

# Rapid syphilis testing in Haiti will prevent congenital disease and stillbirths

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## **Weill Cornell and GHESKIO research also finds rapid testing to be cost-effective**

Congenital syphilis is a major preventable public health problem in many developing countries, frequently causing stillbirths or neonatal death and disabling children who survive. Often undiagnosed or untreated, syphilis is passed from mother to child -- even when mothers take part in prenatal programs to prevent the spread of HIV.

Now, new research from Weill Cornell Medical College and the Groupe Haitien d'Etude du Sarcome de Kaposi et des Infections Opportunistes (GHESKIO) published in the May issue of the open-access journal PLoS Medicine finds that integrating a new rapid syphilis test into prenatal HIV testing programs in Haiti can prevent more than 2,000 cases of stillbirth, neonatal death or congenital syphilis.

"We have shown that by working with the HIV prevention program infrastructure, we can better prevent transmission of syphilis from mother to child at minimal incremental cost. These findings not only give guidance to public health efforts in Haiti, but may serve as a model for projecting the benefits of similar efforts in Africa and in other resource-poor settings," says Dr. Bruce R. Schackman, lead author of the study and associate professor and chief of the Division of Health Policy in the Department of Public Health at Weill Cornell Medical College.

Researchers compared three strategies for screening pregnant women for syphilis. The first strategy, the standard of care in rural Haitian areas

without access to syphilis laboratory testing, is assessing symptoms and treating if symptoms are found. The second, considered the standard in urban areas, is a blood test for antibody response to the syphilis bacterium -- an approach that requires a one-week waiting period for follow-up and treatment. The third strategy is rapid testing that permits immediate diagnosis and treatment initiation at a single clinic visit.

According to the World Health Organization (WHO), there are more than 20 rapid syphilis tests commercially available. Four of the tests were evaluated in a field trial at the GHESKIO Center in Port-au-Prince, Haiti, and found to be simple to administer, offering easy-to-interpret results within 30 minutes. Haiti is one of several developing countries where in pregnant women infection with untreated syphilis is as common as infection with HIV.

"Relying on the appearance of symptoms allows for many syphilis cases to be missed. And for most rural women, making even one repeat visit to a clinic to learn the results of a test and be treated is too much of a personal burden. Requiring only one clinic visit, rapid testing followed by immediate treatment proved to be definitely the best strategy," says co-author Dr. Jean W. Pape, founder and director of GHESKIO and professor of medicine in the Division of International Medicine and Infectious Diseases at Weill Cornell Medical College.

Dr. Pape, an internationally renowned infectious disease expert who is from Haiti, founded GHESKIO more than 25 years ago. The organization is dedicated to the battle against HIV/AIDS, childhood diarrhea and tuberculosis. Since its inception, GHESKIO has worked closely with Weill Cornell Medical College in championing education, health care and HIV research in Haiti. The work of GHESKIO and its partners has led to a 50 percent decrease in infant mortality in Haiti and a similar decrease in the national HIV prevalence.

Researchers evaluated cost-effectiveness by predicting the health outcomes for each strategy as "disability-adjusted life years" (DALYs) -- reflecting the number of years of healthy life lost due to congenital syphilis among newborn babies, the number of stillbirths and the number of neonatal deaths. While rapid testing was found to be more expensive than other approaches, its value compared to current syphilis screening standards of care in rural and urban areas was represented by cost-effectiveness ratios of \$7-\$10 per DALY. This is similar to or better than the value for programs to prevent mother-to-child transmission of HIV that have been studied in Africa.

"If immediate syphilis testing were provided as part of HIV-testing programs for all pregnant women in Haiti who currently have access to prenatal care, over 1,000 cases would be avoided each year, along with over 1,000 stillbirths and neonatal deaths, at a very reasonable additional cost of slightly more than half a million dollars," says senior author Dr. Daniel W. Fitzgerald, assistant professor of medicine at Weill Cornell Medical College and assistant attending physician at NewYork-Presbyterian Hospital/Weill Cornell Medical Center. "This study provides a convincing case for adding rapid syphilis testing to current global campaigns aimed at reducing mother-to-child transmission of HIV."

Source: Weill Cornell Medical College

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