WAFDMC: A web app for digitalization of malaria cases in Batu state hospital

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WAFDMC digitalizes the current paper-based malaria treatment and control processes in Batu state hospital (BSH). It enables a quick flow of relevant patient data among the participants which meets the urgency required in treating malaria cases.

Background and methods

Malaria is a life-threatening disease in many tropical and subtropical areas and needs prompt treatment even in mild cases. Batu state hospital (BSH) is situated in a malarious region of Ethiopia, where malaria is an economic burden too. The economic cost of malaria to the rural low-income population group is substantial [1]. This indicates that malaria reduction can contribute to the country's poverty reduction as well. Two species of malaria, Plasmodium falciparum and Plasmodium vivax, are endemic to BSH and its suburbs [2]. The Web App for digitalization of malaria cases (WAFDMC) is developed to cope with the problems of inefficient document storage, data transfer and limited collaboration among the participants due to the current paper-based malaria prevention and control system of the hospital. A usability test was carried out to test whether the web app can be used by both internal and external participants of the hospital.

Results

The web app WAFDMC connects BSH employees with external persons (e.g. referring doctors) involved in the malaria treatment process and enables them to share and retrieve digital patient data for malaria treatment. It implements the entire process from patient registration through laboratory request, diagnosis and treatment. Further it enables digital daily updates of malaria surveillance reports to be used by all users for malaria planning. Figure 1 shows which specific information can be accessed or entered by BSH internal and external users. The user defined roles and access rights to the patient data are based on the hospital internal administrative regulations. The usability test at BSH and the simulation test at BFH showed that the user interface was perceived positively, and the test subjects found it easy to use the app to complete the tasks associated with their roles.

Outlook

The WAFDMC enables digital data communication on malaria cases among the persons involved in the treatment at BSH. This paves ways to prompt treatment of malaria in the hospital. It also promotes malaria elimination efforts by providing up-to-date malaria surveillance data daily and using this for planning and informed decision making. The app in BSH can be extended to relevant diseases and treatment processes others than malaria. WAFDMC has a potential to be implemented in other hospitals in the region.

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References

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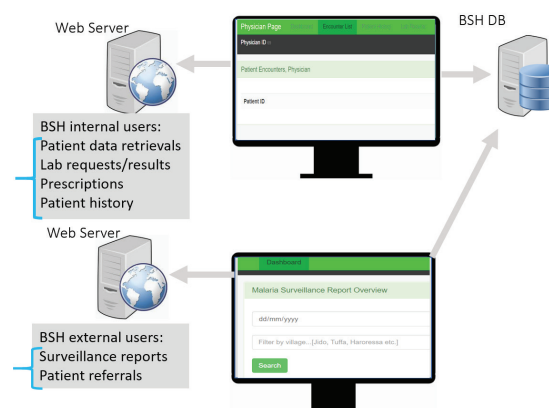
Fig.1 Architecture and screenshots, WAFDMC