
Online Journal of Public Health Informatics

High-quality research and innovation in the field of public health informatics
Volume 6 (2014), Issue 1 ISSN 1947-2579 Editor in Chief: Edward K. Mensah, PhD, MPhil

Contents

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

Abstract

The International Society for Disease Surveillance (ISDS) will hold its twelfth annual conference in New Orleans on December 12th and 13th, 2013. Led by the Society's mission to improve population health by advancing the science and practice of disease surveillance, the conference brings together researchers and practitioners in public health, epidemiology, health policy, biostatistics and mathematical modeling, informatics, computer science, and related fields focused on biosurveillance and emerging challenges to public health practice. The theme of this year's conference, Translating Research and Surveillance into Action, promotes the activities that are making a difference in the public health community. With abstracts submitted by authors from 36 countries, the conference will highlight research and successes in practice from around the world. Of the 211 abstracts submitted to the conference, 66 were chosen for oral presentation, 80 for posters, 4 for roundtable discussions, 4 for panels and 28 for a new presentation type, lightning talks. With 14 talks in 2 separate sessions, lightning talks will provide the audience with an information-packed series of 5 minute presentations. They will include themes like how to best use social media, what types of surveillance were performed during the 2013 Super Bowl, what algorithms work best for detection of outbreaks in resource-limited countries, and many other fantastic topics. In keeping with the conference theme of action, and due to the increasing frequency of major events requiring public health response (such as extreme weather and terrorist bombings), we are grateful to have Dr. David Abramson provide the opening keynote. Dr. Abramson is the deputy director of the National Center for Disaster Preparedness and can offer insight into how public health surveillance can be used before, during, and after disasters. We are also very pleased to have Dr. Gary Slutkin, the founder and executive director of the Cure Violence organization, speak at the conference. Dr. Slutkin will discuss his organization's fascinating use of epidemiologic techniques applied to the problem of reducing gang violence in inner cities. We look forward to hearing their experience and the challenge of thinking about epidemiology and surveillance in a new light. I am looking forward to the 2013 ISDS Conference – it is one of the few places where public health practice, analytics, information technology, and policy seamlessly merge in a meaningful way. Every year I listen to inspiring success stories of surveillance practice, intriguing informatics techniques, brilliant analytical methods, and thoughtful policy discussions. And while all of those topics are remarkable by themselves, they are surpassed by the amazing people I meet and the connections that I make every year at ISDS!

(*Online J Public Health Inform* 2014;6(1):e5265) doi:[10.5210/ojphi.v6i1.5265](https://doi.org/10.5210/ojphi.v6i1.5265)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5265

URL:

doi:[10.5210/ojphi.v6i1.5265](https://doi.org/10.5210/ojphi.v6i1.5265)

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

Abstract

Many local and international stakeholders have independently pursued solutions for electronic surveillance and reporting in African countries resulting in multiple systems of varying effectiveness and minimum interoperability. CDC lead a developmental process that engaged various partner organizations, including the WHO Regional Office for Africa, to conceptualize a strategy for providing region-wide governance of eSurveillance and the creation of the African Surveillance Informatics Governing Board to address standards, policy, infrastructure, workforce, and resource needs to strengthening surveillance and reporting capacity.

(*Online J Public Health Inform* 2014;6(1):e5009) doi:[10.5210/ojphi.v6i1.5009](https://doi.org/10.5210/ojphi.v6i1.5009)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5009

URL:

doi:[10.5210/ojphi.v6i1.5009](https://doi.org/10.5210/ojphi.v6i1.5009)

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

Abstract

We applied sequential pattern extraction to identify the most important climatic factors related to dengue fever in French Guiana. Our findings suggest that the local climate has major effects on the occurrence of dengue epidemics in French Guiana and highlight the utility of the data mining approach to analyze disease surveillance data on a temporal and a spatial scale in relation to climatic, social and environmental variables. This study is a first step of a data mining project which will help to better understand and accurately predict temporal dynamics of dengue fever in French Guiana.

(*Online J Public Health Inform* 2014;6(1):e5011) doi:[10.5210/ojphi.v6i1.5011](https://doi.org/10.5210/ojphi.v6i1.5011)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5011

URL:

doi:[10.5210/ojphi.v6i1.5011](https://doi.org/10.5210/ojphi.v6i1.5011)

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

Abstract

The success of syndromic surveillance depends on the ability of the surveillance community to quickly and accurately recognize anomalous data. Current methods of anomaly detection focus on sets of syndromic categories and rely on a priori knowledge to map chief complaints to these general syndromic categories. As a result, the mapping scheme may miss key terms and phrases that have not previously been used. Furthermore, analysts do not have a good way of being alerted to these new terms in order to determine if they should be added to the syndromic mapping schema. We use a dynamic dictionary of terms to side-step the downfalls of a priori knowledge in this rapidly evolving field by alerting the analyst to rare and brand new words used in the chief complaint field.

(*Online J Public Health Inform* 2014;6(1):e5012) doi:[10.5210/ojphi.v6i1.5012](https://doi.org/10.5210/ojphi.v6i1.5012)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5012](https://doi.org/10.5210/ojphi.v6i1.5012)

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

Abstract

The purpose of Karachi Health and Demographic Surveillance System (HDSS) is to generate longitudinal information on health and demographics of low socioeconomic population and provide platform for larger projects in efforts for diseases control. It covers an area of 19 square-kilometers at five peri-urban and urban communities in Karachi with focus on maternal and child health. In quarterly visits, Community health workers (CHWs) followed 67802 women of reproductive age, identify new pregnancies and followed them until their outcome. In the year 2012 it has GFR 135.1, CBR 33.7, NMR 45, IMR 62 <5 years mortality 72 and MMR of 372.

(*Online J Public Health Inform* 2014;6(1):e5013) doi:[10.5210/ojphi.v6i1.5013](https://doi.org/10.5210/ojphi.v6i1.5013)

###Reviewer names will be inserted here### published 14.

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doi:[10.5210/ojphi.v6i1.5013](https://doi.org/10.5210/ojphi.v6i1.5013)

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Abstract

The lessons learned from the nationwide implementation of an electronic disease surveillance system highlighted in this abstract can help to guide the successful implementation of an electronic disease surveillance system in developing countries.

(*Online J Public Health Inform* 2014;6(1):e5014) doi:[10.5210/ojphi.v6i1.5014](https://doi.org/10.5210/ojphi.v6i1.5014)

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URL:

doi:[10.5210/ojphi.v6i1.5014](https://doi.org/10.5210/ojphi.v6i1.5014)

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

Abstract

We developed and validated a multivariable probabilistic case-detection model to detect known cases of diabetes mellitus (DM) using clinical and demographic data. We applied our method to a cohort of older adult residents of the region of Sherbrooke, Quebec. Predictors were added to a logistic regression model and internally validated using a 2:1 split sample approach. Models were compared using measures of goodness of fit, discrimination and accuracy. The best model incorporated all predictors into the model: male sex, age, at least one hospitalization, physician visit and drug dispensed for diabetes.

(*Online J Public Health Inform* 2014;6(1):e5015) doi:[10.5210/ojphi.v6i1.5015](https://doi.org/10.5210/ojphi.v6i1.5015)

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

Abstract

We assessed human influenza forecasting studies to spur translation of these novel methods to practice. Searching 3 databases for papers in English, year 2000-, that validated against independent data, we included 36. They were population-based, hospital-based, and forecast pandemic spread (N=28, 4, 4, respectively); and used curve-prediction and diffusion models (N=19, 17, respectively). Four and 5 used internet search and meteorological data, respectively, besides clinical data. Eight reported sensitivity analyses; 1 compared agent-based and compartmental models. Several showed favorable 4-week-ahead skill, but lack of sensitivity analysis and model comparisons, and implementation challenges for complex models, may hinder translation to practice.

(*Online J Public Health Inform* 2014;6(1):e5016) doi:[10.5210/ojphi.v6i1.5016](https://doi.org/10.5210/ojphi.v6i1.5016)

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doi:[10.5210/ojphi.v6i1.5016](https://doi.org/10.5210/ojphi.v6i1.5016)

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Abstract

We develop an interactive tool for disease outbreak detection, visualization, and forecasting. The tool is based on the R statistical environment and the shiny package and therefore the code is written entirely in R, but deployment is in HTML. In addition, the choice of the R statistical environment provides access the plethora of R packages and scripts built for disease detection and forecasting. A demonstration tool is created using a 2010 measles outbreak in Zimbabwe.

(*Online J Public Health Inform* 2014;6(1):e5017) doi:[10.5210/ojphi.v6i1.5017](https://doi.org/10.5210/ojphi.v6i1.5017)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5017](https://doi.org/10.5210/ojphi.v6i1.5017)

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Abstract

We will describe an R package developed for visualizing and analyzing the quality of aggregate surveillance data.

(*Online J Public Health Inform* 2014;6(1):e5018) doi:[10.5210/ojphi.v6i1.5018](https://doi.org/10.5210/ojphi.v6i1.5018)

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URL:

doi:[10.5210/ojphi.v6i1.5018](https://doi.org/10.5210/ojphi.v6i1.5018)

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Abstract

Based on the actual situation in the CCHF natural foci of Kazakhstan for the first half of 2013, the authors, using EIDSS version 4, evaluated the accuracy of the earlier prognosis of situation development in the CCHF natural foci of Kazakhstan for 2013 (EIDSS Application for CCHF Foci Activity Epi-Analysis and Prediction in Kazakhstan). The prognosis of situation development in 2013 for 11 districts of Kazakhstan (estimated in 2012 as the districts with a high risk of CCHF) proved to be accurate in 90.9% of cases.

(*Online J Public Health Inform* 2014;6(1):e5019) doi:[10.5210/ojphi.v6i1.5019](https://doi.org/10.5210/ojphi.v6i1.5019)

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Abstract

Adverse childhood experiences (ACEs) derail the healthy developmental processes of a child. Smoking is a coping device for some persons with ACEs. However, research on this has been neglected in Nigeria. We conducted a cross sectional survey of youths in South Western Nigeria and obtained information on exposure to ACEs and smoking. Logistics regression at 5% level of significance was done. At least 1 out of 10 categories of ACEs was reported by 87.9%. Respondents reporting 4 or more categories of ACEs had higher risk of engaging in smoking behaviors. Public health surveillance of ACEs is required in Nigeria.

(*Online J Public Health Inform* 2014;6(1):e5020) doi:[10.5210/ojphi.v6i1.5020](https://doi.org/10.5210/ojphi.v6i1.5020)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5020](https://doi.org/10.5210/ojphi.v6i1.5020)

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

Abstract

Designing an early warning surveillance platform that takes into account the realities faced by developing countries.

(*Online J Public Health Inform* 2014;6(1):e5034) doi:[10.5210/ojphi.v6i1.5034](https://doi.org/10.5210/ojphi.v6i1.5034)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5034

URL:

doi:[10.5210/ojphi.v6i1.5034](https://doi.org/10.5210/ojphi.v6i1.5034)

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

Abstract

Four classifiers were evaluated to determine differences in case detection for heat related illness. The results of those classifiers, as applied to data from Northern Illinois ESSENCE participating hospitals from May 1, 2012 through August 31, 2012, will be discussed. Three refined syndrome definitions for heat related illness (chief complaint-based, discharge diagnosis-based, and both chief complaint and discharge diagnosis) were created based on the four evaluated classifiers and these classifiers were applied to current 2013 data. The application of the syndrome definition is dependent on a jurisdiction's purpose for conducting heat related illness surveillance.

(*Online J Public Health Inform* 2014;6(1):e5035) doi:[10.5210/ojphi.v6i1.5035](https://doi.org/10.5210/ojphi.v6i1.5035)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5035

URL:

doi:[10.5210/ojphi.v6i1.5035](https://doi.org/10.5210/ojphi.v6i1.5035)

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Abstract

The Integrated Disease Surveillance Project (IDSP) is the key indicator based surveillance system in India to fulfill the core surveillance and response functions requirement under the IHR—2005. The goal of this study was to assess and review the core and supplementary surveillance system attributes and functions affecting the outcome of IDSP in the state of Andhra-Pradesh, by undertaking a cross-sectional survey in 35 health facilities; conducting 110 Key Informant Interviews (KIIs) across all 23 districts in the state. The results from the study will inform the country's efforts to meet the IHR-2005 core capacity requirements by the year 2015.

(*Online J Public Health Inform* 2014;6(1):e5036) doi:[10.5210/ojphi.v6i1.5036](https://doi.org/10.5210/ojphi.v6i1.5036)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5036

URL:

doi:[10.5210/ojphi.v6i1.5036](https://doi.org/10.5210/ojphi.v6i1.5036)

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Abstract

The authors describe the challenges of disease surveillance in settings lacking infrastructure and access to medical care. They address the role of analytic methods and evaluate open-source temporal alerting algorithms chosen for the Suite for Automated Global Electronic bioSurveillance (SAGES), collection of modular, freely-available software tools to enable electronic surveillance in these settings. An algorithm test-bed is described and used to compare algorithm alerting performance for both daily and weekly data streams. Multiple detection performance measures are defined, and a practical means of combining them is applied to recommend preferred alerting methods for common scenarios.

(*Online J Public Health Inform* 2014;6(1):e5037) doi:[10.5210/ojphi.v6i1.5037](https://doi.org/10.5210/ojphi.v6i1.5037)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5037](https://doi.org/10.5210/ojphi.v6i1.5037)

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Abstract

Methicillin Resistant Staphylococcus Aureus (MRSA) is a strain of Staphylococcus aureus resistant to methicillin/oxacillin. No active efforts exist at identifying cases of MRSA in Ghana. We reviewed laboratory and clinical data on cases of MRSA and identified a total of 74 cases. A significant number of cases among neonates. Most isolates were from blood and the majority were sensitive to Vancomycin. Septicaemia was the commonest clinical diagnosis. 6 deaths were recorded among cases. Our review indicates MRSA is a significant cause of morbidity and mortality. We recommend the establishment of a surveillance system and guidelines for managing MRSA.

(*Online J Public Health Inform* 2014;6(1):e5038) doi:[10.5210/ojphi.v6i1.5038](https://doi.org/10.5210/ojphi.v6i1.5038)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5038](https://doi.org/10.5210/ojphi.v6i1.5038)

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

Abstract

It is increasingly critical to test antibiotics on local bacterial strains, due to the continuously growing resistance of microflora to extensively administered antibacterial medications. For this study, we examined the development of antimicrobial resistance of Salmonellae collected in Uzbekistan through 1998 versus those collected in 2008. Tests on local collections (through 1998) and newly cultivated (after 2008) strains of the pathogens circulating in the Republic of Uzbekistan demonstrated that the microbial population of Salmonellae underwent changes resulting in the occurrence of resistant strains. There are more moderately resistant and resistant strains among the newly cultivated strains as compared to the ones isolated through 1998.

(*Online J Public Health Inform* 2014;6(1):e5039) doi:[10.5210/ojphi.v6i1.5039](https://doi.org/10.5210/ojphi.v6i1.5039)

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doi:[10.5210/ojphi.v6i1.5039](https://doi.org/10.5210/ojphi.v6i1.5039)

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Abstract

Incorporating prior knowledge (e.g., the spatial distribution of zip codes and background population effects) into a model using Bayesian methods could potentially improve outbreak detection. We adapted a previously described Bayesian model-based spatiotemporal surveillance technique to daily respiratory syndrome counts in NYC Emergency Department data in 2009, the year of the H1N1 influenza pandemic. Citywide, 56 alarms were produced across 15 zip codes, all during days of elevated respiratory visits. Future work includes evaluating our choice of baseline length, considering other alarm thresholds, and conducting a formal evaluation of the method across five syndromes in NYC.

(*Online J Public Health Inform* 2014;6(1):e5040) doi:[10.5210/ojphi.v6i1.5040](https://doi.org/10.5210/ojphi.v6i1.5040)

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URL:

doi:[10.5210/ojphi.v6i1.5040](https://doi.org/10.5210/ojphi.v6i1.5040)

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Abstract

Since April 1, 2012, an integrated syndromic surveillance system (ISSC) has been implemented in rural Hubei Province, China. School absenteeism surveillance is an important part of the system. At the beginning of the project, the suspected diseases outbreak detection mainly depended on researchers' daily data check. The workload was too much to expand the system largely. For early identification and automatic warning of school infectious disease outbreaks, this abstract compared different models to choose the optimal model.

