

L **LORENZO SAVIOLI** of the Global Schistosomiasis Alliance discusses this devastating epidemic **P7**

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Infectious diseases

E **Elton John**
After 25 years of activism, Elton John gives a rallying call to end AIDS by 2030 **P5**



PHOTO: ELTON JOHN AIDS FOUNDATION

About one-third of the world's population has latent TB which means people have been infected by TB bacteria but are not (yet) ill with the disease and cannot transmit the disease.¹

Oxford Immunotec

1. WHO (www.who.int/tb/challenges/en)
2. WHO (http://www.who.int/tb/post2015/20150515_TB_2035_strategy_en.pdf)
3. WHO (http://www.who.int/tb/post2015/20150515_TB_2035_strategy_en.pdf)

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T-SPOT.TB

1. WHO and the United Nations (www.un.org)
2. WHO (http://www.who.int/tb/post2015/20150515_TB_2035_strategy_en.pdf)
3. WHO (http://www.who.int/tb/post2015/20150515_TB_2035_strategy_en.pdf)

**Dr Sandra Pearson**

On the importance of increasing clinical expertise on Lyme Disease in the UK

P4

**Simon Bush**

On the power and potential of technology to unite people against neglected tropical diseases

P8

**River blindness**

A video from the Mectizan Donation Programme on the spread and impact of this preventable condition

A new era in the fight against infectious disease

We stand at a turning point in the fight against infectious diseases. Great progress has been made, but the reality is we can't continue with the same approach. The landscape is changing fast, and we need to respond before decades of development is wiped out

On World Aids Day, it seems appropriate not only to look back, but also look ahead to the new challenges that face our generation in the fight against infectious diseases.

With all the advances in medical science and technology, we should be well placed to fight infection. But the reality is, we are no longer fighting the same diseases we had 20 years ago. New diseases are emerging and old ones re-emerging, infection is no longer confined by geographical borders and we've misused antibiotics to the point at which bacteria are immune to them. We are entering a new era and an

increased global effort is needed to win the fight.

One of the most urgent areas we need to address is drug-resistant bacteria. Recently, The Review on Antimicrobial Resistance, chaired by Jim O'Neill, painted a bleak picture, claiming that drug-resistant infections could kill an extra 10 million people across the world every year by 2050 if they are not tackled. Decades of misuse and over-use and a lack of research into new drugs have weakened antibiotics as an effective weapon.

As a result, not only do we need new drugs to be developed, we need to completely rethink our approach to how we use them. This needs to go hand in hand with



Professor Murat Akova
President, ESCMID

"Infection is no longer confined by geographical borders"

improved diagnostics. We still don't have the equipment widely available to accurately make point-of-care diagnosis, which means millions of infections are completely missed or misdiagnosed and treated ineffectively.

Of course, there are many viral infectious diseases that simply cannot be treated with antibiotics at all. As we saw with the ebola epidemic, outbreaks of a viral infection can be truly devastating. What can be done is prevention and we need to step up our research into improving vaccinations, and increase public health awareness. And this doesn't just mean in the developing world anymore. As people travel more freely, so

does infection, so the responsibility is a global one.

The challenge ahead is not easy, but it's not impossible. We've seen great collaboration and investment from governments, international organisations, non-governmental organisations, pharmaceutical companies, academia and grass roots communities to date. We now need to strengthen and extend partnerships as we enter this new season.

The media continues to play a vital role in keeping these issues at the forefront of public consciousness. The fact is, infectious disease is a global issue. It affects every one of us and we can all take steps to protect ourselves and hold those in authority accountable. ■

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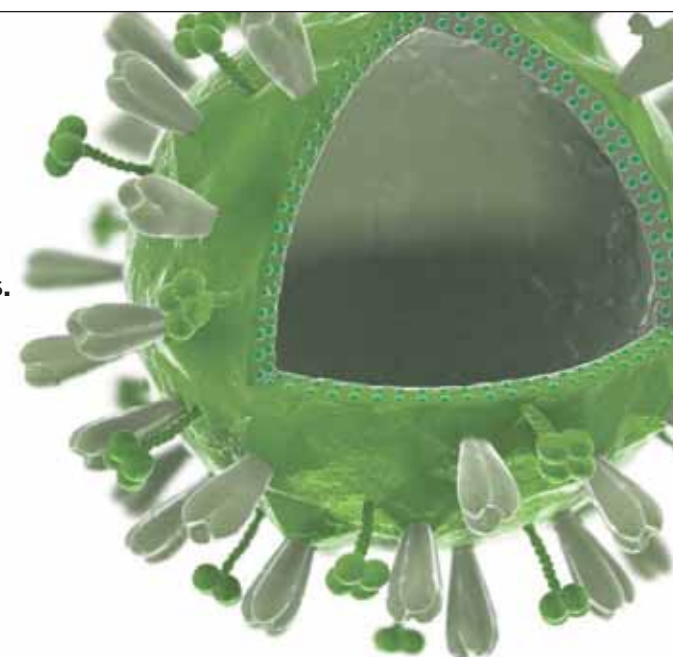
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- HIV (Phase I)
- Malaria (Phase I)
- Herpes Simplex Virus (HSV) (pre-clinical stage)

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COMMERCIAL FEATURE

Antimicrobial resistance: the Hydra among us

With increasing antimicrobial resistance, there is concern that we might enter an era where we lose the essential contribution of antibiotics in treating bacterial diseases. Thus, to increase awareness of global antibiotic resistance and to encourage best practices among the general public, health workers, and policy makers, the World Health Organisation has declared World Antibiotic Awareness Week for 16-22 November 2015. This initiative follows the endorsement of the Global Action Plan on Antimicrobial Resistance by the World Health Assembly in May, 2015, which calls on all member countries to adopt appropriate strategies within two years.

