The Bridgespan Group

Mainstreaming Private Healthcare Systems for **Tuberculosis Control**

OVERVIEW: Mainstreaming Private Healthcare Systems for Tuberculosis Control seeks to alleviate the growing burden of tuberculosis (TB) in India by integrating the private sector in TB reporting and care. Though the private sector caters to the bulk of patients suspected of having TB, there are challenges with the private sector notifying patients to government authorities and ensuring that patients adhere to standardized care. To address these gaps, the Bill & Melinda Gates Foundation and the government's Revised National Tuberculosis Control Program (RNTCP) developed an initiative to incentivize private healthcare providers to diagnose and treat TB according to standardized guidelines, and to notify the government of new cases.

ESTABLISHED: 2013

QUICK FACTS

PRIMARY PHILANTHROPIST:
The Bill & Melinda Gates Foundation

PRIMARY GEOGRAPHY:
Mumbai, Patna, and Mehsana

GRANT AMOUNT:
approximately USD 9 million (**INR 63 crores**[1])

PRIMARY FOCUS:
Health (infectious diseases and systems strengthening)

ARCHETYPE: Build innovative solutions
The initiative's innovative model aims to standardize TB diagnosis, notification, and care in the private sector through a series of incentive mechanisms, supported by an information and communications technology backbone to monitor and track treatment compliance by TB patients.

KEY PARTNERS:
- RNTCP
- PATH
- World Health Partners

WHY BOLD?

The initiative targets TB control through a novel approach. It aims to integrate private healthcare providers for TB care with public systems to overcome one of the biggest roadblocks to eliminating TB in India: missing patients who contract the disease and seek treatment in the private sector, but are not notified to public TB monitoring systems. By using incentives and leveraging strategic partnerships, the initiative has increased the number of TB cases that private providers notify to the government, improved patients' compliance with standardized treatment regimens, and increased TB cure rates in the three cities where the initiative is active.

KEY LEARNINGS

- Use philanthropic funding as risk capital to demonstrate potential for impact at scale
- Partner with the government at the outset to design for national needs and ensure scale
- To change mindsets, deeply understand the actors' needs and incorporate incentives
- Leverage partners' capabilities to achieve effective results
- Use data to evolve and learn

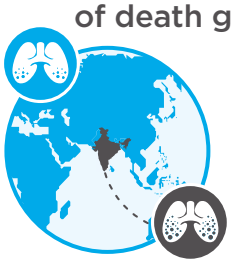
1 Conversion rates (INR to USD) reflect rates available during the April 2018 to June 2018 time period.

THE OPPORTUNITY FOR IMPACT

Tuberculosis (TB) is India's sixth-leading cause of death.[2] In 2016, some 423,000 people succumbed to TB.[3] Drug sensitive TB, the disease's most common type, is curable if the patient receives a six-to-nine month course of anti-TB medication. However, many patients do not adhere to the prescribed drug regimen or drop out of treatment because of the course's lengthy duration. Noncompliance results in multidrug-resistant TB (MDR-TB), where patients become resistant to first-line drugs for treating TB. MDR-TB requires an expensive and more protracted treatment regimen. India also has the world's largest concentration of MDR-TB. In 2016, some 147,000 drug-resistant cases were diagnosed in India.[4]

423,000 people
in India succumbed to TB in 2016

TB—TOP 10 CAUSES
of death globally



SIXTH-LEADING CAUSE
of death in India

Recognizing that TB is an enormous public health threat, the government of India has committed to eliminating the disease by 2025. In 2012, in an effort to track and manage TB cases, the government declared it a "notifiable" disease, meaning that healthcare workers must notify new cases on a government portal for TB control maintained by the Ministry of Health and Family Welfare. Despite the government's mandate, "missing patients"—that is, TB patients who have not been notified on the government TB portal—comprise one of the biggest obstacles to eliminating TB in India. Globally, 4.3 million TB cases go unreported. Of these, more than a quarter (1.1 million cases) are from India.[5]

Private healthcare providers are a crucial link for controlling TB in India. They are both the first point of contact for a majority of TB cases and handle most of India's missing TB patients. Almost 80 percent of all TB patients first approach the private sector[6] for diagnosis and treatment, and private healthcare providers are believed to manage nearly one million of India's missing TB cases.[7] Any effort to eliminate TB in India depends on winning the private sector's full support.