(*Online J Public Health Inform* 2014;6(1):e5041) doi:[10.5210/ojphi.v6i1.5041](https://doi.org/10.5210/ojphi.v6i1.5041)

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doi:[10.5210/ojphi.v6i1.5041](https://doi.org/10.5210/ojphi.v6i1.5041)

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Abstract

This presentation will review the methods established for sharing reported cases of disease across an international boundary. Will review the cases identified and describe follow up actions by public health.

(*Online J Public Health Inform* 2014;6(1):e5042) doi:[10.5210/ojphi.v6i1.5042](https://doi.org/10.5210/ojphi.v6i1.5042)

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Abstract

The Florida Department of Health (FDOH) electronically receives both urgent care center (UCC) data and hospital emergency department (ED) data from health care facilities in 43 of its 67 counties through its Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE-FL). This project will investigate and describe the differences between the data received from these two sources and provide best practices for grouping and analyzing these data sources.

(*Online J Public Health Inform* 2014;6(1):e5043) doi:[10.5210/ojphi.v6i1.5043](https://doi.org/10.5210/ojphi.v6i1.5043)

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Abstract

Uncertainty surrounding microbial fate and transport renders the assessment of climate change effects on waterborne pathogens complex and difficult to forecast. The objective of this study is to use watershed modeling to predict the impacts of future climate change and land management scenarios on microbial water quality. Preliminary findings suggest an increased risk to human health due to direct consequences of climate change. Results of watershed-scale microbial load modeling can inform the adoption of pollution control measures required to protect human health and aid development of new water policy.

(*Online J Public Health Inform* 2014;6(1):e5044) doi:[10.5210/ojphi.v6i1.5044](https://doi.org/10.5210/ojphi.v6i1.5044)

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Abstract

Methicillin-resistant *Staphylococcus aureus* (MRSA) has since become a major cause of illness and death in our healthcare setting. Risk factors for HA-MRSA include hospitalization, older age, invasive devices, and residence in long-term care facility, including exposure to antimicrobial agents. HA-MRSA isolates are often resistant to several antimicrobial drug classes in addition to beta-lactams. The CA-MRSA infections usually affects young, healthy persons and associated with sharing towels or athletic equipment, participating in contact sports, living in unsanitary and crowded areas, using illegal intravenous drugs. The number of invasive MRSA infections reported and the number of invasive infections caused by CA-MRSA is on the increase. The increase of CA-MRSA poses a unique public health threat. It is now clear that CA-MRSA no longer causes only SSTIs but now causes an increased proportion of invasive infections in a rural state. This should further inform and direct prospective researches and policies in developing specific tools to meet the needs.

(*Online J Public Health Inform* 2014;6(1):e5045) doi:[10.5210/ojphi.v6i1.5045](https://doi.org/10.5210/ojphi.v6i1.5045)

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Abstract

The Houston Department of Health Department of Health and Human Services (HDHHS) monitors emergency departments (ED) chief complaints across the Houston metropolitan area, Harris County, and the surrounding jurisdictions by Real-time Outbreak Disease Surveillance (RODS). The influenza-like illnesses (ILI) data is collected by sentinel surveillance provider network of 12 physicians and RODS, an electronic syndromic surveillance database consisting of about 30 EDs in metropolitan Houston. Previous research indicates that there is a relationship between new HIV diagnoses and neighborhood poverty. However, there is limited research on health disparity to investigate the association between influenza-like illnesses (ILI) and social determinants of health (SDH), such as poverty. This cross-sectional study investigates the relationship between ILI and SDH.

(*Online J Public Health Inform* 2014;6(1):e5046) doi:[10.5210/ojphi.v6i1.5046](https://doi.org/10.5210/ojphi.v6i1.5046)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5046

URL:

doi:[10.5210/ojphi.v6i1.5046](https://doi.org/10.5210/ojphi.v6i1.5046)

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

Abstract

The objective of this concept is to combine evidence from multiple sources of data, some in real-time and others at lower reception intervals in order to develop a real-time surveillance capability.

(*Online J Public Health Inform* 2014;6(1):e5047) doi:[10.5210/ojphi.v6i1.5047](https://doi.org/10.5210/ojphi.v6i1.5047)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5047

URL:

doi:[10.5210/ojphi.v6i1.5047](https://doi.org/10.5210/ojphi.v6i1.5047)

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

Abstract

This project is developing a package of materials to facilitate implementation of a jurisdictional-driven enhanced process for generating program-specific surveillance reports from BioSense 2.0 locker data. This package includes query and analysis documented-code libraries for SQL, SAS and R, a chief complaint parser, and an implementation guide. BioSense User Community members provided input during the development phase of this package to ensure that the programmed functions in the code libraries address common needs across jurisdictions. Advantages of this approach to analyzing BioSense data are automation and greater analytic versatility and flexibility compared to the current BioSense 2.0 front-door user interface.

(*Online J Public Health Inform* 2014;6(1):e5048) doi:[10.5210/ojphi.v6i1.5048](https://doi.org/10.5210/ojphi.v6i1.5048)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5048

URL:

doi:[10.5210/ojphi.v6i1.5048](https://doi.org/10.5210/ojphi.v6i1.5048)

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

Abstract

Weekly aggregated local telephone triage data collected from 2007 to 2012 in eight municipalities in Jämtland County, Sweden, were analyzed by seasonal autoregressive integrated moving average (ARIMA) modeling of time series of the two common syndromes acute gastroenteritis (AGE) and influenza-like illness (ILI). Data analysis was done using the free software R (<http://www.r-project.org>). The seasonal ARIMA model detected AGE and ILI outbreak signals in the majority of the investigated communities. This forecast model can prove to be an important tool for monitoring local levels of AGE and ILI to enable early detection of outbreaks of these conditions.

(*Online J Public Health Inform* 2014;6(1):e5049) doi:[10.5210/ojphi.v6i1.5049](https://doi.org/10.5210/ojphi.v6i1.5049)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5049

URL:

doi:[10.5210/ojphi.v6i1.5049](https://doi.org/10.5210/ojphi.v6i1.5049)

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

Abstract

To set appropriate priorities in the development of BioSense 2.0, its governance body understand the needs and requests of users and stakeholders. The Governance Group has surveyed this community several times, refining its methods along they way. There is now a clearer understanding of the appropriate priorities for developing BioSense 2.0.

(*Online J Public Health Inform* 2014;6(1):e5051) doi:[10.5210/ojphi.v6i1.5051](https://doi.org/10.5210/ojphi.v6i1.5051)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5051

URL:

doi:[10.5210/ojphi.v6i1.5051](https://doi.org/10.5210/ojphi.v6i1.5051)

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

Abstract

The Biosurveillance Data Stream Framework and associated definitions are proposed as a starting point to facilitate the development of a standardized lexicon for biosurveillance and characterization of currently used and newly emerging data streams. Criteria for building the data stream framework were developed from an examination of the literature, analysis of information on operational infectious disease biosurveillance systems, and consultation with experts in the area of biosurveillance. To demonstrate utility, the framework and definitions were used as the basis for a schema of a relational database for biosurveillance resources and in the development and use of a decision support tool for data stream evaluation.

(*Online J Public Health Inform* 2014;6(1):e5052) doi:[10.5210/ojphi.v6i1.5052](https://doi.org/10.5210/ojphi.v6i1.5052)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5052

URL:

doi:[10.5210/ojphi.v6i1.5052](https://doi.org/10.5210/ojphi.v6i1.5052)

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

Abstract

This mixed study assessed the capacity and needs for establishing a syndromic surveillance system in rural China. Findings showed that the study sites had basic capacity for establishing syndromic surveillance system, but potential obstacles lied in the data collection and reporting, data quality control, acceptability of local workers and long-term sustainability. Customized trainings and incentive measures were necessary to facilitate its implementation.

(*Online J Public Health Inform* 2014;6(1):e5053) doi:[10.5210/ojphi.v6i1.5053](https://doi.org/10.5210/ojphi.v6i1.5053)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5053

URL:

doi:[10.5210/ojphi.v6i1.5053](https://doi.org/10.5210/ojphi.v6i1.5053)

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

Abstract

Cervical cancer is a significant cause of morbidity and mortality among women in developing countries. This study set out to determine the knowledge of cervical cancer, utilization of cervical cancer screening services and predictors of precancerous cervical changes among sexually active women in Lagos, Nigeria. The study was cross sectional in design. A multistage sampling technique was used to select 332 women. Questionnaire was used to collect data. In addition, Visual Inspection with Acetic Acid (VIA) and Visual Inspection with Lugol's Iodine (VILI) of the cervix. Data were summarized and tests for association were done. The mean age of respondents' mean age was 39.0 years \pm 10. Only (135) 41.9% of respondents were aware of cervical cancer. Eleven respondents (3.3%) had ever had a cervical cancer screening done. On logistic regression, multiple sexual partnering and early coitache predicted having precancerous cervical changes. There was poor knowledge and low utilization of cervical cancer screening services.

(*Online J Public Health Inform* 2014;6(1):e5054) doi:[10.5210/ojphi.v6i1.5054](https://doi.org/10.5210/ojphi.v6i1.5054)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5054

URL:

doi:[10.5210/ojphi.v6i1.5054](https://doi.org/10.5210/ojphi.v6i1.5054)

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

Abstract

Electronic Laboratory Reporting (ELR) following prescribed standards offers both opportunity and unique challenges for public health. One challenge is effectively identifying and documenting tests, results, and constraints upon them public health desires from ELR submitters. Successful implementation of ELR requires semantic understanding of vocabulary used. In order to achieve semantic understanding of the actionable content of ELR messages, a systematic means of documenting and validating vocabulary is needed. Development of an on-boarding process which places vocabulary validation at the beginning of the process is critical in order to hasten on-boarding and realize the benefits of ELR to public health practice.

(*Online J Public Health Inform* 2014;6(1):e5055) doi:[10.5210/ojphi.v6i1.5055](https://doi.org/10.5210/ojphi.v6i1.5055)

###Reviewer names will be inserted here### published 14.

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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 round table will provide participants with a forum to develop recommendations that will improve the data-sharing environment on BioSense 2.0. Participants will be asked to build upon the findings of a data-sharing workshop and share jurisdictional barriers to data sharing as well as potential benefits, and offer potential solutions. Round table participants will be welcome to share their recommendations with the BioSense 2.0 Governance Group.

(*Online J Public Health Inform* 2014;6(1):e5056) doi:[10.5210/ojphi.v6i1.5056](https://doi.org/10.5210/ojphi.v6i1.5056)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5056

URL:

doi:[10.5210/ojphi.v6i1.5056](https://doi.org/10.5210/ojphi.v6i1.5056)

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

Abstract

Public health surveillance depends, in part, on provider-submitted reports of communicable diseases. The "Improving Population Health through Enhanced Targeted Regional Decision Support" research project is implementing a novel technology to pre-populate report forms in order to streamline reporting workflows, lower reporting barriers, increase data completeness, improve timeliness and, ultimately, provide access to higher quality surveillance data for public health organizations. We will share preliminary evaluation results regarding barriers and facilitators to implementation and utilization of the intervention; and differences in perceptions regarding reporting burden on clinical and public health workers.

(*Online J Public Health Inform* 2014;6(1):e5057) doi:[10.5210/ojphi.v6i1.5057](https://doi.org/10.5210/ojphi.v6i1.5057)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5057

URL:

doi:[10.5210/ojphi.v6i1.5057](https://doi.org/10.5210/ojphi.v6i1.5057)

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

Abstract

The variations across the country in the methodological reporting of Atrial Septal Defect (ASD), one type of birth defect, would suggest misleading gaps in reported prevalence rates. Using the data in 2012, we executed Poisson regression analysis to examine the association of prevalence rates of ASD with coding systems adjusting for the potential confounding factors. We found a two-fold higher prevalence rate of ASD for states using ICD-9-CM without exclusion PFO, compared to those using the coding system of the CDC or ICD-9-CM with exclusion PFO for case definition. Furthermore, an interaction term between coding system and case ascertainment methods were also observed. The study revealed that coding systems and case ascertainment methods may lead highly varied prevalence rates of ASD across States. A standardized criteria to bridge this variability will play an important role in public health polices and prevention programs.

(*Online J Public Health Inform* 2014;6(1):e5058) doi:[10.5210/ojphi.v6i1.5058](https://doi.org/10.5210/ojphi.v6i1.5058)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5058

URL:

doi:[10.5210/ojphi.v6i1.5058](https://doi.org/10.5210/ojphi.v6i1.5058)

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

Abstract

With CDC funding we created and maintain a web-based de-identified medical records database from student health centers (SHCs) at a nationally representative sample of 22 universities. This was accomplished through five specific, interrelated processes. The resultant College Health Surveillance Network (CHSN) is an online resource of de-identified EMRs for over 702,000 students (approximately 900,000 visits per year). This sample is highly representative of the 108 four year research institutions nationally. Each participating IHE uploads data monthly to the secure website: confidential person ID, age, gender, student status, ethnicity/race, date of encounter, ICD-9 codes and CPT codes associated with the encounter.

(*Online J Public Health Inform* 2014;6(1):e5059) doi:[10.5210/ojphi.v6i1.5059](https://doi.org/10.5210/ojphi.v6i1.5059)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5059

URL:

doi:[10.5210/ojphi.v6i1.5059](https://doi.org/10.5210/ojphi.v6i1.5059)

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

Abstract

The goal of DTRA's Biosurveillance Ecosystem (BSVE) program is to significantly reduce the time required to identify threats to human health, whether of malicious or natural origin, and respond appropriately. Draper Laboratory is leading a team to develop the Collaborative Overarching Multi-feed Biosurveillance System (COMBS) for BSVE to revolutionize biosurveillance capabilities. USG analysts whose jobs are to reduce risks to national security will benefit from rapid and thorough information access, as will local public health authorities and individual citizens. This poster will provide an overview of the COMBS project and current progress towards meeting the goals of the BSVE.

(*Online J Public Health Inform* 2014;6(1):e5060) doi:[10.5210/ojphi.v6i1.5060](https://doi.org/10.5210/ojphi.v6i1.5060)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5060

URL:

doi:[10.5210/ojphi.v6i1.5060](https://doi.org/10.5210/ojphi.v6i1.5060)

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

Abstract

The Triple-S project (Syndromic Surveillance Survey, Assessment towards Guidelines for Europe) is a 3 year European project. One main objective is to produce a proposal for coordinating syndromic surveillance (SyS) systems operated by European countries and for comparing findings from these systems. Three models have been identified for ensuring the comparison and reporting of findings from EU countries. For the sustainability of the models, a SyS coordinating group is needed to coordinate SyS activities in Europe.

(*Online J Public Health Inform* 2014;6(1):e5061) doi:[10.5210/ojphi.v6i1.5061](https://doi.org/10.5210/ojphi.v6i1.5061)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5061

URL:

doi:[10.5210/ojphi.v6i1.5061](https://doi.org/10.5210/ojphi.v6i1.5061)

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

Abstract

We compared several aberration detection algorithms using data from the Biosense 1.0 system account for total facility visits and background day-of-week effects.

(*Online J Public Health Inform* 2014;6(1):e5062) doi:[10.5210/ojphi.v6i1.5062](https://doi.org/10.5210/ojphi.v6i1.5062)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5062

URL:

doi:[10.5210/ojphi.v6i1.5062](https://doi.org/10.5210/ojphi.v6i1.5062)

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

Abstract

Tanzania has a distributed disease surveillance infrastructure for human and animal disease surveillance that requires application of new technologies to improve surveillance data timeliness and quality. This work compares four technologies for nation-wide use in surveillance: (1) online voice, (2) SMS, (3) mobile web, and (4) Android applications on cell phones. The best technology on availability and sustainability is an Android-based application with limited availability. The mobile web is second best for capability and sustainability and is much more available. The forecast for 2016 shows significant improvement of technology availability providing strong foundation for future systems implementation in Tanzania.

(*Online J Public Health Inform* 2014;6(1):e5063) doi:[10.5210/ojphi.v6i1.5063](https://doi.org/10.5210/ojphi.v6i1.5063)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5063

URL:

doi:[10.5210/ojphi.v6i1.5063](https://doi.org/10.5210/ojphi.v6i1.5063)

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

Abstract

To aid in developing a global biosurveillance program, it is critical to develop a framework to capture and understand the myriad of data streams and evaluate them in context of surveillance goals. Toward this goal, Los Alamos National Laboratory has developed a new method of evaluating the effectiveness of data stream types through the use of a novel concept called the surveillance window, a technique that integrates operational systems analysis, surveillance system analysis and epidemiological analysis. This study provides a simple, yet elegant methodology for which to ground truth known and emerging data streams for utility in integrated biosurveillance efforts.