There is a fundamental challenge to any plan to adhere to the call of the World Health Assembly: most low-income and middle-income countries lack national surveillance systems for the prevalence of antimicrobial resistance. Implementation of antimicrobial stewardship plans at a national level is not possible if detailed information on the prevalence of antimicrobial resistance within the borders of a country is not available. Some countries such as India are slowly developing a national surveillance system, but it will take years to gather compre-

hensive data to develop a global picture of antibiotic resistance that is essential to put in place appropriate measures. But what should be the targets of strategies to fight antimicrobial resistance?

The Centre for Disease Dynamics, Economics and Policy recently published *The State of the World's Antibiotics, 2015*, which highlights how the growth of antimicrobial resistance over the past years has been principally driven by the inappropriate use of antibiotics in two main areas: human use without medical prescription or in the presence of alternative measures, and widespread use as growth promoters in animal farming. The indiscriminate use of antibiotics without specific medical control is a problem in countries where private citizens are able to purchase antibiotics over the counter without prescription. This situation can result in overuse of these drugs, use at suboptimal doses, and interruption of therapy courses if an early resolution of the symptoms occur, all situations that favour the emergence of antimicrobial resistance.

Substitution

Equally problematic as a factor that can promote antibiotic resistance is the use of antimicrobial agents as a substitute for good hygiene standards; this is a particularly sensi-

“Globally, rapid action is needed to gather comprehensive information on antimicrobial resistance”



Marco De Ambrogi

Senior editor, *The Lancet*
Infectious Diseases

tive issue in hospitals where the combination of a high density of patients, easy circulation of pathogens, and suboptimal hygiene standards can be explosive for outbreaks of diseases caused by bacteria resistant to antimicrobial treatment. Similarly, the use of antibiotics to promote the growth of farm animals is recognised as a relevant cause for the increase of antimicrobial resistance in recent years: in intensive farming, where animals are often housed in high numbers in limited spaces with poor hygiene conditions, antibiotics are used as prophylactic agents in food and water for the entire life of the animal.

The use of antibiotics in low doses in this context does not have a medical justification, but it is a widespread practice to overcome problems linked to overcrowding and poor hygiene. A ban on antibiotics as growth promoters was introduced by the European Union a decade ago and it did not lead to a substantial economic damage for farmers, especially when they already had good hygiene standards. Although few countries have followed this example, the situation could change very soon: in mid-October, California is expected to be the first state in the USA to pass a similar law banning the use of antibiotics for growth promotion in animals. There is hope that the same

legislation will be endorsed by other states of the USA, the country with the highest consumption per person of antibiotics in the world, 80 per cent of which are used for animals. Moreover, banning the use of antibiotics as growth promoters in agriculture will be crucial in those developing countries that are the main producers of meat, eggs, and fish, such as China, India, South Africa, and Brazil, where currently there is a lack of control in the use of antibiotics.

In these countries, the optimisation of farming conditions (separation of animals in age groups, use of vaccines, high hygiene standards) needs to be promoted in parallel with a more rational use of antibiotics.

Globally, rapid action is needed to gather comprehensive information on antimicrobial resistance, optimise hygiene standards in hospitals and farming, limit the use of antibiotics to cases where there is a medical or veterinary prescription, and enhance the awareness of resistance among the general public and the policy makers. Antibiotics are a precious resource that has changed the face of medicine - we cannot afford to lose their effectiveness in the fight against diseases. ■



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Dr Sandra Pearson

Medical director, Lyme Disease Action

Minister backs network of Lyme Disease practitioners

Reported cases of Lyme Borreliosis (LB) have risen steadily since the first UK case was reported in 1977. This infectious disease is carried by ticks throughout the UK, including urban green spaces. UK studies report about one in three people with LB did not see a tick. The characteristic spreading, non-itchy rash and initial flu like symptoms may be ignored. Disseminated disease can affect almost any part of the body, though individual presentations vary. Later symptoms may be non-specific, making diagnosis difficult.

The emerging nature of LB and the lack of UK clinical expertise has placed reliance almost exclusively on the blood test which is aimed at detecting antibodies to the disease. The specific antibodies that tests assess do not always develop in some people for a range of reasons, so negative test results in cases of LB can occur. Because of the inherent limitations in the serology tests currently used, a number of companies are working to produce better diagnostic tests.

A House of Lords debate in October 2015 resulted in the Health Minister, Lord Prior, backing Peers' call

for the establishment of a network of interested NHS practitioners across the country with multidisciplinary experience.

Although there is evidence that early treatment with antibiotics is almost always successful, the best treatment in late-diagnosed cases is unknown. Other infections carried by UK ticks can complicate diagnosis and treatment. Research has shown that the bacteria can survive recommended courses of antibiotics but persisting symptoms could in any one case be due to persisting disease, auto immune reaction or tissue damage. Although there is some UK guidance for Primary Care there is a lack of evidence regarding effective treatment of late-stage Lyme disease though repeat courses of antibiotics have been used successfully in the UK.

It is hoped that a UK regional service could foster expertise and experience both to support local doctors and develop an understanding of the inherent complexity of late LB. ■



Read more at globalhealthaction.co.uk



Dr Greg Ussher

CEO, METRO Charity

HIV: on the cusp of a brutal storm

Thirty years ago little was known about HIV, medication wasn't available and social stigma was a huge problem. Today, things have progressed, but more needs to be done to remove the barriers that prevent the most vulnerable accessing support.

