

New initiative to catalyse investment in African healthcare

An innovative approach that could transform Africa's healthcare delivery with private sector financing has obtained US\$10.6 million from the US Government and a quartet of leading international foundations – OPIC, USAID, the Bill & Melinda Gates Foundation, Calvert Foundation & Deutsche Bank Americas Foundations, and Soros Economic Development Fund Support Medical Credit Fund.

Called the **Medical Credit Fund** (MCF), it will enable small and mid-sized healthcare providers – clinics, laboratories, doctors and midwives – in Africa to receive the capital they need to improve their quality. At the same time, it will use internationally certified clinical standards to gauge providers' improvements and a technical assistance programme to ensure that funding is well-spent. If successful in its initial implementation in Kenya, Ghana, Nigeria, and Tanzania, the MCF will expand into additional countries in sub-Saharan Africa, on the strength of evidence that the private sector is already transforming the continent's healthcare systems:

What makes the project especially

innovative is its 'layered capital' structure. By using philanthropic capital to catalyse much large amounts of funding from private and public sources that might otherwise stay on the headlines because of perceived risks, the MCF is able to increase its developmental impact significantly.

'Involving the private sector more fully in Africa's healthcare is the best way to expand access to greater numbers of people – and that's what the MCF has shown it can do,' said OPIC President and CEO Elizabeth Littlefield. 'This new financing will empower smaller providers to scale up much-needed services, improve clinical standards and thereby efficiency. OPIC is pleased to team with so many distinguished partners in this initiative.'

Since the start of the programme in late 2010, the MCF has disbursed more than US\$1.4 million in small loans in Kenya, Tanzania, Ghana, and Nigeria.

The MCF is an initiative of PharmaAccess, a Dutch not-for-profit organization, dedicated to improving healthcare in Africa through innovative approaches.

New global strategy targets raft of neglected tropical disease

Dengue, leprosy, river blindness, and guinea-worm disease are among 17 neglected tropical diseases now targeted by a new global strategy, supported by worldwide partners, that provides a steady supply of quality medications, the World Health Organization has announced.

'With this new phase in the control of these diseases, we are moving ahead towards achieving universal health coverage with essential interventions,' says Margaret Chan, WHO's Director-General.

The report, *Sustaining the drive to overcome the global impact of neglected tropical diseases*, shows new momentum in controlling, eliminating, and eradicating some of the longest-term scourges that take their greatest toll among the poor, moving the world closer to the

elimination of many of them.

'The challenge now is to strengthen capacity of national disease programmes in endemic countries and streamline supply chains to get the drugs to the people who need them, when they need them,' Dr Chan added.

According to the report, two diseases are targeted for global eradication, including dracunculiasis, or guinea-worm disease – which can produce a parasite as long as two or three feet – by 2015, and yaws, which attacks skin, bone, and cartilage, by 2020. Targets are set for the regional elimination of several other diseases in 2015 and in 2020.

Such targets can be set because of the donation of medicines and funding through an alignment of international partners, which helped bring about a considerable scale-up of preventive chemotherapy and other actions through widespread delivery of single-dose, quality-assured medicines.

Epilepsy and migraine may share genetic link

A strong family history of seizures could increase the chances of having severe migraines, says a study in *Epilepsia* journal.

Scientists from Columbia University, New York, analysed 500 families containing two or more close relatives with epilepsy. Their findings could mean that genes exist that cause both epilepsy and migraine.

Previous studies have shown that people with epilepsy are substantially more likely than the general population to have migraine headaches, but it was not clear whether that was due to a shared genetic cause.

The researchers found that people with three or more close relatives with a seizure disorder were more than twice as likely to experience 'migraine with aura' than patients from families with fewer individuals with seizures.

Early HIV drugs 'slow virus down'

Giving a patient HIV drugs as soon as they are diagnosed could be the future of treatment, say researchers. Currently, antiretroviral therapy is given only once the immune system has been seriously weakened by infection.

A trial, in the *New England Journal of Medicine*, showed that a year-long course of therapy after diagnosis helped preserve the immune system and keep the virus in check. It is thought that early treatment may also reduce the spread of HIV.

Treatment is given once a patient's CD4 T-cell count falls below 350 cells per cubic millimetre of blood. However, there has been some speculation that starting as soon as a patient is diagnosed may be more beneficial.

The Spartac study, which involved 366 patients from eight countries around the world, tested the theory. Some patients were given 12 weeks of drugs after being diagnosed, another group had drugs for 48 weeks after diagnosis and a third group were given no drugs until they reached the 350 level.

