

## New dual-acting antimalarial compounds discovered

The drug company Novartis and Medicines for Malaria Venture (MMV) have identified a new class of compounds that targets both the blood- and liver-stage infections of malaria

The discovery of a new class of dual-acting antimalarial compounds – the imidazolopiperazines (IZPs) – was published in the journal *Science* online, on the Science Express website. The findings report on compounds that target both liver and blood infections, attacking the Plasmodium parasite at both stages in its reproduction cycle. The findings describe how MMV, Novartis, and other partners developed a novel assay to determine liver-stage activity of candidate small molecules, then used the assay and other tools to identify and optimise a chemical scaffold with activity on

both blood- and liver-stage parasites in malaria mouse models. Several other compound classes, also with dual activity, are described and released by Novartis through ChEMBL – Neglected Tropical Disease at [www.ebi.ac.uk/chemblntd](http://www.ebi.ac.uk/chemblntd). ‘MMV has been collaborating with Novartis, the Dutch Primate Centre, Swiss Tropical and Public Health Institute and the Wellcome Trust on this exciting project for almost 4 years now,’ said Tim Wells, CSO, Medicines for Malaria Venture. ‘Preventing the infection in the liver is an important part of preventing infections in the community. The potential of this class of compounds to prevent transmission of the disease is one of the key attributes we need in new drugs targeting malaria eradication.’

### Sierra Leone Health Ministry introduces performance-based financing

As Sierra Leone moves ahead with plans to rebuild the country from within, the Minister of Health and Sanitation, Haja Zainab Bangura has introduced performance-based financing as part of a package aimed at bolstering the nation's ailing health service and rewarding health workers who perform well. The reforms address the country's human resources crises, particularly that currently faced by the health sector. Plans unveiled include a bevy of financial incentives, with earmarked monetary support for those who work in rural communities.

Central to Bangura's plan for an improved health service is an interim skills exchange programme with Cuba and South Africa. The scheme is described as comprising a number of short-term placements. Work has already begun with Bangura having secured a tripartite agreement with both nations. The first influx of Cuban health workers are expected within the next few weeks. It is believed that the team will work within the poorest communities first.

Further to the skills exchange, an agreement has also been reached with the Nigerian government for the provision additional medical personnel. Staff

are expected to arrive in February.

Mrs Bangura highlighted the challenges faced by health workers operating out of under-resourced facilities, citing that they were unable to provide even basic acceptable standards of healthcare but heralded evidence of real change, the most recent example of which being a new 100-bed hospital facility built as a gift from China. It is hoped that the hospital will make a tangible difference including enabling the provision of specialist diagnostic treatment.

The University of Sierra Leone has received partial accreditation to train specialist health professionals with funding from the Kuwait Fund for teaching hospitals, Connaught, Princess Christian Maternity, and Ola During.

As reforms continue supplementary funding has been received from the African Development Bank (ADB) as part of the Strengthening District Health Services Project which will facilitate the erection of 27 new health facilities. United Nations agency UNOPS will provide a minimum of six paediatric wards dispersed nationwide, and BADEA, the Arab Bank for Economic Development in Africa, is supporting the building and outfitting of additional health units.

Further developments are expected to be announced throughout the year.

### Obama to give emergency aid for famine in the Horn

President Barack Obama has announced that he will funnel an estimated US\$113 million in emergency aid to the Horn of Africa in addition to the US\$870 million already donated. The aid will assist millions of Ethiopians, Kenyans, and Somalians affected by famine and drought and will be used to provide food, health, temporary homes, clean water, and pharmaceuticals.

### Turkish doctors reach out to assist

Turkish organisation Yeryüzü Doktorları (Doctors Worldwide – DWW), which has been supplying auxiliary medical care in Sudan, the Democratic Republic of Congo, Kenya, Somalia, Ghana, and Sierra-Leone since 2000 is set to increase its quote of voluntary health professionals and have already secured commitment from around 850 doctors and professionals allied to medicine.

The teams will provide services that include medical examinations, cataract, and fistula operations, health screenings, maternity clinics, and hospitals, as well as providing medical supplies against endemic diseases in the region.

