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Evaluation of the Integrated Disease Surveillance and Response (IDSR) system for infectious diseases control in Ghana

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The health sector needs timely and reliable information for planning and evaluating interventions. In sub-Saharan Africa (SSA), disease specific routine health data of acceptable quality are often unavailable due to several factors such as poor motivation, lack of supervision and inadequate feedback and overburdening of staff. In 1998 as a potential solution, the World Health Organization Regional Office for Africa initiated a strategy for overall strengthening of disease surveillance in SSA the *Integrated Disease Surveillance and Response (IDSR)* system. In 2002, Ghana adopted the IDSR strategy to response to the emergence and re-emergence of diseases. It aims to improve health data quality and accuracy for planning and decision-making in the health system. Since 2012, the IDSR data is required to be reported through the District Health Information Management System II (DHIMS2). The objective of this study was to evaluate the IDSR system for infectious diseases control in Ghana.

This was an observational study which employed mixed methods design. Weekly and monthly IDSR data on selected infectious diseases were downloaded and analyzed for 2011 - 2013 (the years before, of and after DHIMS2 implementation) from the DHIMS2 databank for the Upper East Region (UER) and for two districts of UER and their nine health facilities. In addition, a total of 24 key informant interviews were conducted using a semi-structured questionnaire with focus on core and support functions of the IDSR system. The study was conducted from July to November 2013.

Clinically diagnosed malaria was the most prevalent disease in the study area, with an annual incidence rate close to 1. Around 500 suspected HIV/AIDS cases were reported yearly. The highest incidence of cholera and meningitis was reported in 2012 (257 and 392 cases respectively). Three suspected cases of polio and one suspected case of guinea worm were reported in 2013. None of the polio and guinea worm cases and only a fraction of the reported cases of the different other diseases were confirmed. A major observation was the large and inconclusive difference in reported cases when comparing weekly and monthly reports. This can be explained by the different reporting practice for the sub-national health systems. However, IDSR monthly completeness in UER increased by 9% (268/3,000) and timeliness 37% (1,109/3,000) in 2013 compared to 2012. While IDSR weekly completeness improved by 79% (3,660/4,628) and timeliness improved from no reports to 24% (1,127/4,628) in 2013 in UER. The reporting increases were also seen in the districts and periphery health facilities over the same time period, except the Kassena-Nankana Municipal which reported a decreased of 1.6% (4/252) in IDSR monthly completeness in 2013. However, there remain major challenges to the functioning of the IDSR system in Ghana such as ill-equipped laboratories, rare supervision, missing feedback and low priority for surveillance activities. Informants also reported that, the community perceived diagnostic testing at the periphery health system to be unreliable (e.g. tuberculosis and HIV).

In conclusion, although the IDSR strategy was associated with some benefits to the system, there remain major challenges to the functioning and the quality of DHIMS2 in Ghana. Particularly, the inconsistencies between weekly and monthly data and between reconstructed data, paper-based and DHIMS2 calls for urgent attention. As disease surveillance has obviously remained a neglected area of the health systems in SSA, increasing attention and support is urgently needed. With the event of the dramatic and ongoing Ebola epidemic in West Africa, this becomes even more evident.