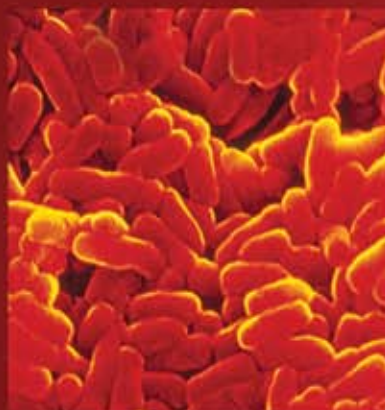


**MULTIDRUG
RESISTANT
TUBERCULOSIS**



**THE LILLY
MDR-TB
PARTNERSHIP**



A global partnership to fight MDR-TB

“Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.”

This Chinese proverb is the call to action for the Lilly MDR-TB Partnership.

The Lilly MDR-TB Partnership

In 2003, Eli Lilly and Company launched a pioneering initiative to fight the rapidly growing threat of multidrug-resistant tuberculosis (MDR-TB) around the world. Highly contagious, MDR-TB currently afflicts about 400,000 people each year. The World Health Organization estimates that the average MDR-TB patient infects up to 20 other people in his or her lifetime. Lilly supports a comprehensive, multi-pronged strategy to fight this disease through efforts to: increase the supply of drugs that can cure this life-threatening disease; train health care personnel; and focus public attention on prevention, diagnosis, and proper treatment.

The Lilly MDR-TB Partnership is an alliance of 14 public and private organizations.

What is MDR-TB?

Multidrug-resistant tuberculosis is a deadly and highly infectious disease resulting from interrupted or incomplete treatment of standard tuberculosis—which infects about nine million people every year—or from person-to-person transmission. MDR-TB does not respond to standard TB drugs, and treatment relies on a handful of antibiotics. The disease is most prevalent in the developing world, where trained health care staff and drug supplies are limited. The treatment for MDR-TB is long and complex, often resulting in poor patient compliance and development of further drug resistance, hence the need for “directly observed treatment” programs (DOTS), whereby patients must take their drugs under supervision. Without strict and proper treatment, strains like XDR-TB (extensively drug-resistant)—which responds to even fewer drugs than MDR-TB—can, and have begun to, emerge.

Global Partners—Local Action

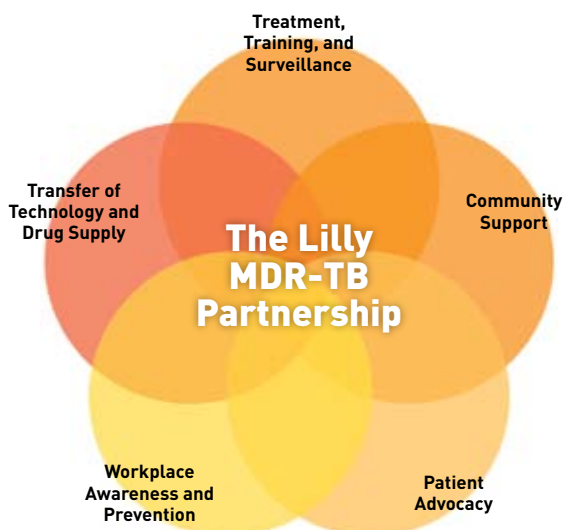


Communities, Businesses, and Nations at Risk

- TB kills two million people every year (5,000 a day)—mostly adults between 15 and 54 years of age, thereby reducing the strength of a community's workforce.
- Two billion people are infected with TB worldwide, nearly a third of the global population.
- One in ten of these people will develop active TB.
- Of nine million new tuberculosis cases each year, 400,000 are MDR-TB.
- China and India account for 50 percent of MDR-TB cases worldwide.

Lilly has brought together 14 major international institutions including businesses, humanitarian organizations, academic institutions, and professional health care associations.

The members of the Lilly MDR-TB Partnership, funded by Lilly with \$70 million, provide comprehensive services for individuals and families afflicted with MDR-TB—diagnosis, treatment, and surveillance of patients; training of doctors and nurses; community support, patient advocacy, and anti-stigma efforts in the workplace; and transfer of Lilly drug-manufacturing technology to pharmaceutical companies in high-burden MDR-TB countries to increase the local drug supplies.



Training, Treatment, and Surveillance

Through the Lilly MDR-TB Partnership, partners assist governments and policy-makers in designing sound MDR-TB strategies, and support efforts to strengthen disease surveillance systems in order to understand and cope with drug resistance. A well-managed MDR-TB control program can only be established within a framework of collaboration among health care professionals.