Prof Jonathan Weber, from Imperial College London, said those on the 48-week regime 'end up with much higher CD4 cell count and a much lower viral load.'

UNAIDS reports a more than 50% drop in new HIV infections

A new World AIDS Day report: *Results*, by the Joint United Nations Programme on HIV/AIDS (UNAIDS), shows that a more than 50% reduction in the rate of new HIV infections has been achieved across 25 low- and middle-income countries – more than half in Africa, the region most affected by HIV.

In some of the countries which have the highest HIV prevalence in the world, rates of new HIV infections have been cut dramatically since 2001; by 73% in Malawi, 71% in Botswana, 68% in Namibia, 58% in Zambia, 50% in Zimbabwe, and 41% in South Africa and Swaziland.

In addition to welcome results in HIV prevention, sub-Saharan Africa has reduced AIDS-related deaths by one-third in the last 6 years and increased the number of people on antiretroviral treatment by 59% in the last 2 years. 'The pace of progress is quickening – what used to take a decade is now being achieved in 24 months,' said Michel Sidibé, Executive Director of UNAIDS.

'We are scaling-up faster and smarter than ever before. It is the proof that with political will and follow through we can reach our shared goals by 2015.'

The report also shows that countries are assuming shared responsibility by increasing domestic investments. More than 81 countries increased domestic investments by 50% between 2001 and 2011. The new results come as the AIDS response is in a 1000-day push to reach the Millennium Development Goals and the 2015 targets of the UN Political Declaration on HIV/AIDS.

The area where perhaps most progress is being made is in reducing new HIV infections in children. Half of the global reductions in new HIV infections in the last 2 years have been among newborn children. 'It is becoming evident that achieving zero new HIV infections in children is possible,' said Mr Sidibé. 'I am excited that far fewer babies are being born with HIV. We are moving from despair to hope.'

Lung infection identified using 'breath-print'

Identifying the 'smell' of different types of lung bacteria could lead to a simple breath test to diagnose infections, a study on mice, in the *Journal of Breath Research*, suggests.

Breath analysis could reduce lung infection diagnosis times from weeks to minutes. Scientists from the US Vermont College of Medicine have already researched breath tests to diagnose asthma and cancer. An expert said breath analysis was 'an important and emerging field.'

Diagnosing bacterial infections traditionally means collecting a sample that is used to grow bacteria in the lab. This bacteria is then tested to classify it and see how it responds to antibiotics, which can take time.

Doctors see breath analysis, in contrast, as a fast and non-invasive method of diagnosing diseases.

For the study, researchers analysed volatile organic compounds (VOCs) given off in exhaled breath by different bacteria as well as different strains of the

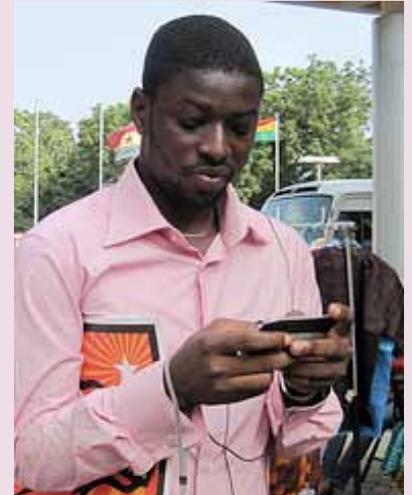
same bacterium.

They infected mice with two bacteria that are both common in lung infections – *Pseudomonas aeruginosa* and *Staphylococcus aureus* – and sampled their breath after 24 hours.

The compounds in their breath were analysed using a technique called secondary electrospray ionisation mass spectrometry (SESI-MS), which is capable of detecting extremely small elements of the chemicals present in their breath.

The researchers said they found a 'statistically significant' difference between the breath profiles of the mice infected with the bacteria and the mice that were uninfected. They also said they were able to differentiate between two species of bacteria and two different strains of the same *P aeruginosa* bacterium.

Jane Hill, co-author of the study, said researchers are now collaborating with colleagues to sample patients in order to demonstrate the strengths, as well as limitations, of breath analysis more comprehensively.



Don't text and walk

Texting while walking is becoming as prolific a problem as distracted driving, and one that suggests the need for similar intervention.

A new study by the *British Medical Journal's* Injury Prevention group revealed that almost one in three pedestrians is distracted by a mobile device while crossing busy streets.

While some incidents of texting while walking can be amusing, the situation is often far from funny, researchers point out. It is, in fact, one of the most dangerous distractions, on par with texting from behind the wheel of a car.

