NEWSLETTER

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Internationale Nachrichten

1. UN calls on big pharma to reduce cost of life-saving medicines

A United Nations high-level panel on access to medicines has called for major changes to the way in which research and development (R&D) of life-saving medicines is funded in order to make them more affordable for patients around the world and fight neglected diseases.

The report from the panel, established by the UN secretary general, Ban Ki-moon, warns that "it is imperative that governments increase their current levels of investment in health technology innovation" in order to provide "fair rewards for the inventors while ensuring that prices remain fair and affordable".

The panel, which was made up of a wide range of global experts, including pharmaceutical industry leaders, public health officials and human rights campaigners, recommended that "innovative financing methods … delink the costs of R&D from the end prices of health technologies". The final report also called for greater transparency of R&D costs, something campaigners have long pushed for.

While campaigners and pharmaceutical companies have fought bitterly over the price of drugs such as the pneumonia vaccine, a lack of commercial interest has meant a dangerous paucity of investment in diseases such as Ebola and in the production of new antibiotics. Strains of tuberculosis that are resistant to current antibiotics are a global problem.

The panel's joint-chair, former Swiss president Ruth Dreifuss, said many campaigners around the world had high expectations for the panel's work.

"I am aware of all the hopes, and I cannot say we responded to all of them but the report will allow some steps forward. The most important thing is to act.

"There are some great priorities that are neglected by the traditional way that innovation and access is dealt with – important challenges such as neglected diseases like Ebola and Zika, which didn't mobilise enough innovation."

She says that the problem of drugs pricing affects rich countries as well as poorer nations. "We see this in oncology and with hepatitis C – because of the … financialisation of the pharmaceutical industry they are not available for all in need. There is a trend to ration some [drugs] and this idea of a two-tier medicine is just unacceptable."

Companies such as GlaxoSmithKline have taken steps to reduce the cost of drugs for poorer countries but campaigners want more comprehensive change to the system.

On the panel was Andrew Witty, chief executive of GlaxoSmithKline; he defended the role of big pharma. "The huge achievements of the current system of healthcare innovation are often ignored or taken for granted. It is often forgotten that almost all of the world's medical technology has come directly from, or with the enormous contribution of the research-based pharmaceutical, biotechnology or med-tech industries." He argues in the report against relying on de-linkage of research funds, warning that it "will likely not be appropriate or useful for many therapy areas".

The panel had a wide remit, looking at issues of human rights, trade, intellectual property and public

health objectives.
Mohga Kamal-Yanni, senior health policy adviser at Oxfam, gave evidence to the panel. She said it had a genuinely open approach but that unless action was taken immediately it would end up being "just another report".
"We have been working on access to medicines for decades now and the problem is escalating, not getting better. The core problem is that the current research and development system … is dictated by commercial interests so there are no new medicines for TB but there are medicines [from which drugs companies] can make a lot of money. And when we do have a good product they are very highly priced – so you can have a pill that cures hepatitis C but is $1,000 a day."
She says that Oxfam believes the panel has the senior backing in the UN to make recommendations that would be listened to. "It was about human rights being discussed at the highest level. There were some really good recommendations … and they should be acted on right now, no delay. The secretary general must start a process of government negotiating that is based on de-linking the cost of R&D from the cost of the product … Governments have to take it seriously and put their weight behind it."
Source: Guardian, http://bit.ly/2cEpO3a (19.09.2016)

