



LILLY  
GLOBAL HEALTH PROGRAMS  
REPORT  
2015

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Finding New Solutions  
Through Partnership



*Lilly*

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For more information about Lilly Global Health Programs, please visit [www.LillyGlobalHealth.com](http://www.LillyGlobalHealth.com).



John C. Lechleiter, Ph.D.  
Lilly Chairman, President,  
and Chief Executive Officer  
2015

## MESSAGE FROM THE CEO

There are no shortages of global health challenges confronting international organizations, national and local governments, communities, and families. For all of our human ingenuity and advances—which have helped billions of people live longer, healthier, more active lives—far too many are left behind.

Diseases, old and new, infectious and chronic, continue to plague the most vulnerable among us, taking root in impoverished villages, overcrowded settlements, remote landscapes, and anywhere access to quality health care is lacking. Society and governments worldwide are desperately seeking solutions for these challenges that threaten to drain budgets, dampen productivity, and fracture families and communities.

As a global biopharmaceutical company, we have a responsibility to help expand access to our medicines and improve patient outcomes. But our company vision—to improve global health in the 21st century—demands that we do even more.

Like many other pharmaceutical companies, we have used traditional philanthropy and product donations to help people in immediate need. But these efforts, vital though they are, are no match for the scale of deeply rooted healthcare challenges that disproportionately affect low- and middle-income countries.

**We need new solutions. New approaches.**

**We need to think bigger. And differently.**

**We need collaboration on a greater scale than ever before.**

Those beliefs serve as the foundation of Lilly's Global Health Programs. Through these programs, we are partnering with nearly 50 leading health and governmental organizations to help tackle two stubborn diseases: tuberculosis (TB) and diabetes. No single organization can, on its own, solve the complex web of challenges underpinning these two diseases. But through strategic public/private partnerships—with each organization applying its unique capabilities, expertise, and assets—we can make far greater progress, even faster.

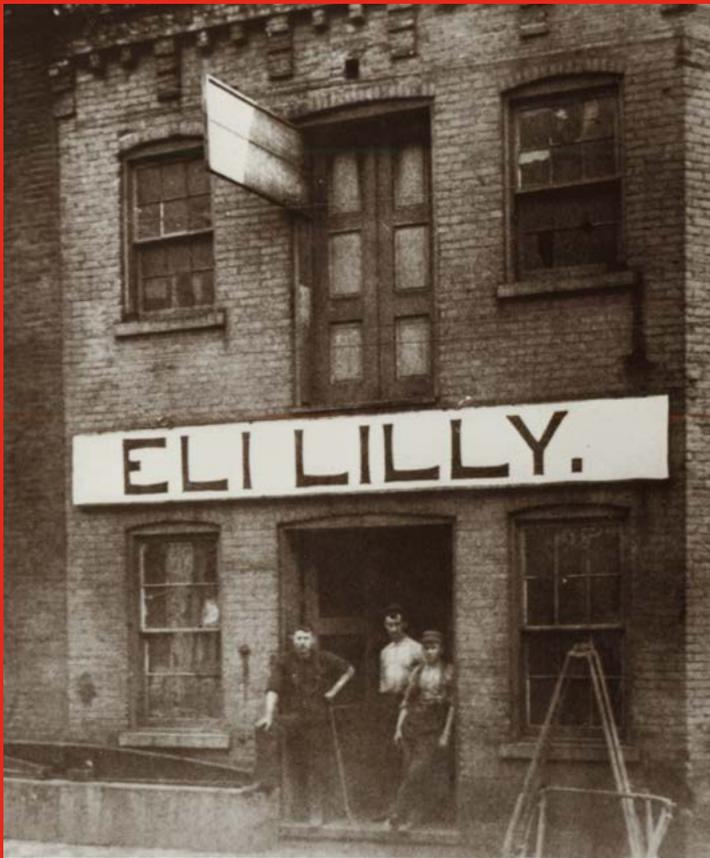
Lilly Global Health Programs include our two signature corporate responsibility efforts—the Lilly MDR-TB Partnership and the Lilly NCD Partnership, both of which are covered in detail in this report.

Through collaboration with partners, and the application of Lilly's unique Research, Report, and Advocate framework (see page 6), we are exploring sustainable new models of care that strengthen healthcare systems, improve outcomes, and reduce costs. In the process, we are collecting evidence-based data that will help governments and other key stakeholders make better informed healthcare decisions and replicate and scale up proven approaches.

Ultimately, we seek to be a catalyst for ideas, solutions, action, and results.

We are honored to work side by side with our partners, each of which offers unique insights, capabilities, ideas, and passion. Without them, the progress detailed in this report would not be possible.

Together, we are achieving far more than any one of us could do alone, and in doing so, we are making life better for more people around the world.



## About Lilly

Lilly is a global healthcare leader that unites caring with discovery to make life better for people around the world. We discover, make, and deliver life-changing medicines, improve the understanding and management of disease, and give back to the communities where we live and work. Given the complexity of today's health challenges, we also partner with leading health organizations to find new solutions that can help more people.

## About the Lilly Foundation

The Eli Lilly and Company Foundation is a tax-exempt private foundation established by Lilly in 1968. The foundation awards cash grants for philanthropic initiatives aligned with Lilly's corporate responsibility priorities:

- Improving health for those in need worldwide
- Supporting communities in which we operate
- Improving public education in the United States

The Lilly Foundation funds the Lilly-MDR-TB Partnership and partners with United Way Worldwide, which makes grants on behalf of the Lilly Foundation and the Lilly MDR-TB Partnership.



# Lilly Global Health Programs

## Our approach

Facing a myriad of challenges such as growing populations and already-strained healthcare budgets, governments worldwide are seeking sustainable new solutions that improve health outcomes and lower costs. The challenges are exponentially more complicated in low- and middle-income countries where resources are scarce, infrastructure is lacking, and healthcare systems sometimes struggle to provide even basic care.

The pharmaceutical industry—and the private sector more broadly—has an important role to play in addressing global health challenges and expanding access to quality care. For Lilly, this means going beyond just our medicines and the services we provide through our core business.

Through our Lilly Global Health Programs, we partner with governments and other leading health organizations to drive meaningful and measurable progress on global and national healthcare objectives. No product donations are involved in these partnerships. Rather, with high-level consultation and on-the-ground engagement, we are exploring new models of care and addressing critical gaps.

We do this work through our two signature global health programs—the Lilly MDR-TB Partnership, focused on multidrug-resistant TB, and the Lilly NCD Partnership, focused on non-

Through the Lilly Global Health Programs, we are:

- Partnering with leading health organizations
- Strengthening healthcare systems
- Expanding access to medicines
- Finding new solutions that can be adapted, replicated, and scaled
- Creating shared value



communicable diseases, diabetes specifically. Both partnerships are at the heart of Lilly's corporate responsibility efforts to improve healthcare quality and outcomes for people living in low- and middle-income countries.

By using a novel approach—Research, Report, and Advocate—we are working to amplify the reach and impact of our efforts. We do this by sharing our results with the wider health community, both globally and in our focus countries, so better decisions can be made about how to invest limited resources. Ultimately, we and our partners will advocate for the replication of best practices by governments and other key stakeholders on a local, regional, national, and global scale.

No single organization can solve complex global health problems alone. We believe in achieving meaningful results through cross-sector collaboration. That's why our Lilly Global Health Programs currently involve nearly 50 well-respected global, national, and local partners—each contributing what it does best. Together, we are finding new solutions to some of today's toughest health challenges and making life better for people who live in communities where quality healthcare—and, therefore, quality of life—can be far too elusive.



## Research, Report, and Advocate

Lilly Global Health Programs employ a novel approach that help make life better today for people who live in the communities where we operate our projects. At the same time, we are collecting and sharing outcomes data so that the best solutions can be replicated and scaled, reaching even more people, tomorrow.

### Research

Piloting new models of healthcare in various low-income settings and collecting evidence-based data

### Report

Sharing data and lessons learned

### Advocate

Using program outcomes data to advocate for broader adoption and scale-up of proven, cost-effective solutions



# the *Lilly* MDR-TB partnership

## An unexpected journey

Lilly has a pioneering legacy in the fight against infectious disease. In the 1940s, the company became one of the first manufacturers to mass-produce penicillin.

Throughout the 20th century, Lilly launched a number of antibiotics including vancomycin, erythromycin, and new classes of oral antibiotics that included penicillins, cephalosporins, and carbacephems.

Among Lilly's product developments were two tuberculosis antibiotics, **capreomycin** and **cycloserine**, that were among a group of **second-line drugs** for TB, to be used when drug resistance causes **first-line medicines** to fail.

Capreomycin and cycloserine were brought to market in 1971 and 1955, respectively. But, waning reports of TB meant that demand diminished for both medicines through the second half of the 20th century. By 1996, capreomycin and cycloserine were used to treat fewer than 1,000 TB patients per year. Some years, we had no orders for the medicines at all. In addition, to create manufacturing capacity for new medicines in our product portfolio, the company was planning to stop producing a large number of older products, including capreomycin and cycloserine.

Against this backdrop, MDR-TB was accounting for more and more of all TB cases. Unknown to Lilly, independent researchers from **Partners In Health (PIH)** discovered that capreomycin and cycloserine, when used in combination with other medicines, cured up to 85% of people treated in their study, at a fraction of the standard cost.

At PIH's request, Lilly increasingly supplied capreomycin and cycloserine to countries with high burdens of MDR-TB, at well-below-market prices. As demand grew in response to the growing MDR-TB crisis, Lilly doubled its manufacturing capacity for both products. But it became clear by the early 2000s that a new solution was needed to create a more sustainable, high-quality supply chain.

These circumstances presented an interesting challenge, and ultimately, a unique opportunity.

TB, often thought of as a disease of the past, continues to plague the world's most at-risk populations. It is preventable and curable, but when untreated, under-treated, or undiagnosed, it spreads rapidly.

## TB is the second-leading cause of death from a single infectious agent.

### Progress is being made:

- Mortality rate from TB dropped by 45% since 1990
- An estimated 37 million lives saved through effective diagnosis and treatment of TB since 2000

### Drug-resistant TB is a growing crisis:



About 3.5% of all people who developed TB in 2013 had MDR-TB—which is harder to treat and has significantly poorer cure rates



480,000 new cases of MDR-TB in 2013



Almost 80% of reported MDR-TB cases occur in the European region, India and South Africa



48% global cure rate for MDR-TB—and alarmingly lower in certain hot spots

### The gap between detecting and getting people started on the right treatment is growing:

- 136,000 cases detected in 2013
- 96,000 people started on treatment
- <1% of people with MDR-TB receive quality assured second-line medicines



**9 Million**

Number of people developed TB in 2013

**1.5 Million**

Number of people that died in 2013

**3.3 Million**

Number of people with TB "missed" by health systems, annually

**98%**

Percentage of deaths that occur in countries with developing economies

# Birth and evolution of the Lilly MDR-TB Partnership

After considering numerous options and consulting with governments, global health organizations, country-level healthcare providers, and advocacy organizations, Lilly determined that the best path forward was to give away its manufacturing technology, and technical know-how for capreomycin and cycloserine.

Beyond making medicines more readily available, it was increasingly clear that more comprehensive approaches were needed to address the complex social, economic, and medical issues associated with MDR-TB. Given our medicines, anti-infective heritage, and capabilities, we believed we could make a meaningful difference by working with other leading global health experts to find new solutions.

With the technology transfer already underway, we formally launched the Lilly MDR-TB Partnership in 2003. The partnership has grown to be our largest philanthropic effort—a \$170 million commitment from 2003-2016. Through it we have worked with nearly 40 partners to elevate TB on the global stage; increase awareness, prevention, diagnosis, and treatment outcomes; ensure access to quality assured medicines; and fund early drug discovery efforts.

Using an approach we call Research, Report, and Advocate (see page 6), we are exploring and evaluating new evidence-based solutions and working with our partners and governments to identify best practices that can be adapted, replicated, and scaled to improve outcomes, reduce costs, and help turn the tide against TB in all its forms.



## At a glance:

### Lilly MDR-TB Technology Transfer

Over the course of a decade, Lilly partnered with seven manufacturers—four in countries with high burdens of MDR-TB—to create a reliable supply of capreomycin and cycloserine, and to improve local access to medicines. In the process, Lilly:

- Gave away its manufacturing know-how for capreomycin and cycloserine
- Used external contract manufacturers to expand supply of capreomycin during technology transfer to ensure continuity of supply chain
- Committed the time and expertise of multiple staff members over the lifetime of the project
- Offered on-site technical and quality assistance
- Funded local facility upgrades or the purchase of specialized equipment aimed at minimizing future manufacturing costs for our partners
- Worked to improve process efficiency so that partners could reinvest in local staff and facilities
- Helped partners build additional manufacturing capacity to strengthen long-term sustainability

We documented our experience with the MDR-technology transfer through a new [white paper](#) titled Seeking Solutions to a Global Health Challenge, available at: [www.LillyGlobalHealth.com](http://www.LillyGlobalHealth.com)

**“In the early 1990s, it had basically been declared that MDR-TB couldn’t be treated in developing countries. Partners In Health began treating patients in the slums of Peru, and we were able to show that you can treat it. And then we realized that one of the problems was high drug prices. So we went to Eli Lilly and Company, and those guys were incredible. They actually helped us lower the price of the drugs for drug-resistant TB from about \$30,000 a year to about \$1,000 a year. And we actually convinced the world to lift this death sentence and treat drug-resistant TB.”**

Dr. Jim Yong Kim, M.D., Ph.D., President, The World Bank Group, formerly with Partners In Health

**“I’m very proud of the fact that we looked beyond just the question of ‘Can we supply some of these medicines at a lower cost?’—the more traditional philanthropic approach—and we thought bigger.”**

John C Lechleiter, Ph.D., Lilly Chairman, President and CEO

# Lilly MDR-TB Partnership Highlights

## Phase I (2003-2007):

Launched in 2003 with an initial commitment of \$70 million, the Lilly MDR-TB Partnership sought to reduce the burden of MDR-TB through a technology transfer and by elevating awareness of MDR-TB on the global stage.