Leprosy bacteria use 'biological alchemy'

Infectious bacteria have for the first time been caught performing 'biological alchemy' to transform parts of a host body into those more suited to their purposes, by a team from the University of Edinburgh.

The study, in the journal *Cell*, showed leprosy-causing bacteria turning nerves into stem cells and muscle.

The authors said the 'clever and sophisticated' technique could further therapies and stem-cell research. Experts described the discovery as 'amazing' and 'exciting'.

The researchers have shown that bacteria can transform parts of the body into something more valuable to them. It is a feat that scientists have already achieved in the laboratory. Skin cells have been transformed into flexible stem cells that can become any of the body's building blocks from heart muscle to brain cells.

Better health information systems needed in Africa says UN

African countries must improve the ways in which they collect, organise, and transmit health information to their citizens, a United Nations official said at a regional meeting in Luanda, Angola.

In his report presented to the UN World Health Organization's (WHO) 62nd session of its Regional Committee for Africa, WHO Regional Director for the continent, Luis Sambo, also highlighted the challenges facing countries to produce good quality and timely information to their cities.

Among these are efforts and initiatives that seek to acquire health information, which are fragmented across sectors, levels, projects, disciplines, and specialties. Other challenges include poor generation of evidence to implement policies and a lack of collaboration among stakeholders to analyse and share data and evidence.

To address these challenges, Dr Sambo recommended that each country establish an online platform to archive and monitor national information on health. A clear road map and timeline should be established for this process, he added, while assuring African countries that WHO is ready to provide detailed advice and technical support on this process.

The creation of each online platform, called a National Health Observatory (NHO), should involve and coordinate all health stakeholders in each country, the WHO official said, including public health policymakers, experts, and international partners.

Mark Dybul appointed to head the Global Fund



The Joint United Nations Programme on HIV/AIDS (UNAIDS) has welcomed Mark Dybul to his appointment as

Executive Director of the Global Fund to Fight AIDS, Tuberculosis and Malaria

'Mark inspires confidence,' said Michel Sidibé, Executive Director of UNAIDS. 'I fully trust that he will lead the Global Fund to new heights by strengthening



Dr Luis Sambo, WHO Regional Director for Africa (left), Dr Mr Bilali Camara UNAIDS Representative – Angola (centre), and Dr Rui Vaz WHO Representative – Angola

In addition, countries that have already established NHOs should ensure that these are meeting the specific needs of their countries and are used to share and use important information that will lead to better health for Africans.

During his presentation, Dr Sambo also underscored that African countries should draw from resources from global health initiatives (GHIs), which target specific diseases, to strengthen their health systems.

'The dramatic increase in the number of GHIs means that countries need to improve how they work with different stakeholders in the health sector,' WHO stated in a news release on Dr Sambo's report. Pooling resources from different sources would lead to good quality, integrated health services.

Sharing information among countries is also vital to prevent the spread of diseases, Dr Sambo said, noting that more needs to be done to respond effectively.

partnerships and delivering results on the ground. His appointment marks a new era for the Global Fund and UNAIDS is looking forward to a strong and dynamic collaboration in the coming years.'

Dr Dybul served as the US Global AIDS Coordinator, leading the implementation of the President's Emergency Plan for AIDS Relief during the presidency of George W Bush. As Executive Director of the Global Fund, Dr Dybul will lead its work in attracting, managing and disbursing additional resources to strengthen the global response to HIV, tuberculosis and malaria.

Weight loss 'is body's way of fighting off gut worms'

Weight loss following infection with intestinal worms is the body's way of fighting off the parasites, say researchers from the UK's University of Manchester.

The immune system hijacks a hormone that controls when to stop eating, their study of mice suggests. This then triggers the type of immune response needed to expel the worms from the gut, *PLoS Pathogens* reports.

The finding could lead to new ways to treat people with intestinal worms.

Researchers first saw a potential link when they were measuring levels of a hormone called cholecystokinin in volunteers after they had been fed a meal.

One man had incredibly high levels and on further investigation it was found he had an intestinal worm infection he had picked up on holiday.

Joining forces with a team specialising in gut worm infections the researchers did a study in mice infected with a worm called *Trichinella spiralis*. They found that immune cells called T-cells responded to the worm infection by driving up levels of cholecystokinin.

This increase has a knock-on effect of driving down another hunger hormone, leptin, which influences what type of immune response the body needs to produce.