### Kano sets sights on Sabongari in drug market clean up initiative

Nigeria's Kano State government has moved to crack down on the distribution of counterfeit and poor quality pharmaceuticals. State Commissioner for Health Dr Abubakar Labaran Yusuf addressed the Nigeria Association of Industrial Pharmacists (NAIP) in December where he outlined the key challenges including widespread codeine abuse.

Labaran was adamant that Kano would not be dissuaded by the enormity of the task and would instead work in partnership with local police forces towards eradicating the problem.

Chairman of NAIP and Kano State chapter Pharmacist, Bala Maikudi, echoed the sentiments of the Governor but added that Kano was still a national leader in the production of Nigerian pharmaceuticals.

## Longer-lasting smartphone batteries to benefit Africa



A Finnish device reduces 3G power consumption by 70%, potentially easing smartphone use in developing nations

where power is in short supply.

Researchers at Aalto University in Finland developed a network proxy, which can help smartphones send and receive data with less battery drain. The proxy serves as a middleman between a mobile device and the internet, condensing data traffic into short bursts. The innovation puts the smartphone on idle mode between data transfers, rather than maintaining a steady bit transfer rate.

Developing nations may be the area of greatest growth for the battery-saving device. Smartphones can provide dependable internet access and a method for communication in countries lacking infrastructure, but the mobile devices' high energy consumption has been a barrier in areas with limited access to an electrical grid.

Mobile technology is on the rise in the developing world and smartphones are performing lifesaving functions in many countries. For example, cell networks are being used to send information and money to people suffering from oppression, famine, and drought

### UNAIDS congratulates United States' leadership to end AIDS

The Joint United Nations Programme on HIV/AIDS (UNAIDS) has congratulated President Barack Obama on his commitment to provide AIDS treatment to 6 million people by 2013 and reach 1.5 million pregnant women living with HIV to protect their children from becoming infected with HIV. This reinforces the collaboration between UNAIDS and the US on the global plan towards elimination of new HIV infections among children by 2015 – the foundation for an AIDS-free generation.

'The commitments made by President Obama will save lives and help move us towards an AIDS-free genera-

tion in Somalia.

Mobile devices are also on the forefront of public health in the developing world. The World Health Organization found 83% of developing nations use mobile technology for health services, such as sending text message reminders, informing patients of test results, and connecting healthcare practitioners in remote areas. In Kenya, a public health initiative is underway to register births and deaths with cell phones.

In Africa in particular, these types of initiatives are important because mobile network coverage is often available where other infrastructure, such as paved roads and electricity, are not. The increasing reliance on mobile devices for basic services may make the Finnish battery-extending proxy a valuable innovation there.

The Aalto University researchers studied internet use in the East African countries of Tanzania, Uganda, and Kenya. They found the proxy could be deployed across a mobile network to enable smartphone usage even in areas with no reliable source of electricity. They also found measures such as mobile optimised websites, HTTP compression, and more efficient data caching, especially when combined with their device, may help smartphone batteries last longer between charges.

tion,' said Michel Sidibé, Executive Director of UNAIDS.

World leaders have pledged to invest between US\$22–24 billion by 2015 for the AIDS response. In recent years, international assistance has begun to decline, jeopardising the ability of countries to sustain and scale-up access to prevention and treatment services. UNAIDS urges members of the G8 and G20 to expand their investments in AIDS – domestic and international.

President Obama's call to step up HIV prevention efforts using high-impact combination tools, such as treatment as prevention, male circumcision, antiretrovirals to stop new HIV infections among children, and consistent condom use, has the potential to avert millions of new HIV infections.

### Make Agricultural innovation a priority says African conference

East and Central African countries have been called upon to establish a new generation of innovation-oriented agricultural universities that would help integrate research, training, and extension services.

The first General Assembly of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), held in Uganda last month agreed to foster partnerships within individual countries and across the region, including promoting closer collaboration between research, training, and extension service providers, and more private sector engagement in commercialising research outputs.

The new universities, it is recommended, would be anchored in ministries of agriculture but linked with other ministries such as education, environment, and transport, the aim being to eradicate the disconnection between National Agricultural Research Institutes (NARIs) and training in various faculties of agriculture at existing universities.

### Africa needs science first then technology, says top academic

Thomas Odhiambo, President of the African Academy of Sciences has hit out at aid agencies that he claims are hindering efforts to combat starvation in Africa by refusing to fund basic science.