## Phase II (2007-2011):

In 2007, Lilly expanded the duration and scope for the Lilly MDR-TB Partnership by committing an additional \$50 million to the collaboration to complete the technology transfer and to further strengthen awareness, prevention, and care. We also committed another \$20 million for early drug discovery efforts.

## Phase I & II key accomplishments

- Transferred manufacturing technology to seven companies to increase availability of MDR-TB medicines and improve standards of care
- Launched the [Lilly TB Drug Discovery Initiative](#)
- Provided \$20 million in funding for TB drug discovery
- Strengthened the capacity of more than 100,000 healthcare professionals to better recognize, diagnose, and treat MDR-TB, and to provide care and support to people with MDR-TB and their families
- Distributed guidelines and toolkits to more than 45,000 hospitals and clinics
- Educated, trained, and partnered with more than 350 journalists to increase and improve media coverage of TB and MDR-TB

## Phase III (2012-2016):

In 2011, the Lilly Foundation provided an additional \$30 million for the third phase of the partnership. During this phase, the partnership is targeting four of the highest-burden MDR-TB countries—China, India, Russia, and South Africa.



Two key areas of focus:



Training and capacity building for healthcare providers



Improving the supply of and access to quality-assured second-line medicines

Though funding runs through 2016, some projects in target countries will conclude in 2017.

The work of the Lilly MDR-TB Partnership has been recognized at the highest levels, including international awards from the Clinton Global Initiative, International Chamber of Commerce, and Global Business Coalition on Health.

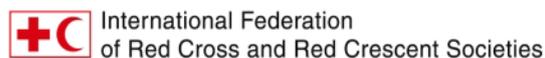
The partnership has also been recognized at the local level, including receiving the Best Partnership Award from the China Medical Association Tuberculosis Society and recognition from the Government of the Republic of Karelia for our work with Partners In Health to improve TB care for people with HIV.



## Lilly MDR-TB Partnership—International Efforts

In addition to working in our four target countries during the third phase of the Lilly MDR-TB Partnership, we also continue to work with international organizations and partners to advance global TB efforts, including the following:

- Lilly representatives are actively engaged on several boards and committees focused on reducing the global burden of TB, including the WHO Public-Private Mix (PPM) group, the WHO Europe Regional Collaborating Committee on Tuberculosis Control and Care (RCC-TB), the Stop TB Partnership Private Sector Delegation, and the Global Fund Private Sector Delegation Advisory Group.
- We partner with the International Federation of Red Cross and Red Crescent Societies to provide on-the-ground community solutions in eight countries; the International Council of Nurses to train nurses in 10 countries; the Stop TB Partnership to help strengthen the voice of civil society in TB efforts and support the creation of a compelling, unifying brand identity for TB that will and increase awareness, understanding, and action. Was also partner with the WHO at the global level to strengthen private sector engagement in TB care and control and to disseminate best practices.
- We have played a leading role in working to ensure a reliable supply of quality-assure second-line medicines to treat MDR-TB.
- Lilly convened more than 40 people representing more than 20 global health, industry, and academic institutions in 2012 for the MDR-TB Innovation Summit, an unprecedented effort that helped identify several creative, sustainable solutions to supply chain challenges.
- We also served as the coordinator of the MDR-TB Second-Line Drug Access Improvement Initiative, a unique working team that included representatives from the Gates Foundation, Global Fund, UNITAID, USAID, WHO, Clinton Health Access Initiative and others. This group identified priorities for action, coordinated efforts, and responded rapidly to emerging issues.
- We funded the development of a “data dictionary” that created common standards and definitions that will improve the data flow between existing eHealth systems for MDR-TB within countries and for data consolidation globally. This will improve access to quality- assured drug supply through better drug forecasting and improved global drug supply.
- We provided a \$500,000 grant in 2013 to the Global Health Committee to scale up its successful model for MDR-TB treatment and nutritional and social support into multiple regions of Ethiopia and strengthen the program in Addis Ababa and Gondar. To date, the program has resulted in more than an 80% treatment-success rate among people with MDR-TB who are HIV-negative. Lilly is also using its skills in Lean Six Sigma to lead a project for the Global Fund to improve accuracy in procuring medicines and supplies for TB, HIV, and malaria in low- and middle-income countries with high disease burden.
- Over the past several years, we’ve helped raise awareness of TB by supporting a global concert on World TB Day organized by our partner TOPOLO.





## TB drug discovery efforts

As part of the Lilly MDR-TB Partnership, we are committed to supporting research for greatly needed new TB medicines. Most current medicines used to treat TB are at least 50 years old, take too long to work, and have potentially debilitating side effects.

### The Lilly TB Drug Discovery Initiative

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We launched the [Lilly TB Drug Discovery Initiative](#) in 2007 as a not-for-profit, public-private partnership with a mission to accelerate early-stage drug discovery. Headquartered in Seattle, Washington, the initiative brings together representatives from governments, philanthropic organizations, pharmaceutical companies, universities, and other research institutions to search for new TB treatments.

The most important goal of the Lilly TB Drug Discovery Initiative is filling the pipeline with new TB medicines. The initiative's founding members represent a unique consortium linking private, not-for-profit, and public sectors—including Lilly, the [Infectious Disease Research Institute \(IDRI\)](#) and the [National Institute of Allergy and Infectious Diseases \(NIAID\)](#) of the U.S. [National Institutes of Health](#). In 2009, [Academia Sinica](#) (National Academy of Sciences of Taiwan) joined the initiative as a contributing member.

### Infectious Disease Research Institute (IDRI)

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We partner closely with [IDRI](#), located in Seattle, to support its research efforts to find new TB medicines. We've committed more than \$20 million in funding and in-kind contributions to IDRI from 2008-2016. Initially, we provided start-up funding and helped establish IDRI's fully equipped high-throughput screening and chemistry laboratories.

We also provide access to Lilly research tools and our corporate compound library that now includes more than 800,000 molecular entities. IDRI uses this library to fill the research pipeline with high potential, structurally novel anti-TB compounds through the use of innovative screening approaches. Lilly scientists volunteer time to assist IDRI with its discovery efforts, contributing their scientific and technical expertise, and passion for finding new TB medicines.

### TB Drug Accelerator

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Lilly is a member of a groundbreaking collaboration between eight pharmaceutical companies and seven research organizations known as the [TB Drug Accelerator \(TBDA\)](#). The partnership is targeting the discovery of new TB medicines by collaborating on early-stage research. The long-term goal of the TBDA is to create a TB drug regimen that cures patients in only one month.

The partnership is unique because it breaks from traditional research and development practices. The members work together to develop the best prospects, regardless of where the drug originated. The structures of lead compounds identified through the program will ultimately be placed in the public domain. Aided by nearly \$20 million from the [Bill and Melinda Gates Foundation](#), the TBDA was launched in 2012. The first round of screening for new TB drug candidates has been completed and compounds are advancing rapidly.



# CHINA

## The Lilly MDR-TB Partnership CHINA

### MDR-TB in China

According to the China CDC, in 2013 more than 900,000 people in China were infected with TB. China is second only to India in terms of the number of reported TB cases. Over the past 20 years, China has more than halved its TB prevalence, yet MDR-TB remains a threat to progress, with an estimated 60,000 MDR-TB notified cases of pulmonary TB in 2013. MDR-TB cases represented approximately 6% of all TB cases in the country.

Although the prevalence of TB has significantly declined as the result of a national TB prevention and control plan, the country is still encountering great challenges because the significant number of people with TB, the rise of MDR-TB, and inadequate and unsustainable treatment approaches.

Furthermore, ongoing national health reforms are leading to dramatically changing responsibilities for TB prevention and care. As a result, there is a great need for capacity building among healthcare providers as they work to implement changes and adapt to their new roles, while also striving to meet aggressive new TB and MDR-TB prevention and control targets.

### The Lilly MDR-TB Partnership in China

The Lilly MDR-TB Partnership began operating in China in 2003 with the transfer of manufacturing technology for capreomycin to Zhejiang Hisun Pharmaceutical Co., Ltd. Since that time, the partnership has continued to engage in China with a number of national and international organizations.

In 2011, the Lilly MDR-TB Partnership further aligned its efforts with the **National Health and Family Planning Committee's (NHFPC's)** TB prevention and control plan. This approach includes designated TB hospitals that are responsible for diagnosing people with TB and initiating in-patient care to ensure proper adherence to protocols and improve outcomes. To support this new approach, the partnership is collaborating with **China's Centers for Disease Control and Prevention (China CDC)** and the **Chinese Medical Association TB Society** to launch pilot training centers for healthcare providers in high-burden provinces. These provinces

**900,000**

Number of people in china that are newly infected with TB every year

**2nd Largest**

Number of TB cases in the world, are in China

**-50%**

The prevalence of TB in China has more than halved over the last 20 years

**60,000**

Notified cases of pulmonary TB in 2013

were selected in collaboration with the the Ministry of Health to test the training approach in a variety of settings.

In addition, Lilly is partnering with other leading health organizations to develop and evaluate training and capacity-building efforts for nurses, traditional doctors, and religious groups, and to support people undergoing TB treatment.

Through all of these efforts, we are measuring and evaluating outcomes to identify best practices that can be replicated and scaled to support the NHFPC's objectives for reducing the TB and MDR-TB burden in China.

### A closer look: launching pilot centers

The partnership is supporting the NHFPC by establishing six pilot centers where providers are trained to better diagnose and manage MDR-TB. Located in provinces with a high burden of MDR-TB, the pilot centers are based in newly designated TB hospitals. The hospitals are located in larger cities, and serve urban populations as well as people living in surrounding counties and villages.

The pilot centers provide training, engage local healthcare professionals, and demonstrate the benefits of quality training to both healthcare professionals and provincial governments. They are critical in helping the NHFPC develop and evaluate healthcare provider training and capacity building models. As part of these efforts, the Lilly MDR-TB Partnership is helping create an elite group of trainers at the pilot centers who will ensure the best training approaches are taught consistently.



## Partnership highlights, Phase III (2012-2016) The Lilly MDR-TB Partnership is helping launch 12 pilot centers:



The pilot centers will support access to improved care for MDR-TB for the **millions** of people at-risk living in high burden MDR-TB provinces



**18,000** healthcare professionals will be trained at the pilot centers



They will provide diagnosis and treatment for an estimated **15,000** people with MDR-TB



More than **4 million** people will be reached through education campaigns and patient-support programs

## Partnership highlights, Phase I & II (2003-2011)

- Successful technology transfer of capreomycin to Zhejiang Hisun Pharmaceutical Co., Ltd
- Signed agreement in 2006 with Ministry of Health in China to support healthcare provider training and public advocacy of MDR-TB in China
- More than 1,500 healthcare providers trained
- More than 700,000 volunteers and social workers engaged through training, education, and outreach efforts; millions of people reached through awareness campaigns
- Sponsored first National MDR-TB Conference in China in collaboration with Chinese Medical Association TB Society
- Lilly China received the Special Contribution Award by China Ministry of Health for our continuing contribution to the country's fight against MDR-TB

## What's next in China?

Lilly and its partners will continue to support NHFPC's efforts to deploy and strengthen its new TB and MDR-TB approach. Our main focus is on launching all 12 pilot centers by 2016. Ultimately, the NHFPC may use the experience of the pilot centers to implement an innovative and proven model on a national scale, including a comprehensive toolkit with best practices that will aid in better MDR-TB diagnosis and management.

The partnership will also:

- Focus on training and awareness in the Qinghai Province to improve program implementation and management at the provincial, prefecture, and county levels, and strengthen community engagement efforts by working with religious groups, media, and the traditional hospital in the province
- Partner with the Chinese Nurses Association and the International Council of Nurses to better train nurses on treatment protocols and address bottlenecks that reduce their ability to help more people with MDR-TB
- In collaboration with the International Federation of Red Cross and Red Crescent Societies and its national society, we will continue to support people being treated for MDR-TB by providing food parcels and health-related transportation



## Key MDR-TB partners in China

- Chinese Centers for Disease Control and Prevention (China CDC)
- Chinese Medical Association Tuberculosis Society
- Qinghai Provincial Center for Disease Control and Prevention
- International Council of Nurses
- Chinese Nurses Association
- International Federation of Red Cross and Red Crescent Societies
- World Health Organization



**Our main focus is on launching all 12 pilot centers by 2016.**

# INDIA



## The Lilly MDR-TB Partnership INDIA

### MDR-TB in India

India has the world's highest burden of TB. More than 1.4 million people were reported to have TB (total notified cases) in 2013, while an estimated 61,000 cases of MDR-TB cases were reported, according to the WHO. MDR-TB cases represented more than 2% of all TB cases in the country.