However, the private sector for TB care is an extremely diverse body of providers.[8] The sector ranges from private chest specialists and general practitioners, to traditional, informal care providers. Each of these stakeholders takes a different approach to diagnosing and treating TB and each is equally important in the TB care continuum.

2 "Country Profile: India," Institute of Health Metrics and Evaluation.
3 *Global Tuberculosis Report 2017,* World Health Organization, May 2018, 29.
4 Ibid., 45.
5 *Global Tuberculosis Report 2016,* World Health Organization, October 2016, 19.
6 *Universal Access to TB Care Concurrent Assessment Report,* CTD and WHO Country Office for India, May 2016, 5.
7 Ibid., 5.
8 The private sector in TB care in this initiative involves the formal private sector comprised of private physicians with an MD or MBBS degree who treat patients in their clinics or private hospital facilities, chemists and private diagnostic labs, and informal physicians comprised of traditional care practitioners from the AYUSH (Ayurveda, Yoga and Naturopathy, Siddha and Homeopathy) network.

For example, traditional care providers might start treating TB patients for a cough (instead of the disease itself), or take time to refer them to a specialist. Chest specialists might swiftly begin TB treatment, but fail to record the case on the TB notifications portal.

Recognizing the need to include the private sector in TB elimination efforts, the government of India issued a call for quick, concerted action by both the public and the private sectors when it unveiled the National Strategic Plan for TB control, 2012–2017.

When the government publicized the plan, there was no proven and scalable mechanism for engaging the private sector in TB management. As a result, there was both the opportunity and the need to formulate an effective model for public–private sector collaboration to control TB.

A BOLD APPROACH TO ALLEVIATING THE BURDEN OF TB

The Bill & Melinda Gates Foundation (Gates Foundation) has worked across the globe to develop better diagnostic tools, drugs, vaccines, and care-delivery mechanisms for TB. The magnitude and severity of the TB crisis in India compelled the Gates Foundation to focus on TB after the organization undertook its initial work on HIV in the country.

The Gates Foundation decided to support the government of India's vision of integrating the private sector in national TB care mechanisms. The organization sought to demonstrate a successful model for aligning the private sector around standard TB care, which the government could then scale nationally.

The Gates Foundation collaborated with the Revised National Tuberculosis Control Program (RNTCP) to pilot a model that could strengthen TB care by motivating private healthcare providers to report new cases to the government and to provide TB patients with standardized treatment. Through new diagnostics, an information and communications technology (ICT) system, and efforts to improve recording and tracking of TB cases, the model was designed specifically to address the problem of missing patients.

In 2013, the Gates Foundation initiated the pilot initiative, Mainstreaming Private Healthcare Systems for Tuberculosis Control, for engaging the private sector in TB care. The foundation and its partners designed the initiative to enable behavior change by incentivizing the private sector to promptly diagnose and treat TB and adhere to the government's notification protocols. To reduce the number of missing patients, the initiative placed a heavy emphasis on notifying new TB cases in a timely manner. The pilot was undertaken in three cities—Mumbai, Patna, and Mehsana.

HOW THE INITIATIVE CAME TO LIFE

The Gates Foundation and the public-sector TB programs were keen to incentivize the private sector to notify and treat TB cases in a standardized and timely manner. They worked closely with anthropologists to understand private healthcare providers' attitudes and motivations, as well as TB patients' challenges. Based on their understanding of these behaviors, professors from the Indian School of Business developed incentive mechanisms tailored to different stakeholders.

Since the private sector for TB care was uncharted territory for researchers and extremely heterogeneous, a flexible model supported by robust research and evidence from the field was required. There was also a need for partners who could innovate and iterate a robust model to engage private healthcare providers.

A lot of thought went into selecting the cities that would host the pilot. Mumbai had the nation's highest density of TB cases and the municipal government's 2012 Mumbai Mission for TB Control had emphasized the need to work with the private healthcare system. Patna was selected because of the Gates Foundation's previous work there and its relationships with key stakeholders—organizations that understood Patna's healthcare landscape. Finally, in Mehsana, the state and district TB program leaders were keen to test whether an approach that focused on the private sector would help universalize access to TB care. Mehsana also had an optimal mix of urban and rural populations and the RNTCP was intent on engaging directly with private healthcare providers.

