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A Report of the CSIS Global Health Policy Center

JUNE 2014

PART OF THE CSIS SERIES ON TUBERCULOSIS

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Building New Relationships on TB Control, One BRIC at a Time

Katherine E. Bliss¹

Among the 22 countries considered to have a high burden of tuberculosis (TB), the group of emerging economies known as the BRICS (Brazil, Russia, India, China, and South Africa) account for at least 60 percent of notified cases.² The BRICS are also estimated to account for 60 percent of the world's cases of multidrug-resistant tuberculosis (MDR-TB).³

These numbers alone might suggest that the BRICS—like other countries with a high TB burden—should be a major focus of U.S. diplomatic engagement on global health. Not only do U.S. officials wish to protect the American population from imported cases of TB, especially MDR-TB, but the high TB rates in the BRICS—all key trading partners of the United States—limit economic growth in those countries and may reduce the overall potential for economic exchange with them. At the same time, sharing technical and programmatic expertise with other countries will help reduce human suffering, a foreign policy priority many Americans support. Yet, development assistance—the most familiar and far-reaching tool of U.S. global health outreach—is far less applicable in the case of the BRICS than in low-income developing countries.

There are two reasons for this. First, the BRICS countries themselves—so named back in 2001 when they captured international interest as the world's fastest-growing economies—provide up to 96 percent of the funding for their own national TB initiatives.⁴ Second, having recognized the toll that tuberculosis exacts on their economies, the BRICS are already engaged in programmatic and research collaboration among themselves and in partnership with other developing countries.⁵

This situation poses an interesting question for U.S. policymakers—and one that this paper aims to address: Given the BRICS's high TB burden, on one hand, and their domestic funding, research, and external support capabilities and priorities, on the other, what are the most appropriate development and/or diplomatic tools for the

¹ Katherine E. Bliss is a nonresident senior associate with the CSIS Global Health Policy Center.

² TB Facts, "TB Funding," <http://www.tbfacts.org/tb-funding.html>.

³ World Health Organization (WHO), *Global Tuberculosis Report 2012* (Geneva: WHO, 2012), 2, http://apps.who.int/iris/bitstream/10665/75938/1/9789241564502_eng.pdf.

⁴ *Ibid.*, 57. However, India finances only 71 percent of its domestic program.

⁵ "World: TB rates need to drop 10x faster for elimination by 2050," ReliefWeb, April 15, 2013. Indeed, in the recent BRICS Health Ministers' Communiqué, countries "resolved to collaborate and cooperate for development of capacity and infrastructure to reduce the prevalence and incidence of tuberculosis through innovation for new drugs/vaccines, diagnostics, and promotion of consortia of tuberculosis researchers to collaborate on clinical trials of drugs and vaccines, strengthening access to affordable medicines and delivery of quality care." "BRICS Health Ministers' Communiqué, Delhi," BRICS Information Centre, University of Toronto, January 11, 2013, <http://www.brics.utoronto.ca/docs/130111-health.html>.

United States to deploy vis-à-vis the individual BRICS, and, potentially, with respect to other middle-income countries with a high TB burden, in the interest of addressing the global spread of tuberculosis, particularly MDR-TB?

BRICS Domestic TB Burden and International Outreach

The BRICS have recently acknowledged their common position as high-burden tuberculosis countries and have agreed to share lessons learned with each other, yet their individual TB epidemics differ widely. India and China alone account for more than 40 percent of the world’s TB cases, with growing epidemics of multidrug-resistant TB being reported there. Russia accounts for a far lower percentage of reported global cases; nevertheless, at least 20 percent of Russia’s new tuberculosis infections are diagnosed as multidrug resistant, with many cases identified among the difficult-to-reach population of injection drug users. In South Africa, a significant proportion of patients are coinfecting with HIV. Brazil’s tuberculosis epidemic is the most conventional, with comparatively low rates of MDR-TB and moderate rates of TB/HIV coinfection.

BRICS and TB at a Glance

Country	2011 Pop. (million)	Total TB Cases Reported (2011)	% MDR New (2011)	% MDR Relapse (2011)	Deaths (2011)	Death Rate per 100,000 (2011)	% TB Patients HIV Positive (2011)	Total 2012 Budget (US \$ millions)	% Domestic Financed (2012)
Brazil	197	84,137	0.91	5.4	5,600	3	20	86	91
China	1,348	911,884	5.7	26	47,000	4	2	367	--
India	1,241	1,515,872	2.1	15	300,000	24	6	219	54
Russia	143	159,479	20	46	22,000	16	5	1,204	100
South Africa	50	389,974	1.8	6.7	25,000	49	65	--	--

Data source: WHO, “Tuberculosis (TB),” <http://www.who.int/tb/country/en/index.html>.