Of the roughly 85,000 people with diagnosed HIV in the UK, about 90 per cent are receiving treatment and, if taking it correctly, the virus can be suppressed to the point at which it is 'undetectable.' What this essentially means is that their disease progression has been halted and that it's very difficult to pass on to sexual partners. However, managing HIV has medical, psychological and social implications and finding the right help can be challenge. On a practical level, individuals need to access the right treatment and healthcare support. However, since many living with the disease come from vulnerable communities, there is also a huge need for services such as benefit support and housing advice.

"We've seen demand for our services increase but simultaneously had funding cut," reports Dr Greg Ussher, CEO of METRO Charity who provide practical support for individuals and families coping with HIV. "Many of our clients are now in the middle of a brutal storm where they can't access support and suffer increased hardship, distress and isolation."

In addition, stigma remains a huge challenge. "We know that our clients are battling with issues of identity and hate crime," continues Dr Ussher. "It can be a lethal cocktail and severely impacts their mental health and wellbeing." In spite of all the medical advancements, there is still a long way to go to ensure those living with HIV can get the support they need. ■

LDA

Lyme Disease Action

www.LymeDiseaseAction.org.uk



Information and links to

- ⇒ PHE suggested referral pathway
- ⇒ NICE Clinical Knowledge Summary
- ⇒ LDA's Medics support line
- ⇒ RCGP e-learning module
- ⇒ Explanation of Lyme serology

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Let's end the AIDS epidemic together

Elton John

Musician and founder, Elton John AIDS Foundation

I have been part of the fight to end AIDS for 25 years. In that time there have been so many predictions, deadlines and targets. Some have been wrong: AIDS did not become a universal killer as was once feared but it did tear through the heterosexual community in Africa, which still accounts for the majority of AIDS deaths worldwide. The global response didn't manage to put three million people on HIV treatment by 2005 as the World Health Organisation challenged us to, but that target accelerated progress and today ten million people around the world have been saved by antiretroviral medication.

This World Aids Day, there's a target and a prediction we should all focus on: ending

the AIDS epidemic by 2030 or facing a return to the darkest days of the disease. At the United Nations General Assembly this year, world leaders committed themselves to the 2030 target. Why? The medicines we now have, as multiple clinical trials prove, are cheap and effective enough to return patients to normal life expectancy and reduce their infectiousness to others by up to 96 per cent. Add to this pre-exposure prophylaxis, male circumcision, prevention of mother to child transmission, paediatric care and support, and we have the arsenal to reduce AIDS from the headline of infectious diseases to a footnote.

If we don't deploy the arsenal now, we risk a mutation of the HIV virus and the long, hugely costly road to new medical

formulations. At the same time, a global population bulge amongst youth who, with or without their consent are becoming sexually active means the next generation is at risk. Indeed AIDS is the second largest killer of adolescents in the world.

And finally, and always, there is stigma. Compounded more recently by homophobic laws in many countries, the spectre of shame that hangs over HIV and how it's transmitted is still enough to keep the most vulnerable - LGBT, drug users, sex workers, people in prison - cowering in the shadows.

The Elton John AIDS Foundation will do everything we can to help reach the 2030 target. This year, we launched a new \$10m fund in partnership with the US government's PEPFAR programme which

will support thousands in LGBT communities across Africa with HIV testing and treatment. We've also established an initiative called Young Survivors to link all adolescents living with HIV to medical care in five major cities.

I am heartened by the amazing work of so many agencies and institutions around the world, some featured in these pages, and the governments, grant makers and individuals that support them to defeat AIDS. I'm truly hopeful that 2030 is a target we can achieve. I'd give anything to be an old man in an AIDS-free world! ■



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Getting medicines to Precious

Scaling-up life-saving treatment for severe malaria

On Sunday 3 May, 2015, 11-month-old Precious Adebayo was admitted to the General Hospital Okeho, Ibadan, Oyo State, Nigeria, and was quickly diagnosed with severe malaria.

His mother, Bosede Adebayo recalls: "Precious started vomiting and had diarrhoea. He had a high temperature and within a short time became very weak. I had to rush him to the hospital. I was so afraid that I left him in God's and the doctors' hands."

Dr Olusola Ayeleke, the treating physician immediately administered the

first dose of injectable artesunate¹ and after three days Precious was well enough to be discharged.

"The response to treatment was very encouraging and amazing," said Dr Ayeleke. "Precious responded quickly. Following the first dose there was significant improvement and by the time the second and third doses had been administered, he began eating well, taking oral medications and was good to go."

Dr Ayeleke attributed Precious' recovery to the use of injectable artesunate provided to the hospital through the Improving Severe Malaria Outcomes (ISMO) project, supported by UNITAID, Medicines for Malaria Venture and the Malaria Consortium in collaboration

with the Oyo State Government. "Before the project, treating severe malaria was really challenging because we were using intravenous quinine," he said. "There was increased mortality due to malaria. Intravenous quinine is associated with more side effects and must be administered more frequently. Injectable artesunate makes the management of severe malaria easier and more fruitful."

"After the ISMO training, health workers can use injectable artesunate to treat severe malaria patients," said Dr Campbell Ibijoke Oluyomi, consultant paediatrician in charge of Oni Memorial Children's Hospital. "It is very fast acting and so patients recover from the

"Every year around half a million children under five years of age die from severe malaria"



Olatunde Adesoro
Project manager (ISMO),
Malaria Consortium

condition quicker and are no longer dying from severe malaria."

Every year around half a million children under five years of age die from severe malaria. Injectable artesunate has been the World Health Organisation-recommended treatment since 2011 – as it saves more lives than other injected malaria medicines. The problem is many health facilities in malaria-endemic countries still lack access to injectable artesunate and continue to use less effective treatments.