2. At UN, global leaders commit to act on antimicrobial resistance
Meeting at the United Nations today, world leaders signalled an unprecedented level of attention to curb the spread of infections that are resistant to antimicrobial medicines.
Speaking at the meeting, UN Secretary-General Ban Ki-moon said, antimicrobial resistance poses "a fundamental, long-term threat to human health, sustainable food production and development."
"It is not that it may happen in the future. It is a very present reality – in all parts of the world, in developing and developed countries; in rural and urban areas; in hospitals; on farms and in communities," Mr. Ban noted.
The Secretary-General also expressed concern at loss of ability to protect both people and animals from life-threatening infections due to antimicrobial resistance.
Antimicrobial resistance (AMR) happens when bacteria, viruses, parasites, and fungi develop resistance against medicines that were previously able to cure them.
"Let me give just a few, sobering examples," said Mr. Ban, enumerating a host of diseases that now rampant due to antimicrobial resistance.
"More than 200,000 newborn children are estimated to die each year from infections that do not respond to available antibiotics. An epidemic of multidrug-resistant typhoid is now sweeping across parts of Africa, being spread through water. Resistance to HIV/AIDS drugs is on the rise. Extensively drug-resistant tuberculosis has been identified in 105 countries. And resistance to antimalarial medicines is an urgent public health concern in the Greater Mekong sub-region," said the Secretary-General.
"These trends are undermining hard-won achievements under the Millennium Development Goals, including against HIV/AIDS, TB, malaria and the survival of mothers and children. If we fail to address this problem quickly and comprehensively, antimicrobial resistance will make providing high quality universal health coverage more difficult, if not impossible," said the Secretary-General, also noting that it would put the Sustainable Development Goals in jeopardy – a message emphasized by Mr. Peter Thomson, President of the 71st session of the UN General Assembly and convener of the high level meeting.
"Antimicrobial resistance threatens the achievement of the Sustainable Development Goals and requires a global response," Mr. Thomson said.
"Member States have today agreed upon a strong political declaration that provides a good basis for the international community to move forward. No one country, sector or organization can address this issue alone," Mr. Thomson stressed, at the meeting co-organized by the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), and the World Organisation for Animal Health (OIE).

Mr. Ban said in order to create a world that is safer, more healthy and more productive, there was need for deep engagement, cooperation and coordination of several sectors, and sustained financing.

For the first time, Heads of States committed to taking a broad, coordinated approach to address the root causes of AMR across multiple sectors, especially human health, animal health and agriculture. This is only the fourth time a health issue has been taken up by the UN General Assembly (the others were HIV, non-communicable diseases, and Ebola).

Seen as a collective effort to address a challenge to health, food security, and development, countries reaffirmed their commitment to develop national action plans on AMR, based on the Global Action Plan on Antimicrobial Resistance — the blueprint for tackling AMR, developed in 2015 by WHO, in coordination with FAO and OIE.

In a joint statement issued during the meeting, WHO, FAO and OIE noted that "such plans are needed to understand the full scale of the problem and stop the misuse of antimicrobial medicines in human health, animal health and agriculture."

"Leaders recognized the need for stronger systems to monitor drug-resistant infections and the volume of antimicrobials used in humans, animals and crops, as well as increased international cooperation and funding," noted the statement.

The statement also highlighted some of the commitments made by world leaders in tackling AMR. "They pledged to strengthen regulation of antimicrobials, improve knowledge and awareness, and promote best practices — as well as to foster innovative approaches using alternatives to antimicrobials and new technologies for diagnosis and vaccines," it said.

"Antimicrobial resistance poses a fundamental threat to human health, development, and security. The commitments made today must now be translated into swift, effective, lifesaving actions across the human, animal and environmental health sectors. We are running out of time," said Dr. Margaret Chan, the Director-General of WHO.

Common and life-threatening infections like pneumonia, gonorrhoea, and post-operative infections, as well as HIV, tuberculosis and malaria are increasingly becoming untreatable because of AMR. "Left unchecked, AMR is predicted to have significant social, health security, and economic repercussions that will seriously undermine the development of countries," noted the joint statement.

According to WHO, FAO and OIE, the high levels of AMR already seen in the world today are the result of overuse and misuse of antibiotics and other antimicrobials in humans, animals (including farmed fish), and crops, as well as the spread of residues of these medicines in soil, crops and water. Within the broader context of AMR, resistance to antibiotics is considered the greatest and most urgent global risk requiring international and national attention.

"AMR is a problem not just in our hospitals, but on our farms and in our food, too. Agriculture must shoulder its share of responsibility, both by using antimicrobials more responsibly and by cutting down on the need to use them, through good farm hygiene," said Dr. José Graziano da Silva, the Director-General of FAO.

Speaking during the meeting, Dr. Monique Eloit, OIE Director-General, said "Effective and accessible antibiotics are as vital for protecting animal health and welfare and good veterinary medicine as they are for human health. We urge national authorities to strongly support all sectors involved, through promotion of responsible and prudent use, good practices and implementation of established standards and guidelines."

Leaders at the UN meeting called on WHO, FAO and OIE, in collaboration with development banks such the World Bank other relevant stakeholders, to coordinate their planning and actions and to report back to the UN General Assembly in September 2018.