(*Online J Public Health Inform* 2014;6(1):e5064) doi:[10.5210/ojphi.v6i1.5064](https://doi.org/10.5210/ojphi.v6i1.5064)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5064

URL:

doi:[10.5210/ojphi.v6i1.5064](https://doi.org/10.5210/ojphi.v6i1.5064)

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

Abstract

We introduce our new DADAR (Data Analysis, Detection, And Response) syndromic surveillance platform.

(*Online J Public Health Inform* 2014;6(1):e5065) doi:[10.5210/ojphi.v6i1.5065](https://doi.org/10.5210/ojphi.v6i1.5065)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5065

URL:

doi:[10.5210/ojphi.v6i1.5065](https://doi.org/10.5210/ojphi.v6i1.5065)

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

Abstract

Developing effective data-driven algorithms and visualizations for disease surveillance hinges on the ability to provide application developers with realistic data. However, the sensitivity of the data creates a barrier to its distribution. We have created a tool that assists data providers with de-identifying their data in preparation for sharing. The functions in the tool help data providers comply with the HIPAA "Safe Harbor" de-identification standard [1] by removing or obscuring information such as names, geographic locations, and identifying numbers.

(*Online J Public Health Inform* 2014;6(1):e5066) doi:[10.5210/ojphi.v6i1.5066](https://doi.org/10.5210/ojphi.v6i1.5066)

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URL:

doi:[10.5210/ojphi.v6i1.5066](https://doi.org/10.5210/ojphi.v6i1.5066)

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

Abstract

The overall objective of this study was to explore factors associated with delay in seeking referral for cancer treatment among breast cancer patients. Delay in seeking treatment contributes in breast cancer patients' presentation at the tertiary hospitals when cancer is at an advanced stage and leads to poor prognosis. This study was a cross sectional study involved 142 breast cancer patients. About 41% of the study participants delayed for more than three months, 48% reported at the tertiary hospitals when cancer is at stage III. Main reasons for delay in seeking treatment were; cost (34%), distance to ORCI/MNH 15%, receiving treatment at the traditional healers (37%) and misinformation about treatment offered at ORCI/MNH (14%). This study provides very vital information which will assist the Ministry of Health and Social Welfare to design strategies that will enable breast cancer patients to present early for treatment after being diagnosed.

(*Online J Public Health Inform* 2014;6(1):e5067) doi:[10.5210/ojphi.v6i1.5067](https://doi.org/10.5210/ojphi.v6i1.5067)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5067](https://doi.org/10.5210/ojphi.v6i1.5067)

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

Abstract

Air pollution is well documented to cause adverse health effects in the population. Studies have demonstrated that it is associated with various adverse health outcomes. Classical epidemiological studies of the health effects of air pollution are typically retrospective. In order to assess the effectiveness of any public health messages or interventions in a timely manner there is a need to be able to systematically detect any health effects occurring in "real-time". This study examined whether the current UK real-time syndromic surveillance systems can detect public health impacts associated with air pollution events such as fires and ambient air pollution episodes.

(*Online J Public Health Inform* 2014;6(1):e5068) doi:[10.5210/ojphi.v6i1.5068](https://doi.org/10.5210/ojphi.v6i1.5068)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5068

URL:

doi:[10.5210/ojphi.v6i1.5068](https://doi.org/10.5210/ojphi.v6i1.5068)

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

Abstract

The chief complaint (CC) text field is a rich source of information, but its current use for syndromic surveillance is limited to a fixed set of syndromes defined a priori using keywords. To identify unanticipated sudden increases in word frequency, we developed a simple method that compares the frequency of every word in the CC text field on a given day against the average frequency of the same word during a baseline period. This could prove useful for situational awareness during routine surveillance and emergencies.

(*Online J Public Health Inform* 2014;6(1):e5069) doi:[10.5210/ojphi.v6i1.5069](https://doi.org/10.5210/ojphi.v6i1.5069)

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

Abstract

Regression analysis is used to fit a periodic model to weekly disease counts for reportable diseases in Missouri. These trigonometric models are then used to obtain upper control limits for the number of cases that would lead to an outbreak signal. The methods, including graphics, are implemented in the open source statistical package R.

(*Online J Public Health Inform* 2014;6(1):e5070) doi:[10.5210/ojphi.v6i1.5070](https://doi.org/10.5210/ojphi.v6i1.5070)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5070

URL:

doi:[10.5210/ojphi.v6i1.5070](https://doi.org/10.5210/ojphi.v6i1.5070)

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

Abstract

We report the first evidence of Shimoni bat virus (SHBV) and the detection of Lagos bat virus (LBV) and Mokola virus (MOKV) in bats from Nigeria. In total, 356 bats representing 7 genera and 8 species, collected in 8 locations of northern Nigeria. None of the 356 bat brains screened by direct fluorescent antibody (DFAT) test were positive for *Lyssavirus* antigens. Of the 76 sera screened by modified rapid fluorescent focus inhibition test (RFFIT) 24 (31.6%) had neutralizing activity; 22 (29.0%) neutralized LBV, 6 (7.9%) neutralized MOKV and 18 (23.7%) neutralized SHBV). Lyssaviruses may be circulating in bats or other wild animals in Nigeria.

(*Online J Public Health Inform* 2014;6(1):e5071) doi:[10.5210/ojphi.v6i1.5071](https://doi.org/10.5210/ojphi.v6i1.5071)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5071

URL:

doi:[10.5210/ojphi.v6i1.5071](https://doi.org/10.5210/ojphi.v6i1.5071)

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

Abstract

The National Biosurveillance Integration Center's (NBIC) innovation project on Social Media Analysis seeks to demonstrate the viability of extracting relevant, health information from social media data, with the ultimate goal to establish an operational social media system for biological event surveillance. Application of this data to the biosurveillance problem is yet largely unexplored. Initial analysis shows promising capacity for health information within social media. Significant investment and future effort is required in the areas of algorithm, system architecture, and CONOPS development to enact an operational social media system for biosurveillance.

(*Online J Public Health Inform* 2014;6(1):e5072) doi:[10.5210/ojphi.v6i1.5072](https://doi.org/10.5210/ojphi.v6i1.5072)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5072

URL:

doi:[10.5210/ojphi.v6i1.5072](https://doi.org/10.5210/ojphi.v6i1.5072)

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

Abstract

In May 2013, over 100 WHO Member States (MS) reported not having met their national International Health Regulations (2005) core capacity requirements. Many MS need support in identifying activities and associated costs to support building capacity. WHO developed a costing tool organized by the IHR (2005) Core Capacities and public health core functions. The tool will provide users with estimated annualized costs for developing and sustaining public health activities relevant to IHR (2005) implementation. Providing National Focal Points with costs estimates and generalized plans of action facilitates allocation of funds and development of IHR capacities and public health functions.

(*Online J Public Health Inform* 2014;6(1):e5073) doi:[10.5210/ojphi.v6i1.5073](https://doi.org/10.5210/ojphi.v6i1.5073)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5073

URL:

doi:[10.5210/ojphi.v6i1.5073](https://doi.org/10.5210/ojphi.v6i1.5073)

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

Abstract

Lack of injury data is a major drawback in injury prevention in Sri Lanka. We designed, developed and piloted a web-based Injury Surveillance System (ISS) for Sri Lanka. Previously, Sri Lanka had an ISS comprised a paper-based data collection tool and its corresponding software application; that system had several deficiencies and was nonfunctioning. We Identified and addressed those deficiencies and developed a new web-based ISS. The pilot test showed that the new ISS is a feasible and sustainable mean of injury surveillance in Sri Lanka. Settings with limited informatics resources can learn from our approach to develop the new ISS.

(*Online J Public Health Inform* 2014;6(1):e5074) doi:[10.5210/ojphi.v6i1.5074](https://doi.org/10.5210/ojphi.v6i1.5074)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5074

URL:

doi:[10.5210/ojphi.v6i1.5074](https://doi.org/10.5210/ojphi.v6i1.5074)

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

Abstract

We suggest there are currently three main challenges in the development of animal syndromic surveillance: the lack of standards in disease classification, the development of statistical methodologies appropriate to deal with animal data, and the creation of ready-to-use tools that employ these statistical methods. We address the latter by incorporating already developed methods into an easy to use R package that contains all the tools for implementation of an animal syndromic surveillance system; from data retrieval, management and analyses to the construction of a user interface.

(*Online J Public Health Inform* 2014;6(1):e5075) doi:[10.5210/ojphi.v6i1.5075](https://doi.org/10.5210/ojphi.v6i1.5075)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5075

URL:

doi:[10.5210/ojphi.v6i1.5075](https://doi.org/10.5210/ojphi.v6i1.5075)

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

Abstract

Surveillance is important in disaster situation because to increase the resiliency of the population during the inter-disaster phase it was suggested that the HCs and DHO adopt a PH S-R System that focuses on basic, primary, secondary, and tertiary preventions of priority diseases/conditions.

(*Online J Public Health Inform* 2014;6(1):e5076) doi:[10.5210/ojphi.v6i1.5076](https://doi.org/10.5210/ojphi.v6i1.5076)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5076

URL:

doi:[10.5210/ojphi.v6i1.5076](https://doi.org/10.5210/ojphi.v6i1.5076)

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

Abstract

Positive laboratory test results are required to confirm over 80% of communicable diseases and they are often the first indication of a disease. The space-time permutation scan statistic only requires disease counts, event date and disease location, which are available from an electronic laboratory reporting system for early detection of potential disease outbreaks. The timeliness in identifying clusters from data submitted by clinical laboratories to the NY statewide electronic laboratory reporting system was earlier than using the traditional method for selected communicable diseases.

(*Online J Public Health Inform* 2014;6(1):e5077) doi:[10.5210/ojphi.v6i1.5077](https://doi.org/10.5210/ojphi.v6i1.5077)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5077

URL:

doi:[10.5210/ojphi.v6i1.5077](https://doi.org/10.5210/ojphi.v6i1.5077)

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

Abstract

High rates of absences from influenza-like-illness (ILI) resulted in closure of a Kentucky school district for 4-days during the 2012-2013 influenza season. We calculated average daily rates of household ILI as recalled in paper surveys by parents for the weeks before, during, and after the closure. Average daily rates of ILI in the district that closed were not significantly reduced when compared with rates in 2 surrounding school districts that did not close.

(*Online J Public Health Inform* 2014;6(1):e5078) doi:[10.5210/ojphi.v6i1.5078](https://doi.org/10.5210/ojphi.v6i1.5078)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5078

URL:

doi:[10.5210/ojphi.v6i1.5078](https://doi.org/10.5210/ojphi.v6i1.5078)

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

Abstract

Gathering information to adjudicate notifiable disease cases can be complex and time-consuming. Greater accessibility to electronic health record systems could improve disease investigation processes. We analyzed case information, comparing cases where the health department had access to an EHR system and those without such access. Completeness was significantly higher where EHR system access was available.

(*Online J Public Health Inform* 2014;6(1):e5079) doi:[10.5210/ojphi.v6i1.5079](https://doi.org/10.5210/ojphi.v6i1.5079)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5079

URL:

doi:[10.5210/ojphi.v6i1.5079](https://doi.org/10.5210/ojphi.v6i1.5079)

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

Abstract

The Electronic Surveillance System for the Early Notification of Community-based Epidemics in Florida (ESSENCE-FL) is a web-based application for use by epidemiologists within the Florida Department of Health and other public health professionals. In Hillsborough County, Florida a specific query has been developed to search for and identify possible tuberculosis patients and exposed contacts among the emergency department data in ESSENCE-FL. This study is designed to determine the usefulness of specific term-chief complaint and discharge diagnosis queries in identifying tuberculosis patients and exposed contacts

(*Online J Public Health Inform* 2014;6(1):e5080) doi:[10.5210/ojphi.v6i1.5080](https://doi.org/10.5210/ojphi.v6i1.5080)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5080

URL:

doi:[10.5210/ojphi.v6i1.5080](https://doi.org/10.5210/ojphi.v6i1.5080)

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

Abstract

This poster describes the Syndromic Surveillance Messaging Validation Suite developed collaboratively by experts from NIST, ISDS, and CDC. The poster explains the features and functions of the validation suite; describes how it is being used for Meaningful Use EHR certification testing; provides details about the test cases (including test stories, test data, and example conformant messages); and explains how using the validation suite for local implementation can enhance standard conformance and improve the quality of hospital SyS data provided to public health agencies

(*Online J Public Health Inform* 2014;6(1):e5081) doi:[10.5210/ojphi.v6i1.5081](https://doi.org/10.5210/ojphi.v6i1.5081)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5081](https://doi.org/10.5210/ojphi.v6i1.5081)

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

Abstract

Electronic epi-biosurveillance presents an opportunity to provide real-time disease surveillance alerts from remote areas to central disease management units, to rapidly decrease reporting times for reportable diseases, and to enable appropriate response scenarios to be put in place in a timely manner. Piloting the SAGES system in Cameroon, a resource-limited country in central Africa, has benefits and challenges in developing systems of public health engagement.

(*Online J Public Health Inform* 2014;6(1):e5082) doi:[10.5210/ojphi.v6i1.5082](https://doi.org/10.5210/ojphi.v6i1.5082)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5082

URL:

doi:[10.5210/ojphi.v6i1.5082](https://doi.org/10.5210/ojphi.v6i1.5082)

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

Abstract

As part of the objective for strengthening existing surveillance system and improving the speed and efficiency of data collection, analysis and public health response, the Electronic Disease Early Warning System (eDEWS) was implemented by the World Health Organization (WHO) in collaboration with the Ministry of Public Health & Population (MoPHP) to strengthen the national disease surveillance capacity and capabilities, which remains weak in Yemen. The eDEWS is an initiative to use the mobile software and electronic means for more efficient transmission of surveillance data, automated analysis and information sharing and development of, integrated, and interoperable surveillance systems at federal, governorate and district levels. The overall goal of eDEWS is to minimize morbidity and mortality due to communicable diseases through detection of potential outbreaks at their earliest possible stage and to facilitate timely interventions.

(*Online J Public Health Inform* 2014;6(1):e5083) doi:[10.5210/ojphi.v6i1.5083](https://doi.org/10.5210/ojphi.v6i1.5083)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5083

URL:

doi:[10.5210/ojphi.v6i1.5083](https://doi.org/10.5210/ojphi.v6i1.5083)

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

Abstract

Surveillance systems utilizing early indicator of disease activity would be useful for monitoring community disease pattern and facilitating timely decision making on public health interventions in an evidence-based manner. We explored the feasibility and practicability of establishing an electronic school absenteeism surveillance system in Hong Kong for monitoring influenza-like illness (ILI) and other emerging diseases, e.g. hand-foot-mouth disease (HFMD), using automatically captured data employing smart card technology. Preliminary data show that ILI-specific absenteeism rates reached their peaks 1-3 weeks ahead of the hospital laboratory surveillance data and HFMD-specific absenteeism rates were in phase with syndromic surveillance system from sentinel practitioners.

(*Online J Public Health Inform* 2014;6(1):e5084) doi:[10.5210/ojphi.v6i1.5084](https://doi.org/10.5210/ojphi.v6i1.5084)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5084

URL:

doi:[10.5210/ojphi.v6i1.5084](https://doi.org/10.5210/ojphi.v6i1.5084)

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

Abstract

This analysis compares ED discharge diagnosis data with ED chief complaint data to assess the validity of using ED chief complaint data to track certain illnesses including chronic diseases.

(*Online J Public Health Inform* 2014;6(1):e5085) doi:[10.5210/ojphi.v6i1.5085](https://doi.org/10.5210/ojphi.v6i1.5085)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5085

URL:

doi:[10.5210/ojphi.v6i1.5085](https://doi.org/10.5210/ojphi.v6i1.5085)

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

Abstract

This presentation will cover the enhancement of Severe Acute Respiratory Surveillance in Arizona-Mexico Border region from 2010 through present. It will discuss the process of establishing the surveillance, comparability between the countries data, analysis, and lessons learned.

