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Data quality of the Chinese National AIDS information system: A critical review

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Abstract

2017 International Medical Informatics Association (IMIA) and IOS Press. Thirty-nine electronic English and Chinese articles on data quality assessment of the Chinese AIDS information system were critically reviewed. Some performance assessment related indicators of data quality have improved since the system was launched in 2008. After a thematic analysis of the factors that may affect data quality, four domains were identified. They are data management, data collector, information system, and data collection environment. The findings are useful to guide data quality improvement effort.

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Data Quality of the Chinese National AIDS Information System: A Critical Review

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Abstract

Thirty-nine electronic English and Chinese articles on data quality assessment of the Chinese AIDS information system were critically reviewed. Some performance assessment related indicators of data quality have improved since the system was launched in 2008. After a thematic analysis of the factors that may affect data quality, four domains were identified. They are data management, data collector, information system, and data collection environment. The findings are useful to guide data quality improvement effort.

Keywords:

Data quality, AIDS, information system, China

Introduction

We conducted a critical literature review to explore data quality assessment in Chinese AIDS Comprehensive Response Information Management System (CRIMS): the status of and the influential factors of data quality.

Methods

English and Chinese electronic literature databases were searched, such as Scopus and CNKI with keywords “AIDS”, “data quality” and “China”. Thirty-nine articles were critically reviewed and thematically synthesized to conceptualize the factors that may affect data quality.

Results

Some performance assessment related indicators of data quality have improved since the CRIMS was launched in 2008. By 2013, the case follow-up rate and the case epidemiological survey rate were greater than 98.0%. The rate of data consistency in laboratory testing of $CD4^+$ T cell counting was maintained above 90.0% except for 2010 [1]. However, non-compulsory items remained incomplete, e.g., identity number, workplace, and contact phone number [1, 3].

The factors associated with CRIMS’s data quality were identified and grouped into 14 categories under four domains: data management, data collector, information systems, and data collection environment (see Figure 1).

Data management is of particular concern when the annual national data-driven performance assessment is used to compare data quality at all levels of the CRIMS [1]. A further concern is the data collection environment in which health service clients sometimes could inhibit data quality in data collection process. Inadequate communication with the clients by data collectors is reported. Automatic data entry checking function is welcomed in the field but may increase the uncertainty of data elements [2].

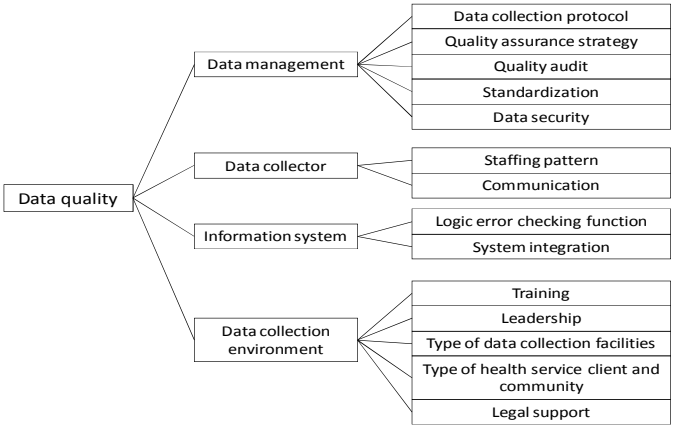

Figure 1. Factors that may affect data quality in the CRIMS

Conclusions

High-level data quality for performance assessment related indicators was reported in the CRIMS, although the problem of the incompleteness of non-compulsory data remained by 2013. The factor affecting data quality can be grouped into four domains: data management, data collector, information system, and data collection environment. Further research needs to investigate how the four domains affect the quality of the data collection process.

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References

[1] J. Han, H. Tang, J. Xu, and Y. Mao, Analysis of national data quality assessment for follow up of HIV/AIDS cases between 2009 and 2013, Chin J Prev Med 48 (2014), 1104-1106.

[2] J. Liu, Z. Jiang, W. Chen, G. Shan, Y. Fan, and H. Zhang, "Case not found" of HIV/AIDS cases analysis in Liuzhou City, 1996-2010, Chin J Dis Control Prev 16 (2012), 307-310.

[3] Q. Qin, L. Wang, Z. Ding, L. Wang, F. Hei, P. Li, and F. Chen, Evaluation of AIDS network direct reporting quality and related indicators in China, 2010, Disease Surveillance 27 (2012), 1007-1012.

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