At the meeting, countries called for better use of existing, cost-effective tools for preventing infections in humans and animals, including immunization, safe water and sanitation, and good hygiene in hospitals and animal husbandry. "Putting in place systems to ensure more appropriate use of existing and new antibiotics is also essential," noted a joint statement from the joint organizers of the meeting.

Highlighting market failures, they called for new incentives for investment in research, and development of new, effective and affordable medicines, rapid diagnostic tests, and other important therapies to replace those that are losing their power.
They also stressed that affordability and access to existing and new antibiotics, vaccines and other medical tools, should be a global priority, while taking into account the needs of all countries.
Source: UN, http://bit.ly/2d1rvtP (22.09.2016)

3. Uganda: 41,000 TB Cases Not Detected Annually
Tuberculosis (TB) prevalence in the country has increased from the estimated 159 per 100,000 last year to the current 258 people, according a joint survey carried out by the Ministry of Health, Global Fund and the World Health Organisation.
The national TB prevalence survey has also revealed that 41,000 TB patients are not detected annually, encumbering government efforts in the fight against the disease. The survey also puts the prevalence of TB in children at 36 cases per 100,000.
When contacted yesterday, Dr Frank Mugabe, the programme manager of the the National TB and Leprosy Programme (NTLP), said "the figures are high because the country has been using wrong estimates yet the population has also increased."
"The survey, the first of its kind in Uganda, is a representative of the whole population," Dr Mugabe said, adding that it was conducted between 2013 and 2015
The survey, according to Dr Mugabe, will enable NTLP to gain a better understanding of the TB burden so as to identify ways of improving TB control in the country.
The number of HIV/Aids patients with tuberculosis was at 27 per cent.
The Ministry of Health is expected to release a full survey report mid-next month to enable government to design and implement a strong strategic plan to tackle TB.
Source: All Africa, http://bit.ly/2d1oKZr (08.09.2016)

4. Multi-drug-resistant tuberculosis cure rates higher than expected in Europe
Cure rates for multi-drug-resistant tuberculosis (MDR-TB) in Europe have been estimated to be twice as high as previously thought, according to a research team at Queen Mary University of London (QMUL).
The Tuberculosis Network Clinical Trials Group (TBNET), an international consortium of clinicians and scientists, documented the management of 380 patients with Multidrug-Resistant Tuberculosis (MDR-TB) at 23 different sites across Europe over five years.
The study, published as correspondence in the *New England Journal of Medicine*, found that cure rates in Europe were 61 per cent according to TBNET's new definitions, compared to only 31 per cent when using the standard criteria proposed by the WHO.
MDR-TB has been on the increase worldwide over the past decade, with the largest number of patients living in the European WHO region. Despite treatment with expensive drugs, cure rates were thought to be very low.
The WHO definition for 'cured' patients includes having three cultures of sputum (mucus from the respiratory tract) that test negative for MDR-TB, taken at least 30 days apart during the continuation phase of treatment.
The researchers found that the WHO criterion for 'cure' could not be applied in the majority of patients. This was because most patients who had successful treatments did not produce sputum (normally produced as the result of infection) after eight months of therapy and therefore could not give a sample.
TBNET proposed new definitions for 'cure' and 'failure' of MDR-TB treatment based on the sputum culture status at six months after the initiation of therapy, and whether patients were free from disease recurrence one year after the end of therapy.
Dr Heinke Kunst, on behalf of the TB research group at QMUL, said: "The results from our study are very encouraging and may give hope to patients who are affected by MDR-TB. But there is still much

to do to improve treatment outcomes, as 30 per cent of MDR-TB patients still cannot be cured in Europe.
"We need new drugs and shorter regimens which are more effective, less toxic and widely available in the European region. We are optimistic that outcomes can be improved with novel medicines and individually-tailored treatments, rather than programmatic one-for-all courses of therapy."
Source: Medical Xpress, http://bit.ly/2dmYXul (15.09.2016)

5. By 2050, drug-resistant infections could cause global economic damage on par with 2008 financial crisis

Drug-resistant infections have the potential to cause a level of economic damage similar to—and likely worse than—that caused by the 2008 financial crisis, according to a new report by the World Bank Group entitled "*Drug Resistant Infections: A Threat to Our Economic Future*." The research shows that a high-case scenario of antimicrobial resistance (AMR)—where antibiotics and other antimicrobial dugs no longer treat infections the way they are supposed to—could cause low-income countries to lose more than 5% of their GDP and push up to 28 million people, mostly in developing countries, into poverty by 2050. And unlike the financial crisis of 2008, there would be no prospects for a cyclical recovery in the medium term, as the costly impact of AMR would persist. (...)
Key findings of the report are based on World Bank Group projections of the world economy in 2017-2050. They include:

