

Strengthening health workforce in Africa: a priority for the AfDB

A critical issue for African countries 'Human Resources for Health: foundation for Universal Health Coverage (UHC) and the post-2015 development agenda', was discussed among 2000 participants from 80 countries at the Third Global Forum on Human Resources for Health (HRH) which took place in Recife, Brazil last November. The conference was followed by a Board meeting of the Global Health Workforce Alliance (GHWA) to set up the future health workforce agenda, in which the African Development Bank is a participant.

Government officials, Ministries of Health and Finance, civil society organisations, global health experts and frontline health workers, leaders from academia, and policymakers gathered to discuss priorities for the post-2015 development agenda.

One of the key objectives of the 1-week event organised by the GHWA, under the patronage of the Government of Brazil, World Health Organization (WHO), and the Pan American Health Organization (PAHO), was the announcement of new political commitments for HRH that will accelerate progress towards UHC.

'The global community needs to

change its traditional approach to health workforce in a fundamental way. It is critical to adopt a comprehensive labour market approach to understand the market forces influencing both supply and demand of health workforce. This is particularly important to Africa with high disease burden and low density of health workforce,' said Agnes Soucat, AfDB's Director for Human Development and Senior Board Member of GHWA.

Soucat presented the Bank's vision for the next 10 years to build human capital in Africa, especially in the health sector, the labour market dynamics focusing on the health industry and the rapid growth of biomedical engineering and pharmaceuticals industries that need a new breed of highly educated and skilled professionals.

Feng Zhao, Manager of the AfDB Human Development Department called for a paradigm shift in global investments in health workforce.

Developing skills and using cutting-edge technologies to build human capital is at the heart of the AfDB's Strategy 2013–2022, which aims at transforming the continent, creating opportunities for inclusive and green growth.

Anti-malaria progress slows as fewer ITNs given out

Global efforts to curb malaria are stalling after a drop in funds to buy bed nets, according to the latest report from the World Health Organization.

For the second year in a row, WHO noted a dramatic decline in the number of bed nets given out to protect people from the mosquitoes that spread malaria. In 2010, 145 million bed nets were distributed; that fell to 92 million in 2011 and 70 million last year.

'Victory over this ancient foe is still a long way off,' WHO Director-General Dr Margaret Chan wrote in the report. WHO says it has less than half of the US\$5.1 billion it needs for its malaria efforts.

In December, the Global Fund to Fight AIDS, Tuberculosis and Malaria temporarily stopped buying bed nets from the two top manufacturers after a corruption scandal.

WHO estimated there were about 207 million cases of malaria and 627 000 deaths worldwide last year, with 80% of the cases in Africa. But those numbers come with a big disqualifier; credible figures are only available for countries representing about 14% of malaria cases worldwide.

WHO said it has so little information, it cannot tell if malaria cases are going up or down in the worst-hit countries, including the Democratic Republic of the Congo and Nigeria, which account for about 40% of the global caseload.

'These are the black hole countries,' said Jo Lines, a malaria expert at the London School of Hygiene and Tropical Medicine, who was not part of the WHO report. 'Not knowing what's happening in these wild places is a concern.'

The slowing progress makes it highly unlikely that WHO and its partners will achieve their target of reducing malaria deaths to 'near zero' by the end of 2015.



Smoker numbers edge close to 1 billion

Although smoking is becoming less popular in many parts of the world, the total number of smokers is growing, global figures reveal.

In 2012, 967 million people smoked every day compared with 721 million in 1980, data from 187 countries show. The rise is linked to population growth, according to researchers.

With the earth's population having more than doubled in the last 50 years to 7 billion, there are simply more people to take up the habit.

Some of the highest smoking rates are now seen in the developing world, according to the *JAMA* report from the University of Washington's Institute for Health Metrics and Evaluation (IHME) in the US. But global smoking prevalence has gone down.

Lead researcher Dr Christopher Murray, who is director of the IHME, said, 'Despite the tremendous progress made on tobacco control, much more remains to be done.'