The increased uptake and use of injectable artesunate by healthcare workers across the malaria-endemic world will help save the lives of more children like Precious. ■



PHOTO: MALARIA CONSORTIUM

¹ For full information on injectable artesunate safety and efficacy please refer to WHO's prescribing information: <http://apps.who.int/medicinedocs/en/d/Jh2922e/2.5.11.html#Jh2922e.2.5.11>

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PHOTOS: MECTIZAN DONATION PROGRAM
Mectizan distribution, Gbatong, Central African Republic



FACTS

Schistosomiasis

is the biggest killer you've probably never heard of.



More than

249 million

people have schistosomiasis with **200,000** deaths / year



More than

700 million

people are at risk across 78 countries



The goal of

elimination

of this disease is achievable

Source: Global Schistosomiasis Alliance

Schistosomiasis: The vision for elimination

Schistosomiasis is a disease of poverty. It is far-reaching, posing a threat to over 700 million people, primarily in the world's most impoverished rural communities

This water-borne parasite is one of the most devastating NTDs in terms of public health burden and economic impact, but the solutions to control and ultimately eliminate it are known, inexpensive, and within our reach. Despite this, in June 2015 schistosomiasis was the only NTD to score 'red' in Uniting to Combat NTDs' third annual progress report. It is clear that we must take urgent action.

There is a growing momentum behind the achievable goal of elimination. Treatment is very effective, with up to 250 million tablets of praziquantel a year being donated from 2016. This donation has created a unique window of opportunity to accelerate progress and we must ensure this opportunity is not lost.

The primary vehicle to achieve schistosomiasis elimination is available, effective, and free to those that need them. Therefore, with the medicines available the solution now lies largely in preventative chemotherapy,

also known as mass drug administration (MDA). Collaborative action between stakeholders at all levels is now urgently needed to mobilise the delivery of hundreds of millions of praziquantel tablets from warehouses to the remote communities where they are so desperately needed, especially in Sub-Saharan Africa. Combining this with adequate hygiene and sanitation, access to safe water, vector control, and education programmes, we firmly believe that schistosomiasis can be eliminated.

The Global Schistosomiasis Alliance (GSA), founded in December 2014, is made up from a group of leading global health experts, financial donors and key stakeholders in water sanitation who have pledged to work together to reach the targets set by the World Health Organisation to eliminate schistosomiasis. This all-inclusive partnership aims to capitalise upon the growing momentum already in evidence towards an ambitious but achievable goal.

"It is clear that we must take urgent action against schistosomiasis"



Dr Lorenzo Savioli
Chair, Global Schistosomiasis Alliance

In Africa we can take inspiration from recent successes seen in Zanzibar, where the Zanzibar Elimination of Schistosomiasis Transmission project has been making strides towards elimination on the islands of Unguja and Pemba since July 2011. Along with six rounds of MDA the project also includes snail control (spraying infested water bodies with niclosamide to reduce the snail population), and behavioural change with schistosomiasis awareness days in schools and safe urinals and washing areas in communities.

Crucially, the GSA is working to ensure that schistosomiasis is considered a priority by national governments and consequently that the WHO targets of regularly providing preventive treatment to 75 per cent of school-aged children in all endemic countries and eliminating schistosomiasis regionally, in the Americas and Western Pacific, and nationally, in selected African countries, by 2020 can certainly be achieved. ■

The Global Schistosomiasis Alliance

The final piece of the puzzle

Schistosomiasis is the biggest killer you've probably never heard of.

The GSA strives to control and eliminate this disease to free children from a vicious cycle of poverty.

www.eliminatestschisto.org

The puzzle pieces contain the following text and icons:

- Top Left (Blue):** >249 m people have schistosomiasis with 200,000 deaths / year. Icon: Staircase.
- Top Middle (Orange):** >700m people are at risk across 78 countries. Icon: Map of Africa.
- Top Right (Blue):** Reducing infection will empower the next generation. Icon: Children playing in water.
- Middle Left (Orange):** We must maximise the window of opportunity and strive for elimination. Icon: No-fly sign.
- Middle Center (White):** GSA GLOBAL SCHISTOSOMIASIS ALLIANCE. Icon: GSA logo.
- Middle Right (Green):** Governments and international partners must work with us. Icon: Group of people.
- Bottom Left (Green):** The solutions are inexpensive and accessible. Icon: House.
- Bottom Middle (Blue):** Merck is donating up to 250m tablets of Praziquantel/year. Icon: Pills.
- Bottom Right (Orange):** Good sanitation and clean water stop re-infection. Icon: Water tap.

INSPIRATION

COLUMN



Michel Sidibé
Executive director, UNAIDS

Ending the AIDS epidemic by 2030

As we mark World AIDS Day, we stand at a crossroads in the response to the epidemic. Hard work, political commitment, community engagement and financial investment over the past 15 years have provided us with a golden opportunity to end the AIDS epidemic—we must not squander it. By choosing the right path now we can break the epidemic over the next five years, plotting a course to end AIDS as a public health threat by 2030. Choose the wrong path and we will see the epidemic rebound with tragic consequences.

Since 2000, the global response to HIV has averted 30 million new HIV infections and nearly eight million AIDS-related deaths. Back then, fewer than 700 000 people were accessing anti-retroviral therapy. Today, more than 15 million people are accessing the life-saving medicines. A historic and ambitious treatment target—to ensure that 15 million people have access to HIV treatment by 2015—has not only been met but exceeded. That's great news.