When they artificially added leptin back into the infected mice, the immune system mounted the wrong response and the intestinal worms remained in the gut for longer.

Nearly one in every four of the world's population are infected with gastrointestinal parasites.

It has long been known that these infections often result in a period of reduced appetite and weight loss but why or how this happens was not understood.

Study author Dr John Worthington said the researchers had looked at only one type of parasitic worm but were now doing tests to see if the same response was produced in response to other worms.

'Naturally you would think that if you are losing weight you are going to have less energy to fight off infection,' he said. 'This does the opposite of what you would expect.'

African Federation of Obstetrics and Gynaecology launched

The World Health Organization Regional Director for Africa Dr Luis Sambo has stressed that with less than 3 years to 2015 – the time set for the attainment of the Millennium Development Goals (MDGs), what is needed now is not necessarily new science, but new commitments to prioritise, allocate resources, accelerate maternal, infant and child mortality reduction efforts in the African countries, and to honour these commitments.

He made the remarks in his inaugural address at the launch of the African Federation of Obstetrics and Gynaecology (AFOG), in Rome, Italy during the International Federation of Gynecology and Obstetrics (FIGO) XX World Congress. Dr Sambo observed that women are the main victims of the uneven distribution of disease burden and coverage of health interventions across countries, within countries, and between population sub-groups.

'Women in sub-Saharan Africa have much more to contribute to society than bearing and nurturing children, as important as these roles may be. A range of pressures including poor health often prevents them from realizing their potential, including their potential for wealth generation. It is evident that improved maternal health has socio-economic benefits, apart from its intrinsic value of being a human right issue,' said Dr Sambo.



Dr Luis Sambo (left) and Dr Yirgu Gebrehiwot, President of the National Associations of Obstetricians and Gynaecologists of Ethiopia, who was elected the new AFOG president

The Regional Director reminded the delegates about ongoing global and regional initiatives and opportunities to reduce maternal and child mortality and pointed out that the formation of AFOG is another major step to address the unacceptable high level of maternal and newborn mortality in the African region. He highlighted some of the key roles the Federation can play. These include; advocacy with governments for allocation of more resources to maternal and newborn health, strengthening capacity for skilled maternal and neonatal care, supporting operational research aimed at scaling up key interventions for maternal and newborn health, along with monitoring of the quality of maternal and neonatal care in countries.

UNEP Studies show rising mercury emissions

Communities in developing countries are facing increasing health and environmental risks linked to exposure to mercury, according to new studies by the United Nations Environment Programme (UNEP).

Parts of Africa, Asia and South America could see increasing emissions of mercury into the environment, due mainly to the use of the toxic element in small-scale gold mining, and through the burning of coal for electricity generation.

The Global Mercury Assessment 2013 reports that emissions of the toxic metal

from artisanal gold mining have doubled since 2005, in part due to new and better information, but also due to rising gold prices that are expected to lead to further increases.

The UNEP study assesses for the first time at a global level releases of mercury into rivers and lakes. Much human exposure to mercury is through the consumption of contaminated fish, making aquatic environments the critical link to human health.

In the past 100 years, man-made emissions have caused the amount of mercury in the top 100 metres of the world's oceans to double. Concentrations in deeper waters have increased by up to 25%.

Coca-Cola addresses obesity in TV advert

Fizzy drink makers have come under pressure from critics who say sugary drinks help cause obesity

Fizzy-drink giant Coca-Cola has launched an advert addressing obesity for the first time on US television. The 2-minute commercial highlights the firm's record of making low-calorie drinks and reminds viewers all foods contain calories.

Donated genetic data 'privacy risk'

Researchers have identified people in the US who anonymously donated their DNA for use in medical research raising concerns about privacy.

They could uncover a person's identity using records of donated DNA coupled with other readily available sources of information on the internet.

It was made possible because of large 'genetic genealogy' databases which help people trace their family tree. The study was reported in the journal *Science*.

Light in womb 'gives healthy eyes'

Light passing through the body and into the womb has an important role in the developing eye, US researchers have discovered.

A study, published in the journal *Nature*, showed that mice spending pregnancy in complete darkness had babies with altered eye development. It indicated tiny quantities of light were needed to control blood vessel growth in the eye.

The researchers hope the findings will aid understanding of eye disorders.

Flu virus 'knows when to attack'

The flu virus has an in-built clock which tells it exactly when to strike to have the maximum impact, a study in the *Cell Reports* journal shows.

The internal molecular clock tells the flu bug how much time it has to multiply, infect other cells, and spread to another human being. If it attacks too early it will be too weak, but leave it too late and the immune system has time to fight back.