- ***Impact on GDP**:* By 2050, annual global GDP would fall by 1.1% in the low-impact AMR scenario and 3.8% in the high-impact AMR scenario. Low-income countries would lose more every year leading up to 2050, with the loss exceeding 5% of GDP in 2050 in the latter scenario.
- ***Impact on global poverty**:* There would be a pronounced increase in extreme poverty because of AMR. Of the additional 28.3 million people falling into extreme poverty in 2050 in the high-impact AMR scenario, the vast majority (26.2 million) would live in low-income countries. Currently, the world is broadly on track to eliminate extreme poverty (at $1.90/day) by 2030, reaching close to the target of less than 3% of people living in extreme poverty. AMR risks putting this target out of reach.
- ***Impact on world trade**:* In 2050, the volume of global real exports would shrink by 1.1% in the low-case scenario, and by 3.8% in the high-case scenario.
- ***Impact on healthcare costs**:* Global increases in healthcare costs may range from $300 billion to more than $1 trillion per year by 2050.
- ***Impact on livestock output**:* By 2050, the decline in global livestock production could range from a low of 2.6% to a high of 7.5% per year.

Drug-resistant infections, in both humans and animals, are on the rise globally. If AMR spreads unchecked, many infectious diseases will again be untreatable, reversing a century of progress in public health. The United Nations has scheduled a day-long special session on AMR as part of the UN General Assembly in New York this week, only the fourth time that health is being highlighted in this way. (...)
Several recent reports on AMR, including the most recent one by Lord Jim O'Neill's independent policy review, have called for an urgent focus on this issue and highlighted the enormous global economic losses it can cause—it estimated about $100 trillion in total by 2050. (...)
The report outlines the crises in the human and veterinary public health sectors and in the environment, where capacity for regulating antimicrobials is insufficient in many countries, where misuse and overuse of antibiotics is an issue for some while access remains difficult for many. There is insufficient investment in building strong public health systems, including surveillance and monitoring, that can reduce risk at the interface between humans, animals and their environment.
The report recommends both AMR-sensitive and AMR-specific solutions to address the crisis. It says that one of the best opportunities in the short-term to mitigate the threat of AMR is to strengthen investments in health systems and overall preparedness to tackle infectious diseases, and to improve public and veterinary health systems while building surveillance for AMR into them as an integral

component. It strongly supports implementation and adequate financing of the WHO Action Plan on AMR, which was endorsed in 2015. It also recommends an urgent focus on innovative AMR-specific interventions that promote and incentivize better stewardship of antimicrobials both for humans and animals, including the appropriate use of antibiotics in animal husbandry.
Source: Weltbank, http://bit.ly/2cKIM6k (21.09.2016)

6. Kenya will roll out the first child-friendly TB drug

Kenya will become the first country to adopt and roll out at the national level the world's first tuberculosis treatment for children next week.

At least 1 million children are infected with TB every year, and approximately 140,000 children die annually from the disease according to the World Health Organization, though experts fear the number is much higher. The drug's adoption in Kenya aims to correct a gap in TB treatment that frequently led to incorrect dosages and fueled drug-resistant strains of the disease. The majority of TB-infected children worldwide rely on crushed up, loosely estimated portions of adult dosages, although the roll-out in Kenya is the first of at least three other countries committed at the national level to fixing the problem.

The program comes through a partnership between WHO, Global Alliance for TB Drug Development and UNITAID To develop and bring the drug through clinical trials, and will be implemented by the Kenyan government, local and international partners, including the Global Fund to Fight AIDS, Tuberculosis and Malaria. The collaboration will also serve as a model for the 17 other countries planning to adopt and roll-out the drug in coming years. The partnership has created new opportunities for these and other organizations to work together across sectors on issues facing children.

"Even though the main milestone was to get the product on the market, that gave us the opportunity to really galvanize support for children's TB, to get a conversation going outside of the medical arena," Dr. Cherise Scott, director of pediatric programs at TB Alliance told Devex.