The World Health Organization say millions of additional lives could be saved with continued implementation of policies such as increased cigarette taxes and smoke-free air laws.

Vitamin D 'boosts child muscles'

Higher levels of maternal vitamin D during pregnancy have been linked to better muscle development in children, say researchers.

The study on 678 children, published in *Endocrine Research*, showed vitamin D levels in the womb were linked to grip strength at the age of four.

The team at the UK's University of Southampton say the muscle boost could persist throughout life. Trials are taking place to see how effective pregnancy supplements are.

Most vitamin D is made by the skin when exposed to sunlight and supplements are offered during pregnancy.



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Malaria vaccines: next generation products by 2030?

The world should aim to have vaccines which reduce malaria cases by 75%, and are capable of eliminating malaria, licensed by 2030, according to the updated *2013 Malaria Vaccine Technology Roadmap*.

This new target comes in addition to the original 2006 Roadmap's goal of having a licensed vaccine against *Plasmodium falciparum* malaria, the most deadly form of the disease, for children under 5 years of age in sub-Saharan Africa by 2015.

The most recent figures by the World Health Organization indicate that malaria causes an estimated 660 000 deaths each year from 219 million cases of illness. Scale-up of WHO recommended malaria control measures has been associated with a 26% reduction in the global malaria death rate over the last decade. Effective malaria vaccines could be an important complement to existing measures, if they can be successfully developed.

Final results from Phase III trials of the most advanced vaccine candidate, RTS,S/AS01, will be available by 2015. Depending on the final trial results, and depending on the outcome of the regulatory review by the European Medicines Agency, a WHO recommendation for use and subsequent prequalification of this first vaccine could occur in late 2015.

The new roadmap, launched at the annual conference of the American Society of Tropical Medicine & Hygiene in Washington DC, and also announced in a letter published in *The Lancet*, aims to identify where additional funding and activities will be particularly key in developing second-generation malaria vaccines both for protection against malaria disease and for malaria elimination. These include next-generation vaccines that target both *Plasmodium falciparum* and *Plasmodium vivax* species of malaria.

'The new vaccines should show at least 75% efficacy against clinical malaria, be suitable for use in all malaria-endemic areas, and be licensed by 2030,' says Dr Jean-Marie Okwo-Bele, Director of WHO's Department of Immunization, Vaccines and Biologicals. 'The roadmap also sets a target for

malaria vaccines that reduce transmission of the parasite.'

The *2013 Malaria Vaccine Technology Roadmap* cites several reasons for the update, among them changing malaria epidemiology associated with the successful scale-up of malaria control measures in the last decade, a renewed focus on malaria elimination and eradication, in addition to the ongoing need to sustain malaria control activities, and new technological innovations since 2006 including promising early work on so-called transmission-blocking malaria vaccines.

WHO lists 27 malaria vaccine candidates currently in clinical trials, with most in early stages of testing; RTS,S/AS01 is the only one currently in late-stage development.

The Roadmap's vision centres on developing safe and effective vaccines against *Plasmodium falciparum* and *Plasmodium vivax* that prevent disease and death and prevent transmission to enable malaria eradication, and is built around two strategic goals:

- Development of malaria vaccines with protective efficacy of at least 75% against clinical malaria suitable for administration to appropriate at-risk groups in malaria-endemic areas.
- Development of malaria vaccines that reduce transmission of the parasite and thereby substantially reduce the incidence of human malaria infection. This will enable elimination in multiple settings. Vaccines to reduce transmission should be suitable for administration in mass campaigns.

The Roadmap is the result of a consultative process led by WHO, which brought together the global community of malaria vaccine researchers, and product developers, and is supported by an informally organised group of malaria vaccine funders. The Malaria Vaccine Funders Group comprises the Bill & Melinda Gates Foundation, the European & Developing Countries Clinical Trials Partnership, the European Vaccine Initiative, the European Commission, the PATH Malaria Vaccine Initiative, the US Agency for International Development, the US National Institute of Allergy and Infectious Diseases, the Wellcome Trust, and WHO.

