

The Historic Elimination of Mother-to-Child HIV and Syphilis Transmission in Puerto Rico

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The elimination of HIV and syphilis from Puerto Rico as per metrics of the World Health Organization has been achieved despite continued HIV risk and high background prevalence. Excellence in antenatal services and screening, deployment of antiretroviral and penicillin syphilis therapies, and proper follow-through with mothers and infants has yielded success even as control of infection overall remains elusive. We highlight the context of this achievement in our editorial to accompany the article: “Elimination of the Perinatal Transmission of HIV and Syphilis in Puerto Rico and Sustained Success since 2007: Convergence of Science, Women-Centered Care, and Policy”. [*PR Health Sci J* 2021;40:3-5]

Key words: HIV, Syphilis, Perinatal, Puerto Rico

In this issue of the *Puerto Rico Health Sciences Journal*, Zorrilla and colleagues describe key elements of the successful effort in Puerto Rico to eliminate maternal-to-child transmission of HIV (EMTCT) as a major public health and medical problem (1). As is recommended by the World Health Organization, syphilis and hepatitis B in higher endemic nations were an integrated focus (2), and congenital syphilis, too, was squelched to historically low levels. There are many remarkable elements about this achievement. First, Puerto Rico reached the 2017 (WHO) criteria for validating the elimination of MTCT and Syphilis in 2007, even before Cuba with its health care system's strong focus on prevention or the rest of the United States with its comparative wealth (1,3). In fact, one of the major milestones towards EMTCT – the rate of perinatal HIV infections of <50 per 100,000 births – was attained in Puerto Rico in 1994. This was the result of collaboration between researchers, the Puerto Rico Department of Health (Departamento de Salud de Puerto Rico), and the medical community to change public policy and implement a public health prevention intervention that has been successful and sustainable. Given that the lowest 2019 median household incomes of any state (+/- margin of error) are \$45,081 +/- \$385 in Mississippi and \$46,711 +/- \$492 in West Virginia, the comparative statistic of \$20,296 +/- \$185 in Puerto Rico suggests the impressive nature of this preventive health achievement (4).

More progress is needed in the Americas. While success stories in Puerto Rico (1,5), Jamaica (6-8), and Cuba (3) are positive examples from the Caribbean (9-11), there are threats to sustaining these successes (12-16). There are 35 member states of the Pan American Health Organization (PAHO) including the United States, WHO's regional office for the Americas, and an additional four associate members (including Puerto Rico) and three participating states (i.e., France, the Netherlands, and the U.K. that administer 10 territories/colonies or incorporated parts of a given European nation in the Caribbean region) (Table) (17). As of a 2016 PAHO report of

data from 2015, multiple countries and territories in the Region of the Americas reported data indicating the EMTCT of both HIV and syphilis, with others reporting data compatible with HIV MTCT elimination alone or elimination of syphilis MTCT alone (see Tables 2 and 3 of the PAHO report) (17). We leave it to the readers to judge the glass half-full or half-empty.

Puerto Rico seeks the elimination of HIV in general and the San Juan metropolitan area has been one of 50 venues to be highlighted as a focus of investment through the *Ending the HIV Epidemic: A Plan for America* (EHE) that has sought since 2019 to end the HIV epidemic in the United States by 2030 (18). Lessons from EMTCT successes can be broadened for HIV transmission reduction in general, particularly in outreach, community engagement, and programmatic rigor and accountability (1,19-21). In Puerto Rico, academic partnerships with the Department of Health and U.S. Public Health Service programs for research (as with the NIAID Clinical Trials Unit at the University of Puerto Rico (22,23) and the Women and Infants Transmission Study (24,25) and services (as with Ryan White Comprehensive AIDS Resources Emergency (CARE) Act resources (26-28)). The data documentation within the article of Zorrilla and colleagues in this issue of the *Puerto Rico Health Sciences Journal* represents an important chapter in the island's recent public health history (29-35). We must strive to ensure that the achievements in EMTCT in Puerto Rico will be sustained for many years to come, even in the face of an acute financial crisis, chronic underfunding of public health,