(*Online J Public Health Inform* 2014;6(1):e5086) doi:[10.5210/ojphi.v6i1.5086](https://doi.org/10.5210/ojphi.v6i1.5086)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5086

URL:

doi:[10.5210/ojphi.v6i1.5086](https://doi.org/10.5210/ojphi.v6i1.5086)

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

Abstract

Situational awareness is important in responding to rapidly unfolding events. To better provide actionable information and knowledge, Los Alamos National Laboratory has developed an app that contextualizes unfolding disease outbreaks in relation to historical data based on epidemiological determinants that influence the timeline of an outbreak. The app provides information on useful data streams that can be monitored for prevention or mitigation actions. This app gives the user an understanding of the developing situation through the integration of operational and epidemiological analysis. In this poster, the usage of this app for cholera will be demonstrated.

(*Online J Public Health Inform* 2014;6(1):e5087) doi:[10.5210/ojphi.v6i1.5087](https://doi.org/10.5210/ojphi.v6i1.5087)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5087

URL:

doi:[10.5210/ojphi.v6i1.5087](https://doi.org/10.5210/ojphi.v6i1.5087)

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

Abstract

The National Environmental Public Health Tracking Program facilitates the linkage of environmental information to health outcomes through development of a national standards-based public health surveillance system that provides useful information to improve where we live and work. State tracking programs have successfully used their tracking networks to identify and educate at-risk communities. Other success stories include endeavours to improve surveillance, support epidemiologic studies, target prevention efforts, and inform policymakers. Future directions include identifying knowledge gaps, developing plans for adding new data sources and collaborators to fill those gaps, and improving application and utility of the Tracking Networks.

(*Online J Public Health Inform* 2014;6(1):e5088) doi:[10.5210/ojphi.v6i1.5088](https://doi.org/10.5210/ojphi.v6i1.5088)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5088](https://doi.org/10.5210/ojphi.v6i1.5088)

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

Abstract

The purpose of this project was to identify ideas and potential options for an enhanced dissemination of provisional data for the US National Notifiable Diseases Surveillance System (NNDSS). We conducted a search of all US State Health Department websites looking for on-line data display tables and tools for either "reportable" or "notifiable" diseases. As of May 1, 2013 our review showed that only 22 States (44%) presented provisional data in either static report or on-line interactive data display formats. There may be room for improvement in the style and content of the dissemination of US nationally notifiable disease provisional data using interactive tools or dashboard design.

(*Online J Public Health Inform* 2014;6(1):e5089) doi:[10.5210/ojphi.v6i1.5089](https://doi.org/10.5210/ojphi.v6i1.5089)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5089](https://doi.org/10.5210/ojphi.v6i1.5089)

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

Abstract

The University of Oklahoma Health Sciences Center is collaborating with the Centers for Disease Control and Prevention to establish a pilot system for Venous Thromboembolism (VTE). We describe the features of this surveillance system that will improve the data quality and thus produce more reliable estimates of VTE disease burden in the U.S. In addition, we share lessons learned regarding how to implement a future scaled-up version of a national surveillance system for VTE.

(*Online J Public Health Inform* 2014;6(1):e5090) doi:[10.5210/ojphi.v6i1.5090](https://doi.org/10.5210/ojphi.v6i1.5090)

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URL:

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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 major enteroviruses causing nationwide epidemics of hand, foot and mouth disease (HFMD) in Singapore were enterovirus 71 (EV71), coxsackievirus A6 (CA6) and A16 (CA16). A mathematical model was used to estimate the basic reproduction number (R_0) of these enteroviruses based on the cumulative number of reported cases in the initial growth phase of each HFMD outbreak. The median R_0 was estimated to be 3.50 for EV71, 2.42 for CA16, and 5.04 for CA6. The enterovirus-specific R_0 estimates would be helpful in providing insights into the potential growth of future HFMD epidemics for timely implementation of disease control measures.

(*Online J Public Health Inform* 2014;6(1):e5091) doi:[10.5210/ojphi.v6i1.5091](https://doi.org/10.5210/ojphi.v6i1.5091)

###Reviewer names will be inserted here### published 14.

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doi:[10.5210/ojphi.v6i1.5091](https://doi.org/10.5210/ojphi.v6i1.5091)

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

Abstract

Seasonal autoregressive integrated moving average (ARIMA) models can generate future forecasts, making it a potential method for modeling syndromic data for aberration detection. We built ARIMA models for five routinely monitored syndromes in New York City and tested the models' ability to prospectively detect outbreaks using datasets spiked with simulated outbreaks. Less than 10% of all outbreaks were detected at a fixed alert threshold of 1 signal per 100 days. These models did not perform well in detecting outbreaks and may require frequent monitoring and readjustment of model parameters.

(*Online J Public Health Inform* 2014;6(1):e5092) doi:[10.5210/ojphi.v6i1.5092](https://doi.org/10.5210/ojphi.v6i1.5092)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5092](https://doi.org/10.5210/ojphi.v6i1.5092)

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

Abstract

Provider reporting of notifiable disease is a critical component of public health assessment and surveillance. To efficiently and effectively assess and respond to disease, health departments require complete data from providers. To better understand the level of completeness in provider reporting, we examined key data elements across 7 notifiable diseases reported to a local health department. We found that some fields are incomplete more than half the time and provider demographics are frequently missing. We discuss the implications on public health workflow and opportunities for improvement.

(*Online J Public Health Inform* 2014;6(1):e5093) doi:[10.5210/ojphi.v6i1.5093](https://doi.org/10.5210/ojphi.v6i1.5093)

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URL:

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

Abstract

Preparing for extreme heat events and monitoring their effects on public health is a vital role for the Houston Department of Health and Human Services (HDHHS). Since heat-related illnesses are not a reportable condition in the state of Texas, this study is aimed at evaluating the ability of a syndromic surveillance system (RODS) to detect heat-related illnesses during heat event of the years 2009-2012 as well as identifying the areas of Houston that had the highest incidence of heat-related morbidity. Preliminary results indicate that RODS was able detected an increase in heat-related illnesses during the record-setting summer of 2011.

(*Online J Public Health Inform* 2014;6(1):e5094) doi:[10.5210/ojphi.v6i1.5094](https://doi.org/10.5210/ojphi.v6i1.5094)

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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 study introduced high-fidelity simulations based on real-world outbreaks for evaluating the performance of syndromic surveillance system. Findings showed that ISSC system was capable to detect the 3 disease outbreaks tested at an early stage, but the practical performance was to a great extent affected by the type and magnitude of outbreak event, the selection of syndromic groups for monitoring, the detection algorithm introduced in the system, and the preferred false alarm rate in real-time surveillance.

(*Online J Public Health Inform* 2014;6(1):e5095) doi:[10.5210/ojphi.v6i1.5095](https://doi.org/10.5210/ojphi.v6i1.5095)

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

Abstract

Chlamydia, a sexually transmitted infection, is the most commonly reported nationally notifiable disease in the United States. We assessed the completeness of key variables included in chlamydia case report data submitted to the Centers for Disease Control and Prevention (CDC) during 2012. Most of the reviewed demographic and geographic variables provided to CDC on 2012 chlamydia case reports had complete values. Diagnosis-related variables provided on case reports were less complete, in particular anatomic specimen site. Further investigation is needed to identify barriers to submitting complete data. Additional evaluation of validity (e.g., accuracy) of data provided is needed to fully evaluate chlamydia case report data.

(*Online J Public Health Inform* 2014;6(1):e5096) doi:[10.5210/ojphi.v6i1.5096](https://doi.org/10.5210/ojphi.v6i1.5096)

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

Abstract

We evaluated the Singapore Ministry of Health's syndromic surveillance programmes which included the monitoring of polyclinic and emergency department attendances for acute diarrheal illness, acute upper respiratory illness, influenza-like illness, and acute conjunctivitis, to assess their attributes and identify areas of improvement. We found the current systems useful in tracking unusual increases in number of cases where both seasonality and short term trends were observable. The data provided by the surveillance systems were relatively accurate with minimal discrepancies. Representativeness was however lacking for primary healthcare facilities but not for hospitals. The existing syndromic surveillance systems are robust and can detect adverse public health events in an accurate and timely fashion. Nonetheless, they can be improved with introduction of new technologies and rolling out of electronic health records, integrating new and traditional information sources to provide faster, accurate data.

(*Online J Public Health Inform* 2014;6(1):e5100) doi:[10.5210/ojphi.v6i1.5100](https://doi.org/10.5210/ojphi.v6i1.5100)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5100

URL:

doi:[10.5210/ojphi.v6i1.5100](https://doi.org/10.5210/ojphi.v6i1.5100)

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

Abstract

The New York City (NYC) syndromic surveillance system has been monitoring syndromes from city emergency department (ED) visits for over a decade. We applied four aberration detection methodologies to a time series of ED visits in NYC spiked with synthetic outbreaks. Among the methods tested, performance varied by outbreak type and size; sudden large one-day spikes in cases were the most commonly detected, although sensitivity was low. The methods tested did not perform well; variability in method performance by outbreak type suggests multiple methods may be ideal for detecting different outbreak features.

(*Online J Public Health Inform* 2014;6(1):e5101) doi:[10.5210/ojphi.v6i1.5101](https://doi.org/10.5210/ojphi.v6i1.5101)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5101

URL:

doi:[10.5210/ojphi.v6i1.5101](https://doi.org/10.5210/ojphi.v6i1.5101)

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

Abstract

We evaluated the Singapore Ministry of Health's sentinel surveillance system for influenza virus, which included the monitoring of virological samples from patients with influenza-like illness seen at government primary care clinics and private general practitioner clinics in 2011-12. Using a systematic approach, we analysed weekly data collected for the full two year period from 2011-12. Criteria applied for evaluation were based on the US Centers for Disease Control's Guidelines for Evaluating Public Health Surveillance Systems, and included quality of the data, acceptability and geographic representativeness. The current surveillance system is satisfactory but could be enhanced by focusing on strategies to improve its acceptability and representativeness. We recommend enhancing quality of the data submitted through further engagement and information sharing with stakeholders involved.

(*Online J Public Health Inform* 2014;6(1):e5102) doi:[10.5210/ojphi.v6i1.5102](https://doi.org/10.5210/ojphi.v6i1.5102)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5102

URL:

doi:[10.5210/ojphi.v6i1.5102](https://doi.org/10.5210/ojphi.v6i1.5102)

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

Abstract

A laboratory biosafety program (LBP) is essential to ensure the health and safety of laboratory staff and the general public from hazardous materials and infectious agents. Ensuring laboratory biosafety requires vigilance; laboratories must maintain equipment and materials, develop and implement security measures, and staff must be annually trained in biosafety procedures. Our evaluation of LBPs underscored the importance of the human element in biosafety compliance.

(*Online J Public Health Inform* 2014;6(1):e5103) doi:[10.5210/ojphi.v6i1.5103](https://doi.org/10.5210/ojphi.v6i1.5103)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5103

URL:

doi:[10.5210/ojphi.v6i1.5103](https://doi.org/10.5210/ojphi.v6i1.5103)

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

Abstract

Absenteeism of varicella and outpatient visits in health facilities in 2 surveillance sites in rural China were collected. During Jan.1 to Jun. 30, 2013, 4 varicella outbreaks were observed. The absenteeism of varicella was shorter than the disease course which could be a potential risk for transmission. Only 1/25 case sought health care in county hospital and was captured by ISSC and CISDCP. This study found that most outbreaks could not be captured by hospitals because of limited surveillance sites and wide range of healthcare choices. It highlighted the necessity of the integration of CISDCP and school absenteeism surveillance.

(*Online J Public Health Inform* 2014;6(1):e5104) doi:[10.5210/ojphi.v6i1.5104](https://doi.org/10.5210/ojphi.v6i1.5104)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5104

URL:

doi:[10.5210/ojphi.v6i1.5104](https://doi.org/10.5210/ojphi.v6i1.5104)

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

Abstract

During the spring of 2013 there were human disease outbreaks caused by two emerging novel viruses: avian Influenza A (H7N9) virus in China and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in the Middle East and Europe. During these two events NBIC leveraged its expertise in enhancing collaboration and shared situational awareness among federal agencies. Facilitating collaboration allowed shared situational awareness and enhanced decision for senior leadership of federal agencies. NBIC coordinated with its interagency partners to provide federal government leadership with an overview of the situation as it has evolved for avian influenza A virus (H7N9) and MERS-CoV.

(*Online J Public Health Inform* 2014;6(1):e5105) doi:[10.5210/ojphi.v6i1.5105](https://doi.org/10.5210/ojphi.v6i1.5105)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5105

URL:

doi:[10.5210/ojphi.v6i1.5105](https://doi.org/10.5210/ojphi.v6i1.5105)

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

Abstract

Infectious disease surveillance is a process, the product of which reflects both real illness and public awareness of the disease. To develop a statistical framework to characterize influenza surveillance systems, Bayesian hierarchical model was applied to estimate the statistical relationships between influenza surveillance data and information environment (e.g. HealthMap, Google search volume, etc.) The model identified characteristics of surveillance systems that are more resistant to the information environment (percentage data, broad case definition and the senior population). General practitioner (%ILI-visit) and Laboratory (%positive) seem to capture the true infection at a constant proportion, and are less influenced by information environment.

(*Online J Public Health Inform* 2014;6(1):e5106) doi:[10.5210/ojphi.v6i1.5106](https://doi.org/10.5210/ojphi.v6i1.5106)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5106

URL:

doi:[10.5210/ojphi.v6i1.5106](https://doi.org/10.5210/ojphi.v6i1.5106)

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

Abstract

The department of Paediatrics, Aga Khan University, Karachi is conducting health demographic surveillance system (HDSS) with focus on maternal and child health at peri - urban sites located in Karachi, Pakistan. Entire study area has been mapped on GIS and collated with data which is used to generate Geo Spatial reports for planning, monitoring and epidemiological studies.

(*Online J Public Health Inform* 2014;6(1):e5107) doi:[10.5210/ojphi.v6i1.5107](https://doi.org/10.5210/ojphi.v6i1.5107)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5107

URL:

doi:[10.5210/ojphi.v6i1.5107](https://doi.org/10.5210/ojphi.v6i1.5107)

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

Abstract

We have applied GIS methodologies to create a retrospective analysis of tularemia outbreaks in the Republic of Armenia.

(*Online J Public Health Inform* 2014;6(1):e5108) doi:[10.5210/ojphi.v6i1.5108](https://doi.org/10.5210/ojphi.v6i1.5108)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5108

URL:

doi:[10.5210/ojphi.v6i1.5108](https://doi.org/10.5210/ojphi.v6i1.5108)

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

Abstract

The purpose of this panel is to facilitate the dissemination of surveillance-related use cases by public health practitioners with accompanying benchmark datasets to method developers. The panel will present their experiences with preparing patient-level emergency department data sets to accompany a use case submitted to the ISDS Technical Conventions Committee. We will review methods for cultivating a data set that is appropriate for sharing; experiences with and strategies for navigating the IRB human subjects review process; and legal and ethical issues related to sharing syndromic surveillance data with third parties.

(*Online J Public Health Inform* 2014;6(1):e5109) doi:[10.5210/ojphi.v6i1.5109](https://doi.org/10.5210/ojphi.v6i1.5109)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5109

URL:

doi:[10.5210/ojphi.v6i1.5109](https://doi.org/10.5210/ojphi.v6i1.5109)

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

Abstract

The Triple-S project (Syndromic Surveillance Survey, Assessment towards Guidelines for Europe) is a 3-year European project, which main objective is to produce guidelines for implementing or improving a syndromic surveillance (SyS) system in animal and human health. The major expectation was the guidelines to be user-friendly, practical and based on concrete examples of existing systems in Europe.

(*Online J Public Health Inform* 2014;6(1):e5110) doi:[10.5210/ojphi.v6i1.5110](https://doi.org/10.5210/ojphi.v6i1.5110)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5110

URL:

doi:[10.5210/ojphi.v6i1.5110](https://doi.org/10.5210/ojphi.v6i1.5110)

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

Abstract

How do you find something when you don't know exactly what you are looking for? This is a common challenge in surveillance. Here, we present a method that supplements current syndromic surveillance efforts by relaxing some of the requirements to predefine syndromes or symptoms of interest. It looks for words in free text fields of healthcare encounters, such as emergency department chief complaints, which have either never occurred before, or which appear much more often in the current interval than they had in the past. It also applies constraints on how closely those encounters occur in time for further specificity.