While addressing the SOS Sahel Agency in London in December 2011, Odhiambo stated that advanced research such as molecular biology was needed to solve the problems faced by farmers and herders.

He said that while some of the blame for weak science lay at Africa's own door, naming among other things the poor state of universities and libraries, he also argued that Western donors were ignoring the need to invest long-term in medical research, forestry, and agriculture which he said was essential for economic development.

Odhiambo called for investors to prioritise research into pathogens, crops, and livestock native to Africa.

## Fatality rates on Nigerian highways among world's worst



Nigeria's roads remain neglected scenes of needless carnage; and despite the World Health Organization warning that Nigeria's traffic fatalities are among the highest in the world, the deaths continue unabated.

'For now, it's a death trap,' said Abdul-Azeez Ibraheem, a lecturer at Lagos State University who studied the traffic crashes.

Africa as a whole has one of the highest road traffic death rates in the world, a WHO 2009 study determined. Nigeria saw more than 47 800 people killed in traffic crashes in 2007 alone. Paved

roads only constitute 15% of Nigeria's total road network, and crashes happen with a horrifying regularity.

Speeding buses crash head-on into each other on a seemingly daily basis, as drivers who often take stimulants and liquor rush along unsafe roads. Passengers are crammed onto benches welded to the floor of former delivery vans. And long-haul truckers lose control of gasoline tankers that can explode into hellish infernos.

Nigeria has about 164 000 kilometers of unpaved dirt or gravel roads, which wash out in the country's rainy season and make travel impossible.

While the country earns billions of dollars a year from oil production, confusion over which roads remain a federal, state, or local responsibility sometimes delay repairs. Corruption plays another major problem, as some road projects often get budgeted for each year without any actual work being done.

For more information visit the interactive World Health Organization map on traffic deaths: <http://bit.ly/qCIZzN>

## Fund receives boost as private equity firm Aureos exceeds fundraising target

A private equity investment firm, Aureos Capital, has announced that recent fundraising efforts have proven effective as targets for their Africa Health Fund have been exceeded in 2011.

The Africa Health Fund which was set up in 2009 supports numerous countries by providing back up funding for medical services and products.

Although details about which countries will be assisted, and how funding will be disseminated are yet to be announced, Aureos are keen to herald the company's success in 2011 as particularly significant. Sev Vettivetpillai, CEO of Aureos Advisers said, 'the fact that we have exceeded our fund-raising target and attracted a wide range of investors in such a tough climate is testament to the Africa Health Fund's pioneering purpose.'

Aureos has now secured US\$105.4 mil-

lion from private sector investors the largest of which being International Finance Corporation (IFC), the African Development Bank (AfDB), DEG, and the Bill and Melinda Gates Foundation.

Securing further investment remains a priority with the company defining its core objective as helping low-income Africans gain access to affordable, high-quality health services while providing investors with good long-term financial returns.

Aureos is said to be finalising details with recourse to investing in 20 new schemes in the coming months, although no announcements detailing what these schemes are have been released.

One example of the nature of investments made by Aureos includes funding given to C & J Medicare Hospital, a healthcare provider in Accra, Ghana, which serves private patients, corporate customers, and additionally individuals attending the hospital's free-of-charge health screening drives.

## Budget for African public health systems given go-ahead

The Scientific Conference of the African Field Epidemiology Network (AF-ENET) has learned that an agreement has been reached between ministers from 10 African nations, that will allow funding for the training of public health system managers, to be available for the next 5 years.

The US\$61 million fund will prioritize epidemiology and other laboratory research, as well as educating public health workers in how to specialise in disciplines that will strengthen public health throughout the continent.

The task of approving the fund as well as deciding how the money will be spent fell to ministers for health from DRC, Ethiopia, Ghana, Mozambique, Nigeria, Rwanda, South Sudan, Tanzania, Uganda, and Zimbabwe, and was a key feature of the Dar es Salaam Agenda for Action on public health systems.

Closing the conference, the Deputy Minister for Health and Social Welfare, Dr Lucy Nkya, hailed the initiative as a positive step forward and an example of African nations working together towards improving public health in Africa.

## Surgeons slash cost of life changing hernia operations with mosquito nets

Surgeons from Operation Hernia, an organisation providing low-cost surgery in developing countries, have found that one mosquito net, bought for around US\$15, could be cut into enough meshes for around 3000 operations.