Researchers say finding ways to reset the clock could lead to new treatments.

The barriers to Nigeria's battle to constrain polio



The end of 2012 was supposed to be a moment when the world could celebrate having eradicated the polio virus, but another deadline has been missed.

Three countries remain where the transmission of polio has never been interrupted – Afghanistan, Pakistan, and Nigeria. Nigeria is being watched more closely than anywhere else: its cases reached a 3-year high with more than 100 in 2012.

The Bill and Melinda Gates Foundation, as well as Rotary International, are pouring significant money and effort into the global campaign to end polio.

Polio cases are concentrated in particular pockets of several states in northern Nigeria. Suspicion still lingers that the drops of polio vaccine are a Western plot to sterilise Muslim children. Another misconception is that the jabs are a family planning method that will ultimately stop the children from giving

birth when they want to."

That standpoint has to be confronted head on, according to England's former chief medical officer, Sir Liam Donaldson. He is leading independent monitors overseeing the polio eradication efforts.

Their latest report gave a blunt warning that Nigeria may end up being the last country in the world with polio.

Communities should have their broader health needs taken into account by vaccination campaigns, the report recommended.

There are though grounds for optimism that 2013 might be different. Fresh energy is being put into vaccine campaigns – even using satellite tracking to detect settlements where children might be missed. Local staff who are deemed ineffective have been fired. Lessons are being learned from India, which marked a year without polio cases early in 2012.

Senior politicians in Nigeria are feeling the heat from the global campaign. Health minister Dr Muhammad Pate spoke about how much he felt was resting on his shoulders. 'I feel my head is sticking out on this,' he said. 'If we don't successfully conclude the efforts in eradicating polio, I'll consider my legacy to be a failed one. Polio eradication is do-able. Other countries have done it – therefore we can do it in Nigeria.'



Closer cooperation between physicians and veterinarians needed

Closer cooperation between physicians and veterinarians has never been more urgent because of the rise of antibiotic resistance and the fact that 60% of the 1500 human diseases are caused by pathogens affecting multiple animal species, says Dr Cecil Wilson, President of the World Medical Association.

Writing on the WMA website he says: 'In the realm of medicine and public health, cooperation between these fields has never been more urgent. About three of every four newly emerging human infectious diseases originated in animals. This includes terrifying conditions such as Ebola, Lassa Fever and the Nipah, Hendra and Marburg viruses.'

Dr Wilson adds that poor environmental health affects human and animal health in other ways, through pollution, contamination and conditions conducive to the emergence and survival of new infectious agents.

'Given the rise of antibiotic resistance what is needed is a more holistic approach and a better understanding of resistance related to the use of antibiotic drugs to find these new contagions.'

Dr Wilson says that recognising that human health, animal health and ecosystem health are inextricably linked, the WMA and the WorldVeterinary Association recently signed a Memorandum of Understanding.

Cooperation between the two bodies would include joint educational efforts between human medical and veterinary medical schools, support for cross species disease surveillance, and control efforts to prevent zoonotic diseases, collaboration in the responsible use of antimicrobials, and enhanced collaboration in medical education, clinical care, public-health and biomedical research.

Study questions generic HIV drug use

Rises in the use of cheaper, non-branded HIV drugs could potentially see more patients with treatment failure, claim US researchers.

They say, based on modelling and trial data, that generic medicines may be slightly less effective. And as they require users to take three daily pills instead of one, this ups the risk some patients may miss doses. But others say firm conclusions cannot be made from the *Annals of Internal Medicine* study.

The HIV information site Aidsmap says because the study is based on modelling it raises too many uncertainties. A spokesman was concerned that reports such as this could unduly alarm people with HIV on these medicines. He said the move to generics should be supported.

Experts agree that generic antiretroviral

drugs have already made a big contribution to managing HIV globally, particularly in the developing world.

The authors of the study say that they used a worst-case scenario for their modelling and much will depend on how well patients comply with taking their tablets.

The currently recommended treatment for newly diagnosed patients is a single pill (Atripla) taken daily. A generic form of a drug that has a similar mechanism of action to emtricitabine became available in January 2012, and a generic version of efavirenz is expected in the relatively near future. Patients could soon take these two less expensive generic drugs alongside the brand drug tenofovir.

The researchers calculate that for every 15 patients switched to the generic-based regimen, one who is also infected with hepatitis C could be treated.

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Peggy Schlie, Marketing Manager and Modality Manager for Respiratory Care at Draeger

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