Protektem Pikinini Blo Yu Trial: Protocol for a field trial to assess the effectiveness of treating-all pregnant women with hepatitis B infection with tenofovir prophylaxis in Vanuatu, 2024-2025

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Background: Background: Hepatitis B infection is a major public health concern in the Pacific Island nation of Vanuatu; 9% of the general population are estimated to be living with chronic hepatitis B. Most new infections are due to mother-to-child transmission. Hepatitis B vaccination is available in Vanuatu, but coverage rates for birth dose and third dose are suboptimal. While treatment with tenofovir disoproxil fumarate (TDF) is available, there is limited capacity to measure hepatitis B viral load and no hepatitis B e antigen testing available - tests that are recommended to determine eligibility for TDF prophylaxis during pregnancy. These issues are further compounded by geographical dispersion of the population across islands. This field trial will evaluate the effectiveness, acceptability, cost-effectiveness, and safety of a "treat-all" approach to TDF prophylaxis for pregnant women with reactive hepatitis B surface antigen (HBsAg) tests.

Methods: A step-wedge randomised field trial will be conducted in Vanuatu involving pregnant women with hepatitis B. Consenting pregnant women with reactive HBsAg results will be allocated to an arm by clinic, with the clinic switching arms midway. In the control arm women with hepatitis B viral load ≥ 200,000 IU/mL will receive oral TDF prophylaxis from week 28 of pregnancy to six weeks after giving birth. The intervention arm will receive oral TDF prophylaxis regardless of HBV DNA level also from week 28 of pregnancy to six weeks after birth. Primary data analysis will be by intention-to-treat. Initial analyses will be unadjusted comparisons of intervention and control arms. Adjusted analyses will be performed, as needed, and presented in addition to unadjusted comparisons.

Discussion: The trial will provide evidence of acceptability, effectiveness, and cost-effectiveness of prophylaxis for all women with hepatitis B. The outcome of this field study will provide evidence for global and national guidelines.

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