In Mumbai and Patna, the initiative chose to partner with nonprofits that function as Private-Provider Interface Agencies (PPIAs). PPIAs aggregate private healthcare providers and work closely with them to ensure that the model performs smoothly. A PPIA's task list entails coordinating with private healthcare providers, facilitating patient referrals for TB diagnosis, hand-holding patients through the TB treatment process, and ensuring that private physicians notify and treat new TB cases.

In Mumbai, PATH is the PPIA. PATH operates in partnership with The Mumbai Mission for TB Control. Because Mumbai's outreach population is large, PATH engages two local nonprofits—ALERT India and Maharashtra Jan Vikas Kendra—for home visits and psychosocial support to patients. In Patna, World Health Partners (WHP) and its volunteer network carry out the PPIA role. The PPIA helps to enable positive changes in patients' behaviors, by using tech tools like 99DOTS[9] to monitor their adherence to treatment regimens.

Finally, to tie its nonprofit partners to results, the Gates Foundation structured its grant to include a performance-based component. The foundation provided a USD 6 million (INR 39 crores) grant to PATH and a USD 3 million (INR 19.5 crores) grant to WHP, both of which ran from 2013 to 2016. Fifteen percent of the grant amount was tied to indicators like private-sector case notifications, microbiological confirmations of diagnoses, and treatment completion rates. In Mehsana, grants from the Gates Foundation supported an ICT platform and electronic voucher (e-voucher) payments via WHP.

The Gates Foundation, PATH, WHP, and the government TB programs devoted a significant effort to map the private healthcare providers (formal and informal providers, chemists, and labs) in Mumbai, Patna, and Mehsana to understand the landscape of TB care in each of their intervention areas.

9 99DOTS is a TB adherence technology where patients call a toll-free number every time they take their TB medication.

HOW THE INITIATIVE WORKS

The initiative attempts to enable and incentivize private healthcare providers to diagnose, notify, and treat TB according to nationally mandated standards. The initiative operates across the TB care continuum, from diagnosis to treatment, and works with different types of private healthcare providers.

As local informal providers are usually the first point of contact for low-income patients suspected of having contracted TB, the initiative encourages informal providers to refer suspected TB patients for chest X-rays or smear tests. These diagnostics are provided free of cost to the patient through an electronic voucher (e-voucher) system. The patient is provided with a unique number (that is, a voucher) when an informal provider prescribes a diagnostic test. The e-voucher links the patient with the PPIA representative. A call center operated by the PPIA generates and tracks this e-voucher and reimburses the diagnostic facilities for the test.

If the diagnosis tests positive for TB, the informal provider refers the patient to a formal provider or a specialist for a GeneXpert (Gx) test or culture test to obtain microbiological confirmation of TB. The Gx test also screens for drug resistance. If patients are found to be resistant to a strain of anti-TB drugs, they are referred to the public healthcare system for more tests and a longer treatment regimen of one to two years.[10] [11] The e-voucher system reimburses the cost of the Gx test, which typically amounts to INR 1,600 (about 23 USD).[12] By facilitating a quick referral, the informal providers are not deprived of their clients. Instead, they benefit due to an increased level of trust between the patient and the provider.

Partner nonprofits work closely with private healthcare providers to ensure that they notify the government of all diagnosed TB cases. They also guide patients through the diagnosis process to ensure easy access to accurate diagnosis.

Patients who can be treated with the first-line of anti-TB drugs must follow a six-to-nine month regimen. These patients receive their monthly prescriptions from specialists or formal providers. Monthly prescriptions provide an opportunity for patients to consult with doctors and discuss their progress. The monthly prescriptions come with an e-voucher, which patients can use to obtain medications (from a list of approved anti-TB drugs) from any local chemist who participates in the initiative. Over time, the initiative seeks to move away from a list of drugs to a single fixed-dose-combination (FDC) drug for TB, to make treatment more compliant with government standards.[13] Both the government of India and WHO consider the FDC approach to be a best practice.

---

10 "The Shorter MDR-TB Regimen," World Health Organization, May 2016.