Obesity quadruples to nearly 1 billion in developing world

The number of overweight and obese adults in the developing world has almost quadrupled to around 1 billion since 1980, says a report from a UK think tank.

The Overseas Development Institute said one in three people worldwide was now overweight and urged governments to do more to influence diets.

Globally, the percentage of adults who were overweight or obese - classed as having a body mass index greater than 25 - grew from 23% to 34% between 1980 and 2008. The majority of this increase was seen in the developing world, particularly in countries where incomes were rising, such as Egypt and Mexico. The ODI's *Future Diets* report says this is due to changing diets and a shift from eating cereals and grains to the consumption of more fats, sugar, oils, and animal produce.

A total of 904 million people in developing countries are now classed as overweight or above, with a BMI of more than 25, up from 250 million in 1980. This compares with 557 million in high-income countries. Over the same period, the global population nearly doubled.

At the same time, however, undernourishment is still recognised to be a problem for hundreds of millions of people in the developing world, particularly children.

Fit teenagers less likely to have heart attacks in later life

Researchers in Sweden have found an association between a person's fitness as a teenager and their risk of heart attack in later life. In a study of nearly 750 000 men, they found that the more aerobically fit men were in late adolescence, the less likely they were to have a heart attack 30 or 40 years later.

The study, published in the *European Heart Journal* found that the relationship between aerobic fitness and heart attack occurred regardless of the men's body mass index (BMI) when they were teenagers. However, fit but overweight or obese men had a significantly higher risk of a heart attack than unfit, lean men.

HIV causes structural heart disease

HIV causes structural heart disease, according to research presented at EuroEcho-Imaging 2013 by Dr Nieves Montoro from Madrid, Spain. The findings support the introduction of cardiovascular screening in all HIV patients, particularly those with a positive blood viral load.

EuroEcho-Imaging 2013 is the official annual meeting of the European Association of Cardiovascular Imaging (EACVI); it took place in December in Istanbul, Turkey.

Dr Montoro said, 'It is well known that patients with HIV have a high incidence of structural heart disease (mainly diastolic dysfunction and pulmonary hypertension) as measured by echocardiography, but the reason is not clear. We decided to conduct a study to evaluate whether the stage of HIV or the detectable blood viral load were related to the degree of heart disease.'

This prospective cohort study included 65 HIV patients (63% male, average age 48 years) who had dyspnoea (shortness of breath) graded as >I on the NYHA scale. The stage of HIV was determined by measuring the CD4 count and their opportunistic diseases. Also, the viral blood load was determined. Patients had a transthoracic echocardiogram to assess whether they had structural heart disease. The following cardiovascular risk factors were assessed: hypertension, diabetes, smoking status, dyslipidemia, and renal failure.

Nearly half of patients (47%) had

some form of structural heart disease, mainly left ventricular hypertrophy, left ventricular dysfunction, pulmonary hypertension, and signs of right ventricle failure. Patients with a positive blood viral load had a significantly higher incidence of structural heart disease than those with an undetectable load (75% vs 43%).

Dr Montoro said, 'We found that half of HIV patients with dyspnoea had echocardiographic evidence of structural heart disease. Our most interesting finding was that patients with a positive blood viral load had a significantly higher incidence of structural heart disease. In fact, having a detectable blood viral load nearly doubled the prevalence of heart disease, suggesting that HIV itself might be an independent causal agent.'

The amount of structural heart disease was not affected by whether or not the patient had AIDS, their gender, age, or presence of cardiovascular risk factors, although this is still a preliminary result and will have to be confirmed in further analysis.

Dr Montoro concluded, 'Detecting cardiac problems in HIV patients sooner, using a simple diagnostic tool like echocardiography, will enable us to treat them in the very early stage of the heart damage and improve their prognosis. Patients found to have a detectable blood viral load and/or structural heart disease should have closer follow-up by a cardiologist and their HIV specialist doctor.'

Swedfund invest in private hospitals in East Africa

Swedfund, the Swedish state's venture capital company, and The Africa Health Fund through The Abraaj Group, have announced an investment of US\$6.5 million in The Nairobi Women's Hospital, a private healthcare provider for women and their families (men and children) in East Africa.