"Because of this we've committed new players to the fight against TB, organizations like Save the Children and UNICEF, people we wouldn't have reached if we were focusing on TB broadly," she said.

Kenya is classified as a high-burden country for TB by the WHO, and Scott confirmed it will be the first to roll out the drug in a national health program since the formulation was approved in November 2015. More than 17 other governments have placed orders for the drug, and several others plan to implement national programs, Mario Raviglione, director of the global TB program at the WHO told Devex in a phone interview.

"Uganda, the Philippines and India will roll out a national program, meaning once those are running, the majority of children with TB will have access to the correct formulation worldwide," he said.

Kenya, he explained, has been extremely eager to begin roll-out, made easier by its well-established and relatively decentralized network of TB clinics. Other interested countries, however, are not far behind in moving the drug forward.

For Raviglione, it was crucial to reorient the partnerships approach, from working with other health and TB-focused organizations to joining forces with those working on maternal and child health as well as education. These newer collaborations helped correct a small flaw in Kenya's implementation of TB-related services which previously left children in a lurch.

"National TB programs deliver [medicines] through program clinics," he said, explaining that TB symptoms can be tough to detect, especially in young children, and often the facilities that offer health services to mothers and children are separate from those with staff trained to detect TB. When mothers brought their children to these pediatrics-focused clinics, the symptoms of TB were often missed.

"In many countries these kinds of services are not well connected to the national programs," he said. "You would be astonished, there's so many organizations, private ones too, that work in issues related to children, so simply getting them involved in informing people about child TB goes a very long way," he said.

Raviglione emphasized that even though well-heeled organizations such as the Global Fund provide generous funding for TB programs, "only 15-20 percent of this money goes to TB, despite being the number one killer among infectious diseases," he said. This is one reason it's taken so long to develop child-safe formulations and dosages, he added, and yet another reason why those working on TB must cross sectors to achieve the greatest impact.
Source: Devex, http://bit.ly/2dw3lGr (27.09.2016)

Forschung & Entwicklung

1. New insight into the progression of tuberculosis infection
Scientists have found evidence of a separate stage in tuberculosis (TB) infection, where people have no symptoms but are more likely to develop the full disease.
The findings, published in Nature Medicine, suggest it may be possible to identify which people are most at risk of developing TB. These patients could then be treated in a more targeted way.
Professor Robert Wilkinson, lead author of the study from Imperial College London and the Francis Crick Institute, said: "We have shown clear evidence for a TB stage in-between latent infection and active disease. It could lead to a way of predicting which infected individuals will develop TB disease and transmit it to others."
The results offer hope in controlling spread of disease, added Professor Wilkinson: "People ill with TB can infect up to 10–15 other people through close contact and if we can identify people in the transition stage, before they transmit the disease, that's potentially a game-changer in terms of TB eradication."
Conventionally, TB infection is classed into two stages: 'latent' and 'active'. People with latent infection test positive for an immune response to the TB bacteria, Mycobacterium tuberculosis, but do not have the symptoms of active disease.
Around 10 per cent of people with latent TB infection progress to active disease if left untreated. However, currently there is no accurate way to predict which infected individuals will develop the disease.
It is estimated that there are 2 billion people around the world with latent TB infection. Active TB kills an estimated 1.5 million people annually – with people with HIV being at greater risk.
The team, which included scientists from the University of Cape Town, South Africa, and the US National Institute of Health, screened 265 HIV-positive people for TB infection in a township in Cape Town where TB incidence is high. Of those who tested positive for latent TB, 35 were recruited to the study and were followed up over a period of six months.
The team used a combination of medical imaging techniques to study the lungs of the 35 patients – positron emission tomography (PET) and computed tomography (CT) scans – which highlighted areas of lung abnormalities as 'hot spots'.
Ten out of the 35 participants with latent TB infection had lung abnormalities consistent with a transitional or subclinical stage of TB progression. The other 25 participants had no hot spots and showed no signs of disease progression.
Over the course of the study, four of the 10 patients with lung abnormalities developed fully-fledged TB symptoms and started full treatment for TB. Two of these were found to have active TB confirmed by a standard sputum culture that tests for the presence of TB bacteria in the airways.
"We found evidence of differences in disease progression within a group of people that currently would all be diagnosed and managed as having the same latent TB infection, as none of them showed any outward symptoms of TB," explained Professor Wilkinson. "Those that had evidence of 'subclinical' disease on the PET/CT scans were at higher risk of developing the disease."
Imaging was continued during the treatment period for the four patients with active TB. This showed the lung abnormalities gradually diminishing over time.
Professor Wilkinson said: "These high-tech images provide us with new ways to evaluate whether

