

Strengthening of the National Health Information System through the use of GIS Maps in Health Facilities on Bioko Island, Equatorial Guinea.

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The Bioko Island Malaria Control Project (BIMCP), in collaboration with the National Malaria Control Program (NMCP) of Equatorial Guinea has developed, designed, and implemented the National Health Information System (NHIS). The NHIS aims to collect patient's health information registered during consultations at all public health facilities to facilitate planning, decision making, and resource allocation. In 2012, the BIMCP developed an ArcGIS based mapping system to uniquely identify all households and has worked diligently with the Ministry of the Interior to identify community boundaries according to geo-political delimitations. In 2015, large maps (5x5 feet) with community names and boundaries were introduced on a pilot basis in 4 health facilities in Malabo District to aid patients, and health personnel locate, identify, and register the patient's physical residential address. The use of maps aims to strengthen the information collected at health facilities through the NHIS and constitutes an effective strategy for carrying out spatial epidemiological surveillance, while increasing the accuracy of the source of malaria incidence, and designing and implementing malaria control interventions at the community level. On Bioko Island, it has been observed, that patients, during registration, use common points of reference such as government buildings, schools, and popular local attractions, to indicate their community of origin. Furthermore, if a community name is given, it can identify an aggregated community name and not a specific community, thus making it difficult to collect proper residential community information. As an example, this has been observed when patients live in communities such as Porvenir 1, Porvenir 2, Porvenir 3, where patients only provide "Porvenir" as the residential community, without the corresponding community number. Through training of health personnel in the use of maps and the utility of collecting accurate information, health personnel have been aiding patients in identifying their community of residence and improving the quality of the information collected. This analysis will show a visual representation and progress made since the use of maps began in 2015, highlighting the increased ability to identify the patient's community of residence as it has increased by 195% from 2015 to 2016, and by 116% from 2016 to July 2017.