For the past several years the BRICS leaders have held summits to discuss issues of common interest. They also have coordinated their positions in advance of major international meetings, such as the G-20 or UN General Assembly. On World Tuberculosis Day 2011, UN special envoy on tuberculosis and former president of Portugal, Jorge Sampaio, writing in the *Financial Times*, called on the BRICS to “join together in a global initiative to galvanize action and tackle TB, including MDR-TB, head-on, addressing a significant threat to global health, security and development.”⁶ A few months later, in July 2011, the BRICS health ministers met in Beijing for the first time to exchange information on their respective health challenges and to identify opportunities for collaborative interaction with—and outreach to—other developing countries.

Following the most recent BRICS health ministerial meeting in Delhi, in January 2013, officials released a communiqué in which they recognized that “multi-drug resistant

⁶ Jorge Sampaio, “Guest Column: Emerging global leaders should take a stand,” *Financial Times*, March 23, 2011, <http://www.ft.com/cms/s/0/74ed40f2-5425-11e0-8bd7-00144feab49a.html#axzz2sYrVMNNV>.

tuberculosis is a major public health problem for the BRICS countries due to its high prevalence and incidence mostly on the marginalized and vulnerable sections of society.”⁷ Increasingly, the international advocacy community is demanding they take action to address TB at home and abroad: During a March 2013 BRICS Summit in Durban, South Africa, global health advocates called on leaders to focus on HIV, malaria, and tuberculosis, to support the Global Fund, and to engage the G-20 in greater support for global health.⁸

Like the BRICS configuration, the India-Brazil-South Africa (IBSA) alliance serves as a vehicle for health collaboration. IBSA was launched in 2003, after the three countries’ leaders felt they had been marginalized at the Evian G8 Summit. Through IBSA, partner countries contribute to an international development fund, and also cooperate through civil society working groups, scholarly exchanges, and joint military exercises.⁹ IBSA work on health has included an effort to assess “how the Burundi health care system can be improved in the fight against HIV/AIDS using models and experiences from IBSA countries,” as well as the rehabilitation of health centers in one of Cape Verde’s more remote islands, along with joint research planning.¹⁰

Individual BRICS are also initiating health outreach programs with other developing countries in what are sometime referred to as “horizontal cooperation” arrangements in order to emphasize the fact that both partners are in a similar phase of development. India supports projects on health along its borders with Nepal and Bangladesh. Brazil’s Ministry of Health, through the Center for Research on International Relations in Health (CRIS) at the federal Oswaldo Cruz Foundation (FIOCRUZ), carries out overseas cooperation on disease prevention, surveillance, and treatment, placing a high priority on sharing with other developing countries the lessons from its own domestic experience on HIV and universal health care. Increasingly, South Africa supports health programming within sub-Saharan Africa, while China also engages in international projects in the region. Russia focuses its efforts primarily in the Central Asian republics.

Current U.S. TB Programs in the BRICS

Brazil

The United States has a long history of health cooperation with Brazil, including on TB. In recent decades, the United States invested approximately \$35 million in TB

⁷ “BRICS Health Ministers’ Communiqué, Delhi,” BRICS Information Centre, University of Toronto, January 11, 2013, <http://www.brics.utoronto.ca/docs/130111-health.html>.

⁸ Lucy Chesire, “Here I Am: Calling for leadership from the BRICS countries,” *Huffington Post*, March 26, 2013, http://www.huffingtonpost.com/lucy-chesire/here-i-am-calling-for-lea_b_2955836.html.

⁹ “India to Host IBSA Summit in June,” *The Hindu*, April 26, 2013, <http://www.thehindu.com/news/national/india-to-host-ibsa-summit-in-june/article4657311.en>; Oliver Stuenkel, “Keep BRICS and IBSA Separate,” *The Diplomat*, August 13, 2012, <http://thediplomat.com/the-editor2012/08/13/keep-the-brics-and-ibsa-seperate>. IBSA leaders were to have met in June 2013 to identify common goals for the next period, but reports indicate that the meeting was postponed to June 2014.