(*Online J Public Health Inform* 2014;6(1):e5111) doi:[10.5210/ojphi.v6i1.5111](https://doi.org/10.5210/ojphi.v6i1.5111)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5111

URL:

doi:[10.5210/ojphi.v6i1.5111](https://doi.org/10.5210/ojphi.v6i1.5111)

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

Abstract

Using STD/HIV surveillance data the STD/HIV Program at the Louisiana Office of Public Health created a system to identify pregnancy status from STD/HIV lab reports in real-time. The system, which is currently under development, was tested on historical data from 2011 and 2012 and successfully identified pregnancy status from STD/HIV lab reports. Although the pregnancy identification system does not currently include criteria that yields both a high positive predictive value and a high sensitivity, additional criteria will be incorporated to improve these outcomes. Once identified, high risk HIV-infected pregnant women can be targeted for follow-up.

(*Online J Public Health Inform* 2014;6(1):e5112) doi:[10.5210/ojphi.v6i1.5112](https://doi.org/10.5210/ojphi.v6i1.5112)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5112

URL:

doi:[10.5210/ojphi.v6i1.5112](https://doi.org/10.5210/ojphi.v6i1.5112)

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

Abstract

The aim of this study was to assess the impact of staff qualification and training on the performance of core function activities(CFA) of Communicable Disease Surveillance and response(CDSs) in Gazera state, Sudan during 2009. A descriptive cross sectional facility based study design used. The assessment covered: sentinel sites(51), locality offices (seven) and the staff of state epidemiology directorate. Questionnaires, checklists and record review were used. Data collected and analyzed using SPSS V.1 There were a deficiency in CDSs CFA specially at locality levels with strong positive association between staff qualification and training with CFA; knowledge ($X^2=23.05$ - $p=0.01$),awareness ($X^2=21.17$, $p=0.002$),timelines ($X^2=10.2$ - $p=0.03$) There were significant relations highlighting area for strengthening,

(*Online J Public Health Inform* 2014;6(1):e5113) doi:[10.5210/ojphi.v6i1.5113](https://doi.org/10.5210/ojphi.v6i1.5113)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5113

URL:

doi:[10.5210/ojphi.v6i1.5113](https://doi.org/10.5210/ojphi.v6i1.5113)

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

Abstract

Syndromic surveillance of livestock animals at points of concentration, such as livestock markets, has the potential to provide early detection of endemic, zoonotic, transboundary, environmental, and newly emerging animal diseases and to identify animal health trends. We describe the design and implementation of a syndromic surveillance program in selected cattle markets in Texas, USA. The project successfully demonstrated the feasibility of having trained livestock inspectors document the number of cattle observed and the number displaying clinical signs/syndromes. Weekly analysis of the syndrome data provided useful information on animal health trends.

(*Online J Public Health Inform* 2014;6(1):e5114) doi:[10.5210/ojphi.v6i1.5114](https://doi.org/10.5210/ojphi.v6i1.5114)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5114

URL:

doi:[10.5210/ojphi.v6i1.5114](https://doi.org/10.5210/ojphi.v6i1.5114)

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

Abstract

The study included 24,516 newborns who were born between 2007 and 2011 in Louisiana and failed initial hearing screening tests prior to hospital discharge. Unadjusted and adjusted log-linear models were conducted to estimate crude and adjusted annual percent change of rates in loss to follow-up. Besides trends analyzed from 2004 to 2011 in all races, trends were analyzed by race/ethnicity and time periods before and after 2007. Overall, the rate of loss to follow-up was around 50% from 2004 to 2006. It dropped to about 35% in 2007 and kept stable until 2010, and then dropped to 27% in 2011.

(*Online J Public Health Inform* 2014;6(1):e5115) doi:[10.5210/ojphi.v6i1.5115](https://doi.org/10.5210/ojphi.v6i1.5115)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5115

URL:

doi:[10.5210/ojphi.v6i1.5115](https://doi.org/10.5210/ojphi.v6i1.5115)

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

Abstract

The North Carolina Institute for Public Health, in collaboration with CDC and the Public Health Informatics Institute, developed a set of core requirements for the development and maintenance of electronic biosurveillance systems to achieve situational awareness. The three-stage research process included a literature review, interviews with key informants in the biosurveillance field, and a multi-day workshop attended by surveillance experts across the United States. Best practices, innovations, and lessons learned were leveraged to identify the minimum capabilities of effective biosurveillance systems, with the goal of achieving preparedness for natural disasters, disease outbreaks, or hazards during mass gatherings.

(*Online J Public Health Inform* 2014;6(1):e5116) doi:[10.5210/ojphi.v6i1.5116](https://doi.org/10.5210/ojphi.v6i1.5116)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5116

URL:

doi:[10.5210/ojphi.v6i1.5116](https://doi.org/10.5210/ojphi.v6i1.5116)

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

Abstract

In Tanzania, the rate of circumcision among older men has been low. IntraHealth International introduced an intervention to increase VMMC uptake among men 20 years and older, through community sensitization and demand creation using targeted SMS messaging. Results showed a 25% rise in VMMC in the project's first 9 months indicating that mobile technology can be a powerful VMMC recruitment tool.

(*Online J Public Health Inform* 2014;6(1):e5118) doi:[10.5210/ojphi.v6i1.5118](https://doi.org/10.5210/ojphi.v6i1.5118)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5118

URL:

doi:[10.5210/ojphi.v6i1.5118](https://doi.org/10.5210/ojphi.v6i1.5118)

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

Abstract

Syndromic data involves data variation that can be difficult to handle by traditional methods of analysis, e.g. mass gatherings, extreme weather and other high-profile events. For the purpose of optimizing baselines for outbreak detection, we carried out a power analysis of data transformations, e.g. ratios and geometric means. ANOVAs were applied to power simulations, using the gamma distribution to generate baseline and outbreak distributions. The results were compared with empirical findings on syndromic surveillance (Swedish Health Care Direct 1177). The study supports the potential value of data transformations to increase detection power and control for sporadic events.

(*Online J Public Health Inform* 2014;6(1):e5119) doi:[10.5210/ojphi.v6i1.5119](https://doi.org/10.5210/ojphi.v6i1.5119)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5119

URL:

doi:[10.5210/ojphi.v6i1.5119](https://doi.org/10.5210/ojphi.v6i1.5119)

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

Abstract

The LASUTH Site of the National Influenza Surveillance site (NISS) commenced operation in 2009 It was set up to characterize the epidemiology of seasonal human influenza. We did a secondary analysis of the data from the site. Types A (60.4%) and B (3.96%) flu were identified. The sub-types of A viruses were A/H1 (3.3%), A/H3 (57.4%), Novel AH1/ N1 (37.7%), A/ un-subtyped. The ISS site is achieving the aim for which it was set up.

(*Online J Public Health Inform* 2014;6(1):e5120) doi:[10.5210/ojphi.v6i1.5120](https://doi.org/10.5210/ojphi.v6i1.5120)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5120

URL:

doi:[10.5210/ojphi.v6i1.5120](https://doi.org/10.5210/ojphi.v6i1.5120)

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

Abstract

Since 2009, VA Office of Public Health has monitored influenza and influenza-like-illness (ILI) activity using the VA's Healthcare Associated Infection and Influenza Surveillance System (HAISS). Analysis of data from the 2012-2013 Influenza Season showed increases in outpatient visits, hospitalizations, telephone triage calls, total testing and positive influenza tests, indicating that the 2012-2013 season required more healthcare resource utilization. Additionally, more Veterans ≥ 65 years of age sought care compared to the last 2 seasons. Strain characterization demonstrated HA epitope differences compared to vaccine strains. Vaccine procedure data showed that influenza immunization among VA patients could be improved upon.

(*Online J Public Health Inform* 2014;6(1):e5121) doi:[10.5210/ojphi.v6i1.5121](https://doi.org/10.5210/ojphi.v6i1.5121)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5121

URL:

doi:[10.5210/ojphi.v6i1.5121](https://doi.org/10.5210/ojphi.v6i1.5121)

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

Abstract

Emerging infectious diseases may disseminate internationally to the DHS workforce and/or domestic U.S. population. The growth of air travel facilitates rapid movement of people over international boundaries, enabling infected persons to travel great distances while potentially infectious to others. Analysts reviewed data from multiple sources to determine disease characteristics, spatial distribution, and frequency of occurrence for MERS-CoV and H7N9 flu. Timely identification of major ports of entry for international travelers from regions of disease emergence and integration of biosurveillance analysis are essential for protecting personnel, ensuring appropriate resource allocation, and supporting public health intervention strategies.

(*Online J Public Health Inform* 2014;6(1):e5122) doi:[10.5210/ojphi.v6i1.5122](https://doi.org/10.5210/ojphi.v6i1.5122)

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Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5122](https://doi.org/10.5210/ojphi.v6i1.5122)

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

Abstract

Electronic health records (EHRs) are increasingly being adopted to improve quality of care in health care systems, but they also have potential to monitor health at the population level. Enhancing existing surveillance methods with innovative EHR use allows for strategic targeting of health resources, and data to guide and evaluate public health initiatives and policies. New York City is currently developing the NYC Macroscopic, aggregating EHR data into a surveillance tool to inform public health decisions. We have outlined key issues in developing an EHR-based surveillance system, and proposed indicators for the NYC Macroscopic.

(*Online J Public Health Inform* 2014;6(1):e5123) doi:[10.5210/ojphi.v6i1.5123](https://doi.org/10.5210/ojphi.v6i1.5123)

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URL:

doi:[10.5210/ojphi.v6i1.5123](https://doi.org/10.5210/ojphi.v6i1.5123)

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

Abstract

As zoonoses are of concern to both human and animal health, the question was raised whether a joint analysis of surveillance information from both sectors would be more productive for disease prevention and control. Currently this information is collected in different datasources and an overview on routinely collected data in Germany was needed. An inventory was conducted to systematically document the content and relevant characteristics of existing datasources. Even if the suitability of data depends on the purpose of use, this overview enables a first assessment, which information is available for subsequent analysis in the field of zoonotic disease surveillance.

(*Online J Public Health Inform* 2014;6(1):e5124) doi:[10.5210/ojphi.v6i1.5124](https://doi.org/10.5210/ojphi.v6i1.5124)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5124

URL:

doi:[10.5210/ojphi.v6i1.5124](https://doi.org/10.5210/ojphi.v6i1.5124)

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

Abstract

Late in September 2012, the Tennessee Department of Health (TDH) deployed a web-based application for emergency management of ~1,100 patients at-risk of life-threatening fungal infections following epidural injection of methylprednisolone acetate (MPA) from a single compounding pharmacy. The custom information system and its successful use in providing situational awareness and decision support during the fungal infections outbreak will be highlighted in this presentation.

(*Online J Public Health Inform* 2014;6(1):e5125) doi:[10.5210/ojphi.v6i1.5125](https://doi.org/10.5210/ojphi.v6i1.5125)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5125

URL:

doi:[10.5210/ojphi.v6i1.5125](https://doi.org/10.5210/ojphi.v6i1.5125)

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

Abstract

In response to pending legislation, the Department of Veterans Affairs (VA) recently issued a new Directive that requires mandatory reporting of infectious diseases to public health authorities. One potential implementation strategy is to use the VA's Healthcare Acquired Infection and Influenza Surveillance System - an electronic biosurveillance system that will soon be released nationally - which would not only build on existing technology, optimize reporting, and minimize work burdens on VA staff but also allow the VA to comply with Meaningful Use requirements.

(*Online J Public Health Inform* 2014;6(1):e5126) doi:[10.5210/ojphi.v6i1.5126](https://doi.org/10.5210/ojphi.v6i1.5126)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5126

URL:

doi:[10.5210/ojphi.v6i1.5126](https://doi.org/10.5210/ojphi.v6i1.5126)

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

Abstract

This study analyzed the emergency department (ED) visits in Missouri from carbon monoxide (CO) poisoning from the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) and the Missouri Health Strategic Architectures and Information Cooperative (MOHSAIC) database. Most ED visits for CO poisoning were among adults and whites. More poisonings occurred at the beginning and the end of the winter months. St. Louis County, St. Louis City and Jackson County had the highest numbers of CO poisoning. This study demonstrated the utility of ED data as a surveillance tool to identify CO poisoning cases and develop prevention strategies.

(*Online J Public Health Inform* 2014;6(1):e5127) doi:[10.5210/ojphi.v6i1.5127](https://doi.org/10.5210/ojphi.v6i1.5127)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5127

URL:

doi:[10.5210/ojphi.v6i1.5127](https://doi.org/10.5210/ojphi.v6i1.5127)

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

Abstract

In this paper the model to study risk factors for hepatitis B and to identify the main causes affecting the incidence of hepatitis B was developed. Proposed model allows to identify the dependencies between the risk factors and the hepatitis B morbidity, detect major factors that affect the intensity of the epidemic process and verify the effectiveness of preventive measures. As a result the program was developed, which allows to improve the quality of management decisions at epidemiological surveillance.

(*Online J Public Health Inform* 2014;6(1):e5128) doi:[10.5210/ojphi.v6i1.5128](https://doi.org/10.5210/ojphi.v6i1.5128)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5128

URL:

doi:[10.5210/ojphi.v6i1.5128](https://doi.org/10.5210/ojphi.v6i1.5128)

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

Abstract

This poster presents findings from the National HIV Behavioral Surveillance (NHBS) in New Orleans. These data outline relevant high-risk behaviors among Injection Drug Users (IDU). Risk behaviors and demographic profiles are contrasted for three consecutive representative samples over time. These data can aid in tailoring activities to meet the needs of IDU in New Orleans engaging in high-risk behaviors. Furthermore, these results may inform and direct prevention programs in order to better structure outreach and educational materials.

(*Online J Public Health Inform* 2014;6(1):e5129) doi:[10.5210/ojphi.v6i1.5129](https://doi.org/10.5210/ojphi.v6i1.5129)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5129

URL:

doi:[10.5210/ojphi.v6i1.5129](https://doi.org/10.5210/ojphi.v6i1.5129)

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

Abstract

Weekly monitoring of nation-wide number of deaths in the Netherlands (population 16 million) was set up to track events or outbreaks and estimate their impact. The system monitors reported number of deaths from all causes at 3 different time-lags: deaths reported within 1, 2 and 3 weeks (43%-98% complete). Baselines and prediction limits are calculated using a 5 year historical period and serfling type regression. For the 2012/2013 season excess deaths coincided with the exceptionally long 18 week influenza season and were considerable (6,000+ excess above baseline) compared to other seasons.

(*Online J Public Health Inform* 2014;6(1):e5130) doi:[10.5210/ojphi.v6i1.5130](https://doi.org/10.5210/ojphi.v6i1.5130)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5130

URL:

doi:[10.5210/ojphi.v6i1.5130](https://doi.org/10.5210/ojphi.v6i1.5130)

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

Abstract

It is critical to understand to understand the attitudes and perceptions amongst public health leaders regarding the use of digital disease data to improve situational awareness. A survey of such leaders showed that this novel content had the most value in the first stage of situational awareness for identifying early indications of disease outbreaks. News media and Internet search were moderate to highly valuable for 70% of respondents, while social media was moderately to highly valuable to 60% of respondents. For both strengthening the comprehension of an outbreak and informing future predictions, beliefs were split regarding the potential value (if any) that exists.

(*Online J Public Health Inform* 2014;6(1):e5131) doi:[10.5210/ojphi.v6i1.5131](https://doi.org/10.5210/ojphi.v6i1.5131)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5131

URL:

doi:[10.5210/ojphi.v6i1.5131](https://doi.org/10.5210/ojphi.v6i1.5131)

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

Abstract

The Louisiana Office of Public Health (OPH) conducts emergency department (ED) syndromic surveillance using Louisiana Early Event Detection System (LEEDS). LEEDS automatically processes electronic chief complaint and diagnosis data to identify ED visits indicative of specific syndromes. OPH monitored LEEDS for infectious disease and injury syndromes during the 2013 Super Bowl and Mardi Gras activities in New Orleans. C2 and CPA were used to detect syndrome aberrations. This surveillance provided essential situational awareness necessary to indicate if and when the utilization of public health resources may have been needed to prevent additional injury and illness.

