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

Abstract

During the ongoing public health crisis, many agencies are reporting COVID-19 health outcome information based on the overall population. This practice can lead to misleading results and underestimation of high risk areas. To gain a better understanding of spatial and temporal distribution of COVID-19 deaths; the long term care facility (LTCF) and household population (HP) deaths must be used. This approach allows us to better discern high risk areas and provides policy makers with reliable information for community engagement and mitigation strategies. By focusing on high-risk LTCFs and residential areas, protective measures can be implemented to minimize COVID-19 spread and subsequent mortality. These areas should be a high priority target when COVID-19 vaccines become available.

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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: With the rapid development of new advanced molecular detection methods, identification of new genetic mutations conferring pathogen resistance to an ever-growing variety of antimicrobial substances will generate massive genomic datasets for public health and clinical laboratories. Keeping up with specialized standard coding for these immense datasets will be extremely challenging. This challenge prompted our effort to create a common molecular resistance Logical Observation Identifiers Names and Codes (LOINC) panel that can be used to report any identified antimicrobial resistance pattern. Objective: To develop and utilize a common molecular resistance LOINC panel for molecular drug susceptibility testing (DST) data exchange in the U.S. National Tuberculosis Surveillance System using California Department of Public Health (CDPH) and New York State Department of Health as pilot sites. Methods: We developed an interface and mapped incoming molecular DST data to the common molecular resistance LOINC panel using Health Level Seven (HL7) v2.5.1 Electronic Laboratory Reporting (ELR) message specifications through the Orion Health™ Rhapsody Integration Engine v6.3.1. Results: Both pilot sites were able to process and upload/import the standardized HL7 v2.5.1 ELR messages into their respective systems; albeit CDPH identified areas for system improvements and has focused efforts to streamline the message importation process. Discussion: The common molecular resistance LOINC panel is designed to be generalizable across other resistance genes and ideally also applicable to other disease domains. Conclusion: The study demonstrates that it is possible to exchange molecular DST data across the continuum of disparate healthcare information systems in integrated public health environments using the common molecular resistance LOINC panel. Keywords: Data Exchange Formats, Electronic Laboratory Reporting, Health Information Exchange, LOINC, Health Level Seven, Public Health Surveillance.

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

Abstract

Objectives: The Noncommunicable Disease (NCD) Mobile Phone Survey, a component of the Bloomberg Philanthropies Data for Health Initiative, determines the prevalence of NCDs and their associated risk factors and demonstrates the use of mobile phone administered surveys to supplement periodic national household surveys. The NCD Mobile Phone Survey uses Surveda to administer the survey; Surveda is an open source, multi-modal software specifically developed for the project. The objective of the paper is to describe Surveda, review data collection methods used in participating countries and discuss how Surveda and similar approaches can improve public health surveillance. Methods: Surveda features full-service survey design and implementation through a web application and collects data via Short Messaging Service (SMS), Interactive Voice Response (IVR) or mobile web. Surveda's survey design process employs five steps: creating a project, creating questionnaires, designing and starting a survey, monitoring survey progress, and exporting survey results. Results: The NCD Mobile Phone Survey has been successfully conducted in five countries, Zambia (2017), Philippines (2018), Morocco (2019), Malawi (2019), and Sri Lanka (2019), with a total of 23,682 interviews completed. Discussion: This approach to data collection demonstrates that mobile phone surveys can supplement face-to-face data collection methods. Furthermore, Surveda offers major advantages including automated mode-switch, question randomization and comparison features. Conclusion: Accurate and timely survey data informs a country's abilities to make targeted policy decisions while prioritizing limited resources. The high acceptance of Surveda demonstrates that the use of mobile phones for surveillance can deliver accurate and timely data collection.

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