The country's complex health system often leads to diagnosis delays, misdiagnosis, and ineffective treatment approaches.

In 1997, the Indian government established the **Revised National Tuberculosis Control Program (RNTCP)**, which provides free TB diagnosis, treatment facilities, and medicines. The public program has continued to evolve and expand its coverage, and today is focused on providing "universal access to early quality diagnosis and quality care for all TB patients."

Although about 70% of all identified TB cases in India are treated through the RNTCP, there are often significant delays between initial diagnosis and the start of treatment, and a large number of people continue to receive inappropriate treatment. In addition, despite the availability of free care, many people pay for services and treatment in private settings—where quality varies greatly, especially in rural areas.

### The Lilly MDR-TB Partnership in India

The Lilly MDR-TB Partnership has been active in India since 2004, beginning with the transfer of cycloserine to Shasun Pharmaceuticals, Ltd. This effort led to ongoing discussions and collaboration with the government and other key TB stakeholders in India about how to leverage the capabilities of Lilly and its partners to help achieve RNTCP goals.

**1.4 Million**

Number of people in India who were reported to have TB in 2013

**1 Million**

Estimated number of people with TB in India that are "missing"—that is, not reported to the National TB Program as being diagnosed or effectively treated

**61,000**

Number of estimate cases of MDR-TB reported in India 2013

**2/3**

Despite universal free coverage, an estimated two-thirds of people with TB go to private providers and pay for care

There have been numerous partnership projects and initiatives undertaken in India since 2004. In 2011, it was agreed with the government that the Lilly MDR-TB Partnership should help address three critical needs:

- Better healthcare-provider training at state and regional levels (pharmacists, nurses, rural healthcare providers, private hospital clinicians)
- New approaches to engage with private-sector healthcare institutions and providers
- More effective ways to engage with practitioners of traditional medicine, especially in rural areas

As a result, the Lilly MDR-TB Partnership is focusing its efforts in India today on healthcare-provider training and capacity building in both private and public sectors, and creating linkages between private healthcare providers and public systems to better ensure people get proper care along the TB continuum, from prevention to cure. Our goal is to accelerate progress on the RNTCP's goal of providing universal access, improving treatment and completion success rates, and collecting and evaluating data to determine the most effective and sustainable approaches.

### A closer look: capacity building for pharmacists

The private healthcare sector in India is highly diverse, consisting of qualified and non-qualified practitioners. Many pharmacists working in rural areas of India lack formal training, yet they are often the only point of contact for healthcare.

In collaboration with the Indian Pharmaceutical Association and the Federation of International Pharmacists, the Lilly MDR-TB Partnership began working with pharmacists in 2010 to increase their capacity to better recognize TB in all its forms, make appropriate referrals for care, and to administer the correct medicines—all in accordance with approved guidelines.

More than 2,000 pharmacists and chemists have been trained to date. Among those trained, 1,200 have actively engaged in referring more than 10,000 people with potential TB symptoms for appropriate care through the RNTCP. About 9% of these people have tested positive for TB and been put on appropriate treatment.

In addition to strengthening their capabilities, many of these non-traditional providers have become respected TB thought leaders in their communities and are helping their peers better identify and treat TB.

## India partnership highlights, Phase III (2012-2016)

### We are focused on training and capacity building:



**2,000+** doctors trained



**2,000+** pharmacists and chemists trained



**635** rural healthcare providers trained; **230** of whom have become engaged and helped increase referrals by **33%** in their respective intervention areas



**200** nurses engaged



**20+** private hospitals engaged to improve treatment and care

### And referring previously “missing” TB cases for appropriate care:

- 1,500 nontraditional healthcare-providers trained to make appropriate referrals for people at-risk of TB
- 72,000 people at-risk for TB referred for appropriate screening and care in 2014
- 215,000 people expected to be referred for appropriate care and support by 2016

### We are increasing treatment access:

- Almost a half million people have access to quality treatment through our partnership efforts
- Nearly 1,000 people supported through treatment completion
- Trained rural healthcare providers provide access to TB services to a population of nearly 1.3 million, referring them for early and appropriate diagnosis and supporting treatment completion

### And improving treatment completion rates:

- Achieved target of increasing treatment completion rates by 5% per year in target populations in Burari (Delhi) and Hyderabad (Telangana)

## What's next in India?

Our partners will continue to provide direct care and support for people on treatment in the geographies in which we operate. Together, we will continue to report findings to help the Indian government and other key stakeholders evaluate and advance the most effective and sustainable approaches for MDR-TB treatment and control. In addition, the Lilly MDR-TB Partnership is focused on the following areas:

- Scaling-up private-sector hospitals' effort around TB. Working with the Union in India and REACH, we are engaging with multiple private hospitals to improve the quality of TB care and follow-up, including training physicians on appropriate treatment regimens, better linking with India's national TB reporting system for monitoring, and better connecting people with TB to support service (including the use of mHealth)
- Deploying training modules countrywide. In collaboration with the Central TB Division, we have developed training modules for pharmacists, nurses, and auxiliary nurse midwives. Translated into seven languages, the training modules continue to be used in many regions to support healthcare providers and people fighting TB
- Supporting transition of DMCs to RNTCP. We are supporting TB Alert's efforts to transition ownership and accountability for its Designated Microscopy Centers (DMCs) to the RNTCP to sustain and continue these centers in areas that lack health services
- Supporting and recognizing journalists. We will continue to work with REACH to improve the quality and frequency of reporting on TB, and provide resources to journalists at [www.media4TB.org](http://www.media4TB.org). To date, 40 journalists from across India have been named as Media Fellows; they have written 140 stories in eight different languages and helped train more than 200 journalism and media students on TB reporting.

## Phase III work



## Partnership highlights Phase I & II (2004-2011)

- Successful technology transfer of cycloserine to Shasun Pharmaceuticals, Ltd.
- More than 130 clinicians trained on management of MDR-TB
- 1,600 people with MDR-TB supported with psychosocial counselling and home-based care services in West Bengal and Delhi
- 10 journalists from across India named as Media Fellows; they wrote more than 35 stories on different aspects of TB
- Media stories on TB published in eight local languages

## Key MDR-TB partners in India

- CARE India
- Indian Pharmaceutical Association
- Indian Nursing Council
- International Council of Nurses
- The International Union Against Tuberculosis and Lung Disease (The Union)
- Resource Group for Education and Advocacy for Community Health (REACH)
- St. Stephen's Hospital
- TB Alert, India
- World Health Organization



# RUSSIA



## The Lilly MDR-TB Partnership RUSSIA

### MDR-TB in Russia

While TB diagnosis and mortality rates have fallen in Russia since 2001, the country had more than 140,000 people with TB (total notified cases) and 41,000 estimated cases of MDR-TB in 2013, according to the WHO. MDR-TB cases represented 19% of all TB cases in the country.

The Russian Ministry of Health instituted a new approach to TB control and care in 2011 and new MDR-TB clinical guidelines in 2014. These efforts are backed by significant investment from the government and universal health coverage for Russian citizens. Yet significant structural, social, and policy gaps slow progress. Scale-up and replication of proven, cost-effective treatment and care models are greatly needed.

TB care in Russia is provided by specially trained TB staff and their training and capabilities vary greatly. This is critical as TB doctors in Russia are accountable for determining treatment regimens, which should ideally be based on evidence-based studies and approved protocols. Nurses and other healthcare providers are underutilized and TB awareness and prevention programs are limited.

In Russia, TB and drug-resistant rates are high among people living with HIV infection, people in prison settings, and homeless and migrant populations. Targeted approaches are required to reduce the TB burden among these groups.

### The Lilly MDR-TB Partnership in Russia

The partnership has been active in Russia since 2003, beginning with the technology transfer of cycloserine to JSC Biocom. Our primary focus through the first two phases of the partnership was on technology transfer implementation, transmission control, healthcare-provider training, and disease state awareness.

**3rd Highest**

Russia has the third-highest burden of TB, after India and China

**142,000**

Total number of TB cases in Russia 2013

**19%**

MDR-TB rate among newly diagnosed cases in Russia

**41,000**

Estimated MDR-TB cases in Russia in 2013

In 2011, the partnership realigned its efforts in further support of Russia's MOH objectives, with a focus on:

- Supporting federal and regional governments in expanding MDR-TB prevention and care models in selected regions—including rapid diagnosis and initiation of treatment to reduce transmission
- Conducting MDR-TB diagnostics and treatment training for healthcare-providers, including doctors, nurses, and social workers
- Collaborating with journalists and other organizations to increase public awareness
- Facilitating interactions with the federal system (interventions in prison) and a more integrated healthcare approach (interventions for people living with TB and HIV, and migrants).

### A closer look: PIH project in Tomsk offers hope

Completing a full course of the right treatment is critical to stopping TB. But lack of adherence makes up about 40% of all negative TB outcomes. Rates are much higher for vulnerable populations, especially those living in—or passing through—rural areas, and people in prison.

In the mid-1990s, PIH asked Lilly to supply capreomycin and cycloserine to treat newly reported cases of MDR-TB in Tomsk prisons. We agreed and this formed the foundation of what would later become the Lilly MDR-TB Partnership. Over the ensuing years, PIH's involvement, and Lilly's support of those efforts, grew in Tomsk.

In 2004, PIH and several NGOs began exploring a new model of care in the Tomsk region to significantly reduce the burden of TB.

The Tomsk model is based on infection transmission control, training, and ensuring people with TB complete their treatment. This comprehensive, patient-centered approach builds on the DOTS approach, complimented by psychosocial support. This includes searching for patients, including those without homes, who do not attend treatment sessions, monitoring for adverse events to minimize the treatment defaults, and providing nutritional support.

The results in Tomsk are dramatic. From 2000-2012, the TB incidence rate was nearly cut in half and mortality rates dropped by more than 70%. In 2013, the project was highlighted in the "Best Practice in Prevention, Control and Care for Drug-Resistant Tuberculosis," published by the WHO Regional Office for Europe, and it received the prestigious Karel Styblo Public Health Prize from the International Union Against Tuberculosis and Lung Diseases.

## Partnership highlights Phase III (2012-2016)

**The partnership is supporting international and national policies in Russia to decrease the incidence of TB by more than 50% and TB deaths by more than 40% from 2011-2020.**



We are doing this by helping expand the successful model in Tomsk to 2 additional regions—Voronezh and Petrozavodsk



We are working with 2 major hospitals in these regions to adopt proven, effective TB models and guidelines



We are building capacity among hundreds of healthcare providers across several regions of the country



And increasing TB awareness among millions of Russians through more frequent and better-informed media coverage

**"During visits with patients and providers, in clinics and hospitals and prisons, I thought so often about how grateful we are to be at the front lines of such life-saving work, which has always involved—thanks to the Lilly MDR-TB Partnership—that magical combination of clinical care, training, and research. I think we can all take great pride in the dramatic improvements we've seen in Tomsk's tuberculosis outcomes."**

Paul Farmer, M.D., Ph.D.  
Chair, Department of Global Health and Social Medicine,  
Harvard Medical School, and co-founder of PIH



## What's next in Russia?

The partnership's primary objective is to support the Russian Ministry of Health in its efforts to reduce its country's TB burden by increasing the number of people at-risk of TB who seek care and the number of qualified healthcare-providers actively treating TB. We will do this this by supporting the expansion and replication of PIH's Tomsk model in Russia, and working with our other partners to further:

- Train and build capacity among healthcare-providers
- Increase the number of hospitals adopting advanced prevention, care, and training models
- Implement targeted, integrated care approaches for vulnerable populations
- Drive TB awareness through media training and awards
- Demonstrate that successful treatment of MDR-TB is possible, even in hard-to-treat populations
- Share best practices among our partners in Russia, China, India, and South Africa

## Partnership highlights Phase I & II (2003-2011)

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- Transferred manufacturing technology for cycloserine JSC Biocom. (In 2014, the product became the first medicine manufactured in Russia to be approved by the [WHO Prequalification of Medicines Programme](#) and the company's manufacturing facility became the first and only one in Russia to meet WHO's Good Manufacturing Practice Standards)
- Conducted numerous MDR-TB training and education sessions for researchers and doctors
- Partnered with International Council of Nurses and Russian Nurses Association to develop education programs and train about 4,000 nurses
- Supported journalist training programs and awards to strengthen media coverage of MDR-TB
- Equipped 11 children's TB hospitals with computers so the children can continue to learn while staying at the hospital
- Designed "Your Health Is in Your Hands" photo exhibit reaching millions of Russian citizens with a message to get regular lung health checkups

## Key MDR-TB partners in Russia

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- Central TB Research Institute and other TB Research Institutes
- Children in Need Charity Foundation
- Federal Correctional Services
- International Council of Nurses, Russian Nurses Association
- International Federation of Red Cross and Red Crescent Societies
- International Investment Centre
- Partners In Health, Brigham and Women's Hospital, and Harvard Medical School
- Russian Regional TB Services
- Russian TB Society
- Russian Union of Journalists
- SIA International, JSC Biocom
- World Health Organization

# SOUTH AFRICA



## The Lilly MDR-TB Partnership SOUTH AFRICA

### MDR-TB in South Africa

South Africa carries a significant TB burden with about 330,000 people contracting the disease in 2013 (total notified cases). With one of the highest burdens of MDR-TB in Africa, South Africa had about 7,000 notified cases of MDR-TB among notified pulmonary TB cases in 2013, according to the WHO. South Africa has one of the world's worst dual epidemics of HIV and TB, and a growing XDR-TB (extensively drug-resistant TB) problem.

