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## Contents

# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

Information and Communication Technology (ICT) has become a major tool in delivery of health services and has had an innovative impact on quality of life. ICT is affecting the way healthcare is delivered to clients. In this paper, we discuss the state of ICT and health informatics in Ghana. We also discuss the state of various relevant infrastructures for the successful implementation of ehealth projects. We analyse the past and present state of health informatics in Ghana, in comparison to other African countries. We also review the challenges facing successful implementation of health informatics projects in Ghana and suggest possible solutions.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

**Objectives:** Public health professionals rely on quantitative data for the daily practice of public health as well as organizational decision making and planning. However, several factors work against effective data sharing among public health agencies in the US. This review characterizes the reported barriers and enablers of effective use of public health IS from an informatics perspective. **Methods:** A systematic review of the English language literature for 2005 to 2011 followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) format. The review focused on immunization information systems (IIS) and vital records information systems (VRIS). Systems were described according to the structural aspects of IS integration and data quality. **Results:** Articles describing IIS documented issues pertaining to the distribution of the system, the autonomy of the data providers, the heterogeneous nature of information sharing as well as the quality of the data. Articles describing VRIS were focused much more heavily on data quality, particularly whether or not the data were free from errors. **Conclusions:** For state and local practitioners to effectively utilize data, public health IS will have to overcome the challenges posed by a large number of autonomous data providers utilizing a variety of technologies.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

The purpose of this intervention study was to measure the impact of an onsite and online 12-week worksite heart-health campaign designed to reduce metabolic risk factors for employees at BMW of North America, LLC. All participants received three coaching sessions by a registered dietitian (RD), participated in eight educational sessions led by an RD, viewed their pre, midpoint and final biometric data online, and had access to other web-based tools and educational booklets. The program used team-based competition. At baseline and week 12, blood pressure, anthropometric and hematologic parameters were measured, including changes in weight, blood pressure, fasting blood glucose, waist circumference, total cholesterol, LDL cholesterol, HDL cholesterol, triglycerides, and smoking habits. Of the 100 individuals that enrolled, 95 completed the program, and 87 met criteria to be eligible for data analysis. Paired t tests demonstrated significant reductions in weight ( $p < .0001$ ), body mass index ( $p = .0047$ ), waist circumference ( $p < .0001$ ), diastolic blood pressure ( $p = .0018$ ), and systolic blood pressure ( $p = .0012$ ). Paired t tests for total cholesterol, LDL cholesterol, HDL cholesterol, triglycerides, and fasting blood glucose did not indicate any significant improvements. There was an improvement in body mass index and blood pressure classifications after completion of the program. A Friedman's test of blood pressure classification demonstrated significant improvements in participants' blood pressure classification from pre-program to midpoint, midpoint to end, and pre-program to end. These results support the effectiveness of a dietitian-led, team-based, worksite heart-health campaign with web-based education to reduce risk factors for metabolic syndrome.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

Public health emergencies such as H1N1 and SARS pandemics have demonstrated and validated the necessity of a strong and cohesive laboratory response system that is able to respond to threats in an efficient and timely manner. Individual laboratories, through connection with other laboratories or networks, are able to enhance their capacity for preparedness and response to emergencies. Efficient networks often establish standards and maintain best practices within member laboratories. The Global Laboratory Directory Mapping tool (GLaDMap) supports the efforts of laboratory networks to improve their connectivity by providing a simple and efficient tool to profile laboratories by geographic location, function or expertise. The purpose of this paper is to evaluate the effectiveness of the GLaDMap search tool and the completeness of the descriptive content of networks and laboratories that are currently contained within the GLaDMap database. We determined the extent of information volunteered and how the system is being used. Although the system aims to attract an array of users from around the globe, our analysis reveals minimal participation and information sharing and that the low profile participation rate limits the tool's functionality. The Global Laboratory Directory platform has addressed barriers to participation by adding optional functionality such as restricted access to laboratory profiles to protect private information and by implementing additional functional applications complementary to GLaDMap.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