This is the largest single foreign direct equity investment in private healthcare in Kenya this year. In 2010, the then newly formed Africa Health Fund invested in The Nairobi Women's Hospital. This further equity injection

validates the opportunity of investing in Africa's healthcare and is a further sign of investor confidence in Kenya's economy.

The objective of The Africa Health Fund is to increase access to, affordability, and quality of health-related goods and services for Africans, especially those at the bottom of the income pyramid.

Swedfund's mandate is to support private enterprise in developing countries, mainly by making equity investments and loans to companies that have a profitable track record but need capital and support in order to grow. Swedfund's portfolio includes holdings in around 70 companies around the world.

EDCTP African scientists awards

The European & Developing Countries Clinical Trials Partnership (EDCTP) has given its Outstanding African Scientist Award to Dr Glenda Grey (University of Witwatersrand and Medical Research Council, South Africa). Dr Graeme Meintjes (University of Cape Town, South Africa) received the Rising Star African Scientist Award. The awards consist of a recognition trophy and a cash prize of €10 000 for the Rising Star award and €20 000 for the Outstanding Scientist award respectively. These awards aim to further the research programmes of the winners and support other relevant research-related activities. The award ceremony took place at the EDCTP Africa Office in Cape Town, South Africa.

Dr Glenda Grey, the recipient of the Outstanding African Scientist award, is one of the world's foremost authorities on the HIV epidemic in sub-Saharan Africa.

Dr Graeme Meintjes, who received the Rising Star award, obtained his PhD in 2011 with a thesis that focused on the diagnosis, treatment and immunopathogenesis of paradoxical tuberculosis-associated immune reconstitution inflammatory syndrome (TB-IRIS).

Vitamin E 'beneficial' in dementia

A study in the journal *JAMA* found people with mild-to-moderate Alzheimer's disease on high doses of vitamin E had a slower rate of decline than those given a dummy pill.

They were able to carry out everyday tasks for longer and needed less help from carers, say a team of researchers from Minneapolis.

In the study, 613 people with mild-to-moderate Alzheimer's disease received either a daily dose of vitamin E, a dementia drug treatment known as memantine, a combination of vitamin E and memantine, or placebo.

The study found participants receiving vitamin E had slower functional decline than those receiving placebo, with the annual rate of decline reduced by 19%.

Those on vitamin E (also known as alpha tocopherol) also needed less help from carers.

Malaria treatment could improve in children

An analysis of patients from across the malaria endemic world suggests that a key antimalarial treatment could be improved by better dosing in young children.

Antimalarial drug resistance has hampered malaria control programmes for almost 60 years. A key factor in combatting this threat is to ensure that all antimalarial drugs are deployed in a way that ensures that the maximum number of patients are completely cured.

A study published in *PLOS Medicine* explored this issue by presenting the results of a large pooled analysis of more than 7000 patients with malaria from Africa, Asia, and South America. It presents a convincing argument for public health policy-makers to pay careful attention to dosing recommendations for artemisinin combination therapies (ACTs) when reviewing current drug treatment protocols, particularly for young children.

The paper examines the combination of piperazine and dihydroartemisinin, an increasingly common choice of treatment for patients suffering from malaria caused by the malaria parasite *Plasmodium falciparum*.

The results of the study, coordinated by the WorldWide Antimalarial Resistance Network (WWARN), show that while treatment of malaria with dihydroartemisinin-piperazine generally results in excellent patient recovery, young children are at higher risk of treatment failure and this may be due to their receiving an insufficient dose of the drug.

WWARN brought together 76 researchers worldwide who contributed individual patient data from 26 clinical studies. These data are being used to analyse the implications of different drug dosing levels of ACTs, for treatment efficacy. The results, which combine almost 70% of all available published data on this treatment, confirm that dihydroartemisinin-piperazine is highly efficacious curing more than 97% of patients.

However, the study also highlights that one-third of children aged 1–5 years received a dose of piperazine below that recommended by the World Health Organization. Furthermore, patients receiving a lower dose were slower to respond to treatment and had a greater risk of getting malaria again.