The South African Department of Health launched the National Strategic Plan for TB and HIV in December 2011, which called for the decentralization of TB care. Up until that time, TB detection was decentralized, but care typically took place in large hospitals in urban centers. People seeking treatment often faced delays in hospital admissions, long travel, extensive time away from families and work, and other barriers.

Through decentralization, the Department of Health is working to ease TB burden on an already taxed South African healthcare system. The goal is to reduce transmission rates of drug-resistant TB by initiating treatment sooner, improving adherence to treatment regimens, and supporting patients closer to their homes. Yet, the lack of health systems integration at national, provincial, and district levels continues to slow progress.

### The Lilly MDR-TB Partnership in South Africa

The partnership in South Africa began in 2003 with the technology transfer of capreomycin and cycloserine to Aspen Pharmacare Holdings Ltd. Over the years, we have worked with numerous NGOs and institutions, and the government at the national, provincial, and local levels. Projects have included healthcare-provider training, with a focus on nurses and community workers, patient support programs, and advocacy and disease state awareness efforts.

**330,000**

Number of people in South Africa who were reported to have TB in 2013

**Number 1**

TB is the leading cause of death in South Africa

**200%**

Increase in number of MDR-TB cases in South Africa

**7,000**

Notified cases of MDR-TB in South Africa among notified pulmonary TB cases in 2013

The partnership now primarily focuses its activities on two provinces—KwaZulu-Natal and the Eastern Cape—that have the highest burden of MDR-TB in South Africa.

In collaboration with the South African Red Cross Society, KwaZulu-Natal Chapter, and the outpatient clinic of the King Dinuzulu Hospital Complex, the partnership is working in the Durban area to link people with or at risk of TB to support in their communities, strengthening prevention efforts, and supporting people who are being treated to improve treatment completion rates.

The Donald Woods Foundation is helping the Eastern Cape Department of Health decentralize and deinstitutionalize MDR-TB treatment. Actively engaged in the Lilly NCD Partnership, the foundation joined the Lilly MDR-TB partnership in 2013. Together we are working in the Buffalo City region of the Eastern Cape to reduce TB transmission by strengthening prevention and control efforts in local clinics and prisons and mobilizing community healthcare workers to bring care to people in their homes and schools.

The partnership also supports decentralization efforts in collaboration with [FHI 360](#) through providing for a technical advisor for the National Department of Health, and with the South African Medical Research Council, documenting the introduction and roll-out of new models of care for people with MDR-TB.



## Partnership highlights Phase III (2012-2017)

The partnership is supporting government decentralization efforts, moving from institutionalized TB care in large hospitals to providing care for people with TB in their local communities.



We are working in KwaZulu-Natal and the Eastern Cape, two provinces with a high burden of drug-resistant TB that are home to **17 million** people:



Training **120** nurses in infection control and comprehensive patient care, and more than 200 nurses and nurse faculty members on operational research methods



Supporting thousands of families in at-risk communities through community-based education and psychosocial services

And supporting decentralization efforts at the national level

## Partnership highlights Phase I & II (2003-2011)

- Transferred technology for capreomycin and cycloserine to Aspen Pharmacare Holdings Ltd
- Conducted TB awareness campaigns reaching millions of South Africans
- Facilitated exchanges between doctors from South Africa and other countries (e.g., Latvia, Peru) to improve MDR-TB management and care at a time when the expertise was not abundant in South Africa
- Conducted annual best-practice meetings for doctors in South Africa, which, in part, helped spark the country's policy on decentralization for MDR-TB management and care

## A closer look: decentralization efforts in KwaZulu-Natal

KwaZulu-Natal is a province on the eastern coast of South Africa, with Durban being its largest urban center. The area around Durban has the highest TB burden in the country, with alarming rates of drug-resistant TB.

King Dinuzulu Hospital Complex (KDHC) is a public hospital in Durban that specializes in treating drug-resistant TB. The TB component of the hospital manages up to 2,500 patients a month and MDR-TB cases at the hospital have steadily increased—from just over 200 cases in 2000 to more than 2,300 in 2010. Unable to support the demand, KDHC has a shortage of beds and a waiting list for the initiation of treatment.

The Lilly MDR-TB Partnership supports the South African Red Cross Society (SARCS), KwaZulu-Natal Chapter, which acts as a community-based link between KDHC and people with MDR-TB. It provides social support to help people with drug-resistant TB complete treatment regimens and improve outcomes, including for people who have previously not completed their full course of treatment. SARCS also oversees the improvement of systems for patient care within the outpatient clinic of the hospital, and ensures that family members of people with TB get screened.

Interventions put in place by KDHC and SARCS are being measured and evaluated to determine outcomes and best practices that can inform similar efforts across South Africa and beyond.

### What's next in South Africa?

The Lilly MDR-TB Partnership will continue to support the South African DoH's strategic plan to reduce the burden of TB by collecting evidenced-based data that will be used to inform national and provincial decentralization efforts.

The partnership will also:

- Support the South African Medical Research Council in documenting various TB treatment and control models in support of decentralization. The project will help determine the effectiveness of different approaches and research larger health systems factors that influence treatment outcomes
- Work with DENOSA to develop and evaluate MDR-TB training programs
- Train healthcare workers at community clinics and prisons
- Work with the Donald Woods Foundation and provincial departments of health to support people in at-risk communities through awareness campaigns and door-to-door outreach programs that include TB screening and educational materials
- Provide ongoing technical assistance in the roll-out of decentralization across South African provinces in collaboration with FHI 360 and the National Department of Health

## Key MDR-TB partners in South Africa

- Democratic Nursing Organisation of South Africa (DENOSA)
- Donald Woods Foundation
- Eastern Cape Department of Health
- FHI 360
- International Council of Nurses
- King Dinuzulu Hospital Complex
- National Department of Health, South Africa
- South African Medical Research Council
- South African Red Cross Society, KwaZulu-Natal Chapter



## The rising burden of NCDs

Non-communicable diseases (NCDs) are a complex and growing public health threat, accounting for approximately 36 million deaths each year, according to the WHO.

Commonly mistaken for diseases that afflict affluent countries, NCDs—which include diabetes, cancer, cardiovascular diseases, and chronic respiratory diseases—disproportionately affect the most vulnerable. In fact, nearly 80% of NCD deaths occur in low- and middle-income countries.

This impact is exacerbated by the fact that healthcare systems in these countries have traditionally been oriented toward care for infectious diseases and other areas including maternal and child health. Amid scarce resources and competing healthcare system demands, many people with NCDs are diagnosed late—if at all. And for those who are diagnosed, care is variable at best.

More than 9 million deaths attributed to NCDs occur before the age of 60. And 90% of these “premature”—and largely preventable—deaths occur in low- and middle-income countries. As these diseases take lives, they also diminish opportunities. Poverty grinds on. Development stalls. Struggling communities weaken even further. And families face the loss of loved ones, lost income, and potentially catastrophic healthcare expenditures.

There are few successful models and limited international funding for NCDs, but recognition of the challenge is increasing,



## NCDs on the rise

**36 Million +**

Number of global deaths each year related to NCDs

**80%**

Percentage of global deaths related to NCDs in low- and middle-income countries

**9 Million**

Number of deaths attributed to NCDs occur before the age of 60

**90%**

Percentage of “premature” deaths that occur in low- and middle-income countries

and global health organizations, governments, and other stakeholders are mobilizing to address the human, financial, and societal toll of these diseases. The [WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020](#) provides a road map and a menu of policy options for cross-sector collaboration that, when implemented, will attain nine voluntary global targets, including a 25% reduction in premature deaths from NCDs by 2025. Achieving the targets would save millions of lives.

## Tackling NCDs through partnership

While responding to the NCD challenge is primarily the role of governments, new ways of thinking and collaboration on an unprecedented scale are needed. The private sector has a critical role to play in these efforts. That includes Lilly because we have expertise, capabilities, and assets related to two key NCDs—diabetes and cancer.

After consulting with key global health stakeholders at the international, national, and local levels, we determined that we could best contribute to the NCD challenge by focusing on diabetes, which particularly affects those who are socially and economically disadvantaged. For more than 90 years, Lilly has been a worldwide leader in pioneering diabetes solutions. Given our history, deep expertise, and current product portfolio and pipeline, diabetes was a natural choice as the focus of the Lilly NCD Partnership.

We launched the Lilly NCD Partnership in September 2011 with a commitment of \$30 million over five years. Through the partnership, we are collaborating with seven leading health organizations in Brazil, India, Mexico, and South Africa—four countries with high rates of diabetes, and NCDs in general.

Together we are leveraging our collective expertise and capabilities to develop and evaluate approaches that strengthen the early detection and timely treatment of diabetes—with the goal of sustainably improving patient and health systems outcomes while possibly lowering costs. Evidence shows that investments in early intervention efforts can improve health outcomes and reduce the need for more expensive treatment later, typically at far greater cost to families, communities, and society.



## Diabetes: a global epidemic

According to the International Diabetes Federation's Atlas, 2014 Update:



There were **387 million** people with diabetes in 2014; by 2035, this will rise to **592 million**—a 53% growth rate



The number of people with type 2 diabetes is increasing in every country



**77%** of people with diabetes live in low- and middle-income countries



**179 million** people with diabetes are undiagnosed

## Diabetes caused:



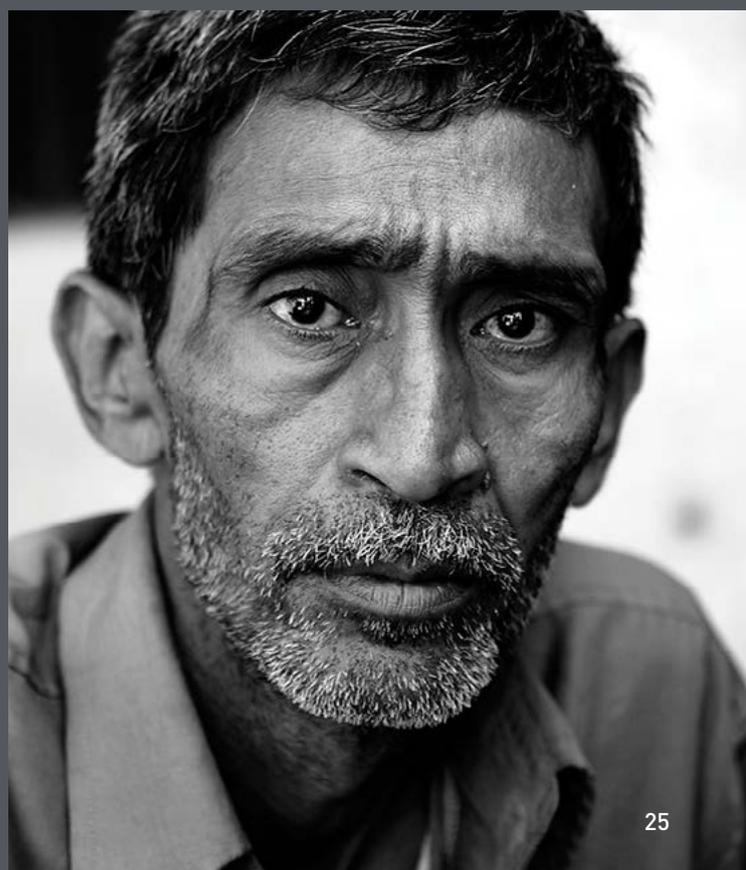
**4.9 million** deaths in 2014



A death every **seven seconds**



At least **\$612 billion** in health expenditures in 2014



# Lilly NCD Partnership Highlights

Through the Lilly NCD Partnership, we collaborate with seven leading health organizations. Each is highly regarded at the local and/or international level and brings critical capabilities and expertise. Lilly has collaborated with some partners—such as Project HOPE—many times, while this is the first engagement with others. We actively share approaches, learnings, and outcomes across the partnership, including every year at the Lilly NCD Partnership Summit.