(*Online J Public Health Inform* 2014;6(1):e5132) doi:[10.5210/ojphi.v6i1.5132](https://doi.org/10.5210/ojphi.v6i1.5132)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5132

URL:

doi:[10.5210/ojphi.v6i1.5132](https://doi.org/10.5210/ojphi.v6i1.5132)

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

Abstract

In 2011, the Nebraska DHHS implemented a near-real-time inpatient (IP) surveillance system, to enhance the surveillance of Cardiovascular Disease (CVD). An IP database was created in ESSENCE and algorithms were defined for myocardial infarction (MI) and for the detection of 5 risk factors for CVD. The number of monthly MIs was tracked and the frequency of each risk factor analyzed. Results of this study demonstrate the applicability of ESSENCE for near-real-time monitoring of risk factors and CVD events. Such timely detection holds potential to enhance prospective monitoring of CVD trends in populations and impact efforts towards CVD prevention.

(*Online J Public Health Inform* 2014;6(1):e5133) doi:[10.5210/ojphi.v6i1.5133](https://doi.org/10.5210/ojphi.v6i1.5133)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5133](https://doi.org/10.5210/ojphi.v6i1.5133)

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

Abstract

In order to explore who were at high risk of loss to follow-up among newborns who failed initial hearing screening tests prior to hospital discharge in Louisiana between 2007 and 2011The study included 15,145 newborns who failed the initial hearing screening tests and loss to follow-up. Unadjusted and adjusted logistic regression models were conducted to evaluate all the risk factors. Preterm birth newborns and those mothers who are young, low educated, smoke during pregnancy, have Medicaid pay for delivery, have higher number of previous live births, unmarried, and live in urban areas with higher risk of loss to follow-up.

(*Online J Public Health Inform* 2014;6(1):e5135) doi:[10.5210/ojphi.v6i1.5135](https://doi.org/10.5210/ojphi.v6i1.5135)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5135](https://doi.org/10.5210/ojphi.v6i1.5135)

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

Abstract

This study was conducted in Louisiana DDH, Office of Public Health as a part of my practicum during the period from June to September, 2013. The length between the date of birth and the date of screening was evaluated after excluding new born with no screening records. Estimation of the average days for some risk factors groups including birth weight, gestational age, admission to NICU, APGAR score at 5th minute after birth, method of delivery, and plurality.

(*Online J Public Health Inform* 2014;6(1):e5136) doi:[10.5210/ojphi.v6i1.5136](https://doi.org/10.5210/ojphi.v6i1.5136)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5136](https://doi.org/10.5210/ojphi.v6i1.5136)

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

Abstract

We present a new method for disease outbreak detection, the "Non-Parametric Heterogeneous Graph Scan (NPHGS)". NPHGS enables fast and accurate detection of emerging space-time clusters using Twitter and other social media streams where standard parametric model assumptions are incorrect.

(*Online J Public Health Inform* 2014;6(1):e5137) doi:[10.5210/ojphi.v6i1.5137](https://doi.org/10.5210/ojphi.v6i1.5137)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5137

URL:

doi:[10.5210/ojphi.v6i1.5137](https://doi.org/10.5210/ojphi.v6i1.5137)

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

Abstract

The U.S. fully implemented the International Health Regulations and submitted 59 potential Public Health Emergencies of International Concern (PHEIC) to WHO since 2007. The 2009 H1N1 influenza pandemic, first notified as required notification of a novel strain of influenza by the U.S., is the only event determined to be a PHEIC by WHO to date. The public health impact of information sharing of PHEICs on a secure IHR website or of direct exchanges between trusted IHR National Focal Points is not known. However, a shared platform and assessment tool has facilitated notifications across national borders.

(*Online J Public Health Inform* 2014;6(1):e5138) doi:[10.5210/ojphi.v6i1.5138](https://doi.org/10.5210/ojphi.v6i1.5138)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5138

URL:

doi:[10.5210/ojphi.v6i1.5138](https://doi.org/10.5210/ojphi.v6i1.5138)

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

Abstract

This panel convenes an interdisciplinary group of nationally recognized experts in biosurveillance (BSV) to provide their perspectives on integrating novel data sources into standards of practice for various BSV functions by public health agencies at different levels. The discussion will focus on the utility of novel, electronic data sources (e.g., social media) that originate outside of traditional healthcare and public health channels. An audience response "clicker" system will be used to foster audience engagement. In alignment with the 2013 ISDS conference theme, the desired outcome is to identify priorities for research and evaluation that will advance BSV science and practice.

(*Online J Public Health Inform* 2014;6(1):e5139) doi:[10.5210/ojphi.v6i1.5139](https://doi.org/10.5210/ojphi.v6i1.5139)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5139

URL:

doi:[10.5210/ojphi.v6i1.5139](https://doi.org/10.5210/ojphi.v6i1.5139)

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

Abstract

In the U.S., federal programs accelerating the meaningful use of electronic health record (EHR) technology are also encouraging greater standardization in the way governmental public health agencies (PHAs) establish surveillance data partnerships with healthcare providers and hospitals. Join this Round Table discussion to exchange lessons learned in implementing Meaningful Use and help to refine national guidelines that aid governmental public health agencies in forming data sharing partnerships through Meaningful Use requirements and incentives.

(*Online J Public Health Inform* 2014;6(1):e5140) doi:[10.5210/ojphi.v6i1.5140](https://doi.org/10.5210/ojphi.v6i1.5140)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5140

URL:

doi:[10.5210/ojphi.v6i1.5140](https://doi.org/10.5210/ojphi.v6i1.5140)

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

Abstract

We describe ORBiT, the Oak Ridge Biosurveillance Toolkit, the objective of which is to provide 1) forecasting and early warning, and 2) an extensible data analytics platform for biosurveillance by enabling the use of traditional and non-traditional datasets, consisting of heterogeneous data types and modalities. ORBiT includes a data collection interface, analytic components, higher-order statistical tools, and a visual front-end with visual analytics. ORBiT is implemented as a distributed analytic platform consisting of a software stack atop of Hadoop and uses Titan, a distributed graph database as a backend for data storage.

(*Online J Public Health Inform* 2014;6(1):e5142) doi:[10.5210/ojphi.v6i1.5142](https://doi.org/10.5210/ojphi.v6i1.5142)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5142

URL:

doi:[10.5210/ojphi.v6i1.5142](https://doi.org/10.5210/ojphi.v6i1.5142)

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

Abstract

Data from large patient samples evaluating the magnitude of benefit with the newer anti-fungal agents are lacking. We have analyzed the Nationwide Inpatient Sample (NIS) database to evaluate the trends in the incidence of fungal infections and to evaluate the potential impact of newer anti-fungal agents on in-hospital mortality among allo-SCT recipients. Our data suggests that the use of newer anti-fungal agents has an impact on the survivability of fungal infections in the setting of allo-SCT.

(*Online J Public Health Inform* 2014;6(1):e5143) doi:[10.5210/ojphi.v6i1.5143](https://doi.org/10.5210/ojphi.v6i1.5143)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5143

URL:

doi:[10.5210/ojphi.v6i1.5143](https://doi.org/10.5210/ojphi.v6i1.5143)

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

Abstract

Since April 1, 2012, an integrated syndromic surveillance system (ISSC) has been implemented in rural Hubei Province, China. Studies have suggested that the OTC retail sale data could be used to detect early outbreak. However, few researches have performed to identify whether OTC retail sales data could also predict the outbreak in developing countries and resource poor settings. To explore the feasibility of using OTC medication sales data for early detection of respiratory epidemics in rural China, this abstract analyzed the relationship between OTC sales and respiratory infectious cases.

(*Online J Public Health Inform* 2014;6(1):e5144) doi:[10.5210/ojphi.v6i1.5144](https://doi.org/10.5210/ojphi.v6i1.5144)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5144

URL:

doi:[10.5210/ojphi.v6i1.5144](https://doi.org/10.5210/ojphi.v6i1.5144)

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

Abstract

BioSense 2.0 protects the health of the American people by providing timely insight into the health of communities, regions, and the nation by offering a variety of features to improve data collection, standardization, storage, analysis, and collaboration. This presentation will highlight the architecture of the BioSense 2.0 system, covering the interfaces that data providers use to send data to BioSense and the many methods of viewing the critical public health data contained in the BioSense 2.0 system.

(*Online J Public Health Inform* 2014;6(1):e5145) doi:[10.5210/ojphi.v6i1.5145](https://doi.org/10.5210/ojphi.v6i1.5145)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5145

URL:

doi:[10.5210/ojphi.v6i1.5145](https://doi.org/10.5210/ojphi.v6i1.5145)

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

Abstract

Patients' visits to ER are hard to predict and control and the services incur high costs. We built an analytic framework to statistically quantify the relative utilization rates of emergency care resources by chronically ill. Analyzing Diabetes, Asthma, and Arthritis data, we found significant differences in utilization by patients covered with public and private insurance. Public plans have an opportunity to improve effectiveness and quality of chronic illness care if they follow protocols implemented by private insurance providers. Our approach can be straightforwardly extended towards comparative analyzes of utilization of healthcare resources beyond emergency care or chronic illness.

(*Online J Public Health Inform* 2014;6(1):e5146) doi:[10.5210/ojphi.v6i1.5146](https://doi.org/10.5210/ojphi.v6i1.5146)

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Please cite as:

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URL:

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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 importance of post-disaster surveillance has increased with the massive impact recent disasters have had on affected populations' health. In 2012, the Council of State and Territorial Epidemiologists (CSTE) assessed state-level disaster epidemiologic capacity with a focus on surveillance. Concurrently, the Centers for Disease Control and Prevention (CDC) created the Disaster Epidemiology Community of Practice (DE CoP), which serves as a forum for public health practitioners to share information, including resources related to post-disaster surveillance. This panel will present the results of the CSTE 2012 assessment and will provide an overview of resources available to epidemiologists for post-disaster surveillance.

(*Online J Public Health Inform* 2014;6(1):e5147) doi:[10.5210/ojphi.v6i1.5147](https://doi.org/10.5210/ojphi.v6i1.5147)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5147

URL:

doi:[10.5210/ojphi.v6i1.5147](https://doi.org/10.5210/ojphi.v6i1.5147)

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

Abstract

Potential benefits obtained through multi-species surveillance have been widely discussed. We examine an electronic disease reporting solution where cases in humans and other animals are entered into a single platform and accessible in a single database. Real Instances of potential zoonotic disease are described and the practical gains from integrated reporting and analysis are evaluated.

(*Online J Public Health Inform* 2014;6(1):e5148) doi:[10.5210/ojphi.v6i1.5148](https://doi.org/10.5210/ojphi.v6i1.5148)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5148

URL:

doi:[10.5210/ojphi.v6i1.5148](https://doi.org/10.5210/ojphi.v6i1.5148)

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

Abstract

Advanced techniques in fuzzy association rule data mining and integrating evidence from multiple sources are used to predict levels of influenza incidence several weeks in advance and display results on a map in order to help public health professionals prepare mitigation measures. This approach exploits the complicated relationships between disease incidence and measurable environmental, biological, and sociological variables that were found to have associations with the disease in other studies. Predictions were compared with data not used in model development in order to avoid exaggerated values of performance. The positive and negative predictive values were 0.941 and 0.935, respectively.

(*Online J Public Health Inform* 2014;6(1):e5149) doi:[10.5210/ojphi.v6i1.5149](https://doi.org/10.5210/ojphi.v6i1.5149)

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URL:

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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 objective of the research was to identify the most accurate models for forecasting malaria at six different sentinel sites in Uganda, using environmental and clinical data sources. We generated short-term, intermediate, and long-term forecasts of malaria prevalence at weekly intervals. The model with the most accurate forecasts varied by site and by forecasting horizon. Treatment predictors were retained in the most accurate models across all clinical sites and forecasting horizons. These results demonstrate the utility of using treatment predictors in conjunction with environmental covariates to predict malaria burden.

(*Online J Public Health Inform* 2014;6(1):e5150) doi:[10.5210/ojphi.v6i1.5150](https://doi.org/10.5210/ojphi.v6i1.5150)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

doi:[10.5210/ojphi.v6i1.5150](https://doi.org/10.5210/ojphi.v6i1.5150)

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

Abstract

Priority communicable disease surveillance (PCDS): Surveillance of priority communicable diseases started with a view to build up an early warning system. The diseases selected for reporting under this surveillance are: (1) Diarrhoeal diseases (Acute watery diarrhoea and Bloody dysentery), (2) Malaria, (3) Kala-azar, (4) Tuberculosis, (5) Leprosy, (6) Encephalitis and (7) Unknown diseases. These diseases were selected for reporting from all levels to the national head quarter on a weekly basis, but on a daily basis during an outbreak situation. Upazila Health and Family Planning Officer (UH&FPO) and Civil Surgeons (CS) are responsible for conducting this surveillance locally.

(*Online J Public Health Inform* 2014;6(1):e5151) doi:[10.5210/ojphi.v6i1.5151](https://doi.org/10.5210/ojphi.v6i1.5151)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5151](https://doi.org/10.5210/ojphi.v6i1.5151)

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

Abstract

Cryptococcal meningitis is a leading cause of death in AIDS patients and contributes substantially to the high early mortality in antiretroviral treatment (ART) programs in low-resource settings. A hospital-based seroprevalence of cryptococcal antigen among HIV patients on ART program was determined using the Alpha cryptococcal Antigen EIA KIT. The prevalence was low in the study area probably because the ART monitoring program used helped in reducing the incidence of cryptococcal infection. Routine screening of HIV patients is needed for early detection of the infection before onset of complicating clinical signs.

(*Online J Public Health Inform* 2014;6(1):e5152) doi:[10.5210/ojphi.v6i1.5152](https://doi.org/10.5210/ojphi.v6i1.5152)

###Reviewer names will be inserted here### published 14.

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URL:

doi:[10.5210/ojphi.v6i1.5152](https://doi.org/10.5210/ojphi.v6i1.5152)

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

Abstract

The Louisiana Department of Health and Hospitals (LDHH) has recently developed and implemented emergency response guidelines for handling hazardous chemical emergencies. As part of the guidelines, LDHH staff receives on average 30-50 chemical event reports per day. Centralized LDHH staff review the reports and then provide the nine LDHH regions of the state with copies of all the reports specific to their region. If follow-up public health action is necessary, the program can provide an emergency response packet. Events are monitored at local clinics and hospitals to determine the need for follow-up public health investigations.

(*Online J Public Health Inform* 2014;6(1):e5153) doi:[10.5210/ojphi.v6i1.5153](https://doi.org/10.5210/ojphi.v6i1.5153)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5153

URL:

doi:[10.5210/ojphi.v6i1.5153](https://doi.org/10.5210/ojphi.v6i1.5153)

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

Abstract

Racial disparity in Birth defects study was conducted in Louisiana DHH, Office of Public Health, and CSHS during months of June to September 2013 as part of a practicum required by Tulane MPH Program. This study evaluating the racial differences among certain birth defects using birth defects surveillance data has never been done in Louisiana. Using the 2006-2008 linked data, the relationship between race/ethnicity and selected major birth defects was analyzed. Findings from this study helped identify the major birth defects common in this population and showed variations in the prevalence of birth defects among certain racial/ethnic groups.

(*Online J Public Health Inform* 2014;6(1):e5154) doi:[10.5210/ojphi.v6i1.5154](https://doi.org/10.5210/ojphi.v6i1.5154)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5154

URL:

doi:[10.5210/ojphi.v6i1.5154](https://doi.org/10.5210/ojphi.v6i1.5154)

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

Abstract

The Edmonton (Alberta, Canada) Public Health unit was alerted to an individual with measles in the Emergency Department. To find contacts, Public Health used a manual lookup of hospital records and piloted a time-based automated data query through the syndromic surveillance system, ARTSSN. The completeness and time needed, for both methods were compared. The ARTSSN patient list had 137 contacts compared to 108 from the manual method. Less time was needed for the ARTSSN list. This automated method is valuable in investigating geographic and time-defined Communicable Disease outbreaks as well as potential chemical or radiological exposures.