But now we have to take the AIDS response to another level. AIDS is unfinished business and it will require renewed energy and dedication from all of us to reach the goal of ending the epidemic by 2030 as part of the Sustainable Development Goals. Of the 36.9 million people living with HIV today, almost half remain unaware that they are HIV-positive. There are 22 million people not accessing the treatment that would keep them alive and healthy and prevent the virus being transmitted to other people.

Fast-tracking the AIDS response

UNAIDS has a plan to end the AIDS epidemic by 2030: the Fast-Track approach. This means front-loading investment over the next five years to reach an ambitious 90–90–90 treatment target by 2020. Reaching this target would see 90 per cent of people living with HIV knowing their HIV status, 90 per cent of people who know their HIV-positive status accessing treatment and 90 per cent of people on treatment having suppressed viral loads. The Fast-Track approach will also reduce new HIV infections by 75 per cent and realise our vision of zero discrimination.

Reaching the Fast-Track Targets by 2020 means we will have broken the epidemic and from 2021 less money will be necessary each year to end the epidemic by 2030. Increasing current investments by US\$ 12 billion a year would produce benefits of more than US\$ 3.2 trillion that extend well beyond 2030—a return on investment of nearly US\$ 17 for every US\$ 1 invested.

Leaving no one behind

To be successful, the Fast-Track approach must be grounded in human rights and put people-centred policies and programmes at the forefront. Until now, progress made against the AIDS epidemic has not been shared equally. This is a social injustice. People are being left behind because they continue to face stigma and discrimination, human rights violations, gender inequality, violence and punitive laws.

Ensuring that women and girls are empowered to protect themselves from HIV is crucial. AIDS-related causes are still the leading cause of death among women of reproductive age globally, while around one in five new adult HIV infections occur among young women aged 15 to 24. The human rights of women and girls must be respected. These include the right to make decisions about their own health and the right to assume control over matters related to their sexuality, including sexual and reproductive health, free of coercion, discrimination and violence.

AIDS is also the primary cause of death among adolescents in Africa and the secondary cause of death among young people worldwide. Many young people are still unaware of their risk of HIV exposure or how to protect themselves. It is essential that they have unimpeded access to HIV testing and treatment services as part of quality sexual and reproductive health care. Sex workers, gay men and other men who have sex with men, transgender people, people who inject drugs, prisoners and migrants must be able to access appropriate services and targeted programmes that keep them healthy.

A commitment to ending the AIDS epidemic

In September, world leaders signed up to ending the AIDS epidemic by 2030 as part of the Sustainable Development Goals. The science and tools are at hand. The UNAIDS Fast-Track approach provides a clear road map: front-loading investment, respecting human rights and promoting people-centred programmes and service delivery.

How the world responds over the next five years will determine whether another generation of young people grows up with the epidemic or whether the AIDS epidemic is ended as a public health threat within 15 years. By following the Fast-Track approach, we can avert 21 million AIDS-related deaths and 28 million new HIV infections by 2030.

On this World AIDS Day, let's make sure we choose the right path—let's break the AIDS epidemic. ■

Read more at
globalhealthaction.co.uk

PHOTOS: NICHOLAS AXELROD / RESULTS UK



A community health worker screens Eut Pov for tuberculosis at his home in Stea Meanchey, Cambodia

Could an end

A new report calculates that we can prevent disease as well as research and development

The Global Plan To End TB, published by the Stop TB Partnership, proposes that 2015 should be a turning point in the battle against what has become the world's deadliest killer. Whilst deaths from TB have fallen 47 per cent since 1994 thanks to improved diagnosis and treatment, in 2014 3.6 million cases of the disease remained undiagnosed and untreated, with 1.5 million deaths in 2014 alone. As progress against multi-drug resistant TB and TB-HIV co-infection stalls, the Global Plan calls for the world to ac-

celerate its response. "For the first time we can see the end of TB with a global, costed plan, underpinned by the ambitious strategy of the WHO to end TB," explains Aaron Oxley, director of RESULTS, a member of the Stop TB Partnership. "What the Global Plan does is provide a road map to show what needs to be done and the resources that are needed to do it."

Targets have been set by WHO to reduce the number of TB deaths by 90 per cent by 2030 (compared with 2015 levels) and cut new cases by 80 per cent. However, the Global



Community health workers meet with the Sokha family in Steung Meanchey, Cambodia to discuss the symptoms for tuberculosis. Steung Meanchey has high rates of TB due to overcrowded living conditions and poor nutrition

End to tuberculosis be in sight?

10 million people from dying from tuberculosis (TB) if we channel investment into both fighting the spread of treatments, putting the world on the path to eliminating the disease

Plan calculates that in order to reach these goals, a significant increase in funding is required along with a shift in attitudes toward the disease.

"TB has never received vital political attention or large amounts of funding," says Oxley. "There has been chronic underinvestment and we are now seeing this stagnate, or even decline in some areas such as research and development."

Improved Diagnostics

A lack of diagnostic capacity has hampered an effective response, particularly in HIV-associated and

drug-resistant TB. The most widely used method to detect TB is to simply look for the germs under a microscope. However, this doesn't detect drug-resistance and further tests are required. The World Health Organisation estimates that only 26 per cent of the global total of people with drug-resistant TB are being diagnosed.

The use of a rapid molecular diagnostic tests has expanded substantially since 2010, giving a more accurate diagnosis and a quicker response, but more investment is needed to ensure coverage is extended and to continue developing tests



Aaron Oxley

Director of RESULTS UK and the Developed Country Civil Society constituency representative to the STOP TB Partnership Board

that can be used at the point-of-care.

