Development of a Customised Free and Open Source Database for Routinely Assessing Waiting Times of Patients at Health Facilities

Gavin Reagon[a], Gregory Adams[b], Natasha Titus[a], Ehimario Igumbor[a]

[a] *School of Public Health, University of the Western Cape, Cape Town, South Africa*
[b] *Jitterbug Software, Cape Town, South Africa*

Abstract and Objectives

Long waiting times is one of the commonest complaints of people accessing public health care services. Hence decreasing excessively long waiting times would be a highly visible real and perceived improvement in quality of care of public health care service. In order to achieve this one would have to measure the extent of the waiting times, the mix of causes of high waiting times and develop solutions that effectively address the causes of the high waiting time. The difficulties encountered are developing a simple yet robust and standardised methodology, managing large volumes of data, cleaning the data in a standardised manner and producing standardised reports which allow causes of high waiting times to be easily identified. An action research approach to develop a methodology to achieve this, and a database which facilitates easy handling and standardised cleaning of data and produces automated reports, was employed. The database went through several cycles of appraisal and improvement until finally a stable and user-friendly database which met all the above objectives was developed.

Keywords:

Waiting time, Database, User-friendly, Standardised cleaning, Automated reports, Open source.

Methods

It is relatively easy for researchers to conduct surveys as invariably it is a once off activity. However routine surveys which are done repetitively and iteratively on a wide scale, is a much more difficult undertaking. Despite this health workers are expected to undertake these routine surveys themselves. The only way this is feasible is if a standardised methodology is developed and if the tools to implement this methodology rapidly and efficiently are created. The key tool for routine surveys is an effective and user-friendly database. An action research approach was used both to develop a standardised methodology for the survey and to develop a database which facilitates easy handling and standardised cleaning of data, and produces automated reports. It was decided that the database developed would be a free and open source one, as this would allow for collaboration with open source developers and would increase the feasibility of uptake of the database in under resourced areas.

Results

The database developed allows health workers themselves to identify and act on causes of long waiting times, facilitating the iterative conducting of surveys and the uptake of recommendations for reducing waiting times, thereby contributing to continuous improvement in health services.. It went through several cycles of appraisal and refinement until finally a stable and user-friendly database, which met all its objectives, was developed. The key features of the database are that it has a user-friendly interface, it allows for rapid data entering, it facilitates cleaning of the data in a standardised manner and it automatically produces standardised reports consisting of preformatted composite tables and composite graphs. In addition to these standardised reports the database also allows for user-defined customised reports to be developed and enables detailed statistical analysis.

Conclusion

Conducting and acting on waiting time surveys in a routine iterative manner, is an easy and efficient way of reducing waiting times and ensuring continuous quality improvement in health service provision. The development of a user-friendly database that facilitates health workers measuring the causes of long waiting times, has considerably enhanced the likelihood of these surveys being done effectively and efficiently. Since the database developed is appropriate to poor underdeveloped countries and is free and open source, the potential uptake and widespread use of the database is large.

Address for correspondence

Dr. Gavin Reagon, School of Public Health, University of the Western Cape, Private Bag X17, Bellville, 7530, South Africa. E-mail: greagon@uwc.ac.za