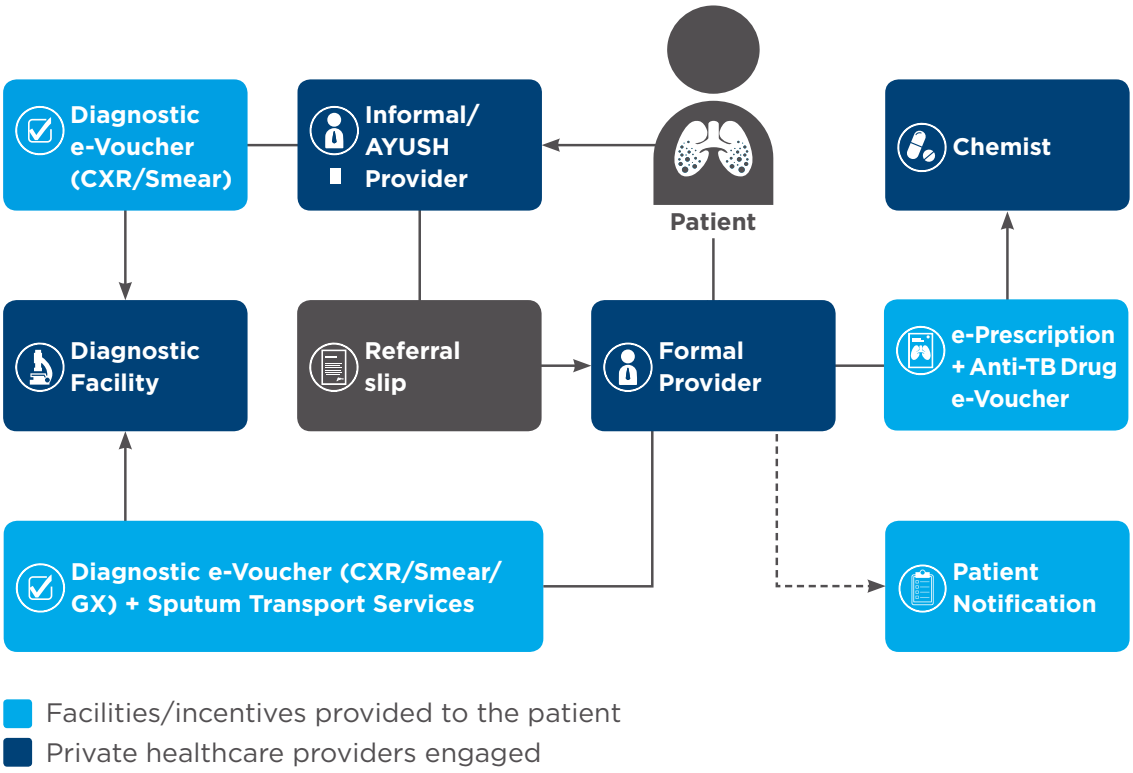
11 Patients with MDR TB do not fall under the purview of the initiative. These patients can choose to stay with the private health provider and pay for the treatment or access TB treatment free of cost from government facilities.

12 Umesh Isalkar and Ekatha Ann John, "Indigenous kit may cut TB test cost by 50%, trials underway," *The Times of India*, June 29, 2017.

13 According to the WHO report *Fixed-dose combination tablets for the treatment of tuberculosis*, TB is treated with three to five different drugs simultaneously, depending on the patient category. To simplify the process and minimize patient effort, anti-tuberculosis drugs can be given as single-drug formulations or as fixed-dose-combination (FDC) formulations, where two or more anti-tuberculosis drugs are present in fixed proportions in the same formulation. WHO and the International Union Against Tuberculosis and Lung Disease advocate replacing single-drug preparations with FDC tablets as the primary treatment for tuberculosis.

Over the entire course of the treatment process, the PPIAs and the TB program in Mehsana deploy field workers to monitor and facilitate drug compliance. For instance, if a patient misses drug doses and does not respond to phone calls from the call center, the nonprofit (in Mumbai and Patna) or government program field workers (in Mehsana) make home visits.

Schematic of the TB initiative



Source: World Health Partners

The national and state TB programs and the Gates Foundation innovated in a number of ways to design and implement this TB-care initiative. For instance, the Gates Foundation selected PATH and WHP as implementing partners because of their flexibility in creating an effective model of engagement with private healthcare providers. It also designed an incentive system supported by a technology backbone for e-vouchers and drug adherence monitoring to enable private healthcare providers to diagnose, notify, and treat TB cases.

The Gates Foundation channels most of the initiative's funding for provider and patient engagement through PPIAs and ICT tools like the call center and e-vouchers for diagnostics and drugs. The RNTCP and the Gates Foundation facilitated knowledge exchange through quarterly convenings. For instance, WHP was able to ramp up microbiological diagnosis in Patna by deploying field staff to ensure that samples were collected and diagnosed. They adopted this practice from the PATH team. All three sites benefited from the early studies around patient pathways to TB care and quality of care studies carried out by Dr. Madhukar Pai (McGill University) and Dr. Jishnu Das at the World Bank and their teams.