Alongside advancements in diagnostics, significant investment is also needed to develop new drugs and vaccines. Drug-resistant TB poses a huge threat, and only 50 per cent of patients successfully complete treatment. In addition, extra attention needs to be given to treating those with TB who are also HIV positive, as TB now accounts for one in every three deaths among people living with HIV.

Encouraging Results

Whilst the challenges remain immense, change is possible. "People

say it can't be done, but, the reality is that it has already begun," explains Oxley. "In South Africa they made the bold decision to role out the latest molecular diagnostics across the country so everyone would have access. The impact has been remarkable."

The Stop TB Partnership hope the latest plan will give the global community both the tools and the inspiration to step up their efforts to tackle TB. "We are in better position than ever before, and we know just what we need to do," concludes Oxley. "It's time to end TB." ■



Women and HIV testing

Q&A with **Professor Jane Anderson**

HIV, Sexual and Reproductive Health, Well-being Directorate of Public Health England & consultant physician in HIV Medicine, NHS Foundation Trust

In the UK, are pregnant women routinely offered an HIV test to prevent their babies becoming infected?

■ Yes. This is because one route of transmission is through the womb. As a result, we now have some of the best outcomes in the world around HIV and pregnancy. Fewer than 1 in 1,000 babies born to women with HIV acquires infection themselves.

Which women are not seen as 'high risk' for HIV?

■ Women who are not pregnant and older women are not necessarily seen as being at risk of HIV, and may not be routinely offered an HIV test. This means that, among this group, there tends to be a higher proportion of women who go undiagnosed; plus there's a higher proportion who are diagnosed positive at a later stage of infection. So it's important that women understand their risks and that they are properly looked after by the healthcare system. Women could be offered an HIV test when they go for their mammogram or cervical screening, for example, and in some places they are — but it's certainly not universal.

Are women more vulnerable to HIV?

■ Yes they are, due to their biological make-up and social situation. It is much harder for women to insist on condom use, for example, and it's not always easy for them to negotiate the kind of sex they want to have. That's because the power dynamic may be weighed against the woman in a relationship. There is also a link between domestic partner violence, sexually transmitted infections and HIV. So it's very important that women are able to access HIV advice, care and support.

Do women access healthcare differently?

■ They do. They tend to see their GP more than men, for instance. So this means we should ensure that the needs of women around HIV are well understood in general practice.



PHOTO: THINKSTOCK

One in 20 gay and bisexual men are living with HIV; and one in five of that number are undiagnosed

Make sure you are regularly tested for HIV

By **Tony Greenway**

The medical breakthroughs surrounding HIV have been hugely positive — but it's not a healthcare issue that's going away. Regular HIV testing is therefore essential.

In recent years, there have been huge breakthroughs in treatments for HIV. This is an immensely welcome step forward notes Professor Jane Anderson, Consultant Physician in HIV medicine at Homerton University Hospital in Hackney. It means that, with early intervention, people diagnosed with HIV can expect to live as long as those who are HIV-free.

However, a range of better treatments doesn't mean that the threat of HIV has disappeared. In fact, more people than ever are living with HIV in the UK. Figures from HIV Aware show that one in 20 gay and bisexual men are living with HIV; and one in five of that number are undiagnosed. "We have lost our early impetus," says Professor Anderson. "There has been less coverage in the media and a pervasive sense that 'it couldn't happen to me — but, even if did, treatment is available.' So the foot has been taken off the pedal — yet HIV remains a real problem."

Regular HIV testing is an important intervention, therefore, especially among those who are likely to be particularly at risk. These include gay men, people from African communities, anyone who has been sexually active in an area of the world where HIV is endemic, sex workers and those who share needles.

Benefits

"The benefit of a test is that if you know you have HIV, you can access treatment and care that will keep you well," says Professor



Professor Jane Anderson

HIV, Sexual and Reproductive Health, Well-being Directorate of Public Health England & consultant physician in HIV Medicine, NHS Foundation Trust

Anderson. "Effective treatment means that you are much less infectious. Also, if your test is negative you can continue to take measures to prevent HIV; and the more people who take HIV tests, the more common it becomes, and the more likely people are to begin to talk more openly about HIV. It becomes a virtuous cycle."

Testing can be carried out in a variety of ways: a simple blood test or mouth swab taken by a healthcare professional; self-testing kits (launched in April of this year); plus home finger-prick sampling (where you send a blood sample to a laboratory for analysis). If a test is positive, support is available, depending on how and where you chose to take your test. With the home sampling service, for example, you will be contacted by an HIV support group who will support you and ensure that you can quickly access the right HIV services. In healthcare settings, the majority of HIV testing takes place within sexually-transmitted infection clinics, run by trained professionals used to supporting those with HIV. Online support and support from charities is also available.

In the UK, millions of HIV tests

are carried out in sexually transmitted infection clinics every year, although numbers of tests in other settings — such as general practice — are harder to quantify. "In some healthcare environments, tests are not always offered when they should be — so there is a gap," says Professor Anderson. "But anyone can ask for an HIV test wherever they feel most comfortable: with their GP, at a clinic or online, for example."

Awareness

In some parts of the world, awareness around HIV testing is more advanced than in the UK. "There is some really innovative practice in countries which have major HIV epidemics," says Professor Anderson. "In parts of Africa, for example, there are community testing programmes which have much greater reach than we do here in the UK. But it should be noted that, in the UK, data shows that, among all those who are living with HIV, the proportion who are diagnosed is 83 per cent. In America it's a similar number. That's a good measure of how effective a country's testing programme is."

Overall, the message is don't be afraid to get tested, says Professor Anderson. "Early intervention can make a big difference to your long-term health and wellbeing."