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Table. Pan American Health Organization (PAHO) Member States, Associate Members, Participating States, Observer States, and territories/colonies of participating states in 2021. PAHO began as the International Sanitary Bureau in 1902 and was reorganized as the Pan American Sanitary Bureau in 1923. With the establishment of the World Health Organization (WHO), it became the WHO’s Regional Office for the Americas within the United Nations system in 1949, renamed PAHO in 1958. Adapted from: https://www.paho.org/hq/index.php?option=com_content&view=article&id=103:member-states&Itemid=1110&lang=en, and <https://www.paho.org/en/news/2-12-2012-paho-celebrates-110th-anniversary>, accessed February 28, 2021

Member States	Year of Admission to PAHO	Member States	Year of Admission to PAHO
1. *Antigua and Barbuda	1982	28. *St. Kitts and Nevis	1984
2. Argentina	1937	29. Saint Lucia	1980
3. *Bahamas	1974	30. *St. Vincent and the Grenadines	1981
4. *Barbados	1967	31. Suriname	1976
5. Belize	1982	32. Trinidad and Tobago	1963
6. Bolivia	1929	33. *United States of America	1925
7. Brazil	1929	34. Uruguay	1928
8. *Canada	1971	35. Venezuela	1933
9. *Chile	1929		
10. Colombia	1933		
11. Costa Rica	1926		
12. *Cuba	1925		
13. *Dominica	1981		
14. Dominican Republic	1929		
15. Ecuador	1930		
16. El Salvador	1926		
17. *Grenada	1977		
18. Guatemala	1933		
19. Guyana	1967		
20. Haiti	1926		
21. Honduras	1957		
22. Jamaica	1962		
23. Mexico	1929		
24. Nicaragua	1925		
25. Panama	1929		
26. Paraguay	1939		
27. Peru	1926		

Associate Members	
1. Aruba	2012
2. Curaçao	2012
3. *Puerto Rico	1992
4. Saint Maarten	2012

Participating States (see territories/colonies in table footnote)	
1. France	1951
2. The Netherlands	1951
3. United Kingdom	1951

Observer States	
1. Spain	1980
2. Portugal	1986

Ten additional PAHO-participating territories/colonies include: ***Anguilla**, ***Bermuda**, ***British Virgin Islands**, ***Cayman Islands**, French Guiana, Guadeloupe, Martinique, ***Montserrat**, **Caribbean Netherlands (Bonaire, *Saba, and *Sint Eustatius)**, and **Turks and Caicos.**, listed in <https://www.paho.org/en/countries-and-centers>, accessed February 28, 2021. **In bold**, nations/territories identified in 2015 as presenting data confirming the achievement of metrics for elimination of mother-to-child transmission of HIV (also lists the ***U.S. Virgin Islands** that does not participate independently in PAHO), from Table 2 of reference 17 (17). With an asterisk (*), nations/territories identified in 2015 as presenting data confirming the achievement of metrics for elimination of mother-to-child transmission of syphilis (Table 3 of reference 17) (17).

repeated natural disasters likely linked to global warming and climate change phenomena, and the burden of the ongoing COVID-19 pandemic (36-38).

Resumen

La eliminación del VIH y de la sífilis en Puerto Rico, según las métricas de la Organización Mundial de la Salud, se ha logrado a pesar del riesgo continuo de VIH y de la alta prevalencia de fondo. La excelencia en los servicios prenatales y el cribado, el despliegue de terapias antirretrovirales y de penicilina contra la sífilis, y el seguimiento adecuado de las madres y los bebés han dado sus frutos, aunque el control de la infección en general sigue siendo difícil. Destacamos el contexto de este logro en nuestro editorial que acompaña al artículo: “Eliminación de la transmisión perinatal del VIH y la sífilis en Puerto Rico y éxito sostenido desde 2007: Convergencia de la ciencia, la atención centrada en la mujer y la política”.

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