## Partnership overview



Launched in 2011



million commitment over 5 years (2012-2016)



Focused on improving diabetes health outcomes



Leveraging Lilly's Research, Report, and Advocate framework



Focusing on 4 countries with high diabetes and NCD burdens:  
**Brazil, India, Mexico, South Africa**



Partnering with 7 leading global health organizations

## Partnership goals

- Improve health outcomes for people and strengthen healthcare systems
- Collaborate with government and healthcare organizations at global, national, and local levels
- Lead effective pilots of new comprehensive diabetes approaches
- Collect, evaluate, and share outcomes data
- Use evidenced-based data to inform future NCD prevention and control efforts, including the replication and scale-up of best practices
- Create shared value



### Brazil

Institute for Children with Diabetes  
Medical Foundation of Rio Grande do Sul – Federal University of Rio Grande do Sul



### India

Public Health Foundation of India  
Population Services International  
Project HOPE



### Mexico

Carlos Slim Foundation



### South Africa

Donald Woods Foundation  
Project HOPE

## Our partnership approach

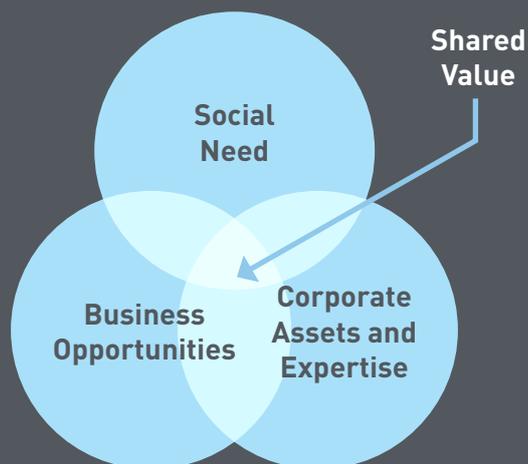
The Lilly NCD Partnership is based on the concept of “shared value.” Shared value is created when a business applies its unique assets and expertise to address a societal need in which the company has a vested, commercial interest. In doing so, lasting value is created for society and for the company. Through the Lilly NCD Partnership, we seek to improve health outcomes for people with diabetes, which is good for society and may create further business insights and opportunities for Lilly.

The Lilly NCD Partnership has no direct tie to our diabetes products, although it aims to impact health system capacity and patient outcomes, which may impact demand for our products over time.

Just as with the Lilly MDR-TB Partnership, we are using Lilly’s novel Research, Report, and Advocate framework (see page 6) in which we research new models of care, share our evidence-based findings to inform future decision making, and advocate for the replication and scale-up of best practices.

Lilly is not donating or providing medicines through the Lilly NCD Partnership. Projects have been designed in close collaboration with our partners in support of global, national, and local diabetes objectives—with the intent of finding sustainable, long-term solutions. Our projects go beyond medicine, working to strengthen healthcare systems in support of healthcare providers and people living with diabetes. Ultimately, we believe medicines are most effective when coupled with a well-functioning healthcare delivery system.

## Creating shared value



Lilly is increasingly using a modern approach to corporate responsibility known as “shared value.” Shared value is created when a business applies its unique assets and expertise to a pressing societal need in which the company has a vested, commercial interest. This modern, sustainable approach differs from traditional corporate responsibility, which is often built around philanthropy and less-focused charitable giving that is frequently unrelated to the business.

While our corporate responsibility efforts are increasingly focused on creating shared value, there will always be a place for traditional philanthropy such as product or monetary donation for disaster relief. We believe that finding the right approach for the situation leads to the greatest impact.

Lilly is a member of the [Shared Value Initiative](#), a global community of organizations committed to driving the adoption and implementation of shared value strategies among leading companies, civil society, and government organizations.



“Lilly is making a major move toward the concept of creating ‘shared value.’ By investing in the healthcare infrastructure of countries that have the highest burden of diabetes, they are leveraging their assets and expertise to both drive business results and improve public health.”

Mark Kramer Founder and Managing Director, FSG, and Senior Fellow, Corporate Social Responsibility Initiative, Harvard Kennedy School

## Other diabetes efforts

Lilly has been a global leader in diabetes for more than 90 years, introducing the first commercial insulin in 1923. Beyond our medicines, devices, and the Lilly NCD Partnership, we collaborate on numerous access challenges, to support people with diabetes, and fund research. Below are just a few examples.

### Life for a Child

Lilly has committed to donating more than 800,000 vials of insulin to the International Diabetes Federation's [Life for a Child](#) program—one of our largest single product donations. As of August 2014, the IDF's program provided support to nearly 14,000 children and youths with diabetes in 46 of the world's poorest countries.



As part of this effort, Lilly partnered with the IDF to produce [Life for a Child](#) and [In the Hearts of Africa](#), two documentaries featuring the journeys of children with type 1 diabetes in Nepal and the Democratic Republic of Congo, respectively. Through providing a glimpse into the world of these children, we hope to raise awareness of the devastating impact of diabetes and increase support for the Life for a Child program.



## Diabetes Conversations

Created by Healthy Interactions in collaboration with the IDF, Lilly Diabetes sponsors the Diabetes Conversations program, featuring [Conversation Map™](#) education tools. This innovative education method uses a unique visual approach to facilitate interactive group participation and empower people with diabetes to become actively involved in managing the disease. These educational tools, available in 38 languages, have been launched in more than 121 countries since 2008.

### BRIDGES

Lilly provided the IDF with a \$10 million educational grant in 2006 to fund the BRIDGES program. [BRIDGES](#)—Bringing Research in Diabetes to Global Environments and Systems—funds translational research projects in primary and secondary prevention of diabetes, providing the opportunity to 'translate' clinical learnings into meaningful solutions. The project solicits proposals that support cost-effective and sustainable interventions that can be adopted in real-world settings for the prevention and control of diabetes.

### A history of collaboration

Lilly collaborated with Canadian scientists Dr. Frederick Banting and Charles Best to overcome production challenges and to introduce the world's first commercial insulin product in 1923, making it widely available to the millions of people who needed it. Until then, diabetes was considered a death sentence, with no effective treatment aside from a semi-starvation diet. Children diagnosed with diabetes rarely lived past a year. Below, is a now-famous photo showing a child with diabetes before, and two months after, taking insulin.



# BRAZIL

## The Lilly NCD Partnership BRAZIL

### Diabetes in Brazil

Brazil has the highest rate of diabetes in South and Central America, and the fourth largest number of cases in the world. According to the IDF, more than 11.5 million people in Brazil have diabetes, almost 9% of its population.

Brazil has made notable advances in diabetes care, yet the disease remains underdiagnosed and undertreated, especially in low-income populations. The government offers universal healthcare, including free access to several commonly used diabetes medicines through Farmácia Popular do Brasil. Yet, diabetes awareness and prevention remain low. In the face of escalating costs, the Brazilian government is seeking to reduce the burden of diabetes by making better use of available resources.

A recent analysis of diabetes care in Brazil underscored several gaps, including inconsistent and inefficient treatment approaches and lack of educational resources for healthcare professionals and people with type 1 diabetes, particularly among rural areas and low-income areas of southern Brazil. It also revealed a lack of effective protocols to reduce the risk for developing type 2 diabetes among women who have had gestational diabetes.



**11.6 Million**

Number of people with diabetes in Brazil

**8.7%**

Percentage of Brazil's population with diabetes

**500**

Number of new cases of diabetes registered each day, according to Brazilian Ministry of Health

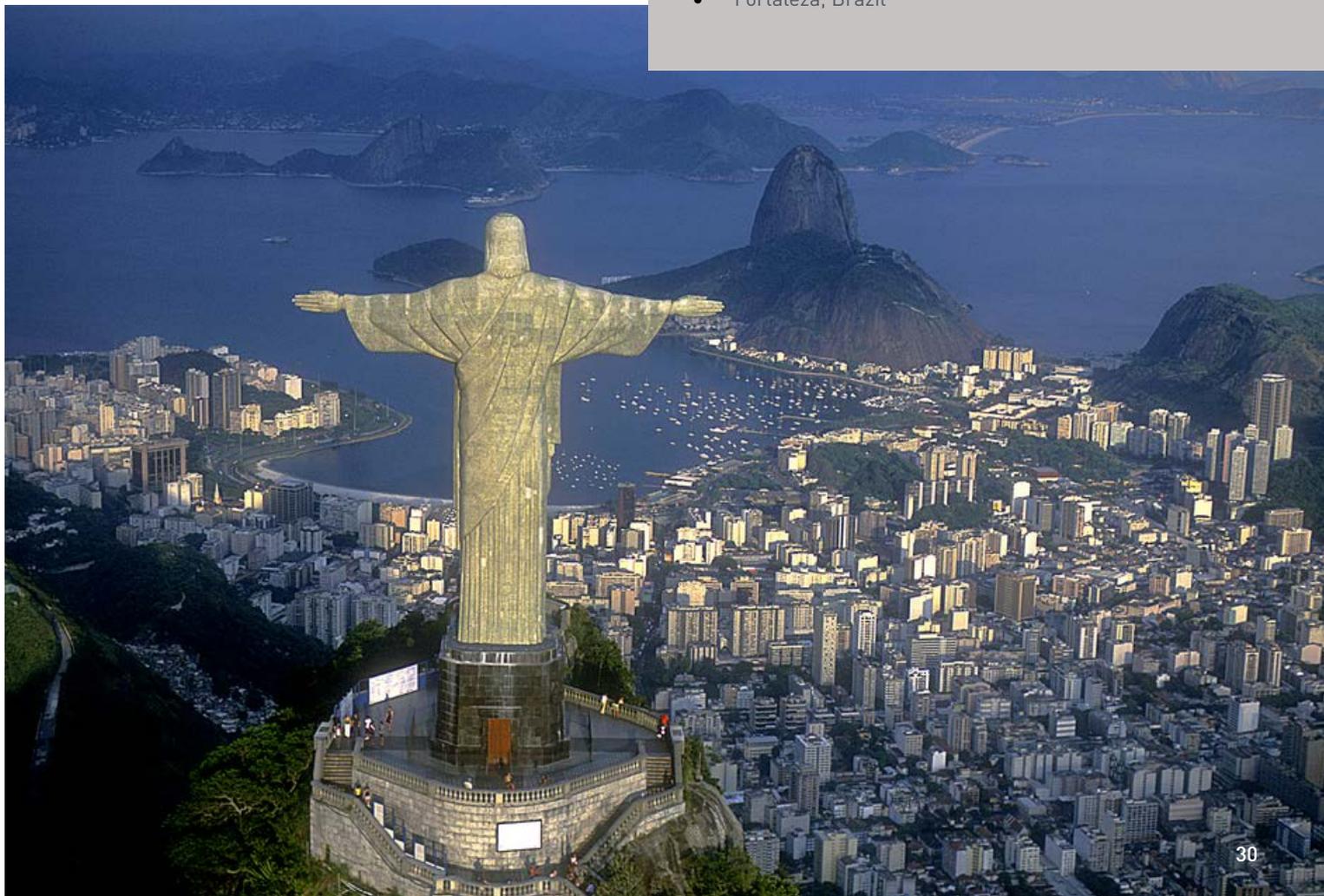
**50%**

Percentage of diabetes-related deaths in South and Central America that occur in Brazil

## The Lilly NCD Partnership in Brazil

The Lilly NCD Partnership works in Brazil on two projects with different partners that are helping address gaps in the country's approach to diabetes. With the Institute for Children with Diabetes, we are seeking to improve long-term healthcare outcomes for young people with type 1 diabetes. With the Medical Foundation of Rio Grande do Sul—Federal University of Rio Grande do Sul, we are focusing on finding replicable approaches to reduce the incidence of type 2 diabetes in women who have previously been diagnosed with gestational diabetes.

Both projects are in the "Research" phase of Lilly's novel Research, Report, and Advocate framework.



### NCD partners in Brazil

Medical Foundation of Rio Grande do Sul—Federal University of Rio Grande do Sul

- Porto Alegre, Brazil
- Pelotas, Brazil
- Fortaleza, Brazil

Institute for Children with Diabetes

- Porto Alegre, Brazil
- Fortaleza, Brazil

## Institute for Children with Diabetes—finding new solutions for the next generation

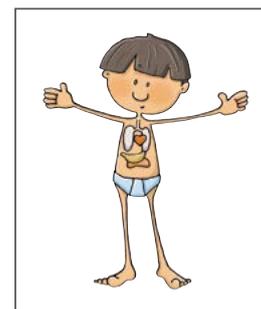
The [Institute for Children with Diabetes \(ICD\)](#) has been seeing families from across Rio Grande do Sul for the past decade. In collaboration with local partners, its staff has pioneered proven training models and tools that better enable multidisciplinary health teams to educate children and adolescents with type 1 diabetes, and their families, about the disease and how to manage it.



As a continuation of ICD's initiatives, the Lilly NCD Partnership is supporting the institute's new training and education model that features videos and other educational tools to simplify the complexity of diabetes, with the goal of reaching more people and improving overall diabetes health outcomes.

### Partnership approach

Through its Compact Education Program in Type 1 Diabetes (CEPT1) model, the institute will initially engage 136 families in two areas of Brazil through a comprehensive model of care that includes educational tools. The videos and supporting materials—intended to be simple and easy-to-understand—provide information about diabetes and how to manage it, including guidelines on exercise, nutrition, and different ways to administer insulin. Multidisciplinary teams of healthcare workers at the two sites have been trained to use and deploy the resources in two randomized studies.



The goal is to help young people with diabetes become more involved in their treatment and, as a result, significantly reduce acute hospitalizations and chronic complications of diabetes. Outcomes will be tracked, analyzed, and reported.

The project is being implemented in two different areas of Brazil—Porto Alegre and Fortaleza—each with its own distinct social, economic, and cultural makeup.