Yet it's important to remember that today's effective, life-prolonging HIV treatments shouldn't be regarded as a green light for unprotected sex. "If you have HIV, it certainly complicates your life," says Professor Anderson. "So if people are repeatedly putting themselves in risky situations and repeatedly getting negative test results, they might feel invulnerable. But they aren't — so 'practice safe sex' is still a vitally important message to get across." ■



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INSPIRATION

 COLUMN


Simon Bush

Director of neglected tropical diseases at Sightsavers

Technology and people power unite to eliminate neglected tropical diseases

New technology is advancing the fight against neglected tropical diseases (NTDs), but successful elimination still relies on community mobilisation.

According to Simon Bush, director of neglected tropical diseases at Sightsavers, there's currently a major shift taking place in the fight against NTDs. "We're seeing a big change at the moment, from controlling NTDs to eliminating them," reports Bush.

Elimination essentially means reducing transmission of a disease to a level where there are very few new cases in a defined geographical area. With this shift comes the need for more effective monitoring, which is where technology comes in. "We led a UK government funded global trachoma mapping project to collect data on trachoma cases within communities in 28 countries using android phones," continues Bush. "Within three years we collected data that previously took 12 years to compile."

Armed with this information, appropriate treatment can be targeted more efficiently. The World Health Organisation, pharmaceutical companies, research institutes, national governments and international and local NGOs all play their part in ensuring drugs get to those who need them, but it's the communities who make things happen. "All programmes rely on volunteer community drug distributors," says Simon. "These are the real heroes. We can only get the drugs so far, these are the people delivering the programme on the ground."

From distributing drugs, to spearheading improvements in sanitation and hygiene practices, local health workers are vital in establishing sustainable programmes. As the focus moves from control to elimination, their hard work, aided by technology, continues to advance the fight against NTDs. ■

 Read more at globalhealthaction.co.uk

Taking risk is essential in fighting NTDs

Targeting regions with the greatest burden of neglected tropical diseases (NTDs) is the next step toward their elimination. However, this will require a new approach, a shift in attitude and a willingness to take risks

By **Kate Sharma**

“The greatest challenge is to reach populations in countries in conflict or those that have recently experienced civil unrest,” says Richard Allan, founder and director of the Mentor Initiative. “There is a huge sense of urgency that hasn’t yet been realised, particularly in relation to Central African countries such as South Sudan, Central African Republic, Democratic Republic of Congo and Angola.”

Whilst the global figures show great success in the fight against NTDs, more localised mapping indicates that the burden still lies in a small cluster of countries that have experienced recent humanitarian crises.



PHOTO: ADAM PETTO

Richard Allan

Founder and Director, the Mentor Initiative



Read more at globalhealthaction.co.uk

For example, South Sudan, boasts the highest burden of blinding trachoma and 90 per cent of cases of sleeping sickness can be found in South Sudan, northern Angola and the Democratic Republic of Congo.

Within a war zone, the playing field shifts all the time as the destruction of communities creates breeding sites for many diseases and forces people to live often in temporary and unsanitary conditions, making them more vulnerable to infection. Add to that the lack of health care access, and it's easy to see how epidemics emerge.

“Leishmaniasis, transmitted by sandflies in Syria, is just one example,” continues Allan. “The annual case load increased from 30,000 to 200,000 as a direct result of conflict.”



REDUCING DEATHS AND SUFFERING FROM TROPICAL DISEASES

The MENTOR Initiative save lives in emergencies through tropical disease control and then stays to help people recover from crisis with dignity, working side by side with communities, health workers and health authorities to leave a lasting impact.

PHOTO: MECTIZAN DONATION PROGRAM

Mectizan distribution, Gbatong, Central African Republic



STATISTICS



One person in seven suffers from one or more NTDs.

What is the research-based pharmaceutical industry doing to help them?



Partnerships to boost R&D

186 R&D projects in the pipeline

3rd largest global funder

USD 527.2 million invested in research

88% of these projects are collaborative approaches

SOURCE: International Federation of Pharmaceutical Manufacturers and Associations - IFPMA - www.ifpma.org

Tackling disease in such hostile conditions requires a complete re-evaluation of expectations and approach. “Countries at war are often written off as being just too difficult to work in,” warns Allan. “But we have to invest in a different approach that allows NGOs to take a greater lead in delivery and we’ve seen it can work.”

As part of the Mentor Initiative, Allan has seen great success in Angola where, after 25 years of conflict, NGOs are providing greater logistical support to allow community health workers and teachers to take a lead in delivering NTD treatment on the ground. “The success we’ve seen in Angola has been really exciting,” says Mr Allan. “But donors,

apart from the End Fund, aren’t used to this approach. They usually opt for the low-hanging fruit where they will see results much faster. There’s a nervousness about investing in countries where change is so slow, but morally we must respond where the greatest burden is.”

Time, however, is of the essence in the fight against NTDs. As

has been seen with dengue fever, the fastest-growing disease in the world, disease can spread with alarming pace. According to the World Health Organisation, before 1970, only nine countries had experienced severe dengue epidemics. The disease is now endemic in more than 100 countries.

Great collaboration continues to

take place in the fight against NTDs and all the evidence shows we can make progress in even the most hostile of environments, but more needs to be done, faster. “We can do it, and we are doing it,” says Allan, “But it requires a willingness to innovate, to take risks and even to accept failure sometimes for the greater good.” ■



NEWS

INFOGRAPHICS



One person in seven suffers from one or more NTDs.

What is the research-based pharmaceutical industry doing to help them?

40

health partnerships combining prevention, training and treatment



An average of

1.4 billion treatments

have been pledged for each of the 10 years from 2011 to 2020

The 14 billion treatments over this 10 year period will help eliminate or control the nine neglected diseases that represent more than 90% of the global neglected diseases burden.

