Malaysia, Panama, Costa Rica and Romania are expected to become ineligible for its grants over the next five years, as they are projected to reach high-income status. But there is also a need for countries with high disease burdens and good economic growth to shoulder more of the cost of their HIV/Aids programmes.

The funding pledges committed by low- and middle-income countries at September's Global Fund replenishment conference indicate that there is a strong will among these countries to contribute. Nine countries - Benin, Ivory Coast, Kenya, Namibia, Nigeria, Senegal, South Africa, Togo, and Zimbabwe - jointly committed US$10.9m to the fund in 2015-17.

A Doctors Without Borders medic carries out an HIV test in Beira, Mozambique

> LOW- AND MIDDLE-INCOME COUNTRIES CONTINUE TO INCREASE THEIR DOMESTIC INVESTMENTS IN HEALTH

The Global Fund's domestic resource mobilisation strategy, adopted in April this year, has contributed to additional government commitments of US$6bn, says Mark Dybul, the fund's executive director. "This is a remarkable achievement, and shows strong commitment by low- and middle-income countries to continue increasing their domestic investments in health."

Several countries are adopting innovative ways to fund their HIV/Aids programmes. Zimbabwe charges an Aids levy on individuals, companies and trusts to fund antiretroviral purchases, as well as free condoms, mobile clinics and CD4 count machines. Botswana and Ivory Coast have harnessed debt-swap agreements to generate $20m and $27m for their Aids programmes respectively. And in October this year a Middle East-based partnership featuring the Islamic Development Bank launched a US$2.4bn fund to finance health programmes, including those on HIV/Aids, in poor Muslim countries, predominantly in Africa.

These investments don't just make sense from an ethical and health point of view; they also make excellent financial sense. Researchers have estimated the financial return on domestic spending on HIV/Aids at 280%, in addition to the obvious health gains.

December 2016, 001/UK/16-11/NM/1699

PHOTOGRAPHY: REUTERS

> WHAT IS CRUCIAL IS THAT COUNTRIES ADOPT PEOPLE-CENTRED APPROACHES TO THE HIV EPIDEMIC (page 2)