treatment has cured an infection. Most importantly, it will show whether we need to treat for the full recommended duration of six months, as most patients find the standard six months regimen of two or three different antibiotics very challenging."
He added:"It would not be feasible to PET/CT scan everyone with latent TB as the majority of these people are in poor regions of sub-Saharan Africa and these particular scanners are expensive. Instead, the study is most promising in enabling other markers of this 'sub-clinical' stage of infection to be identified and be able to better predict those who will develop TB symptoms."
Source: Imperial College London, http://bit.ly/2bV2flr (06.09.2016)

2. Screening for latent tuberculosis infection recommended for those at increased risk
The U.S. Preventive Services Task Force (USPSTF) recommends screening for latent tuberculosis infection in populations at increased risk. People who are considered at increased risk include people who were born in or have lived in countries where tuberculosis is highly prevalent, or who have lived in group settings where exposure to tuberculosis is more likely, such as homeless shelters or correctional facilities. The report appears in the September 6 issue of *JAMA*.
This is a B recommendation, indicating that there is high certainty that the net benefit is moderate, or there is moderate certainty that the net benefit is moderate to substantial.
In the United States, tuberculosis remains an important preventable disease, including active tuberculosis infection, which may be infectious, and latent infection (LTBI), which is asymptomatic and not infectious but can later reactivate and progress to active disease. The precise prevalence rate of LTBI in the United States is difficult to determine; however, based on 2011-2012 National Health and Nutrition Examination Survey data, estimated prevalence is 4.7 percent to 5.0 percent. An effective strategy for reducing the transmission, illness and death of active disease is the identification and treatment of LTBI to prevent progression to active disease. To issue a current recommendation on screening for LTBI, the USPSTF reviewed the evidence on screening for LTBI in asymptomatic adults seen in primary care, including evidence dating from the inception of searched databases.
The USPSTF is an independent, volunteer panel of experts that makes recommendations about the effectiveness of specific preventive care services such as screenings, counseling services, and preventive medications.
Detection
The USPSTF found adequate evidence that accurate screening tests are available to detect LTBI. Screening tests include the Mantoux tuberculin skin test (TST) and interferon-gamma release assays (IGRAs); both are moderately sensitive and highly specific.
Benefits of Early Detection and Treatment
The USPSTF found no studies that evaluated the direct benefits of screening for LTBI. The USPSTF found adequate evidence that treatment of LTBI with regimens recommended by the Centers for Disease Control and Prevention (CDC) decreases progression to active tuberculosis; the magnitude of this benefit is moderate.
Harms of Early Detection and Treatment
The USPSTF found no direct evidence on the harms of screening for LTBI. The USPSTF found adequate evidence that the magnitude of harms of treatment of LTBI with CDC-recommended regimens is small. The primary harm of treatment is hepatotoxicity.
Source: Medical Xpress, http://bit.ly/2dxmZBJ (07.09.2016)

3. Evidence of TB Found in People Who Are 'Cured'
Researchers are perplexed following the discovery that tuberculosis may not be completely gone in those who are deemed "cured." A recent study found evidence of the bacterium that causes TB remains in the lungs after treatment.
A study of 99 HIV-negative individuals in Cape Town, South Africa, who had been treated for pulmonary tuberculosis with a rigorous antibiotic regimen, had their lungs imaged before during and