SOURCE: International Federation of Pharmaceutical Manufacturers and Associations – IFPMA – www.ifpma.org

Collaboration brings success in the fight against neglected tropical diseases

In October this year, Mexico became the third country, along with Colombia and Ecuador, to be declared free of onchocerciasis, by the World Health Organisation (WHO). This success is proof that international collaboration is working in the efforts to eliminate neglected tropical diseases (NTDs)

By Kate Sharma

Whilst progress is definitely being made, the greatest challenge remains reaching countries like South Sudan, the Democratic Republic of Congo, Angola and the Central African Republic, which are characterised by poor infrastructure, a lack of governance and ongoing unrest. Such countries are difficult for non-governmental organisations (NGOs) to operate in and attract less funding due to their complex needs and slow rate of change.

But the problem is not insurmountable, as Dr Adrian Hopkins MBE, director of the Mectizan Donation Program explains. “Communities can organise themselves very effectively,” says Dr Hopkins. “If we can get medication and training to local people, then through community directed treatment we can bring change.”

It was whilst working in the Democratic Republic of Congo in the 1990s that Dr Hopkins first saw mass drug administration used in conjunction with hygiene and environmental management to good effect. “Mass drug administration had never been done before on this scale and for the first time we were able to treat whole communities that were affected,” he recalls.

As director of the Mectizan Donation Program, Dr Hopkins now coordinates the distribution of drugs used to treat onchocerciasis and lymphatic filariasis. Using detailed mapping techniques, the organisation can target where the drugs are needed most, and work with governments and local agencies to deliver them on the ground. “Without the drugs or the donations from the drug companies, we would never have made such progress,” says Dr Hopkins “But it takes

“It takes collaboration to ensure the medication gets to those who need it most”



Dr Adrian Hopkins MBE
Director, Mectizan donation program

collaboration between pharmaceutical companies, WHO, national governments, funders, and local and international NGOs to ensure the medication gets to those who need it most.”

The approach is working and the impact has been so profound that the scientists who discovered and developed ivermectin, the drug used to treat onchocerciasis and lymphatic filariasis, have recently been honoured with the Nobel Prize in Physiology or Medicine.

Ambitious targets have been set to eliminate NTDs by 2020 and 2025. “These targets are doable,” notes Dr Hopkins. “But only if countries take ownership. This doesn’t mean political statements, it means providing people and domestic financing as well as support from external funders.” ■

The pharmaceutical industry generously donates the medicines we need to fight neglected tropical diseases endemic in the world’s poorest populations. Financial support from the donor community is needed to get these medicines to the people who need them.

Visit Mectizan.org for more information.

The Mectizan Donation Program is predominantly funded by MSD, a trade name of Merck & Co., Inc., with headquarters in Kenilworth, NJ, USA; with supplemental funding by GSK. Advertisement sponsored by the Mectizan Donation Program; an international program to control river blindness and lymphatic filariasis. Mectizan is not licensed for use in the United Kingdom.



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PHOTO: MECTIZAN DONATION PROGRAM



No time to waste in fighting neglected tropical diseases

Development professionals are urging governments and international organisations to use the knowledge and the tools they have at their disposal right now to tackle the spread of neglected tropical diseases (NTDs)

By Kate Sharma

As the name suggests, NTDs get little attention and funding on a global scale. The collective term refers to 17 diverse diseases identified by the World Health Organisation (WHO) that impact around 1.4 billion people in some of the world's poorest communities. Not only do NTDs cause terrible physical suffering and disability, they also perpetuate the cycle of poverty as they deny individuals the opportunity to study or work, and to contribute to society.

Back in the 1990s the Global Forum for Health Research highlighted the fact that just 10 per cent of public and private resources devoted to research and development were put toward health

problems in developing countries, where more than 90 per cent of all preventable deaths worldwide occurred. Whilst there is a clear need for research and development, Professor David Heymann, head and senior fellow at the Centre on Global Health Security at Chatham House, urges a broader focus. "The fact is that even the more widely recognised diseases such as tuberculosis and HIV don't have enough investment," he says. "The issue is not should there be more research, it's how can we make it possible? It's not just industry's responsibility: it's a problem to solve with industry, working with academics, researchers and industrialised country governments, as well as governments within developing countries."

"NTDs impact around 1.4 billion people"



Professor David Heymann

Head and senior fellow, Centre on Global Health Security, Chatham House

In 2013 WHO developed a road map for accelerating work to overcome the global impact of NTDs. The paper has given governments and development agencies realistic targets, clearly defined time frames and specific guidelines to work with, and it appears to be making a difference.

Their report published earlier this year showed a number of advancements, including the successful elimination of onchocerciasis (river blindness) in parts of sub-Saharan Africa, Colombia and Ecuador. Onchocerciasis, caused by a parasitic worm spread by black flies, can cause intense itching, eye damage, and irreversible blindness. The successes seen in both Africa and South America are examples of how government

commitment, coupled with support from industry and the international community, has enabled community-based education and healthcare programmes to reach those at greatest risk.

"Governments often want to wait until there is a new or safer vaccine, or a less difficult to administer cure before they respond," says Professor Heymann. "But it's very important to take advantage of the tools we have when we have them. Take smallpox. It was eradicated using a vaccine that wasn't perfect, but the benefits outweighed the risk. Today we know we couldn't use the same vaccine to eradicate smallpox because it has been shown not to be safe in HIV-infected persons. If we'd waited, we would have missed our chance." ■



For more information, please phone **0800 783 87 92** or **020 8963 4502** or email recruit@hmrlondon.com or visit www.londontrials.com

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