### Expected Impact

We will help children and adolescents better manage type 1 diabetes in challenging, low-income settings. Through timely and effective interventions, we will significantly reduce complications and hospitalizations related to type 1 diabetes.

We will do this by training healthcare professionals and leveraging educational tools for type 1 diabetes that will help children and adolescents:



Improve compliance with treatment



Achieve better metabolic control



Reduce acute complications of diabetes



Improve their well-being and quality of life

The validated model may be replicated and scaled-up across Brazil.

### Achievements to date

- Designed CEPT1 model
- Identified two underserved communities
- Submitted and received approval for protocol by research ethics committees
- Customized ICD's educational program into 16 video lessons and printed materials
- Initiated implementation of CEPT1
- Recruitment and randomization of planned study participants under way
- Launched video classes in July 2014

### What's next?

Study recruitment and randomization will be completed soon. All 136 people in the study are expected to complete the CEPT1 video courses. Participants will be followed up with 3, 6, 9, and 12 months after completing the course to compare outcomes with baseline measures. We will report the results, and, if the model is validated, we will advocate for its expansion, potentially creating a broad-based education network for diabetes across the country.

## The Medical Foundation of Rio Grande do Sul—helping women leave diabetes behind after childbirth



Located in Porto Alegre, the [Medical Foundation of Rio Grande do Sul](#) is a private, nonprofit organization that supports research, teaching, institutional development, and science and technology within the context of the Universidade Federal do Rio Grande do Sul and the Hospital de Clínicas de Porto Alegre. As part of its efforts with several local partners, the foundation is studying a new approach to reducing the incidence of type 2 diabetes in women who were previously diagnosed with gestational diabetes.

Through the Lilly NCD Partnership, we are helping physicians responsible for the study evaluate this model's effectiveness and, over time, we will conduct feasibility studies for potential scale-up and replication.

### Partnership approach

Investigators linked to the Universidade Federal do Rio Grande do Sul and the Hospital de Clínicas de Porto Alegre are leading this prevention effort focused on lifestyle changes for postpartum mothers who have had diabetes in pregnancy. In the first phase of this program, approximately 7,000 women with gestational diabetes will be monitored, and 740 of them who are at the highest risk of developing type 2 diabetes after childbirth (those with abnormal plasma glucose after pregnancy or who used insulin during pregnancy) will be selected to participate in the study. Half of the study group will receive the current guidance as provided in Brazil's healthcare system, and the other half will receive additional training, support, monitoring, and other interventions, including the use of mHealth technology.

The pilot study, a multi-center randomized control trial known as **L**ifestyle **I**nterventions in **D**iabetes **A**fter delivering (LINDA Brasil)—which operates in Fortaleza, Pelotas, and Porto Alegre—focuses on women at-risk who live in underserved communities.

### Expected Impact

We will pilot a new model of care for women who were previously diagnosed with gestational diabetes.



The model offers training, support, monitoring, and other lifestyle interventions



We will follow them for three years to measure health outcomes



We will identify best practices and evaluate the feasibility of replicating and scaling-up the approach

### Achievements to date

- Designed pilot study, LINDA Brasil, as part of larger cohort study
- Incorporated mHealth technology and electronic monitoring into study
- Rolled out pilot in 2013-2014
- Recruited more than 1,000 potentially eligible women for the trial and initiated randomization
- Protocol under review for publication

### What's next?

Clinical trial enrollment will continue, ultimately including 7,000 women, with data read outs for the cohort study and the randomized trial occurring over the next several years. After

three years in the study, we hope to be able to show a significant reduction in the development of type 2 diabetes among the women who receive additional interventions. If successful, the approach could be expanded to other regions in Brazil.



# INDIA



## The Lilly NCD Partnership INDIA

### Diabetes in India

With 66.8 million people with diabetes, India is second only to China in the total number of cases. According to the IDF, about 9% of India's population had diabetes in 2013 and the disease claims more than a million lives each year.

Higher incomes, more sedentary lifestyles, diets heavy in starches and sugars, and rising rates of high blood pressure are all fueling the spread of type 2 diabetes, with a co-morbid risk of cardiovascular disease. Alarmed by the trend, the Indian government launched its National Programme on Prevention and Control of Diabetes, Cardiovascular diseases, and Stroke (NPDCS) in 2008.

The government is also taking steps toward universal health coverage.

Awareness of diabetes remains very low in India, and over half of all people with diabetes go undiagnosed. Many healthcare professionals, particularly nonqualified practitioners working in impoverished communities, lack the knowledge and resources to prevent and treat diabetes.

Diabetes and other NCDs threaten to further strain India's healthcare system. The country's latest health plan calls for additional government investment, both at the national and state levels. There is growing consensus that the country needs a comprehensive approach to prevent, detect, and manage diabetes and other chronic diseases.

**66.8 Million**

Number of people with diabetes in India in 2013

**1 Million+**

Number of deaths in India due to diabetes each year

**17%**

Percentage of worldwide cases of diabetes that occur in India

**50%+**

Percentage of people in India with diabetes who go undiagnosed

## The Lilly NCD Partnership in India

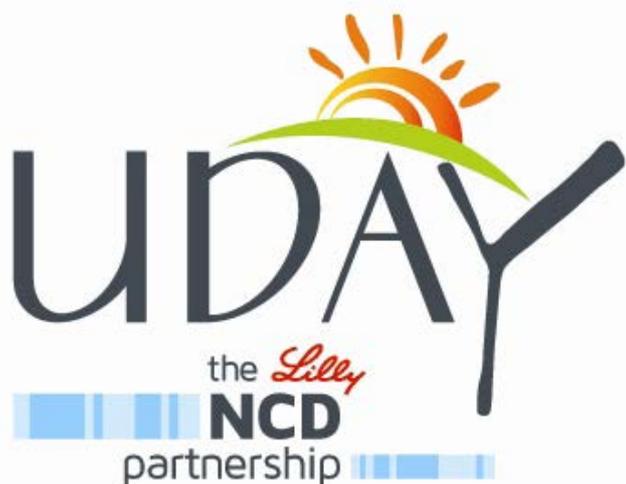
The Lilly NCD Partnership works with three organizations in India—the Public Health Foundation of India (PHFI), Population Services International (PSI), and Project HOPE. With PHFI as the program lead, we are implementing a program designed to help prevent, detect, and reduce the risk of diabetes and hypertension, and collecting operational research on the effectiveness of the intervention.

The program, known as **UDAY**, is the largest comprehensive, community-based diabetes initiative of its kind in India. It has the potential to reach more than 400,000 people living in two pilot areas, significantly improve patient and health system outcomes, and modernize diabetes and hypertension care—while reducing overall cost to the healthcare system.

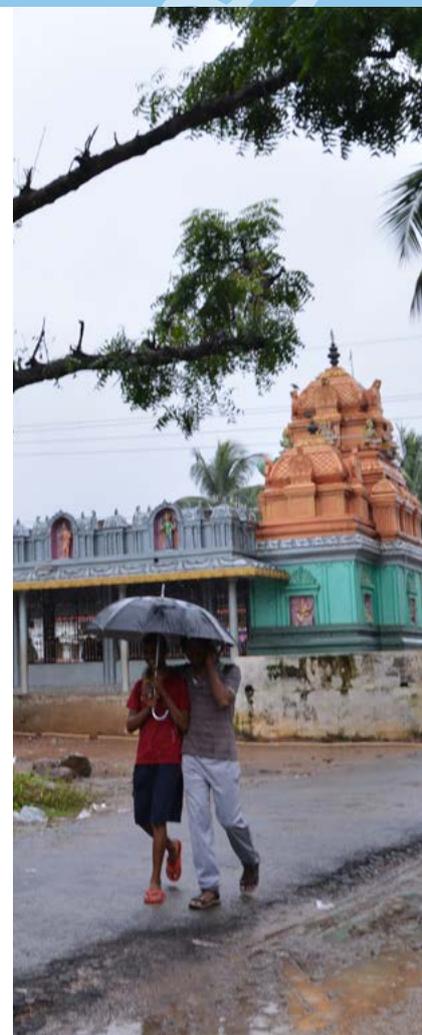
Our UDAY partners have established a research program to collect data and understand an array of factors that contribute to the spread of diabetes and hypertension—from prevalence to patient knowledge base, to healthcare provider practices. Based on this data, we, along with our partners are implementing and evaluating a multifaceted intervention program over the next three years.

## NCD partners in India





### Our UDAY partners



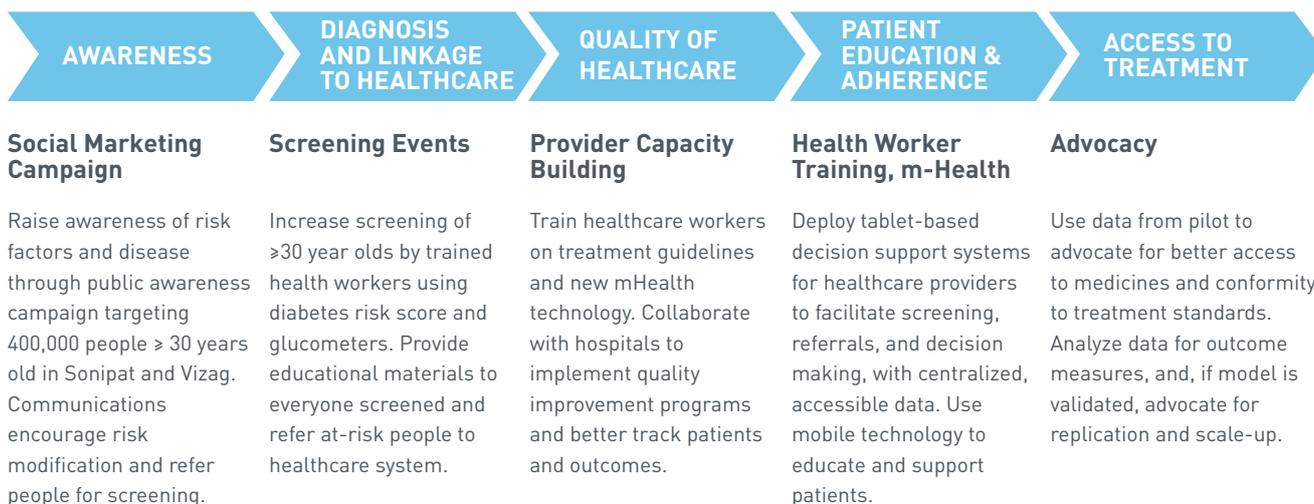
## A Closer Look: UDAY—A Comprehensive Diabetes Prevention and Management Program

UDAY launched in December 2013. The name means “dawn” or “sunrise” in Hindi, and signifies the potential for a new day in India for the prevention, detection, and reduction of diabetes and hypertension.

UDAY is an evidence-based pilot that will measure the impact of a new model of care, which uses the following framework:

### Measurement

We started UDAY by conducting baseline research in Sonipat and Vizag. We used the early data to inform our model. We will continue to collect baseline data and measure results at the middle and end of the pilot to assess program impact.



### UDAY's main research question

Will a multicomponent, multilevel comprehensive intervention program improve the prevention, detection, and management of diabetes and hypertension in the selected study sites?



## Expected Impact of UDAY

### We will increase awareness of diabetes and hypertension, by:

- Targeting evidence-based awareness campaign to 400,000 people
- Using a variety of approaches to reach people, including public service announcements, education materials, television, and mobile technology
- Growing people's awareness of diabetes in ways that lead to action

### We will screen more people and link them with the healthcare system, by:



Screening people  $\geq 30$  years old at events with trained healthcare workers with new tools



Identifying and referring more people with or at risk of diabetes and hypertension



Collaborating with local hospitals to register, screen, and monitor about 10,000 people

### Knowledgeable healthcare providers will make better-informed treatment decisions and support people with diabetes, by:

- Participating in training and capacity building opportunities
- Leveraging new technology and tools to track and monitor patients
- Conforming with national guidelines for prevention and care
- Using mHealth to educate and motivate people with diabetes

### The ultimate goal is to improve outcomes for people and healthcare systems, through:

- Increased prevention
- Earlier detection
- Appropriate therapy initiated sooner
- Reduction in fasting HbA1c levels
- Fewer complications
- Improvements in lifestyle, quality of life

## UDAY/Lilly NCD Partnership Achievements to date

- Completed baseline survey; more than 10,000 surveys taken so far
- Used early data to inform development of UDAY intervention model
- Launched UDAY intervention
- Implemented evidence-based communications campaign
- Developed diabetes and hypertension training manual for community-based primary care workers
- Conducted qualitative study on role of pharmacists in project areas
- Collaborated with leading industry association (Confederation of India Industries) and government of India to convene two national summits on NCDs and produce two white papers, which focused on improving understanding of NCD issues and possible solutions
- Launched [UDAY website](#)

## Connecting Hearts in India: Eyes wide open

As Lilly employee Patricia Toland prepared to depart for India to volunteer with the Lilly NCD Partnership in a rural village north of Delhi, she promised herself that she would learn all that she could and help where she was most needed. Toland, a registered nurse and Lilly Ambassador with Connecting Hearts Abroad, made good on her promise.

“If this experience doesn’t change you, there is nothing in life that will,” says Toland, who applied her expertise in medical communications and diabetes education to help advance the goals of the UDAY project.

