



## Using health and demographic surveillance systems for teratovigilance in Africa

Increased funding in the past decade has improved healthcare coverage of the population and access to vaccines and drugs across sub-Saharan Africa.<sup>1</sup> However, there is still a need to collect valid and sufficient baseline data, data on the safety of drugs and vaccines used during pregnancy, and for innovative approaches to pharmacovigilance in pregnancy to inform policy makers and to improve treatment guidelines.

Interest in establishing sustainable pharmacovigilance systems in Africa is gaining momentum thanks to plans for large-scale implementation of artemisinin-based combination therapies across Africa. However, less than 1% of individual case safety reports in WHO's database (VigiBase®) are from Africa.<sup>2</sup>

Drugs such as tetracycline, metronidazole, albendazole, mebendazole, and efavirenz are not recommended during the first trimester because of potential embryo toxicity.<sup>3</sup> Nonetheless, these drugs are still used by women of childbearing age, and even pregnant women, by self-medication or irrational prescriptions.

A different strategy, such as continuous longitudinal follow-up, is needed to collect reliable data on pregnant women. The health and demographic surveillance system (HDSS) platform of the INDEPTH Network is one such strategy that longitudinally documents millions of person-years and vital statistics relating to individuals in specific communities.<sup>4</sup> The HDSS can be used for pharmacovigilance for the general population, but specifically for pregnant women and other susceptible groups. For example, a study in Tanzania used an HDSS platform to monitor the safety of drugs during pregnancy.<sup>5</sup>

More recently, INDEPTH introduced CHES,<sup>6</sup> a new generation of population surveillance operations that integrates across population and health facility data systems and links demographic, epidemiological, mortality, morbidity, clinical, laboratory, household, environmental, health systems, and other contextual data, with a unique electronic individual identification system throughout. CHES will make pharmacovigilance more effective.

With more than 2 million people under longitudinal evaluation in African countries, this population could generate a sufficient sample size of pregnant women for pharmacovigilance studies through all trimesters. Data collection staff are well trained in collecting data from sensitive vital events (eg, death, abortion, and medication, drug or vaccine adverse events). With CHES, a form of enhanced HDSS, we could identify the main classes of medications used by pregnant women, prospectively determine the incidence and risk factors of suspected adverse events among pregnant women, identify and evaluate adverse effects that are likely to affect compliance and treatment outcomes, and, finally, demonstrate the feasibility of using the HDSS as a sustainable platform to assess the use and safety of medications to facilitate decision making in Africa.

We declare no competing interests.

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