**INTRODUCTION:** Portable handheld computers and electronic data management systems have been used for national surveys in many high-income countries, however their use in developing countries has been challenging due to varying geographical, economic, climatic, political and cultural environments. In order to monitor and measure global adult tobacco use, the World Health Organization and the US Centers for Disease Control and Prevention initiated the Global Adult Tobacco Survey, a nationally representative household survey of adults, 15 years of age or older, using a standard core questionnaire, sample design, and data collection and management procedures. The Survey has been conducted in 14 low- and middle-income countries, using an electronic data collection and management system. This paper describes implementation of the electronic data collection system and associated findings. **METHODS:** The Survey was based on a comprehensive data management protocol, to enable standardized, globally comparable high quality data collection and management. It included adaptation to specific country needs, selection of appropriate handheld hardware devices, use of open source software, and building country capacity and provide technical support. **RESULTS:** In its first phase, the Global Adult Tobacco Survey was successfully conducted between 2008 and 2010, using an electronic data collection and management system for interviews in 302,800 households in 14 countries. More than 2,644 handheld computers were fielded and over 2,634 fieldworkers, supervisors and monitors were trained to use them. Questionnaires were developed and programmed in 38 languages and scripts. The global hardware failure rate was < 1% and data loss was almost 0%. **CONCLUSION:** Electronic data collection and management systems can be used effectively for conducting nationally representative surveys, particularly in low- and middle-income countries, irrespective of geographical, climatic, political and cultural environments, and capacity-building at the country level is an important vehicle for Health System Strengthening.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

**Background:** Although Uganda had recorded decline in HIV infection rates around 1990's, it is argued that HIV/AIDS risk sexual behaviour especially among the youth started increasing again from early 2000. School-based computer-assisted HIV interventions can provide interactive ways of improving the youth's HIV knowledge, attitudes and skills. However, these interventions have long been reported to have limited success in improving the youth's sexual behaviours, which is always the major aim of implementing such interventions. This could be because, the commonly used health promotion theories employed by these interventions have limited application in HIV prevention. These theories tend to lack sufficient attention to contextual mediators that influence ones sexual behaviours. Moreover, literature increasingly expresses dissatisfaction with the dominant prevailing descriptive survey-type HIV/AIDS-related research. **Objective and Methods:** The objective of this research was to identify contextual mediators that influence the youth's decision to adopt and maintain the HIV/AIDS preventive behaviour advocated by a computer-assisted intervention. To achieve this objective, this research employed qualitative method, which provided in-depth understanding of how different contexts interact to influence the effectiveness of HIV/AIDS interventions. The research question was: What contextual mediators are influencing the youth's decision to adopt and maintain the HIV/AIDS preventive behaviour advocated by a computer-assisted intervention? To answer this research question, 20 youth who had previously completed the WSWM intervention when they were still secondary schools were telephone interviewed between Sept.08 and Dec.08. The collected data was then analysed, based on grounded theory's coding scheme. **Results:** Findings demonstrate that although often ignored by HIV interventionists and researchers, variety of contextual mediators influence individual uptake of HIV preventives. These include relationship characteristics, familial mediators, peer influence, gender-baised social norms, economic factors and religious beliefs. **Conclusion:** To generate concomitant mutual efforts, rather than exclusively focusing on individual level mediators, there is an urgent need to shift to integrative approaches, which combine individual level change strategies with contextual level change approaches in the design and implementation of interventional strategies to fight against HIV/AIDS. **Key words:** HIV/AIDS interventions, ICT, behavioural change, contextual factors, health promotion, youth.

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# Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

## Abstract

This report delineates Yolo County Health Department's process to ascertain its optimal methods of participation in syndromic surveillance and health information exchange. As a health department serving a county of just 200,000 residents, Yolo County Health Department needed to operate within strict financial constraints. Meaningful Use legislation enabled it to pursue both syndromic surveillance and health information exchange participation whilst complying with its budgetary restrictions. The Health Information Technology for Economic and Clinical Health (HITECH), a segment of the American Recovery and Reinvestment Act of 2009, has incentivized the 'Meaningful Use' of electronic health records (EHRs) by providing incentive reimbursements and non-compliance penalties. The Meaningful Use of EHRs is to take place over 3 Stages: Stage 1 has begun, Stage 2 is imminent, and Stage 3 is currently being discussed. Having been solicited by both health information exchange and syndromic surveillance options which were cost-prohibitive, Yolo County Health Department focused attention on BioSense 2.0, a Meaningful Use-ready and virtually free syndromic surveillance program developed by the Federal Centers for Disease Control and Prevention. In collaboration with Sacramento County Department of Health and Human Services, and with support from several other area counties, Yolo County Health Department submitted a Funding Opportunity application for BioSense 2.0 regional implementation. Through this collaboration, Yolo County Health Department has begun participating in the formative stages of the Sacramento Area Center for Advanced Biosurveillance (SAC-B). Via SAC-B, Yolo County Health Department will be able to participate in syndromic surveillance in the BioSense 2.0 program, and simultaneously expand its electronic health data sharing towards a more comprehensive health information exchange. Lastly, over the course of these projects, three other methods of participating in electronic health data sharing became available to Yolo County Health Department: all three methods were the direct result of Meaningful Use legislation. Key words: county health department; health information exchange; meaningful use, syndromic surveillance

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