The experience shed light on the reality that diabetes does not discriminate, although challenges in diagnosing and treating it can be unique. “Some of the homes here don’t have refrigerators, so one of the pharmacists we met will keep insulin in his shop for patients,” Toland recalls. “People are making do in necessary ways.”

Through Connecting Hearts Abroad, more than 1,000 Lilly employees have had experiences similar to Patricia’s, each finding unique insights that will last a lifetime. As Toland shares, “Our eyes have been closed and they’re wide open now.”



## What’s next for UDAY?

Baseline data will continue to be collected, and the implementation of the model will ramp up on all fronts. The social marketing campaign is under way to increase awareness, and screening events will begin in 2015, along with the deployment of mHealth technologies, and a patient registry and quality improvement program in collaboration with local hospitals. The UDAY model will be implemented for three years, with measurement occurring at Year 3 and Year 4. We will report results to share learnings and identify best practices. If the model is validated, we will advocate for its scale-up across India.



# MEXICO



## The Lilly NCD Partnership **MEXICO**

### Diabetes in Mexico

According to the IDF, more than 9 million people in Mexico have diabetes, and that number could grow to 15.7 million by 2035.

The Mexican government provides universal coverage, including access to medicines and lab tests. Yet, the country faces several challenges, including increasing health costs, an aging population, and strained resources. The growing prevalence and toll of diabetes led Mexico's Ministry of Health (MOH) to recently adopt its first national strategy against obesity and diabetes. Through this plan, the Ministry of Health and its partners are implementing guidelines, protocols, and standards for the management of diabetes.

Throughout Mexico, diabetes is largely managed by specialists in private and public health clinics. However, more than half of the population accesses healthcare through primary-level public clinics, which subsequently have to address the needs for people with diabetes and associated co-morbidities in addition to their mandate to provide general primary care. New, cost-effective solutions are needed at the primary care level that improve access to care, integrate improvement efforts, and empower people with diabetes to better manage their disease.

### The Lilly NCD Partnership in Mexico

The Lilly NCD Partnership works in Mexico with the [Carlos Slim Foundation \(CSF\)](#), a nonprofit organization that finds new solutions for key health issues afflicting Latin America and Mexico's most vulnerable populations. Through the partnership, we have collaborated with the foundation to help standardize, monitor, and evaluate a pilot of its Casalud healthcare model; an innovative, comprehensive approach to address NCDs—primarily diabetes and hypertension—at primary care clinics.

**9 Million**

Number of people with diabetes in Mexico in 2013

**15.7 Million**

Number of people in Mexico expected to have diabetes by 2035

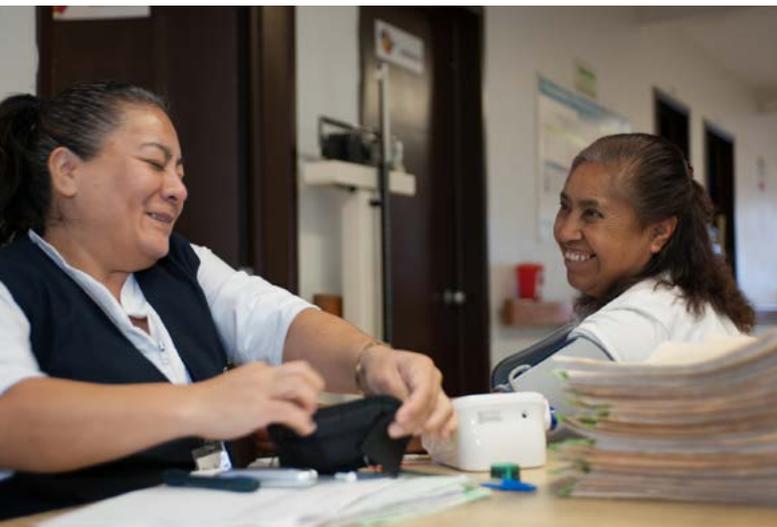
**12.6%**

Percentage of Mexico's population with diabetes in 2013

**68,000**

Number of diabetes-related deaths in Mexico in 2013

In October 2013, Mexico's Ministry of Health adopted the CSF's model as part of its National Strategy Against Obesity and Diabetes. The Casalud model is being scaled and implemented across nearly all of Mexico by the end of 2014. Through our ongoing partnership with CSF, we will continue to evaluate the implementation of this model in two states, and the resulting patient outcomes. We will use the data to further validate the model, improve it, and facilitate its implementation nationally.



The Carlos Slim Foundation is located in Mexico City. With the successful adoption of the Casalud model across most of Mexico, the Lilly NCD Partnership is now helping to further measure and evaluate the model at eight clinics in two states: Queretaro and San Luis Potosí.

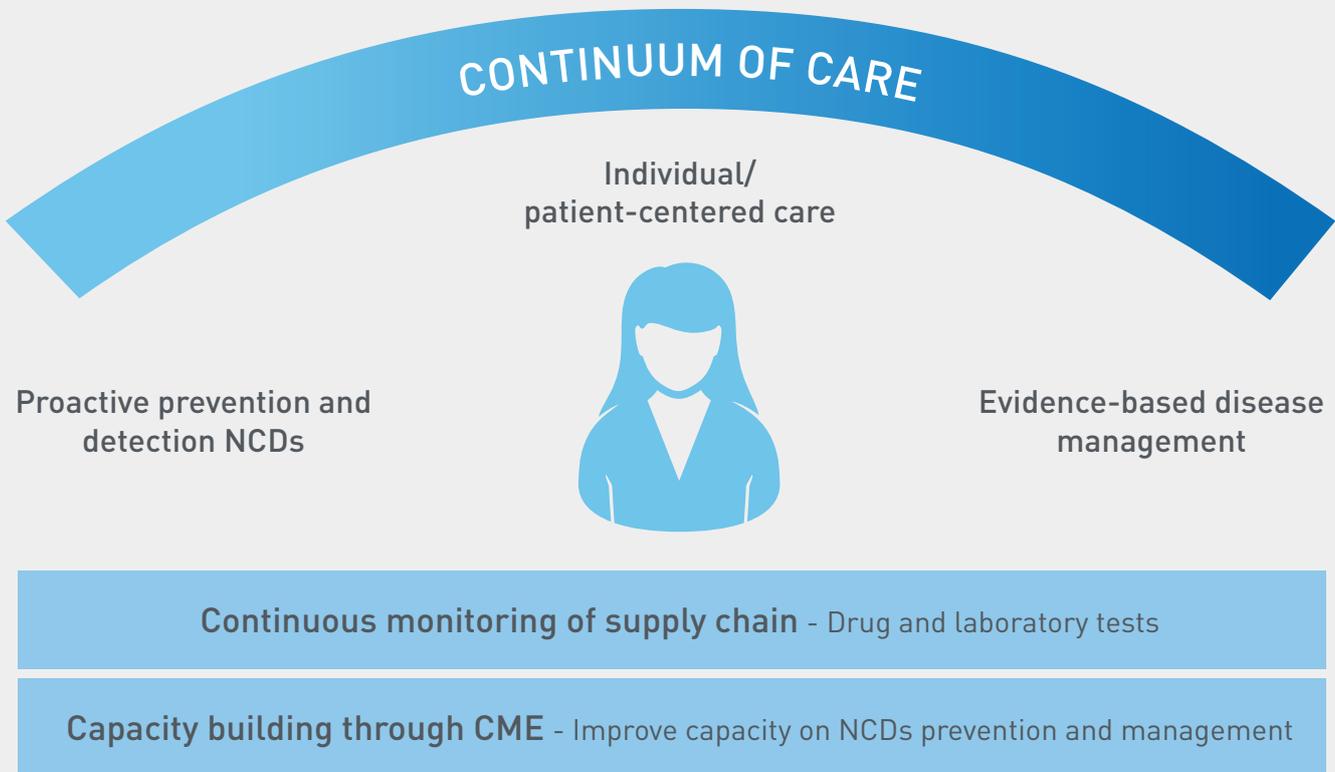




## A Closer Look: The Casalud Model

The Casalud model, developed by CSF, focuses on treating NCDs at a primary care clinic level, with a focus on diabetes and hypertension.

### Reconfiguring delivery of health services in primary care clinics



### Individual/patient-centered care

The Casalud model is focused on individual care, tailored to a person's risk profile, with the goal of preventing or minimizing NCDs before they take a greater toll. In addition to screening, people at risk are given tools to manage their health, including access to online training and a mobile application.

### Proactive prevention and detection of NCDs

Casalud deploys innovative technology to systematically assess NCD risks. Made available to primary care clinics, the MIDO (Measuring Integrally to Detect Opportunely) Mobile Module™ includes everything a healthcare provider needs to measure weight, blood pressure, and blood glucose. The system also provides personalized recommendations and treatment options. A backpack version of the system enables healthcare workers to access NCDs in a person's house.

### Evidence-based disease management

The Casalud model uses an integrated information system for the management of NCDs by healthcare providers. The system offers a digital portfolio that features clinical guidelines and government regulations, health calculators, checklists, and the ability to exchange electronic information within the clinic.

### Continuous monitoring of supply chain

The Casalud model employs a new online system to monitor monthly and daily use and availability of medicines and lab tests. Data is entered by pharmacy clerks at primary care clinics using mobile devices. These data feed into a real-time dashboard that allows state administrators to better identify trends, improve forecasting, and improve overall supply chain efficiency.

### Capacity building through Continuing Medical Education

The Casalud model seeks to improve the capacity of healthcare providers to prevent and manage NCDs through access to academic curricula in partnership with leading teaching institutions. Through a combination of standard courses and video lectures that can be personalized, healthcare workers can ultimately graduate with a Continuing Medical Education credits and a degree.

## Role of the Lilly NCD Partnership in Advancing the Casalud Model

Initially, the Lilly NCD Partnership worked with CSF to measure and evaluate the Casalud model as it was being piloted in eight clinics in the Mexico City region, and to assist with launch and implementation resources.

In 2013, we conducted a rigorous baseline assessment at the eight clinics. After the baseline data were collected, CSF piloted the Casalud model at the clinics. (Twelve months later, we once again surveyed the clinics to understand how the model affected outcomes. Early data offer new insights into better ways to implement the model, and those learnings are being shared with clinics in other states to fine tune its implementation.)

In late 2013, Mexico's Ministry of Health requested to implement the Casalud model across most of Mexico. Though Lilly's role was modest in this impressive outcome, it shows the power of identifying and championing effective new solutions that can be replicated and scaled to benefit more people.

Given this new development, we have adjusted the focus of the partnership to conduct research and evaluation in five areas:

- Health results
- Assessment of the deployment
- Supply chain and stock monitoring
- Patient empowerment
- Detection of NCDs

### What's next in Mexico?

The Lilly NCD Partnership will continue to evaluate the eight clinics and report findings. Early results are encouraging, with evidence that physicians are starting to change their consultation and treatment habits (e.g., increased focus on eyes, feet, diet, exercise, and use of appropriate medicine). The data will be independently evaluated and shared with the Mexican Ministry of Health and other stakeholders.

The partnership will continue to assist CSF in refining the Casalud model, with the goal of creating a systematic approach that can be replicated for additional clinics across Mexico. Ultimately, our goal is to demonstrate that through an integrated model of care, you can improve outcomes, decrease costs, and help more people in a sustainable way.



## Expected Impact

We will support CSF's effort to strengthen primary care diabetes prevention and treatment efforts:



By evaluating the Casalud model in 8 clinics in 2 states to measure the impact of the model on patient outcomes



We will identify opportunities to improve the model and facilitate its implementation across Mexico.

Through a more effective Casalud model, we will help improve access, prevention, and care for millions of people across Mexico.

### Achievements to date

- Conducted baseline study at 8 clinics in 2 states, including more than 500 patients
- Conducted study of diabetes medicine supply chain to find opportunities for improvement
- Assisted with pilot launch of Casalud using a Six Sigma methodology to develop an implementation manual for the model, which is being used across Mexico today
- Conducted follow-up evaluations at 8 clinics, 12 months post pilot launch
- Supporting ongoing scale-up of Casalud model and identifying areas of improvement to support national implementation

**“What began as small step is quickly becoming a quantum leap for Mexico's health care system. Through rigorous, evidence-based programs—that use modern technologies to address modern problems—I'm confident that we can quickly transform the quality of care in our country.”**

Héctor Gallardo-Rincon, M.D., director of operational solutions at the Carlos Slim Foundation, and former WHO medical officer

# SOUTH AFRICA



## The Lilly NCD Partnership: **SOUTH AFRICA**

### Diabetes in South Africa

There are 2.7 million people with diabetes in South Africa, more than 9% of its population, according to the IDF. Diabetes accounted for almost 70,000 deaths in South Africa in 2013. Across Africa, 76% of deaths due to diabetes were—alarmingly—in people under the age of 60.

In South Africa, the problem of diabetes and other NCDs is exacerbated by an overstretched healthcare system that has been largely oriented toward infectious diseases, including HIV/AIDS, malaria, and TB. In response, the South African government is implementing a national strategic plan for the prevention, control, and monitoring of NCDs, including a goal to increase the number of people controlled for diabetes and hypertension by 30% by 2020.

