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Contents

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

Abstract

Advances in information technology over the last decade offer the opportunity to advance the goals of public health advocates to provide safer and healthier home environments. A call to action in public health informatics is needed to realize the benefits of information technology to support healthy home objectives.

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

Abstract

AbstractBackground: The proper use of Partograph supports to capture key maternal and fetal data. Paper-based Partograph are prone to error, incompleteness, delayed decisions and loss of clients' information. Electronic (e-Partograph) enables to easily retain and retrieve client data to ensure quality of care. Mobile technologies found an opportunity for resource-limited countries to improve access and quality of health care. Evidences were lacking on end users' acceptance to e-Partograph. Objective: This study aimed to assess obstetric care providers' willingness to use mobile based e-Partograph and its associated factors. Methods: Institutional based cross-sectional study was conducted from December 30, 2016 to January 21, 2017. A total 466 obstetric care providers were selected using multistage sampling technique in North Gondar Zone, Northwest Ethiopia. A structured self-administered questionnaire was used to collect the data. The data were entered in to Epi info version 7 and analyzed by using SPSS version 20. Cronbach's Alpha test was calculated to evaluate the reliability of data. A multivariable logistic regression analysis were used to identify factors associated with dependent variable. Adjusted odds ratio with 95%CI was used to determine the presence of association. Results: The study found that 460(99.6%) of care providers owned mobile phone. Smartphone owners accounted only 102(22%). Of them, 205(46%) were willing to use mobile-phone for e-Partograph. Care providers aged >30 years (AOR=2.85, 95% C.I: 1.34-6.05), medical doctors and higher level clinicians (AOR=8.35, 95% C.I: 2.07-33.63), Health Center (AOR=4.41, 95% C.I:.10-9.26), favorable attitude towards Partograph (AOR=2.76, 95% C.I: 1.49-5.09) and related in-service trainings (AOR=7.63, 95% C.I: 3.96-14.69) were enabling factors for willingness to use mobile phone. Conclusions: Almost all obstetric care providers had access to mobile phone, however; smartphone ownership is still low. Willingness to use mobile-phone for e-Partograph was low. Younger aged, lower level clinicians, Hospital based workers, unfavorable attitude on Partograph and lack of in-service trainings were main factors for non-willingness. Hence awareness creation on partograph use and digital capacity building are crucial for effective e-partograph management. Key words: e-Partograph, Ethiopia, Obstetric care provider, Willingness

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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: Health-related data's users have trouble understanding and interpreting combined statistical and mapping information. This is the second round of a usability study conducted after we modified and simplified our tested maps based on the first round's results. Objective: To explore if the tested maps' usability improved by modifying the maps according to the first round's results Methods: We recruited 13 cancer professionals from National American Central Cancer registries (NACCR) 2016 conference. The study involved three phases per participant: A pretest questionnaire, the multi-task usability test, and the System Usability Scale (SUS). Software was used to record the computer screen during the trial and the users' spoken comments. We measured several qualitative and quantitative usability metrics. The study's data was analyzed using spreadsheet software. Results: In the current study, unlike the previous round, there was no significant statistical relationship between the subjects' performance on the study test and the experience in GIS tools (P = .17 previously was .03). Three out of the four (75%) of our subjects with a bachelor's degree or less accomplished the given tasks effectively and efficiently. This study developed a comparable satisfaction results to the first round study, despite that the previous round's participants were highly educated and more experienced with GIS. Conclusion: By considering the round one's results and by updating our maps, we made the tested maps simpler to be used by subjects who have little experience in using GIS technology, and have little spatial and statistical knowledge.

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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 reports and describes VINCENT, a visual analytics system that is designed to help public health stakeholders (i.e., users) make sense of data from websites involved in the online debate about vaccines. VINCENT allows users to explore visualizations of data from a group of 37 vaccine-focused websites. These websites differ in their position on vaccines, topics of focus about vaccines, geographic location, and sentiment towards the efficacy and morality of vaccines, specific and general ones. By integrating webometrics, natural language processing of website text, data visualization, and human-data interaction, VINCENT helps users explore complex data that would be difficult to understand, and, if at all possible, to analyze without the aid of computational tools. The objectives of this paper are to explore A) the feasibility of developing a visual analytics system that integrates webometrics, natural language processing of website text, data visualization, and human-data interaction in a seamless manner; B) how a visual analytics system can help with the investigation of the online vaccine debate; and C) what needs to be taken into consideration when developing such a system. This paper demonstrates that visual analytics systems can integrate different computational techniques; that such systems can help with the exploration of public health online debates that are distributed across a set of websites; and that care should go into the design of the different components of such systems.