A TB patient receives counseling support from a PPIA partner. (Photo: Bill & Melinda Gates Foundation)

PROGRESS AND RESULTS

The initiative has made notable progress in working with both formal and informal healthcare providers in the private sector. Its success has prompted national-level action. After the pilot initiative, The Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund), in collaboration with the RNTCP will co-opt and support the private-sector engagement model at 33 sites across the country.

By 2015, the initiative was working with a large proportion of formal and informal private healthcare providers as well as private pharmacies and labs across the three cities. For example, in Mumbai, the initiative worked with 817 formal providers (22 percent of those mapped), 1,464 informal providers (30 percent of those mapped), and 310 pharmacists (29 percent of those mapped).

The initiative defined key result indicators: notification rates (both public and private), the proportion of microbiologically confirmed TB cases, and adherence to and completion of TB medication regimens. PPIAs monitored progress against these metrics regularly. (See the table below for the initiative's key results.) The initiative saw a significant increase in TB notification rates from the private sector in all the pilot cities.

A majority of patients who initiated anti-TB treatment through the initiative successfully completed their regimens. Mumbai saw a 73 percent treatment completion rate, Patna achieved 75 percent, and Mehsana reported 72 percent. TB treatment completion rates in the private sector have not been tracked previously in India, so this data will set a valuable baseline.

The initiative's key results

Reach	Mumbai				Patna				Mehsana			
	M	T	E	A*	M	T	E	A*	M	T	E	A*
Formal	3,772	3,108	1,315	817 (22%)	1,812	875	634	570 (31%)	344	312	312	107 (31%)
Informal	4,813	4,002	1,977	1464 (30%)	1,563	929	720	576 (37%)	131	-	-	-
Pharmacists	2,710	310	310	310 (11%)	1,556	972	692	444 (29%)	437	177	172	90 (21%)
Notification	**Mumbai**				**Patna**				**Mehsana**			
	'13	'14	'15	'16	'13	'14	'15	'16	'13	'14	'15	'16
Private-sector notifications	2,891	7,253	18,134	25,153	0	3,728	16,581	18,812	0	1,108	2,903	3,686
Total TB notifications	34,794	38,104	45,334	47,520	4,662	8,269	20,695	22,291	2,075	3,560	5,353	6,203
Adherence	**Mumbai**				**Patna**				**Mehsana**			
Tracked	28,152				40,326				962			
Completion rate	73%				75%				72%			

Key: M = mapped, T = targeted for outreach, E = engaged, A = active (and currently participating in the program)
*figures in brackets refer to the percent of total mapped providers who are active

Source: Bill & Melinda Gates Foundation (collated across years)

Most importantly, the initiative's key stakeholders—private-sector physicians—believe the model matters. "Before the PPIA project, the time between patients' diagnosis and initiation of treatment was as long as 45 days," says Dr. Vikas Oswal, a private chest physician in Mumbai. "[Now] it has been cut down to four days."

The initiative has demonstrated that funders and their partners can structure programs to change stakeholders' mindsets, if the right incentives are written into the design. The initiative did not achieve these results by recasting the role of private healthcare providers, who

"Before the PPIA project, the time between patients' diagnosis and initiation of treatment was as long as 45 days. [Now] it has been cut down to four days."

Dr. Vikas Oswal

Private Chest Physician, Mumbai

continue to be the patients' first touchpoint for TB care. Rather, the initiative's leaders worked incentives into the existing system to motivate private healthcare providers to subscribe to standard TB care practices. This adaptation enabled the RNTCP to receive accurate notifications and support patients in complying with their treatments. It also demonstrated positive outcomes and made the case for scaling the PPIA model that aims to improve case notification and treatment completion rates for patients accessing care in the private sector.

LOOKING TO THE FUTURE

The pilot initiative's success in Mumbai, Patna, and Mehsana helped demonstrate proof of concept for a model that engages private healthcare providers to diagnose, notify, and treat TB cases and to strengthen adherence to the TB treatment regimen. Government programs and development aid agencies (e.g., The Global Fund) have adopted the initiative and are aiming to scale it.