¹⁰ Sachin Chaturvedi and Halla Thorsteinsdóttir, “BRICS and South-South Cooperation in Medicine: Emerging Trends in Research and Entrepreneurial Collaborations,” RIS Discussion Paper #177, Research and Information Systems for Developing Countries (RIS), March 2012, http://www.ris.org.in/images/RIS_images/pdf/dp177_pap.pdf.

initiatives focused on Directly Observed Therapy Short course (DOTS) programs; limiting the spread of MDR-TB; “improving coordination between TB and HIV/AIDS Programs in order to address TB/HIV co-infection”; and awareness-raising campaigns.¹¹

The United States is currently phasing out assistance for tuberculosis control in Brazil. One of three recent programs sponsored by the U.S. Agency for International Development (USAID) supported Brazil’s National Tuberculosis Reference Laboratory in efforts to monitor for drug-resistant TB and to enhance laboratory quality control. A second supported the work of the Pan American Health Organization in working with primary health care providers and community outreach leaders to strengthen the DOTS strategy. A third used radio, television, and street theater to dramatize the threat of TB within high-risk communities in order to raise public awareness about the need to recognize symptoms and seek treatment.

Brazil is reported to be the only country where there is still a USAID mission for bilateral programs, but with which USAID also works to develop trilateral cooperation programs.¹² Outside Brazil’s borders, the U.S. and Brazilian governments have worked together in El Salvador, São Tomé & Príncipe, and Mozambique to strengthen health systems and support government efforts against HIV/AIDS. Beyond assistance and trilateral cooperation on health, the U.S.-Brazil Economic Partnership Dialogue, launched in 2007, and the periodic meetings of the Science and Technology Commission, which oversees the 1984 Science and Technology Agreement, offer opportunities for formal discussion and planning regarding health cooperation. Through relatively modest support from the National Institutes of Health (NIH), primarily the Fogarty International Center (FIC), U.S. and Brazilian scientists collaborate on TB-related research. In 2012, NIH funded roughly \$415,000 worth of TB-related research in Brazil.

India

President Obama has called the U.S. relationship with India “one of the defining partnerships of the 21st century,” and there is a robust U.S.-India relationship on TB.¹³ USAID, which has funded TB work in India for more than a decade, helps the Revised National TB Control program to support DOTS, with a particular focus on TB/HIV coinfection and reducing MDR-TB.¹⁴ USAID is currently developing a new, four-part strategy that involves working closely with hospitals, the private sector, and civil society groups to scale up TB services in private health care settings; adapting and adopting new technologies for TB diagnosis; supporting local-level research; and designing programs for implementation in urban areas.

The Centers for Disease Control and Prevention (CDC) has similarly supported DOTS implementation, and has also advised the Indian government on the expansion of

¹¹ U.S. Agency for International Development (USAID), “Health: USAID Brazil,” <http://brazil.usaid.gov/en/node/11>.

¹² U.S. Department of State. “U.S. Relations with Brazil,” fact sheet, October 3, 2013, <http://www.state.gov/r/pa/ei/bgn/35640.htm>.

¹³ U.S. Department of State, “U.S. Relations with India,” fact sheet, December 21, 2012, <http://www.state.gov/r/pa/ei/bgn/3454.htm>.

¹⁴ USAID India, “Our Work—Health,” http://transition.usaid.gov/in/our_work/health/health.html.

MDR-TB control activities, while providing technical assistance on disease surveillance, laboratory capacity strengthening, enhancement of public-private partnerships, and operations research.¹⁵

Beyond bilateral development and technical assistance, in 2005, the United States and India signed a Science and Technology (S&T) Agreement, and in 2009 initiated a Strategic Dialogue that has a Science, Technology, Health, and Innovation component.

The National Institutes of Health are also active on TB in India, providing India's National Institute of Epidemiology with more than \$220,000 to carry out TB-related research. Meanwhile, the Indian government supports considerable research and biotechnology product development in the country's universities and in the "Genome Valley" outside Hyderabad, suggesting opportunities for potential U.S.-India scientific collaboration on TB-related product development.

China

In 2012, U.S. and Chinese officials pledged to increase "cooperation and coordination on a range of pressing global and regional issues," with the aim of building "a new model of bilateral relations in the 21st century."¹⁶ Since 2010, USAID has worked indirectly on TB in China by funding WHO staff positions at China's health ministry, with the goal of transferring technical expertise. Recognizing China's expanding global health activities, USAID has also placed a development counselor in the U.S. embassy in Beijing since 2008 "to develop a closer working relationship on global development challenges" and to "encourage China to adopt internationally agreed standards on good donorship."¹⁷ USAID and China have also discussed carrying out joint projects in sub-Saharan Africa related to maternal and child health and malaria.¹⁸