after treatment.
Investigators at Stellenbosch University used a CT scan, a more detailed form of x-ray, and PET scans that glow bright to reveal the presence of lung abnormalities.
Imaging in 76 of those patients thought to be cured showed continued inflammation in the lungs and lesions similar to those of untreated patients.
One year after treatment, 50 patients showed similar lung involvement, although most of the lesions had decreased in size. Sixteen patients with some abnormalities picked up in the scans were otherwise free of lesions.
Researchers also detected genetic material in the saliva and mucus of 34 patients, an indication that live bacteria remained in their lungs.
“Oh yeah, we certainly were,” said Clifton Barry describing the surprised reaction of researchers.
Barry is a senior scientist at the U.S. National Institutes of Health Tuberculosis Research Section.
He co-authored the study published in the journal Nature Medicine.
“We were quite surprised to see the residual findings at the end of treatment... and the evidence of presence of active live bacteria in patients we called cured of tuberculosis,” Barry added.
Barry said investigators don’t know what the implications are, but they wonder whether such patients could relapse and, if so, whether a second infection could become resistant to antibiotics.
A six-month course of antibiotics has been the gold standard in treating patients, who afterwards usually show no symptoms of TB.
Said Barry, “I think the question is, “Is that really enough?” And do we need to think about potentially looking more carefully at patients at the end of treatment and evaluating in a different algorithm how we treat individual patients.”
One-third of the world’s population is infected with tuberculosis. The U.S. Centers for Disease Control and Prevention says 9.5 million people become sick and 1.5 million die.
Not only might TB patients need to be monitored closely after treatment, researchers say the study points up that new strategies may be needed for dealing with tuberculosis.
These may include doing genetics tests to determine the bacterium’s genotype, or severity and traits, so treatment regimens may be tailored to individuals infected with TB, replacing a one-size fits all approach to curing tuberculosis.
Source: Voice of America, http://bit.ly/2cyupRg (20.09.2016)

Reportage

1. How Boston's bartenders and barbers helped stop a TB outbreak
The nurses of Boston City Hospital weren't in the habit of stopping by the bar on their way into work. But that was where they began finding themselves every morning, starting in the mid-1980s.
They would show up as early as 8 a.m. at now shuttered bars in South Boston. They got to know the neighborhood's bartenders, but not because they were ordering drinks: The nurses were using the bars to see their patients.
The tuberculosis outbreak then raging among Boston's homeless population had started in early 1984. By July of 1985, the U.S. Centers for Disease Control and Prevention was calling it the most severe outbreak ever documented among America's homeless population, according to Boston Globe reporting from the time. Dispensing medications from bars, barbershops, and corner stores, Boston's medical experts managed to rein in the outbreak. Since then, the story of their innovative plan has largely been forgotten by all but those involved. But it helped bring tuberculosis under control in the city, and set the precedent for similar interventions used today in developing countries, where TB is still widespread.
Tuberculosis is spread through the air, and is highly contagious. Bacteria enter the air when a person with the disease coughs or speaks, and others breathing that air may get infected.
In the close quarters of Boston's homeless shelters, tuberculosis began spreading like a match to

tinder. Complicating the problem, the drug regimen for the illness was demanding: Up to two years of multiple types of antibiotics taken every day. For homeless people, shelters had no way of knowing if a person would even return the next night, let alone months into the future.
And if the whole antibiotic course wasn't finished, the patient risked developing drug-resistant TB, which is more difficult to treat. Medications for drug-resistant forms of the disease also have serious side effects.
So doctors and nurses got creative, and after weeks of puzzling over how to tackle the outbreak, they realized they needed to take treatment to the patients. "It was a lot of trial and error, using common sense, and adapting the system to the population," said Dr. John Bernardo, TB Control Officer at the Massachusetts Department of Public Health, who played a key role in caring for the homeless during the crisis. The work was divided between Boston City Hospital and the city's newly established Health Care for the Homeless program. "We had to do things like get on our bikes and go find them every day to give them their medication," recalled Dr. Jim O'Connell, president of the Boston Health Care for the Homeless Program.
Other clinicians found their patients at their favorite watering hole. An 8 a.m. beer at a bar on Broadway in South Boston was the routine of two homeless patients — and turned out to be the most consistent place to see their nurses. If one of the men missed a day, the nurses relied on the bartender to report back when he was next seen.
One man wanted to take his medication at work, but didn't want his coworkers to see — so an outreach worker met him in the bathroom each morning, said Bernardo. In some cases, medical officials in other parts of the country needed to follow patients. "One fellow went to New York, and because we told him to, he got in touch with them and he continued the therapy — then he came back here and got plugged back into our system," Bernardo said in a report in the Globe dated July 19, 1985.
Clinicians kept these efforts up for over a decade. Still, the number of TB cases among the homeless across the United States remained 150 to 300 times higher than the nationwide rate through the late 1980s and only started to fall in the 1990s, according to the CDC.
Since then, the idea of deputizing community members to help treat diseases has become the World Health Organization's recommended strategy for treating TB around the globe.
Dr. Paul Farmer, working in Peru in the 1990s, pioneered a treatment strategy in which a trained community member observes and supports TB patients on medication. Anyone from an employer to a nurse to a family member could take on this role.
Similar efforts in South Africa and India have found that community volunteers can be just as effective at dispensing TB medications as medical staff. One study from India found that volunteers were more successful than staff at health facilities at supervising patients, in part because they lived closer to the patient. Such tactics aren't in general use in the U.S. any longer — TB cases in 2015 were just three per 100,000 people. But certain groups, including African-Americans, immigrants, prisoners, and the homeless remain at higher risk than the general population for contracting the disease. In the U.S., the focus has now shifted to prevention — but this, too, benefits from a personalized approach, like the one that worked in the 1980s, says Bernardo.
"Public health is personal," he said. To reach Boston's Haitian community — in which TB is highly stigmatized — Bernardo and his colleagues hosted a morning radio show. Many people started calling in with questions, and the number of patients coming to the clinic increased, too, he said. "It's not rocket science," said Bernardo.
Source: The Week, http://bit.ly/2dewstn (13.09.2016)