(*Online J Public Health Inform* 2014;6(1):e5155) doi:[10.5210/ojphi.v6i1.5155](https://doi.org/10.5210/ojphi.v6i1.5155)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5155

URL:

doi:[10.5210/ojphi.v6i1.5155](https://doi.org/10.5210/ojphi.v6i1.5155)

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

Abstract

This study introduced real-time warning and signal verification to evaluate the practical performance of ISSC syndromic surveillance system. Findings showed that combined with real-time warning and epidemiological verification, ISSC system has the ability to detect infectious disease outbreaks which might be missed by traditional case report system. The number of false positive alert signals would be further decreased by incorporating advanced detection algorithms and exploring the manifestations of disease outbreak in rural community.

(*Online J Public Health Inform* 2014;6(1):e5158) doi:[10.5210/ojphi.v6i1.5158](https://doi.org/10.5210/ojphi.v6i1.5158)

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

Abstract

There is no consensus regarding a standard definition encompassing the full scope of the term "syndromic surveillance" that accurately describes the various data sources and data elements (both pre-diagnostic and diagnostic) used in this surveillance method. In this roundtable, we will solicit feedback and aim to create a more accurate and comprehensive definition of syndromic surveillance. The facilitators will provide a list of commonly used definitions for syndromic surveillance collated from the literature and websites and ask roundtable participants to categorize the strengths and weaknesses of these definitions. We will then identify key terms and concepts to include in a new definition.

(*Online J Public Health Inform* 2014;6(1):e5159) doi:[10.5210/ojphi.v6i1.5159](https://doi.org/10.5210/ojphi.v6i1.5159)

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

Abstract

To understand and set priorities for research and best practices in public health monitoring, a group of ISDS members has developed an online survey to gather input from the ISDS community on the current landscape and prioritization of select technical issues in the field of biosurveillance. Through analysis, the Survey will identify respondents' perceptions of opportunities in the area of analytical methodologies. Results, both frequencies of responses and prioritization, for all respondents and by strata depending on demographic variables, will be available during the presentation.

(*Online J Public Health Inform* 2014;6(1):e5160) doi:[10.5210/ojphi.v6i1.5160](https://doi.org/10.5210/ojphi.v6i1.5160)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5160

URL:

doi:[10.5210/ojphi.v6i1.5160](https://doi.org/10.5210/ojphi.v6i1.5160)

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

Abstract

The primary goal of this study was to assess the prevalence of Rickettsia and Borellia in ticks collected from different regions of Georgia.

(*Online J Public Health Inform* 2014;6(1):e5161) doi:[10.5210/ojphi.v6i1.5161](https://doi.org/10.5210/ojphi.v6i1.5161)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5161

URL:

doi:[10.5210/ojphi.v6i1.5161](https://doi.org/10.5210/ojphi.v6i1.5161)

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

Abstract

This poster will describe how two chemical exposure events led to the creation of a new classifier in NJ's syndromic surveillance system.

(*Online J Public Health Inform* 2014;6(1):e5162) doi:[10.5210/ojphi.v6i1.5162](https://doi.org/10.5210/ojphi.v6i1.5162)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5162

URL:

doi:[10.5210/ojphi.v6i1.5162](https://doi.org/10.5210/ojphi.v6i1.5162)

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

Abstract

This project reviewed approaches used by public health agencies for alerting health care providers and enhancing surveillance systems to identify the presence of novel respiratory disease and to characterize their recent experience in searching for globally emerging viruses. Public health agencies continue to endeavor to develop and maintain cost-effective disease surveillance systems to better understand the burden of illness, especially newly emerging disease, within their jurisdiction. The importance of maintaining sufficient infrastructure and the trained personnel needed to operate these surveillance systems for optimal disease detection and public health response readiness cannot be understated.

(*Online J Public Health Inform* 2014;6(1):e5163) doi:[10.5210/ojphi.v6i1.5163](https://doi.org/10.5210/ojphi.v6i1.5163)

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URL:

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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 abstract assesses the seasonal trends in respiratory illnesses using South Carolina syndromic surveillance emergency department data. The use of syndromic surveillance emergency department data to track respiratory illnesses is useful for the early detection of illness clusters in a particular area and for the development of prevention strategies in preparation of increases in respiratory illnesses.

(*Online J Public Health Inform* 2014;6(1):e5164) doi:[10.5210/ojphi.v6i1.5164](https://doi.org/10.5210/ojphi.v6i1.5164)

###Reviewer names will be inserted here### published 14.

Please cite as:

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URL:

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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 paper proposes the use of Multi-Attribute Utility Theory to address the issue of identifying and selecting essential information for inclusion into a biosurveillance system or process. We developed a decision support framework that can facilitate identifying data streams for use in biosurveillance systems or processes and demonstrated utility by applying the framework to the problem of evaluating data streams for use in an global infectious disease surveillance system.

(*Online J Public Health Inform* 2014;6(1):e5165) doi:[10.5210/ojphi.v6i1.5165](https://doi.org/10.5210/ojphi.v6i1.5165)

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URL:

doi:[10.5210/ojphi.v6i1.5165](https://doi.org/10.5210/ojphi.v6i1.5165)

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

Abstract

Brucellosis is one of the world's most widespread zoonosis. We determined the sero-prevalence and risk factors for brucellosis in humans and their animals in Kajiado and Kiambu Counties of Kenya through simultaneous cross sectional surveys. The current study simultaneously investigated the linkage in sero-prevalence between humans and their animals within the same household at the same time. A human prevalence range of 2.2%-14.1% is reported while the prevalence in animals was 1.2%-3.4%. Having animal contact as well as handling hides and skins (OR =6.6, 95% CI: 4.5-9.7) predisposed humans to exposure to brucellosis.

(*Online J Public Health Inform* 2014;6(1):e5166) doi:[10.5210/ojphi.v6i1.5166](https://doi.org/10.5210/ojphi.v6i1.5166)

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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 U.S. Defense Threat Reduction Agency (DTRA) is funding multiple development efforts directed at enhanced platforms to support bio-surveillance analysts under their Bio-surveillance Ecosystem (BSVE) program. These efforts include well-integrated user interface systems and advanced algorithmic concepts to facilitate analysis of diverse, pertinent data sources including traditional bio-surveillance data sources as well as social media inputs. A central challenge in this development effort is a practical, effective, method to test these prototype systems. This presentation discusses a simulation-based testbed to allow quantitative evaluation of analytical methods through controlled injection of simulated outbreak-related information into test data streams.

(*Online J Public Health Inform* 2014;6(1):e5167) doi:[10.5210/ojphi.v6i1.5167](https://doi.org/10.5210/ojphi.v6i1.5167)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5167

URL:

doi:[10.5210/ojphi.v6i1.5167](https://doi.org/10.5210/ojphi.v6i1.5167)

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

Abstract

In 2003, the CDC estimated that 1 million people in the USA were living with HIV/AIDS, and 25% were undiagnosed. For many such patients the ED may be the only contact with the health care system. We surveyed ED staff to evaluate attitudes and barriers towards ED based HIV testing. We found that in spite of recent CDC recommendations for HIV testing in high risk ED patients, there are still significant barriers to acceptance among ED health care providers.

(*Online J Public Health Inform* 2014;6(1):e5168) doi:[10.5210/ojphi.v6i1.5168](https://doi.org/10.5210/ojphi.v6i1.5168)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5168

URL:

doi:[10.5210/ojphi.v6i1.5168](https://doi.org/10.5210/ojphi.v6i1.5168)

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

Abstract

In 2003, the CDC estimated that 1 million people in the USA were living with HIV/AIDS, and 25% were undiagnosed. For many such patients the ED may be the only contact with the health care system. This study assessed compliance with CDC and USPTF guidelines for HIV testing in patients seeking evaluation for STDs in a regional cohort of emergency departments. 13927 patients underwent screening for STDs during the study period. Only 397 (2.85%) also received HIV screening while 107 (0.8%) received both HIV and syphilis screening as per federal recommendations.

(*Online J Public Health Inform* 2014;6(1):e5169) doi:[10.5210/ojphi.v6i1.5169](https://doi.org/10.5210/ojphi.v6i1.5169)

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

Abstract

Civil Registration System (CRS) in India has been in vogue for more than 100 years now. Even after 4 decades of the enactment of the Act, there are wide inter-state and intra-state variations. Objectives 1. To assess the district wise reporting and registrations of births and deaths in AP from 2007 - 2010. 2. To make an urban vs. rural comparison of proportions of these registrations. 3. To identify factors influencing civil registration in AP and steps for strengthening CRS. The article discusses, determinants of civil registration in India & strategies for strengthening reporting & registrations.

(*Online J Public Health Inform* 2014;6(1):e5170) doi:[10.5210/ojphi.v6i1.5170](https://doi.org/10.5210/ojphi.v6i1.5170)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5170

URL:

doi:[10.5210/ojphi.v6i1.5170](https://doi.org/10.5210/ojphi.v6i1.5170)

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

Abstract

Innovative approach to revitalizing Disease Surveillance System in Zimbabwe using cell-phone mediated data transmission has been a huge success. Cell phones have been successfully integrated into disease surveillance system resulting in expansion of surveillance coverage, improved completeness and timeliness. Decision makers are now able to access disease surveillance data in near real-time.

(*Online J Public Health Inform* 2014;6(1):e5171) doi:[10.5210/ojphi.v6i1.5171](https://doi.org/10.5210/ojphi.v6i1.5171)

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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: Human papillomavirus (HPV) is a vaccine-preventable virus that can cause cervical cancer. Widespread positivity rates in target groups before and since the introduction of the vaccine in 2006 would provide insight into the uptake of the vaccine. Data: Archived patient records were queried and formatted to allow analysis and determination of positivity rates. Results/Conclusions: Positivity rate estimates show a decrease in positivity for younger age groups. From 2004 to 2013, high-risk rates dropped 20% in women 14-24 years. After the vaccine introduction, HPV positivity has declined at a rate consistent with widespread inoculation, especially in younger women.

(*Online J Public Health Inform* 2014;6(1):e5172) doi:[10.5210/ojphi.v6i1.5172](https://doi.org/10.5210/ojphi.v6i1.5172)

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URL:

doi:[10.5210/ojphi.v6i1.5172](https://doi.org/10.5210/ojphi.v6i1.5172)

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

Abstract

We determined if the Rhode Island Real-time Outbreak and Disease Surveillance (RODS) system identified an increase in emergency department (ED) overdose visits during a known cluster of illicit-drug overdose deaths in RI and characterized ED overdose visits. When stratified by ED there was a significant increase in overdose chief complaints from one ED during March - May 2013 compared to the previous year. This coincides with the cluster of drug overdose deaths in March 2013. Despite most chief complaints for overdose not specifying cause, syndromic surveillance systems provide an existing platform that could be used to better assess ED overdose visits.

(*Online J Public Health Inform* 2014;6(1):e5173) doi:[10.5210/ojphi.v6i1.5173](https://doi.org/10.5210/ojphi.v6i1.5173)

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

Abstract

Our objectives were to explore the relevance of emergency departments' (ED) data, collected daily through the French syndromic surveillance system (414 EDs, 65% attendances), to describe the characteristics of patients with acute liver failure (ALF). Data corresponding to ICD10 codes related to hepatitis diagnosis that include ALF ICD10 code (K720) were extracted and analyzed. During 2010-2012, 246 730 attendances with hepatitis were recorded of which 2 475 (1%) were linked to ALF. Patients with ALF were male (60%), their median age was 55 years. This study shows the relevance of French syndromic surveillance data to assess the burden of ALF.

(*Online J Public Health Inform* 2014;6(1):e5174) doi:[10.5210/ojphi.v6i1.5174](https://doi.org/10.5210/ojphi.v6i1.5174)

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URL:

doi:[10.5210/ojphi.v6i1.5174](https://doi.org/10.5210/ojphi.v6i1.5174)

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

Abstract

Unlike usual surveillance systems, the ASTER system must provide a unified monitoring of several military populations exposed to different biological and chemical threats, and the surveillance of each population must be tailored to meet its specific risk profile. For coping with these requirements, we have developed a formal surveillance system model we have used for designing the system architecture and the webservice collaborations. The system currently covers populations in desertic areas as well as in Amazonian Forest. This versatility allowed a quick and easy system tailoring for the recent French Deployments in Jordanian Refugees Camps or in Mali.

(*Online J Public Health Inform* 2014;6(1):e5175) doi:[10.5210/ojphi.v6i1.5175](https://doi.org/10.5210/ojphi.v6i1.5175)

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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 session describes the technical process, challenges, and lessons learned in scaling up from a local to regional syndromic surveillance system using the MetroChicago Health Information Exchange (HIE) and GUARDIAN collaborative initiative.

(*Online J Public Health Inform* 2014;6(1):e5176) doi:[10.5210/ojphi.v6i1.5176](https://doi.org/10.5210/ojphi.v6i1.5176)

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

Abstract

Despite the number of infections, hospitalizations, and deaths from influenza each year, developing the ability to predict the timing of these outbreaks has remained elusive. We have developed the Above Local Elevated Respiratory illness Threshold (ALERT) algorithm to help public health practitioners develop simple rules to define a period of increased disease incidence in a given location. The ALERT algorithm defines a period of elevated disease incidence in a community or hospital that systematically collects surveillance data on a particular disease. By defining this period of increased risk, the ALERT algorithm enables fast response to emerging outbreaks in healthcare settings.

(*Online J Public Health Inform* 2014;6(1):e5177) doi:[10.5210/ojphi.v6i1.5177](https://doi.org/10.5210/ojphi.v6i1.5177)

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URL:

doi:[10.5210/ojphi.v6i1.5177](https://doi.org/10.5210/ojphi.v6i1.5177)

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

Abstract

Background: Surveillance is important in schools. We assessed the effect of a training program on the knowledge of school physicians regarding surveillance. Methods: Seventy school physicians were included. Assessment of their baseline surveillance knowledge was done (pretest). An intervention program was prepared. Assessment of the training program was done using the same data collection tool (post test). Results: Significant difference in the mean knowledge score before and after the intervention was detected. In a multiple linear regression model, the total knowledge score before the intervention and the age of the physician were the only two factors found to be significantly affecting the school physicians' knowledge score after the intervention. Conclusion: Training of school physicians on disease surveillance has an effect on their level of knowledge regarding surveillance.

(*Online J Public Health Inform* 2014;6(1):e5178) doi:[10.5210/ojphi.v6i1.5178](https://doi.org/10.5210/ojphi.v6i1.5178)

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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 WHO/NREVSS Influenza laboratory surveillance system has been in use for ~40 years. Through multiple reporting methods, partner labs can share their influenza laboratory testing data to the Influenza Division at CDC. Over time, this system has evolved in complexity, and the most recent enhancement has been the addition of HL7 laboratory messaging through the Public Health Laboratory Interoperability Project. This reporting has been challenging to implement, but has added great value to the system, including an increased potential for new data analyses, increased functionality, and a broader use of the resulting data.

(*Online J Public Health Inform* 2014;6(1):e5179) doi:[10.5210/ojphi.v6i1.5179](https://doi.org/10.5210/ojphi.v6i1.5179)

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

Abstract

To early detection of influenza outbreak in the rural China, we collected the 1-year data of ILI through the web-based syndromic surveillance system in rural China (ISSC). Linear growth curve model (LGM) can be used to predict growth trajectory of ILI over 7 days (one week) in each healthcare unit by the introduction of random effects. LGM is applicable in modeling the growth and variation of daily outpatient visits of ILI in rural healthcare units. The growth rate curves of ILI surveillance data might be useful for the early detection of influenza epidemic in rural China.

(*Online J Public Health Inform* 2014;6(1):e5180) doi:[10.5210/ojphi.v6i1.5180](https://doi.org/10.5210/ojphi.v6i1.5180)

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

Abstract

Open Source Software (OSS) is rapidly becoming part of public health applications. The adoption more broadly of OSS has the potential to improve global public health initiatives in general, because it provides a free, modifiable software option which can be altered to meet specific requirements.

(*Online J Public Health Inform* 2014;6(1):e5181) doi:[10.5210/ojphi.v6i1.5181](https://doi.org/10.5210/ojphi.v6i1.5181)

###Reviewer names will be inserted here### published 14.

Please cite as:

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Online J Public Health Inform 2014;6(1):e5181

URL:

doi:[10.5210/ojphi.v6i1.5181](https://doi.org/10.5210/ojphi.v6i1.5181)

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

Abstract

Describes a tool for the identification of spatio-temporal clusters of legionellosis in Toronto for the purpose of early outbreak detection - the Legionella Alert Mapping Program (LAMP).

