

POLICY BRIEF

**RECOMMENDATIONS
FOR THE NEW
ADMINISTRATION**

Blue Marble Health and Vaccine Science Diplomacy

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Since 2000, we have seen significant improvements in global health, especially in regard to poverty-related infectious diseases (also known as neglected diseases) affecting low-income countries. Many of these improvements resulted from initiatives launched by the George W. Bush administration and expanded by President Barack Obama. They include the President's Emergency Plan for AIDS Relief, the President's Malaria Initiative, and the USAID Neglected Tropical Disease (NTD) Program. In addition, the United States has been a major contributor to The Global Fund to Fight AIDS, Tuberculosis and Malaria and Gavi, The Vaccine Alliance. Successes (as measured by the Gates Foundation-supported Global Burden of Disease Study) include a 50%–90% reduction in child mortality from vaccine preventable diseases, and major reductions in mortality or disease prevalence from neglected diseases—AIDS, TB, malaria, and the NTDs.¹

Countering these achievements are some new and important global health trends that will need to be addressed by the next administration.

BLUE MARBLE HEALTH

Today, a new and defining feature of the world's poverty-related neglected diseases is that they are no longer mostly the purview of the poorest and most devastated African nations. Analyses conducted since 2013 have instead determined that most of these diseases are now found in the G20 nations, together with Nigeria (which has a larger GDP than several G20 countries). While

these countries account for almost 90% of the global economy, they also host huge numbers of the world's hidden poor who are afflicted with poverty-related neglected diseases, including most of the worm infections, protozoan NTDs such as Chagas disease, and leishmaniasis, dengue, leprosy, and TB, as well as major noncommunicable diseases such as cancer, cardiovascular disease, and diabetes. Thus, traditional dichotomous notions of global health that compare developing to developed countries have been replaced with a paradigmatic change—one I've described in my research as “blue marble health.”

The major tenet of blue marble health—that the G20 now account for most of the world's poverty-related diseases—has important considerations and ultimately, policy consequences. For example, the epicenter of the 2015–16 Zika epidemic is in northeastern Brazil—an intense concentration of poverty in Latin America's wealthiest economy. Argentina, Brazil, and Mexico—the three largest economies in Latin America—host most of the region's Chagas disease and leishmaniasis cases. Similarly, the U.S. Gulf Coast states—including Texas, Louisiana, and Florida—where the largest numbers of impoverished Americans live, are at risk for Zika and Chagas disease. An estimated 12 million Americans now live with at least one NTD. Southern Europe is also now a “hot zone” of tropical infections, including malaria, dengue, West Nile virus, and schistosomiasis, due in part to economic downturns.² Impoverished regions of China, India, and Indonesia, all G20 countries, account for most of Asia's neglected diseases.



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This policy brief is part of a series of recommendations from the Baker Institute for the incoming president's administration.

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CONFLICT AND CLIMATE CHANGE

After poverty, the next most important factors now driving new neglected diseases may be conflict and climate change. The collapse in health systems infrastructure in conflict-ridden Guinea, Liberia, and Sierra Leone allowed Ebola virus infections to kill 11,000 people in West Africa in 2014–15. But we have seen far larger numbers of people perish due to kala-azar resulting from the Sudanese wars.³ Now, several neglected diseases have emerged in territories occupied by the Islamic State, including leishmaniasis, known by locals as the “Aleppo evil,” and there has been resurgence in measles and polio.⁴ Climate change, together with human migrations and unchecked urbanization, may also be fueling new tropical diseases in southern Europe and the Western Hemisphere.

RECOMMENDATIONS

1. Pivot the U.S. State Department Office of Global Health Diplomacy toward blue marble health

The blue marble health concept offers a unique opportunity to effect disease reduction by engaging the leaders of the G20 countries. Specifically, through future summits, a renewed commitment to provide access to essential medicines for neglected diseases that target vulnerable populations in each of the G20 nations could result in a two-thirds or more reduction in the global burden of poverty-related neglected diseases. Focusing on the G20 could provide an important new mission for the U.S. Department of State's Office of Global Health Diplomacy. In addition, the recognition that conflict is a new and important driver of disease also suggests a need to develop command centers shared between the U.S. Departments of State and Defense to recognize the outbreaks that will surely arise in conflict areas in the Middle East, North Africa, and elsewhere.

2. Create a center of excellence for neglected diseases in the United States

The findings of blue marble health and the fact that 12 million Americans live with a neglected

tropical disease signal the need to establish a center of excellence for research and development (R&D) on new ways to monitor and prevent these diseases.

3. Strengthen the GHSA to incorporate “vaccine science diplomacy”

The current version of the Global Health Security Agenda (GHSA) is strong in the areas of surveillance and disease outbreak detection but not in areas linked to neglected disease product development. A new Coalition for Epidemic Preparedness Innovations has been proposed; however, engaging the G20 could also promote an R&D agenda. Specifically, 20 national funds for neglected disease R&D, such as the one recently established by the Japanese Global Health Innovative Technology Fund, could capture the innovation potential of each of the G20 nations in order to produce an urgently needed new generation of drugs, diagnostics, and vaccines for global and blue marble health. A key element here is to foster international scientific cooperation between the G20 nations in programs of vaccine science diplomacy.

ENDNOTES

1. GBD 2013 Collaborators, “Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013,” *Lancet* 386(2015): 743–800.

2. P.J. Hotez, “Southern Europe's Coming Plagues: Vector-Borne Neglected Tropical Diseases,” *PLoS Neglected Tropical Diseases* 10 (2016): e0004243, doi:10.1371/journal.pntd.0004243

3. W. Al-Salem, J.R. Herricks, and P.J. Hotez, “A review of visceral leishmaniasis during the conflict in South Sudan and the consequences for East African countries,” *Parasites & Vectors* 9 (2016): 460.

4. P.J. Hotez, “Vaccine science diplomacy: expanding capacity to prevent emerging and neglected tropical diseases arising from the Islamic State-held territories,” *PLoS Neglected Tropical Diseases* 9 (2015): e0003852.