2. Tuberculosis: devastating childhoods in PNG
Grace* is 10 years old and battling tuberculosis (TB) for the second time in her life.
This young girl arrived at a small district clinic in Papua New Guinea's Central Province earlier this year so weak and wasted she couldn't walk. The clinic is a basic shack, typical of many across PNG. There are just six staff to provide support for around 15,000 people, some of them travelling up to six

hours by boat for medical attention.
Grace spent two months at the clinic receiving daily injections for her TB. “I thought I was going to die,” she says. “It was painful and hurt the most in my neck.”
Grace is among one million children globally who will contract TB this year. More than 140,000 children like her will die from this entirely curable and largely preventable disease. TB has devastating impacts on children in developing countries like PNG. Many children do survive, but with their bodies and minds profoundly damaged after the bacteria infiltrates their bones or brains. The luckiest recover at substantial cost to their education. Family incomes are undermined as parents spend time away from their homes to care for sick children over months or even years of treatment, which can shatter already fragile livelihoods.
Children account for 26 per cent of detected TB cases in PNG but this is likely to be a fraction of the real story. In PNG, as in other TB-endemic nations, there are formidable challenges to the diagnosis and treatment of paediatric cases, with the disease frequently misdiagnosed or overlooked.
When Grace first came to the clinic two years earlier, she was lucky enough to be seen by a health worker who had been trained by ChildFund to detect and treat TB. Grace was started on a treatment of tablets that needed to be taken for the next six months. But when she started to feel better, her mother stopped giving her the tablets and a few months later, Grace was sicker than ever.
This is a common story. TB drugs can have a rapid effect on how people feel, but unless they are taken for the full duration, they won’t provide a cure. Worse, they give the TB bug the chance to fight back and progress into a drug-resistant form of the disease.
PNG is already recording outbreaks of deadlier drug-resistant strains of TB. Referred to by some experts as “Ebola with wings”, this modern-day mutation is much harder to treat and has the potential to have catastrophic consequences within and beyond PNG’s borders.
Finding effective solutions to address the TB epidemic in PNG is not impossible, but requires far greater levels of cooperation and determination, nationally, regionally and across agencies.
Building on the key principles outlined in the World Health Organization’s End TB Strategy, it is vital that the PNG healthcare system is strengthened to address the shortage of skilled frontline health workers and to move from a passive to an active case-finding model. This requires improved detection methods, increased community awareness of the disease and its symptoms, and sustained healthcare support for patients.
Innovative solutions in the area of medical research and development will also play an important role in reducing caseloads. Already, new TB vaccines are being trialled, improved pharmacological treatment products are available, and the roll-out of GeneXpert diagnostic machines is delivering efficiencies in TB testing and treatment.
More broadly, it is crucial to address the social and economic conditions that perpetuate the spread of the disease in PNG. Poverty, poor nutrition, inadequate housing and overcrowding in urban areas provide the ideal conditions for TB to thrive.
Australia is well positioned to play a powerful role in assisting our nearest neighbour to tackle this disease, and ultimately eliminate TB as a public health risk. Through increased, well-targeted aid and by leveraging Australia’s significant research and industry capability, we can help contribute the resources and strategies needed to win the TB war.
Source: Policy Forum, http://bit.ly/2cuCuI9 (09.09.2016)

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