- **Harvard Medical School and Partners in Health (PIH)**—in Russia, PIH has established a training Center of Excellence in Tomsk (Siberia). PIH members train doctors and health care workers, and work closely with Russian health officials to develop national MDR-TB training standards. PIH has also produced a vital “Guide to the Medical Management of Multidrug-Resistant Tuberculosis,” which has been translated into Russian.
- **International Council of Nurses (ICN)**—has established an online “Global TB/MDR-TB Resource Center” for the 13 million nurses worldwide. ICN is actively training nurses in all forms of TB care and prevention. After the successful launch of its “training of trainers” program in South Africa and the Philippines in 2005, ICN has now implemented the program in Swaziland and Malawi, with plans to expand to other high-burden MDR-TB countries.
- **International Hospital Federation (IHF)**—has developed a comprehensive TB and MDR-TB-control training manual for hospital managers that will be disseminated to its 40,000 public and private hospital and clinic members.
- **U.S. Centers for Disease Control and Prevention (CDC)**—is working to strengthen drug-resistance surveillance systems. The CDC has launched a cutting edge laboratory-based electronic surveillance system in Russia, which enables accurate and timely monitoring of MDR-TB.
- **World Health Organization (WHO)/ STOP TB Partnership**—WHO created the DOTS-Plus (Directly Observed Treatment) program specifically for MDR-TB. Lilly’s two MDR-TB drugs are distributed through this program. About 22,000 patients have enrolled in DOTS-Plus programs in 39 countries. The WHO helps countries develop national programs within the approved treatment guidelines by training health policy consultants and TB specialists, and through Drug-Resistance Surveillance (DRS) programs to monitor the evolution and spread of the disease.
- **World Medical Association (WMA)**—has developed MDR-TB clinical management guidelines, which are being converted into an online course that gives doctors around the world access to the latest international treatment protocols for MDR-TB care. The course will soon also be available in Spanish, Chinese, and Russian.

Transferring Technology, Transferring Hope

Community Support, Patient Advocacy, and Workplace Awareness and Prevention

On World TB Day 2006, Dr. Marcos Espinal, executive secretary of the STOP TB Partnership, made clear that TB “is not a medical problem. [TB] is a social problem.... TB can be conquered. TB has a cure.” Indeed, the fight against TB is not restricted to the medical side of the disease, but must also address its social implications. Since community support of patients is integral to treatment compliance, the Lilly MDR-TB Partnership also concentrates on ensuring that patients are not stigmatized by their communities.

- **International Federation of Red Cross and Red Crescent Societies (IFRC)**—implements patient-support programs aimed at the most vulnerable segments of populations. These include public-awareness campaigns and community outreach as well as psychological support and food supplements. IFRC volunteers focus strongly on reducing the public stigma associated with TB. These extensive support programs have already been executed in Kazakhstan and Romania.
- **TB Alert**—has launched www.tbsurvivalproject.org, an advocacy website featuring MDR-TB survivor Paul Thorn, to engage MDR-TB and TB patients worldwide. Thorn is author of *The TB Survival Handbook*, which provides patients with his first hand account of dealing with the disease, and tips on how to cope with treatment.
- **World Economic Forum (WEF)**—the WEF spearheaded the creation of the Business Alliance to Stop TB, in order to understand the symptoms of TB, where to go for diagnosis, and how to seek appropriate treatment. The goal is to help all members of the workforce understand that, with proper treatment, TB and MDR-TB patients need not lose their jobs or be shunned.

PIH co-founder Dr. Paul Farmer, head of Social Medicine and Health Inequalities at Brigham and Women’s Hospital, examines a young child.



Transfer of Technology and Drug Supply

One of Lilly’s main goals is to increase the supply of quality, affordable second-line drugs. In addition to heavily discounting its MDR-TB drugs, cycloserine and capreomycin, for the WHO, Lilly is transferring its drug-manufacturing technology and expertise to four pharmaceutical companies in the countries hardest hit by MDR-TB. Lilly provides technical assistance and training for four years, and is assisted by Purdue University.

- **Aspen Pharmacare** (South Africa)—manufactures both cycloserine and capreomycin. Aspen sold its first batch of cycloserine to Botswana in 2005, and is preparing for a new facility with a capacity of 4 billion capsules per year. Aspen has also begun construction of a plant to produce capreomycin by late 2007.
- **Hisun Pharmaceutical** (China)—produced its first batch of the capreomycin active ingredient in May 2006. Hisun is also building a second facility to produce vials of the capreomycin final drug by the second half of 2007.
- **Shasun Chemicals and Drugs** (India)—has validated its manufacturing process for cycloserine, and dispatched its first order to Aspen in February 2006.
- **SIA International** (Russia)—Lilly’s newest drug-manufacturing partner is one of Russia’s largest pharmaceutical companies. SIA will produce both Lilly MDR-TB drugs.
- **Purdue University** (USA)—assists in the transfer of technology process, and produces cycloserine in its new manufacturing facility, the Chao Center for Industrial Pharmacy in Indiana.

ACCOMPLISHMENTS OF THE LILLY MDR-TB PARTNERSHIP

- From 2000 to 2005, Lilly supplied one million vials of capreomycin and five million capsules of cycloserine through the WHO's DOTS-Plus program in 39 countries.
- Lilly's transfer of drug manufacturing technology and expertise to pharmaceutical companies in the four highest burden MDR-TB countries will ensure a greater supply of affordable, quality, second-line drugs where they are needed most.
- Lilly and its partners have played vital roles in influencing key MDR-TB policies around the world and ensuring their implementation. These policies involve introducing new treatment protocols and convincing the global health care community that treating MDR-TB is just as important as treating primary TB.
- On World TB Day 2006, Nobel Peace Laureate Archbishop Desmond Tutu declared that the Lilly MDR-TB Partnership is an "excellent example of coordinated action against the disease."

"TB can be overcome, I know,
I am living proof . . . now we need
to invest in the people who will
implement the plan to stop TB for
all of us."

Archbishop Desmond Tutu

Even with notable progress in treatment and prevention, the fight against MDR-TB is far from over. It will require continuing hard work and dedication from all partners, not only to defeat the disease, but also to strengthen health care systems throughout the world.

For more information on the Lilly MDR-TB Partnership, please visit www.LillyMDR-TB.com