The CDC Division of Tuberculosis Elimination provides technical assistance to China to support efforts to reduce the transmission of TB and MDR-TB.¹⁹ The U.S.-China Science & Technology Agreement, in place since 1979, and a 2002 Memorandum of Understanding on Emerging and Infectious Diseases between NIH and relevant Chinese agency counterparts, also structure discussion related to health cooperation. Similarly, the Strategic and Economic Dialogues, intended to "build a cooperative partnership based on mutual benefit and mutual respect," offer opportunities for discussion on health, as well.²⁰

¹⁵ Centers for Disease Control and Prevention (CDC), "Global Health—India," <http://www.cdc.gov/globalhealth/countries/india/>. See also CDC, "Tuberculosis (TB): DTBE in India," <http://www.cdc.gov/tb/topic/globaltb/India.htm>.

¹⁶ U.S. Department of State, "Joint Statement on the 4th Round of the U.S.-China Strategic and Economic Dialogue," media note, May 4, 2012, <http://www.state.gov/r/pa/prs/ps/2012/05/189286.htm>.

¹⁷ USAID, "Cooperation with China on International Development," <http://photos.state.gov/libraries/china/240500/pdf/USAID-China%20Cooperation%20on%20International%20Development%2009%2002%2010.pdf>.

¹⁸ *Ibid.*

¹⁹ CDC, "Tuberculosis (TB): DTBE in China," <http://www.cdc.gov/tb/topic/globaltb/China.htm>.

²⁰ U.S. Department of State, "Joint Statement on the 4th Round of the U.S.-China Strategic and Economic Dialogue."

Russia

The United States and Russia share a long history of fruitful collaboration on international health challenges, going back to shared work on smallpox eradication, a model for scientific collaboration in the face of Cold War tensions. In the 1990s, following the collapse of the Soviet Union, the Russian government welcomed support from the United States. However, in recent years, as Russia has sought to develop its own capacity for implementing overseas development programs, the nation's leaders have been reluctant to embrace development assistance—even in support of health initiatives. Complicating matters, in 2012 the Russian government expelled the USAID mission from the country.

The CDC has provided Russia with technical assistance related to laboratory capacity strengthening, the adoption of newer diagnostic tools, such as GeneXpert, and the development of human resources capacity to carry out clinical trials of new TB therapies.²¹

The NIH, through the National Institute of Allergy and Infectious Diseases (NIAID), currently supports the Russian Central Institute for Tuberculosis on a \$105,850 project related to “Cellular and Molecular Pathways of Tuberculosis Progression.” Given the Russian government's interest in supporting national industrial development, joint U.S.-Russia collaboration on product development may be a promising area of opportunity.

While the U.S.-Russia Bilateral Presidential Commission has had a health focus in the past, Russia's expulsion of USAID in 2012 suggests that alternative tools of engagement on global health, such as strengthening research and trilateral cooperation, may be the most feasible future approach.²² Indeed, Russia and the United States have fruitfully collaborated on polio eradication in Central Asian countries in recent years.

South Africa

Among the BRICS, South Africa receives the greatest amount of U.S. bilateral support on health, primarily through the programs of the President's Emergency Plan for AIDS Relief (PEPFAR). Programmatic support for TB work in South Africa is extensive and focused on civil society as well as government activities.²³ CDC technical assistance activities have included evaluating South Africa's TB surveillance system and researching the burden of drug resistant TB in children.²⁴ Yet even within the context of significant bilateral support for health programs in South Africa health programs, the U.S. relationship with South Africa is trending toward shared regional outreach, and the State Department notes that “The United States seeks opportunities for

²¹ CDC, “Tuberculosis (TP): DTBE in Russia,” <http://www.cdc.gov/tb/topic/globaltb/Russia.htm>.

²² BBC News, “Russia expels USAID development agency,” September 18, 2012, <http://www.bbc.co.uk/news/world-europe-19644897>.

²³ USAID South Africa, <http://www.usaid.gov/south-africa/global-health>. U.S.-based philanthropic organizations, including the Doris Duke Charitable Foundation and the Bill and Melinda Gates Foundation, are also funding TB-focused clinical research and implementation science projects. See Bill and Melinda Gates Foundation, “What We Do: Tuberculosis,” <http://www.gatesfoundation.org/What-We-Do/Global-Health/Tuberculosis>; and Doris Duke Foundation, “Programs: African Health Initiative: Grant-making Process,” <http://www.ddcf.org/Programs/African-Health-Initiative/Grant-making-Process/>.