(*Online J Public Health Inform* 2014;6(1):e5182) doi:[10.5210/ojphi.v6i1.5182](https://doi.org/10.5210/ojphi.v6i1.5182)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5182

URL:

doi:[10.5210/ojphi.v6i1.5182](https://doi.org/10.5210/ojphi.v6i1.5182)

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

Abstract

Situational awareness is important for both early warning and early detection of a disease outbreak. We will describe a suite of tools developed at Los Alamos National Laboratory that provide actionable information and knowledge for enhanced situational awareness during an unfolding event. The BRD is a searchable database, a one stop shop for disease surveillance resources and can be used for validating information received about disease outbreaks. The BaRD is a searchable database that catalogs and classifies epidemiological model-specific information to allow facile selection. The SWAP is an app to provide a context for a rapidly unfolding event through graphical visualization.

(*Online J Public Health Inform* 2014;6(1):e5183) doi:[10.5210/ojphi.v6i1.5183](https://doi.org/10.5210/ojphi.v6i1.5183)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5183

URL:

doi:[10.5210/ojphi.v6i1.5183](https://doi.org/10.5210/ojphi.v6i1.5183)

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

Abstract

The recent focus on the "One Medicine" concept has resulted in an increased awareness that the control of diseases in animal populations, whether zoonotic or not, can be of great public health importance. However, awareness of the activities developed in the field of animal health is still low among public health workers. In this roundtable the facilitators will encourage discussion regarding what can public and animal health learn from each other, focusing particularly on how this cooperation can be promoted.

(*Online J Public Health Inform* 2014;6(1):e5184) doi:[10.5210/ojphi.v6i1.5184](https://doi.org/10.5210/ojphi.v6i1.5184)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5184

URL:

doi:[10.5210/ojphi.v6i1.5184](https://doi.org/10.5210/ojphi.v6i1.5184)

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

Abstract

The purpose of this presentation is to communicate best practices NH realized in the development of an excessive heat surveillance response partnership for action through planning activities, partnership building, and the use of automated technology, with a focus on the use of surveillance data for actionable results.

(*Online J Public Health Inform* 2014;6(1):e5185) doi:[10.5210/ojphi.v6i1.5185](https://doi.org/10.5210/ojphi.v6i1.5185)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5185

URL:

doi:[10.5210/ojphi.v6i1.5185](https://doi.org/10.5210/ojphi.v6i1.5185)

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

Abstract

Clostridium difficile is a major cause of healthcare associated infection, morbidity and mortality - especially in the elderly - resulting in high readmission rates and posing a huge burden to rising healthcare costs. Due to its potentially preventable nature, the Centers for Medicare & Medicaid Services (CMS) implemented rules in the Hospital Value Based Purchasing Program to penalize hospitals with high CD infection (CDI) rates. This study used a large nationally representative Medicare Advantage population to profile demographic traits and analyze trends in readmissions, mortality, emergency room visits and observation room stays in patients discharged with CDI from 2008 to 2011.

(*Online J Public Health Inform* 2014;6(1):e5186) doi:[10.5210/ojphi.v6i1.5186](https://doi.org/10.5210/ojphi.v6i1.5186)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5186

URL:

doi:[10.5210/ojphi.v6i1.5186](https://doi.org/10.5210/ojphi.v6i1.5186)

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

Abstract

This study demonstrated the innovative two-stage approach for detecting ILI aberrations from daily claim data. The timeliness and comprehensiveness of the ILI surveillance could be improved by this approach.

(*Online J Public Health Inform* 2014;6(1):e5187) doi:[10.5210/ojphi.v6i1.5187](https://doi.org/10.5210/ojphi.v6i1.5187)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5187

URL:

doi:[10.5210/ojphi.v6i1.5187](https://doi.org/10.5210/ojphi.v6i1.5187)

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

Abstract

The National Center for Health Statistics (NCHS) and the Influenza Division are collaborating to increase accuracy and decrease resources needed for pneumonia and influenza mortality surveillance in the United States Electronic death registration systems as well as funding to states have made reporting of mortality data to NCHS near real-time. We assessed the timeliness of the NCHS data and compared the data to the 122 Cities Reporting System (CMRS). Because of increased timeliness of the NCHS data and correlation to the 122 CMRS we will continue to monitor data from NCHS as a potential replacement for the 122 CMRS.

(*Online J Public Health Inform* 2014;6(1):e5188) doi:[10.5210/ojphi.v6i1.5188](https://doi.org/10.5210/ojphi.v6i1.5188)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5188

URL:

doi:[10.5210/ojphi.v6i1.5188](https://doi.org/10.5210/ojphi.v6i1.5188)

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

Abstract

Administrative and vital statistics databases are frequently used for public health surveillance of influenza incidence and outcomes. We used population based, probabilistic record linkage of laboratory diagnosed influenza, emergency department, hospital admission and death registration databases to determine how frequently laboratory diagnosed influenza is coded as influenza or recorded as a cause of death. Influenza was substantially under-recorded as a cause of emergency presentation, hospitalization and death. Influenza type A infection was more likely than type B to lead to coding of influenza. Despite under-coding, time series of coded influenza from databases do reflect trends in influenza incidence.

(*Online J Public Health Inform* 2014;6(1):e5189) doi:[10.5210/ojphi.v6i1.5189](https://doi.org/10.5210/ojphi.v6i1.5189)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5189

URL:

doi:[10.5210/ojphi.v6i1.5189](https://doi.org/10.5210/ojphi.v6i1.5189)

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

Abstract

While other surveillance systems may only use death and admissions as severity indicators, these serious events may overshadow the more subtle severity signals based on appointment type, disposition from an outpatient setting, and whether that patient had to return for care if their condition has not improved. This abstract discusses how these additional data fields were utilized in a fusion model to improve the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE).

(*Online J Public Health Inform* 2014;6(1):e5190) doi:[10.5210/ojphi.v6i1.5190](https://doi.org/10.5210/ojphi.v6i1.5190)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5190

URL:

doi:[10.5210/ojphi.v6i1.5190](https://doi.org/10.5210/ojphi.v6i1.5190)

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

Abstract

The "Grand Raid de la Réunion" is one of the hardest ultra trails in the world. This endurance running race has consequences on health's runners. We used syndromic surveillance to estimate the health impact of this sporting event on the Emergency Departments (ED) of Reunion Island. During the race's period, a global increase of the ED visits all causes was observed. The syndromic surveillance system detected a significant ED visits" increase for hydro-electrolytic disorders. These results highlight the usefulness of syndromic surveillance to estimate the impact on health of a mass gathering on a sporting event of great magnitude.

(*Online J Public Health Inform* 2014;6(1):e5191) doi:[10.5210/ojphi.v6i1.5191](https://doi.org/10.5210/ojphi.v6i1.5191)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5191

URL:

doi:[10.5210/ojphi.v6i1.5191](https://doi.org/10.5210/ojphi.v6i1.5191)

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

Abstract

In Reunion Island, alcohol is a major public health problem. Syndromic surveillance system based on ED data was used for describe alcohol intoxication visits between 2010-2012 and factors associated with their variations. During the study period, alcohol intoxication was the second leading cause of all visits in ED. Time-series models showed a robust association between ED visits and days of minimum social benefits payment, weekends, public holidays. These results will be transmitted to health authorities in order to orient the public health policies.

(*Online J Public Health Inform* 2014;6(1):e5192) doi:[10.5210/ojphi.v6i1.5192](https://doi.org/10.5210/ojphi.v6i1.5192)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5192

URL:

doi:[10.5210/ojphi.v6i1.5192](https://doi.org/10.5210/ojphi.v6i1.5192)

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

Abstract

We describe how high-volume electronic healthcare reimbursement claims from providers' offices and retail pharmacies can be used to provide timely and accurate influenza-like illness (ILI) situational awareness at state and CBSA levels. We focused on the 2006-2010 influenza seasons and the 39 CBSAs in the State of GA. A sufficient proportion of claims for services within any 7-day service period can be accumulated from both providers' offices and retail pharmacies to generate useful CBSA-level ILI metrics, dispelling the common perception that claims data accumulate too slowly to be useful for public health decision making in sub-state geographic areas.

(*Online J Public Health Inform* 2014;6(1):e5193) doi:[10.5210/ojphi.v6i1.5193](https://doi.org/10.5210/ojphi.v6i1.5193)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5193

URL:

doi:[10.5210/ojphi.v6i1.5193](https://doi.org/10.5210/ojphi.v6i1.5193)

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

Abstract

There is a significant body of literature on the use of social media for biosurveillance. However, less is known about the impact of integrating social media into public health practice, and resulting interventions. This motivated the ISDS Social Media for Disease Surveillance Workgroup to conduct a systematic literature review on the use of social media for actionable disease surveillance. Based on the preliminary results, there is little published literature on this topic, possibly suggesting that it is particularly challenging to translate research using social media for disease surveillance into practice.

(*Online J Public Health Inform* 2014;6(1):e5195) doi:[10.5210/ojphi.v6i1.5195](https://doi.org/10.5210/ojphi.v6i1.5195)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5195

URL:

doi:[10.5210/ojphi.v6i1.5195](https://doi.org/10.5210/ojphi.v6i1.5195)

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

Abstract

Mycobacterium chelonae is not reportable in NYC. To investigate tattoo-associated *M. chelonae* infections, we used NYC ED syndromic surveillance for case finding and trend analysis. No significant trend emerged from 5 years of ED surveillance data. Thirty-one ED visits for tattoo complications were identified in the five-month period preceding a reported case of *M. chelonae*. Fourteen patients were interviewed, and none were suspected or confirmed with *M. chelonae*. Syndromic surveillance is an option for case finding when the event under surveillance is described by a unique and specific word or phrase, such as tattoo.

(*Online J Public Health Inform* 2014;6(1):e5196) doi:[10.5210/ojphi.v6i1.5196](https://doi.org/10.5210/ojphi.v6i1.5196)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5196

URL:

doi:[10.5210/ojphi.v6i1.5196](https://doi.org/10.5210/ojphi.v6i1.5196)

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

Abstract

The sensitivity and predictive value of a surveillance system (ESSENCE-FL) originally designed for syndromic data to identify possible outbreak activity using data from a reportable disease system was examined. ESSENCE-FL-generated alerts were compared with confirmed outbreak activity for different infectious diseases over a 52-week period. Results showed that although overall sensitivity of the system to detect outbreak activity was fairly low, the positive predictive value was relatively high. This evaluation concludes that the application of reportable disease data within the ESSENCE-FL syndromic surveillance system is useful for prompting users of possible outbreak activity that warrants further inquiry.

(*Online J Public Health Inform* 2014;6(1):e5197) doi:[10.5210/ojphi.v6i1.5197](https://doi.org/10.5210/ojphi.v6i1.5197)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5197

URL:

doi:[10.5210/ojphi.v6i1.5197](https://doi.org/10.5210/ojphi.v6i1.5197)

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

Abstract

The on-site beta test of system upgrade to the Early Notification of community-based Epidemics (ESSENCE) allowed user feedback to the development team to aid in the evaluation of an analytic combination of weighted clinical and syndromic evidence, known as fusion, and direct the completion of the upgrade prior to launch. The analytic fusion capability was improved particularly in the area of severity-related indicator data, improving algorithms, and user interfaces.

(*Online J Public Health Inform* 2014;6(1):e5198) doi:[10.5210/ojphi.v6i1.5198](https://doi.org/10.5210/ojphi.v6i1.5198)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5198

URL:

doi:[10.5210/ojphi.v6i1.5198](https://doi.org/10.5210/ojphi.v6i1.5198)

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

Abstract

Reliable detection and accurate scoping of outbreaks of foodborne illness are important to effective mitigation of their consequences. However, relatively small number of persons affected and underreporting, challenge the reliability of surveillance models. In this work, we investigate utility of using inpatient and emergency room diagnoses to detect outbreaks of Salmonellosis in humans, and quantify the impact of including potential misdiagnoses of Salmonellosis. We found that the data support and reliability of detection could be improved by including misdiagnoses of Salmonellosis, therefore tracking these diseases could support accuracy of foodborne illness surveillance.

(*Online J Public Health Inform* 2014;6(1):e5199) doi:[10.5210/ojphi.v6i1.5199](https://doi.org/10.5210/ojphi.v6i1.5199)

###Reviewer names will be inserted here### published 14.

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Online J Public Health Inform 2014;6(1):e5199

URL:

doi:[10.5210/ojphi.v6i1.5199](https://doi.org/10.5210/ojphi.v6i1.5199)

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

Abstract

The United States is in the midst of a drug overdose epidemic, primarily due to opioid analgesics. Emergency department data are an important source of morbidity data for public health surveillance. This population-based study will describe visits to North Carolina emergency departments for drug, and more specifically, opioid overdoses.

(*Online J Public Health Inform* 2014;6(1):e5200) doi:[10.5210/ojphi.v6i1.5200](https://doi.org/10.5210/ojphi.v6i1.5200)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5200

URL:

doi:[10.5210/ojphi.v6i1.5200](https://doi.org/10.5210/ojphi.v6i1.5200)

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

Abstract

To manage an increasingly complex data environment, a fusion module based on Bayesian networks (BN) was developed for the Dept. of Defense (DoD) Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE). Subsequent efforts have produced a full fusion-enabled version of ESSENCE for beta testing and further upgrades. The current presentation describes advances to formalize the network training, calibrate the component alerting algorithms and decision nodes together, and implement a validation strategy. A cross-validation strategy produced consistent threshold combinations yielding 88% sensitivity from reported events, a 10-15% improvement over the original demonstration module.

(*Online J Public Health Inform* 2014;6(1):e5201) doi:[10.5210/ojphi.v6i1.5201](https://doi.org/10.5210/ojphi.v6i1.5201)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5201

URL:

doi:[10.5210/ojphi.v6i1.5201](https://doi.org/10.5210/ojphi.v6i1.5201)

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

Abstract

In Los Angeles County, emergency department data is collected from hospitals and classified into syndromes based on chief complaints. To validate this respiratory syndromic surveillance categorization, chief complaint data were compared to discharge diagnoses extracted from electronic health records from one hospital emergency department in Los Angeles County during one week in January 2013. The agreement between syndrome classification and discharge diagnosis for respiratory reports is high ($k=0.75$), though over 25% of diagnosis data were missing. Further validation of additional syndromes is needed. Electronic health records are valuable sources of data and can enhance the validity of syndromic surveillance systems.

(*Online J Public Health Inform* 2014;6(1):e5202) doi:[10.5210/ojphi.v6i1.5202](https://doi.org/10.5210/ojphi.v6i1.5202)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5202

URL:

doi:[10.5210/ojphi.v6i1.5202](https://doi.org/10.5210/ojphi.v6i1.5202)

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

Abstract

Timeliness and Completeness of the routine surveillance reports are surveillance quality indicators which are widely used for monitoring the surveillance quality. However our study shows that in maturing surveillance systems with variable data quality these quality indicators do not provide valid indication of quality. Maturing surveillance systems that have variable data quality should have more comprehensive indicators - including all surveillance system components and core and support surveillance functions - for monitoring surveillance quality.

(*Online J Public Health Inform* 2014;6(1):e5203) doi:[10.5210/ojphi.v6i1.5203](https://doi.org/10.5210/ojphi.v6i1.5203)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5203

URL:

doi:[10.5210/ojphi.v6i1.5203](https://doi.org/10.5210/ojphi.v6i1.5203)

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

Abstract

The present abstract is part of a broader research project to establish a syndromic surveillance system (ISS) in rural areas of China. Four counties in Jiangxi Province and Hubei Province were selected as study sites. As more than half of data collectors in the broader project are village doctors, a deeper understanding of the acceptability of village doctors is needed to guide decision makers. The purpose of this study is to identify different acceptability groups of village doctors and to explore factors influencing acceptability from their perspective.

(*Online J Public Health Inform* 2014;6(1):e5204) doi:[10.5210/ojphi.v6i1.5204](https://doi.org/10.5210/ojphi.v6i1.5204)

###Reviewer names will be inserted here### published 14.

Please cite as:

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

Online J Public Health Inform 2014;6(1):e5204

URL:

doi:[10.5210/ojphi.v6i1.5204](https://doi.org/10.5210/ojphi.v6i1.5204)

Publisher:
JMIR Publications
130 Queens Quay East.
Toronto, ON, M5A 3Y5
Phone: (+1) 416-583-2040
Email: support@jmir.org

<https://www.jmirpublications.com/>