The pilot intervention areas are at various stages of integration with their respective government programs. Mumbai is the furthest along—the Municipal Corporation has already contracted nonprofits to function as PPIAs and established a supply chain for government procured drugs in private healthcare facilities. "The private-sector pilot was one of the several strategies implemented by the Mumbai Corporation, and I am happy that it helped demonstrate and provide evidence for scale up," says Dr. Daksha Shah, deputy executive health officer and city TB officer for Mumbai.

> "The private-sector pilot was one of the several strategies implemented by the Mumbai Corporation, and I am happy that it helped demonstrate and provide evidence for scale up."
>
> **Dr. Daksha Shah**
> Deputy Executive Health Officer and City TB Officer for Mumbai

The Global Fund along with the RNTCP is investing in scaling the PPIA approach in 33 cities across India. Learning from this initiative, the national TB program also plans to incorporate innovative care delivery elements like direct benefit transfers to patients for their nutrition intake, and an honorarium for doctors to notify TB cases in a timely manner.

KEY LEARNINGS

Use philanthropic funding as risk capital to demonstrate potential for impact at scale. Before the Gates Foundation took on the initiative, India lacked a proven approach for engaging with the private sector to deliver TB care to nationally mandated standards. The Gates Foundation therefore decided to work closely with the government to demonstrate a scalable model for private-sector engagement in TB care. The goal was to test the approach in cities of diverse sizes and resources, as well as varying degrees of government involvement in TB care.

As Sameer Kumta from the Gates Foundation put it, they "invested in unchartered areas to develop and demonstrate potential solutions." Through testing, learning along the way, and demonstrating through pilots that the approach was working, the Gates Foundation increased the odds that the initiative might scale over the long term.

> "[The Gates Foundation] invested in unchartered areas to develop and demonstrate potential solutions."
>
> **Sameer Kumta**
> Senior Program Officer,
> Bill & Melinda Gates Foundation

Partner with the government at the outset to design for national needs and ensure scale. The government of India's TB control program made the integration of private healthcare providers a top priority, which led the Gates Foundation to target the private sector for an intervention. The Gates Foundation worked closely with the government to identify areas that were ripe for innovation and forged partnerships with government to scale the model if it proved successful. For example, the Mumbai municipal government had an active TB control mission, whose proponents were keen to engage the private sector and provide buy-in for PATH's PPIA activities.

To change mindsets, deeply understand the actors' needs and incorporate suitable incentives. To ensure the willing participation of private-sector providers in the initiative, the partners invested in understanding their motivations and concerns and designed incentives to address them. For example, by leveraging insights gleaned from behavioral studies and other anthropological research, the partners persuaded thousands of private healthcare providers to adhere to nationally mandated standards of TB care and to notify new TB cases on the government TB notification portal.

Leverage partners' capabilities to achieve effective results. The RNTCP of India and the Gates Foundation partnered with organizations that had the capacity to deliver. Both PATH and WHP were already integrated into the TB care systems of their respective intervention areas. Their field networks enabled them to reach all private healthcare providers. The partners also had the ability to innovate and create scalable solutions, iterate, and employ technology-based solutions, all of which were critical for driving results.

Use data to evolve and learn. The partners employed ICT tools at various stages of the initiative, both to inform its design and track results. For instance, partners conducted a mapping exercise to broaden their understanding of private healthcare providers, identify providers to include in the initiative, and monitor progress as they expanded their outreach. Anthropological evidence helped the initiative's leaders understand the challenges that providers and patients encounter. Adherence monitoring, home visits, and calls from the call center helped the initiative to focus on those patients who found it most difficult to continue treatment.

Finally, to hold itself accountable for results, the initiative used ICT tools to track metrics associated with notification, compliance, and adherence to TB medication in a prespecified format.

THE BRIDGESPAN GROUP
BOSTON 2 Copley Place, 7th Floor, Suite 3700B, Boston, MA 02116 USA. Tel: +1 617 572 2833
NEW YORK 112 West 34th St., Ste. 1510, New York, NY 10120 USA. Tel: +1 646 562 8900
SAN FRANCISCO 88 Kearny St., Ste. 200, San Francisco, CA 94108 USA. Tel: +1 415 627 4500
MUMBAI Bridgespan India Private Limited (registered address) 9th Floor, Platina, G Block, Plot C 59, Bandra Kurla Complex, Mumbai, Maharashtra, 400051, India. Tel: +91 022 6628 9624

www.bridgespan.org

contact@bridgespan.org
contactindia@bridgespan.org