²⁴ CDC, “Tuberculosis (TB): DTBE in South Africa,” <http://www.cdc.gov/tb/topic/globaltb/Southafrica.htm>.

increased U.S.–South African cooperation on regional and international issues.”²⁵ In 1995, the United States and South Africa signed a Science & Technology Agreement and in 2010 entered into a Strategic Dialogue to create opportunities for formal discussion regarding regional and international issues of mutual concern.

Among the BRICS countries, South Africa boasts the most robust research relationship with the United States—at least when it comes to tuberculosis. There are at least 16 NIH-supported projects currently underway at academic institutions including Stellenbosch University–Tygerberg Campus, the University of Cape Town, and the University of KwaZulu-Natal, as well as through the Medical Research Council of South Africa, worth nearly \$5 million in support. South Africa is putting its own money into research collaborations as well, announcing a \$15 million initiative between NIH and the South African Medical Research Council in June 2013.

Conclusions and Recommendations

The fact that the BRICS account for 60 percent of all TB cases in high-burden countries, and 60 percent of MDR-TB, suggests the United States should continue its existing TB-focused programs in these countries. Yet the BRICS’ dual status as high TB burden countries and “emerging economies,” with the capacity to finance the majority of their own domestic TB programs, means that the most conventional tool of U.S. global health outreach—development assistance for program implementation—will not necessarily be the most effective approach. The BRICS themselves are increasingly supporting technical assistance and cooperation on TB within their own regions. They have also committed to share with each other lessons learned from their own experiences combating the disease.

Considering that the United States and the BRICS share a common interest in the development of new approaches to TB control, and that much of the research, development and testing of any new vaccines, diagnostic tools, and therapies is likely to take place in Brazil, India, China and South Africa, it is essential that U.S. policymakers invest in long-term, collaborative research and implementation partnerships there. Four specific recommendations follow:

1. *Development Support and Technical Assistance.* The United States should continue current bilateral assistance for TB programs in South Africa and India but frame future development assistance initiatives around operational and implementation research. The United States should continue to respond to BRICS government requests for technical assistance on TB and be prepared to facilitate exchanges among TB experts working in each country. Learning what works, and what doesn’t, in terms of TB prevention and control activities in high-burden countries will help inform the design of programs in countries with less capacity to finance domestic programs or carry out basic research and product development.
2. *Research Partnerships.* Because there is already a robust portfolio of research partnerships on TB involving national laboratories and institutions of higher learning in the United States and each of the BRICS, the United States should offer

²⁵ U.S. Department of State, “U.S. Relations with South Africa,” fact sheet, December 6, 2013, <http://www.state.gov/r/pa/ei/bgn/2898.htm>.

to continue, and perhaps expand, funding for TB research in all five countries. Building on the robust collaborative research agenda with South Africa, the United States should sponsor competitive funding opportunities for TB research partnerships between U.S.-based researchers and those in China, India, Brazil, and Russia. This approach could help facilitate country-specific research productivity, stimulate technical and information exchange, and lead to enhanced collaboration on a broader range of health and scientific issues. And for countries such as Russia where the bilateral political relationship can be challenging, fostering research and scientist-to-scientist collaboration on TB research may help alleviate mistrust and create opportunities for enhanced action and cooperation to advance common global health interests.

3. *Support for Civil Society and TB Advocacy Groups.* The United States should also focus some program support for BRICS-based civil society organizations working to strengthen the response to TB in the most underserved communities, many of which are at risk of missing out on the benefits of their countries' sustained economic growth. Supporting nongovernmental organizations' efforts to advocate on behalf of TB patients, particularly those based in remote or impoverished regions, as well as those who are at risk of being infected with TB, will help stimulate research and programming focused on the needs of the most vulnerable sectors.
4. *Health Diplomacy.* The United States should also take full advantage of various bilateral diplomatic mechanisms, including strategic dialogues and science and technology agreements, to advance discussion, research collaboration, and technical exchange on TB prevention, control, and research/development. Setting aside time during annual or biannual meetings for review of existing cooperative activities related to TB as well as discussion of potential areas of collaboration would ensure that TB remains on the bilateral agenda and that activities can evolve as situations change. The United States should also consider expanding the current program of trilateral cooperation on health with Brazil, Russia, and (in discussion with) China.

Many of these steps could also be considered on a case-by-case basis for a number of other middle-income countries with similar research capacities and disease interests. Whether the focus is the BRICS or a broader range of potential partners, ensuring robust long-term collaboration on TB control will depend on high-level political commitment, diplomatic engagement, and ample resources—not to mention congressional support.



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