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THE USE OF A MOBILE PHONE-BASED APPLICATION (MAGPI) FOR DATA COLLECTION DURING DENGUE LARVAL SURVEY IN BANGLADESH - AN OPERATIONAL FEASIBILITY STUDY

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Background: Usage of information technology has provided great opportunities in data collection by improving decision support for surveillance, prevention and control of vectors. Despite the increased mobile phone penetration in Bangladesh, the use of mobile phones for data collection continues to be scarce.

Methods: The study was conducted in two divisions within the central and southern part of Bangladesh. Timeliness of reporting was assessed according to the difference between a date and/or time of data collection and of submission through Magpi and manual submissions. Completeness of reporting was determined according to the number of complete questions divided by the total number of questions in both Magpi and paper-based collection. Questionnaires were distributed to participating health inspectors before the training and after field survey to determine the participants perceptions and attitude towards the use of Magpi. Prior to implementation, an interview with the relevant Senior Program Manager was carried out and group-depth interviews were conducted with the health inspectors after field survey. A Wilcoxon Signed Rank test was used to calculate the difference of perceptions, attitude and use of the Magpi system for the health inspectors between the observed measurements.

Results: Findings had determined an improved timeliness and completeness of records in using Magpi system compared to paper collection. However, there was no change in perceived usefulness, attitude and use of the proposed Magpi system after using the proposed system in the field for data collection. Perceived ease of use indicated a positive change after using Magpi but was obviously noted to have no effect in the change of perceptions and attitude of the health inspectors towards the use of Magpi for data collection.

Conclusions: Compared to paper-based data collection, Magpi system produced a higher proportion of complete data and delivered data records faster for access. Although the change in perceived ease of use for Magpi system was indicated, perceptions on its usefulness and attitude were inadequate to enhance the use of the system. Magpi system nonetheless has the potential to improve timeliness and completeness of data.

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