Each operation using the inguinal hernia repair technique costs just US\$13 including the costs associated with sterilisation and surgery.

Use of the polyester nets replaces use of the nylon version (which was previously trialled but raised safety as well as cost concerns), resulting in a procedure said to be approximately three times cheaper than its predecessor.

In response to questions raised about the safety of the modified procedure, the team claimed that simple steam or chemical sterilisation was sufficient, adding that the greater threat to patient health lay in the hands of under-qualified staff administering treatment.

## Unqualified Ugandan Nurses putting patients at risk



Nurses from Kampala, Uganda are slated as being among the most prolific offenders in the growing problem of those practising medicine without qualification within the country.

Examinations of historic cases of medical negligence have revealed shocking evidence of the impact this has had on both patients and their families.

The 2009 case of 1-year-old Michael Mugwanya who was injected with a high dose of the anti-malarial alkaloid quinine by an unqualified nurse is one such example of the type of procedures being undertaken. Although the case was not fatal, the infant suffered extensive tissue loss and life-threatening sepsis, followed by a protracted and highly distressing period of illness.

Today, thousands of Ugandans are put at risk on a daily basis as they come into contact with and find themselves being treated by the reported 2300 unqualified nurses still working nationwide.

'These [fake] nurses lack clear knowledge of diseases and the specific medicine to administer, but even without such knowledge, they go ahead to administer the medicine, just to earn a living. In the process, people have died,' says Dr Diana Atwine, Director of the State House Medicines and Health Services Monitoring Unit (MHSMU).

Alarming the source of the problem appears to lie in the prevalence of illegal nursing schools. It was reported in October 2011 that the MHSMU had been made aware of 60 such establishments across the country.

The recession is also being cited as a cause for the growing problem, as unqualified nurses find it easier to find

work in cities, especially in slum areas where poverty is at its worst.

The Health Ministry has taken steps to combat the problem by staging stinging operations to expose unqualified nurses and target the medical facilities that house them. Government figures from March 2010 reveal that in Rubaga, of the 351 practitioners found in 100 clinics inspected, only 31% of the nursing staff possessed the requisite medical qualifications and only eight of these 100 clinics had valid operating licenses. Although Kampala has been highlighted as a particular problem the Ministry of Health has emphasised that this problem is endemic throughout Uganda.

Amid much finger pointing, the Ministry for Health has yet to announce a specific strategy for tackling the problem neither have any public consultations been announced, but ministers are allegedly urging the public to avoid small private clinics and to seek treatment at regulated hospitals and health centres.

- Meanwhile, the Uganda Nurses and Midwives Council (UNMC) has renewed calls to the government to address the lack of medical equipment available which, they claim, exposes field nurses to infections from patients.

Ms Jemimah Mutabazi, Chair of the UNMC said 'In Uganda's health sector, almost 80% of the work is done by nurses yet they are constrained by logistical resources.'

In addition, the UNMC will now demand talks with education and health ministers asking them to draw up feasible strategies for ensuring that nurses are adequately qualified and skilled upon graduating. 'Nursing students from the education ministry are slippery because most of them are qualified without skills. The Ministry of Health should intervene in this,' said Ms Mutabazi.

Ms Jane Achieng, the Director General of Health services in the Ministry of Health, said that more than 70% of health units were staffed by nursing assistants, putting the lives of patients in danger. She urged nurses to seek more robust nursing qualifications.

## Senegal's Health Minister puffs up at Marlboro execs

Philip Morris International – makers of the cigarette Marlboro – have come under fire for slashing the cost of a pack of 20 cigarettes by 40%, in a move Health Minister Modou Fada Diagne feels could prove 'catastrophic for the health of the people.'

Some have dismissed the price cut as cynical as there appears to be little financial incentive to do so in a country where 33% of the adult population, and 20% of young people already smoke.

Phillip Morris representatives have shot down claims that the price cut was a tactical response to government-set tax levels on the brand stating that the reduction merely aimed to bring the cost of Marlboro into line with other brands available in the country.

Unperturbed, the Senegal government will move to further increase tax rates and adopt tougher anti-smoking laws.

## Young lawyers canvas better reproductive rights for Nigerian women

Members of the Young Lawyers Forum, Nigeria, have claimed that constraints placed on women who wish to exercise their reproductive rights are having a detrimental impact on women's health.