New solar lamp for African villagers



On a continent where more than half the population lives off-the-grid, many African villagers can neither afford nor acquire simple solar lamps. Instead, they have to rely on dangerous kerosene

products to light their homes. Five young men behind a new social enterprise called KARIBU hope their modular solar lamp can offer this remote clientele an affordable and healthy alternative.

Their study found that about 40% of African households contain four or five people. From the five countries studied – Ethiopia, Ghana, Kenya, Tanzania, and Zambia – each household's average monthly income ranges from US\$90–154. The recent university graduates behind KARIBU think they have found the solution to these problems with their company's new modular solar lamp. The

lamp breaks down into three components: solar panel, rechargeable battery and mobile phone charger, and light.

To make the lamp affordable, KARIBU plans to use a franchised business model of rent-to-own solar solutions. Small shop owners will purchase whole lamps. They will rent out the rechargeable batteries and lights to local villagers for a daily fee. 'They take it home. Their kids study at night. They can charge their mobile phone. They have a light in their house. It's great,' says Adam Camenzuli, KARIBU's Executive Director, adding that the solar lamp is about five times brighter and lasts slightly longer than the kerosene alternative.

Renters will return to the shopkeepers once their battery is out of power to recharge using the store's solar panel. Every time a villager purchases a recharged battery, they will be making an investment towards the solar panel. Once they have paid enough into the system, the shopkeeper will give them the panel, and the household will become 'solar independent.'

Preliminary success using 'probiotics' against hookworms

Laboratory animals fed a modified version of a common human dietary supplement were completely cured of intestinal worms that belong to a family of parasites that currently infect 1.5 billion people, or almost one-quarter of the world's population, according to new research presented at the annual meeting of the American Society of Tropical Medicine and Hygiene (ASTMH).

The study, conducted by scientists at the University of California, San Diego, focused on hookworms, common soil-transmitted helminths (STHs) that are found in soil that has been contaminated with human feces. Hookworms can linger in the intestines for years, where they feed on blood and tissue, robbing their hosts of iron and protein and interfering with absorption of critical nutrients. They frequently cause stunting and cognitive delays in infected children.

Asthma: altering diet may ease symptoms

Fruits, vegetables, and whole-grains might be an unlikely treatment for asthma according to animal studies.

Tests on mice, published in the journal *Nature Medicine*, showed that a high-fibre diet could reduce inflammation in the lungs.

The extra fibre changed the nutrients being absorbed from the gut, which in turn altered the immune system. The researchers argue the shift to processed foods may explain why more people are developing asthma. The airways are more sensitive to irritation and more likely to become inflamed in people with asthma. It leads to a narrowing of the airways that make it harder to breathe.

However, a possible solution may lie in another organ, the gut, and the bacteria which live there. The cells of the human body are vastly outnumbered by the trillions of microbes that live in and on it. There is growing evidence that these bacteria have a significant impact on health.

A team at the University of Lausanne in Switzerland showed that the high and low fibre diets altered the types of bacteria living in the guts of the mice.



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New ONE report: It's time to stop saying 'AIDS in Africa'

A new ONE report on the state of the global fight against HIV/AIDS has found widely divergent progress in efforts to control the disease, particularly across sub-Saharan Africa – so much so that the phrase 'AIDS in Africa' has become an anachronism.

'It's time to retire the phrase, "AIDS in Africa",' says Erin Hohlfelder, ONE's Global Health Policy Director. 'Our analysis shows major distinctions between leaders and laggards, and that a one-size-fits-all approach to tackling AIDS on the continent does not make sense.'

According to the data, 16 countries in sub-Saharan Africa have already reached the 'beginning of the end of AIDS,' defined as a time when the total number of new HIV infections is lower than the number of patients newly receiving AIDS treatment in the same year. At the same time, some African countries lag far behind.

ONE's report profiles nine African countries in detail, analysing their funding levels, national planning, and civil society engagement in tackling the disease. Leading the way are countries such as Ghana, Malawi, and Zambia, where governments, international donors, and civil society leaders have been working together to achieve dramatic progress against HIV/AIDS.