Yet, with entrenched poverty, one of the world's highest obesity rates, and a rising burden of type 2 diabetes, many challenges face the country. Diabetes awareness and screening remain low. There is a lack of qualified doctors, while nurses, community healthcare workers, and others are underutilized. People who are diagnosed too often don't have reliable access to treatment and support.

### The Lilly NCD Partnership in South Africa

The Lilly NCD Partnership has two partners in South Africa. We work with the Donald Woods Foundation in the Eastern Cape to combine diabetes diagnosis and referral with an existing program of home-based care for people with HIV/AIDS and TB. We partner with Project HOPE in Johannesburg to train community healthcare workers, increase awareness and screening, improve access to clinical services, and empower patients.

**2.7 Million**

Number of people with diabetes in South Africa in 2013

**9.4%**

Percentage of South Africa's population with diabetes

**69,000**

Number of diabetes-related deaths in South Africa in 2013

**76%**

Percentage of diabetes-related deaths across Africa that occur in people under the age of 60

## The Donald Woods Foundation-Health in Every Hut

The Donald Woods Foundation (DWF) is a charity registered in the UK and South Africa dedicated to fighting poverty through education, health, heritage, and community-building in some of the most underdeveloped communities in South Africa. In addition to our work with them on TB, we partner with DWF in the Mbashe region of the Eastern Cape, where the foundation has extensive community ties and experience in responding to the HIV/AIDS crisis. The remote, rural region lacks quality infrastructure and services - such as roads, clean water and sanitation - which makes delivering quality care very challenging.



Through the Lilly NCD Partnership, we are extending DWF's successful HIV/AIDS and TB screening and access model to include NCDs, such as diabetes. We will measure the impact of this integrated model to increase detection, improve outcomes, and reduce costs.

### Partnership approach

DWF's Health in Every Hut program seeks to bring primary healthcare access to every single hut in Mbashe region, which includes about 250,000 people spread across a diverse, rugged terrain.

As part of the program, local community healthcare workers are recruited and trained to use a novel tablet-based tool for door-to-door outreach. They use the devices to screen for HIV/AIDS, TB, diabetes, hypertension, epilepsy, and maternal- and child-health issues. People in need of follow-up are referred to local clinics and provided support services, including transportation, and visited regularly to identify additional health needs and measure outcomes. DWF also works to strengthen local hospitals and clinics through training and staff support, and provides community health education.

### Expected Impact

We will improve access to quality healthcare for **250,000** people living in the Mbashe area, through:



New screening tools, trained community healthcare workers, and door-to-door outreach



Improving awareness, screening, detection, referrals, and outcomes

We expect to show that improved access to primary healthcare and better outcomes in deeply rural areas is possible and can be replicated to help advance the South African government's efforts to re-engineer primary care.

### Achievements to date

- DWF developed novel tablet-based IT system to collect and manage data
- Recruited and trained nearly 100 community healthcare workers on new tools and door-to-door approach
- Visited more than more than 15,000 households, screening nearly 23,000 people
- Of those screened, more than 7,000 referred for follow-up to clinics
- Nearly 1,000 follow-up visits from community health workers
- Launched more than 40 peer-support groups

### What's next with DWF?

We will continue to expand DWF's Health in Every Hut model across the Mbashe region according to plan, and evaluate its effectiveness on health outcomes. We anticipate screening 65,000 households by 2015, and will explore adding new fields to our screening software to capture data on eye care and the elderly. We will adapt our model based on new insights and improve our peer-support offerings.

We will continue to work with local hospitals and clinics to build and strengthen NCD care capabilities, and further promote health education among local schools and through community events. We will also convene thought leaders, partners, and policy makers to share lessons learned on efforts to combat NCDs.

## Project HOPE—The HOPE Centre

Founded in 1958, Project HOPE is an NGO that provides medical training, health education, and humanitarian assistance programs in more than 35 countries. In South Africa, in partnership with local NGOs, the South African Ministry of Health, and academic stakeholders, Project HOPE opened a clinic and initiated a community-based approach for preventing, detecting, and treating chronic diseases in 2012.



The Lilly NCD Partnership joined the effort with Project HOPE to run a diabetes awareness, training, and care program from the newly-opened clinic, known as the HOPE Centre. The clinic is located on the edge of Zandspruit, a crowded, informal settlement of 70,000 people on the western outskirts of Johannesburg, where many people lack access to basic services, including electricity, clean water and sanitation.

## Partnership approach

Through the Lilly NCD Partnership, we are working with Project HOPE to strengthen the HOPE Centre's capabilities, training community healthcare workers, and screening people for diabetes and hypertension through door-to-door campaigns and community events. At-risk people are referred for appropriate care, treated, and monitored through the clinic. Peer-support groups and materials help empower people at-risk of or who have diabetes, through education, motivation, and follow-up.

The HOPE Centre offers chronic-disease management, screening for diabetes-related complications, point-of-care testing for Hb1Ac and other markers, and basic primary care services, among other things.

## Expected Impact

We will improve awareness of diabetes and hypertension for people in Zandspruit, and similar communities, through:

- Community education
- Screening events

We will screen more people and ensure proper diagnosis of more people through:

- Community and door-to-door screening events
- Clinic assessments

We improve outcomes:

- Lower HbA1C levels
- Fewer complications
- Better quality of life

We will improve access to clinical services, through:

- Integrated primary care services
- Appropriate treatment and monitoring

We will empower people to manage their condition, through:

- Education resources
- Peer support groups

## Achievements to date

- Recruited and trained nearly **100** community healthcare workers
- Screened and provided educational materials to more than **9,300** people
- Registered nearly **1,600** patients at the Hope Centre clinic
- Diagnosed almost **1,000** people with diabetes or hypertension who had never been diagnosed before
- Launched patient-support groups
- Expanded the work of Project HOPE to neighboring community of Itsoseng, in June 2014, using the Zandspruit model

## What's next with Project HOPE in South Africa?

We will continue to implement Project HOPE's model in Zandspruit, as well as support its work in Itsoseng. Project HOPE will partner with Ministry of Health and the City of Johannesburg to train hundreds of community healthcare workers, and screen up to 10,000 people in Zandspruit and Itsoseng. Patient outcomes will be measured and reported on an ongoing basis.

# Corporate Responsibility at Lilly

## A new approach

At Lilly, our greatest contribution to society is discovering and developing innovative medicines that make life better for people around the world. This is the core of what we do. And by doing this well, it allows us to extend our reach and deepen the impact of our other activities and corporate responsibility efforts.

Over the last decade, we have transformed our corporate responsibility efforts, sharpening our focus on improving health for people in low- and middle-income countries and strengthening the communities where we work and live. We're balancing traditional philanthropy—which dates back to the earliest days of our company—with novel approaches that put to work our scientific and business expertise, resources, and the passion of our employees.

The Lilly MDR-TB Partnership and the Lilly NCD Partnership represent Lilly's two most prominent corporate responsibility efforts to expand access and help people in need. Here are some other highlights.



### AMPATH

Lilly's more than 10-year partnership with Indiana University and the Moi Teaching and Referral Hospital provides donations and medicines to treat diabetes, mental illness, and cancer. Through the AMPATH (Academic Model Providing Access to Healthcare) program, Indiana University and Moi staff collaborate to improve patient outcomes and support people who otherwise couldn't access quality care. Lilly has donated about **\$60 million** in medicines since 2002. In early 2015, the Lilly Foundation provided a \$1 million grant to support AMPATH's Oncology Institute efforts to screen, treat, and provide palliative care to people living in low-income communities who are fighting cancer.



### Disaster relief

When disasters strike, Lilly responds with cash and product contributions to help people in desperate situations. Every disaster is different, prompting a wide variety of needs. When responding, we take great care not to overburden the local infrastructure, so that our product donations are meaningful and have the most impact.



### Charitable contributions

In 2013, we gave more than \$750 million in charitable contributions (including cash, products, and other in-kind donations) to organizations around the world.



### Connecting Hearts Abroad

Our Connecting Hearts Abroad program sends at least 100 "Lilly Ambassadors" each year on two-week assignments to provide assistance in developing communities. More than 700 employees from nearly 50 countries have volunteered through this life-changing, eye-opening program.



### Global Day of Service

In 2014, more than 24,000 employees in nearly 60 countries volunteered in their local communities through our annual Global Day of Service. Over the years, we have contributed 725,000 volunteer hours to different projects, making our Global Day of Service one of the largest single-day volunteer programs in the world.



### Global Giving

Since the launch of Lilly Global Giving in 2011, employees have helped raise more than **\$1.1 million** to support more than **800** global projects. Some of the most popular programs supported aim to help children in Guatemala and Haiti, address the needs of people with MDR-TB in India, and provide disaster relief in West Africa, Turkey, and Serbia.



### Hunger relief

Our Elanco animal health division is working to break the cycle of hunger in 100 communities by 2017. We've already begun to "break the cycle" in more than 50 communities to date. We do this by supporting diverse global and local projects to fight hunger and improve food security, including our long-standing partnership with [Heifer International](#).



# List of terms

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**AMPATH** - Academic Model Providing Access to Healthcare

**Academia Sinica** - National Academy of Sciences of Taiwan

**BRIDGES** - Bringing Research in Diabetes to Global Environments and Systems

**CSF** - Carlos Slim Foundation

**CDC** - Center for Disease Control and Prevention

**CMA** - Chinese Medical Association

**CEPT1** - Compact Education Program in Type 1 Diabetes model

**DOTS** - Directly observed treatment, short-course

**eHealth** - Electronic health (healthcare supported by electronic processes and communication)

**IPA** - Indian Pharmaceutical Association

**IDRI** - Infectious Disease Research Institute

**ICD** - Institute for Children with Diabetes

**ICN** - International Council of Nurses

**KDHC** - King Dinuzulu Hospital Complex

**MDR-TB** - Multi-drug resistant tuberculosis

**mHealth** - Mobile health (medicine and public health supported by mobile devices)

**NCDs** - Non-communicable diseases

**NGO** - Non-governmental organization

**NHFPC** - National Health and Family Planning Committee

**NIAID** - National Institute of Allergy and Infectious Diseases

**PIH** - Partners In Health

**RNTCP** - India's Revised National Tuberculosis Control Program

**TB** - Tuberculosis

**TBDA** - TB Drug Accelerator

**The Union** - International Union for Lung Health

**WHO** - World Health Organization

**XDR-TB** - Extensively drug-resistant tuberculosis



# Our Partners

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Akorn, Inc.  
All-Party Parliamentary Group  
Aspen Pharmacare  
Biocom  
CARE India  
Carlos Slim Foundation  
Central TB Research Institute and other TB Research Institutes  
Chao Center/Purdue University  
Chief TB Specialist of the Russian Ministry of Health  
Children in Need Foundation  
Chinese Centers for Disease Control  
Chinese Medical Association  
Chinese Medical Association Tuberculosis Society  
Chinese Nurses Association  
Democratic Nursing Organisation of South Africa (DENOSA)  
Donald Woods Foundation  
Eastern Cape Department of Health  
Emory University  
Federal University of Rio Grande do Sul – Medical Foundation  
FHI 360  
Global Health Committee  
Indian Nursing Council  
Indian Pharmaceutical Association  
Institute for Children with Diabetes  
International Council of Nurses  
International Federation of Red Cross and Red Crescent Societies  
International Investment Center  
International Union Against Tuberculosis and Lung Disease (India)  
Johns Hopkins University School of Advanced International Studies  
King Dinuzulu Hospital Complex  
KNCV Tuberculosis Foundation  
Meditsinskaya Gazeta  
National Health and Family Planning Committee  
Partners in Health, Brigham and Women's Hospital and Harvard Medical School  
Population Services International  
Project HOPE  
Public Health Foundation of India  
Qinghai Provincial Centers for Disease Control (China)  
Resource Group for Education and Advocacy for Community Health (REACH)  
Russian Federal Correctional Services  
Russian Nurses Association  
Russian Red Cross  
Russian Regional TB Services  
Russian TB Research Institutes  
Russian TB Society  
Russian Union of Journalists  
Shasun Chemicals and Drugs  
SIA International, JSC Biocom  
South African Medical Research Council  
South African National Department of Health  
South African Red Cross Society, KwaZulu Natal Chapter  
St. Stephen's Hospital  
Stop TB Partnership  
TB Alert India  
TB / HIV Care Center of the Russian Ministry of Health  
TOPOLO  
World Health Organization  
Zhejiang Hisun Pharmaceutical Co., Ltd

# Taking on polio

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In the wake of the polio outbreaks in the early half of the 20th century, Jonas Salk, M.D., developed a method to make the polio vaccine from tissue cells grown in the laboratory. Lilly began manufacturing and stockpiling massive quantities of the vaccine a full year before FDA approval to ensure rapid availability—even though approval was not guaranteed.

Today, polio is 99% eradicated around the world, with only three countries reporting instances of the disease. We are proud to have played a small role in reducing the toll of polio—a disease that may soon be left to the history books.



As Lilly ramped-up production of the world's first polio vaccine in March 1955, a photographer captured the scene. Two Lilly employees here pack vaccines for shipment.

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For more information about Lilly Global Health Programs, please visit [www.lillyglobalhealth.com](http://www.lillyglobalhealth.com).

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