

## Abstract

# Interoperability of Surveillance Data Collection Tools (District Health Information System 2 and District Vaccine Data Management Tools) in Enugu State, Nigeria, From 2015-2018

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## Abstract

**Background:** Over the years, Nigeria has used District Vaccine Data Management Tool (DVDMT) for surveillance data collection including routine immunization. In 2012, Nigeria adopted District Health Information Software (DHIS2), a Java driving online real-time tool for data collection. In 2015, Enugu State commenced the use of DHIS2 alongside the traditional DVDMT as surveillance data capturing tools.

**Objective:** The objective was to carry out an evaluation of the two surveillance data tools to assess surveillance attributes, interoperability, effect in decision making, and preference of use.

**Methods:** We quantitatively and qualitatively assessed surveillance attributes of Enugu State's DHIS2 and DVDMT from 2015 to 2018 using adapted CDC guidelines (2001). We administered semi-structured questionnaires to all 17 local immunization officers from the 17 local government areas (districts) to assess surveillance attributes. We carried out desk review at all levels, key informants done with 6 purposefully selected stakeholders, and focused group discussion carried out with 6 randomly selected heads of surveillance at local governments areas. We recorded proportions, interoperability, effect in decision making, and preference of use.

**Results:** Average completeness of data is 100% in both DHIS2 and DVDMT systems (target 90%). Eligibility is 100% in DHIS2 and 85% in DVDMT (target 80%). Timeliness of reporting is 100% and 80% in DHIS2 and DVDMT, respectively (target 80%). All stakeholders accepted both tools and agreed that they are simple and flexible. In addition to collection of all data recorded by DVDMT, DHIS2 captures vaccine utilization. Data collection and transmission of DVDMT and DHIS2 are carried out by the same surveillance personnel at health facility and local government area levels. Apart from vaccine utilization both tools can complement each other in case of missed data as they record the same thing. All key informants opined that it is double work managing the two tools and also agreed that DHIS2 is better than DVDMT in decision making because it has features for data visualization and real-time reporting. The focused group discussion agreed that both tools are good, although DVDMT is easier to work with as DHIS2 requires computer proficiency of current users alongside hardware management of the Java-enabled phones used in data capture and transmission. However, they also agreed that DHIS2 usage is less time consuming and opined they will prefer to use DHIS2 as the only data capturing tool in Enugu State if proper capacity building is done.

**Conclusions:** The DHIS2 and DVDMT surveillance data tools in Enugu State is meeting all its targets based on surveillance attributes, though DHIS2 provides better quality data. There is a good understanding and synergy in operation of the two systems in all levels and intermittently data from both tools can be compared. DHIS2 can enable prompt decision making than DVDMT as data can be assessed and visualized in real time. Surveillance officers prefer the use of DHIS2 as the only surveillance tool in

Enugu State, although proficiency is a challenge. We recommended a gradual phase out of DVDMT for data capturing in Enugu State, while capacity building of users for DHIS2 should be addressed.

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## KEYWORDS

surveillance evaluation; qualitative study; data tools

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