On the other end of the spectrum are countries like Cameroon, Nigeria and

Togo, where efforts to combat HIV/AIDS have been hampered by insufficient political will or competing political priorities, inadequate funding, poor delivery systems, and stigma against marginalised populations. Key countries to watch in the coming years include South Africa, Tanzania, and Uganda, where real, but erratic strides have been made in recent years.

Globally, the ONE report finds significant progress towards achieving the beginning of the end of AIDS. In fact, if current rates of progress continue, the world can reach that milestone by 2015.

The study finds that one of the most serious challenges facing the global fight against the disease is insufficient funding. According to UNAIDS, the effort is at least US\$3–\$5 billion short of the annual US\$22–\$24 billion necessary to turn the tide against the disease. With a few noteworthy exceptions, donor funding for AIDS has stalled, signalling that their financial commitments often do not match their rhetoric on ending the AIDS epidemic. Compounding this problem, the majority of African governments are not meeting their commitments to spend 15% of their budgets on health.

Moving forward, the ONE report recommends the launch of a 'prevention revolution,' particularly among youths and marginalised populations, in order to accelerate the global fight against HIV/AIDS.

UNAIDS welcomes support for the Fourth Replenishment for the Global Fund

UNAIDS has welcomed a US\$12 billion commitment by international partners to the Global Fund to Fight AIDS, Tuberculosis and Malaria at its Fourth Replenishment meeting in Washington, and fully supports the new funding model.

Opened by US President Barack Obama, the meeting was also an opportunity for world leaders and partners to review progress and look to the future.

The new commitments represent a sharp increase compared with pledges made at the previous replenishment conference of US\$9.2 billion. Shared responsibility by countries has also grown with the total global resources

available for HIV in 2012 estimated at US\$18.9 billion.

'These pledges are a demonstration of global solidarity and trust to move towards ending the three diseases,' said Michel Sidibé, Executive Director of UNAIDS. 'Support for the Global Fund comes at a crucial point – in many parts of the world we are entering into a 'make or break' point in progressing towards our goals.'

New HIV infections among adults and children have reduced by 33% since 2001. In addition, new HIV infections among children have decreased by 52% and AIDS-related deaths by 29% since 2005. More than 9.7 million people in low- and middle-income countries are now accessing HIV treatment, an increase of nearly 20% in just 1 year.

Eating nuts during pregnancy 'may curb allergies'

Children are less likely to have a nut allergy if their mother ate peanuts or tree nuts while pregnant, a study has concluded.

The work, published in the *Journal of the American Medical Association (JAMA Pediatrics)* looked at the health and diets of more than 8000 children and their mothers.

The US researchers believe that early exposure in the womb creates natural tolerance to certain foods. But the findings conflict with other studies that have shown either no effect or a possible risk from nut consumption.

Experts say this makes it difficult to offer firm advice to mothers-to-be, with the exception of women who are themselves allergic to nuts and should therefore always avoid eating them.

Nuts bad for oral health

Another nutty story tells us that nuts and acorns severely diminished the oral health of early humans, according to researchers at the *Proceedings of the National Academy of Scientists*.

The study collected evidence about hunter-gatherers who roamed northern Africa 15 000 years ago, and concluded that nuts helped their survival but led to tooth decay and bad breath among more than half the population.

Previously, researchers had thought that dental problems emerged along with the rise of farming cultures and processed food, about 10 000 years ago.

Hidden benefits of cinnamon spice

A well-used spice in Indian ayurvedic medicine, recent research confirms its healing properties. Researchers at the University of Toronto found that consumption of cinnamon can significantly reduce blood pressure, particularly in people diagnosed as pre-diabetic or type 2 diabetic.

Cinnamon seems also to have a beneficial impact of blood-sugar levels, possibly because it aids glucose control by enhancing the effectiveness of insulin. Cinnamon also kills off bacteria that cause gum disease. In Sri Lanka, cinnamon sticks are used as toothpicks.