Chairman of the Forum, Ilofuan Igbuan, who recently headed a team consultation with Ipas Country Director, Dr Ejike Oji, called for support in the advocacy of reproductive rights for women which, he considered a vital step in ensuring Nigeria's reputation as a progressive country.

Dr Oji, who has been inducted as a Fellow of the Society of Gynecologists and Obstetricians of Nigeria (SOGON), is sympathetic to the aims of the group and has pledged his support.

While Ipas have taken their reproductive strategies to around 40 countries in their fight against deaths in childbirth, it remains to be seen what impact this latest initiative will have.

## Family planning back on the agenda



international organisations to work together with the aim of making immediate and tangible change. One problem has been reaching women who live in rural communities and do not have access to

Population growth rates throughout Africa have again come to the attention of international agencies such as the World Health Organization and USAID who are concerned that family size undermines efforts to bolster economic development throughout the continent.

As such, new initiatives for education on family planning are being drawn up.

It has been reported that around 250 million women throughout Africa do not use any form of contraceptive.

An international conference on family planning in Senegal was held to address this as well as discovering ways for

contraceptives.

As well as educating women of child-bearing age there is also a call to include men in any education schemes as in a large number of cases men often control decisions about health-care within the home.

A similar conference held in Uganda revealed that the sexual health needs of people with disabilities was also considered to be of considerable importance, with reports of involuntary sterilisations and sexual abuse leading to unwanted pregnancies posing additional problems to be addressed.

## WHO calls for Nigerian commitment to combat malaria

The World Health Organization (WHO) has in its 2011 Malaria Report warned against complacency and called for renewed vigour from Nigeria and other African nations in the fight against the potentially fatal disease; this in the face of declining mortality rates across the board.

According to the report, success is the result of significant scaling-up of malaria prevention and control measures within the last decade, including the widespread use of bed nets, better diagnostics, and a wider availability of effective medicines. Investment remains a solid fixture with the United States Agency for International Development (USAID) pledging to Nigeria a top up donation of US\$82 million.

Making the disclosure at the launch of Malaria Action Projects for States (MAPS) in Abuja, the United States Ambassador to Nigeria, Mr Terrence McCulley, said Washington was resolutely committed to partnering with African countries to build capacity in stamping out the disease.

He said, 'Under the US-funded President's Malaria Initiative (PMI) there are plans to work with partners to reduce by half, the burden of malaria to 70% of the populations at risk in sub-Saharan African (approximately 450 million residents) thereby eliminating malaria as a major public concern and promoting development throughout Africa.'

The Minister of State for Health, Dr. Muhammed Pate, explained that Nigeria loses about N132 billion per annum with its current anti-malaria strategy which has had a knock-on effect on the national labour force.

## Approval of new science policy to revamp research in Botswana

Hopes of a brighter future for laboratory-based science in Botswana rest with the establishment of two new organisations that have been set up to oversee national research.

The Botswana National Research, Development and Innovation Coordinating Council (BNRDCC), which will be chaired by the country's science minister, will focus on funding strategies, while the existing Department of Research, Science and Technology under the Ministry of Infrastructure, Science, and Technology, will be transformed into a directorate primarily responsible for the creation of policy.

## New groundnut varieties can cut poverty

Amidst uncertainty over whether modified crop varieties can reliably lift peasant farmers out of poverty there emerges positive new evidence that this may well be the case, according to staff at the International Maize and Wheat Improvement Center (CIMMYT), in Kenya.

Okello David Kalule, Head of the Uganda National Groundnut Improvement Programme, said that although the new groundnut varieties produced superior yields, some farmers were still growing low-yielding varieties. The reasons for this, he added, included poor agricultural extension services and a lack of access to information about the new varieties. He called for better support of local institutions assisting farmers and greater access to seeds, credit, and information to increase both the spread and intensity of adoption.

## Double the funding for Kenya's women scientists

Kenya's National Council for Science and Technology is doubling its funding for women-only research grants to US\$1 million in 2012. The financial windfall has been earmarked for proposals for research projects in agriculture, health, energy, and technology.

Shaukat Abdulrazak the council's secretary said that 30 proposals would be funded from January 2012 with each eligible for a grant up to US\$90 000.