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

Abstract

Introduction: Non-attendance and delay for vaccination schedules remains a big challenge to healthcare workers. Among the frequently mentioned reasons for missed vaccination in children is the lack of communication between child caretakers and health workers. This necessitates developing an appropriate and uninterrupted vaccine delivery strategy with more focus on demand side interventions like forgetfulness. Objectives: This paper aimed to develop and test an automated mobile text message reminder system in the local context. Methods: Before development of the system, interview and document reviews were used for requirement gathering. This system is developed using iterative development process through phases of requirement analysis, design, development, testing and refinement. Front end application was developed using Java technologies while back end applications were developed with Oracle database. Finally, pilot testing was done on 30 participants before actual implementation. Results: The automated system has been developed based on requirements. The text message reminder system has two components: 1. Web based application for client registration and automatic reminder scheduling; 2.SMS application for automatic SMS text messaging. In the final testing, all the messages (100%) were delivered to the piloted mothers. Message speeds for each individual client ranged on average from 5 second to 30 seconds. Conclusion: Text message reminder system has been developed for routine childhood immunization program in Ethiopian context. Text message interventions should be carefully developed, tested and refined before implementation to ensure they are written in the most appropriate way for their target population.

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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 Utah Department of Health (UDOH) developed an electronic case reporting (eCR) process to automatically transfer clinical data from a provider to the state health department, with aims of improving sexually transmitted disease (STD) surveillance data quality, decreasing the time spent on STD case investigations, and expanding the process to other diseases and larger healthcare systems. Methods: Reportable Conditions Trigger Codes (RCTC) were placed into the electronic health record (EHR) system at Planned Parenthood Association of Utah (PPAU) to trigger the automatic transfer of clinical data to Utah's public health surveillance system. Received data were deduplicated, processed, and assigned directly to the public health surveillance system, with minimal manual intervention. Results: Eighteen new data elements, important for STD case investigations, were transferred to cases with eCR. Additionally, the clinical time spent transmitting data was vastly reduced. With the new eCR process more complete and timely data is received by public health. Providers, as well as public health, now spend less time manually transmitting clinical data by fax and/or phone. Discussion: Automated processes are challenging but can be achieved with a robust disease surveillance system, flexible rules engine, skillful programming, on-going analysis, and successful partnerships. The eCR process created for this project can potentially be useful for other conditions outside of STDs. Conclusion: Results of this demonstration project offer an opportunity for readers to learn about eCR and apply lessons learned to improve their existing eCR systems, or future public health informatics initiatives, at any state-level jurisdiction.

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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 prediction and characterization of outbreaks of infectious diseases such as influenza remains an open and important problem. This paper describes a framework for detecting and characterizing outbreaks of influenza and the results of testing it on data from ten outbreaks collected from two locations over five years. We model outbreaks with compartment models and expliccitly model non-influenza influenza-like illnesses.

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

Abstract

Over the years, there has been a lot of transformation in the way health care is delivered and how individuals access health. Rapid growth in technology has been attributed to the advancement. The internet has played a key role in the delivery of health care and serves currently as a huge source of health information to individuals regardless of their location, language or time. This cross sectional study was conducted in the Kwahu West Municipal to determine factors influencing online health information seeking behaviors among patients. Three hospitals in the municipality were purposively selected for the study. Outpatients attending these facilities were systematically selected. Data was collected using structured interviewer administered questionnaire. The study findings revealed that internet usage rate among patients was 85.8%. However, only 35.7% of patients ever used the internet to access health information. Sex, education and average monthly income were significant factors associated with online health information seeking. The study also showed that, computer and internet experience factors increased the probability of using internet for health information. After adjusting for confounding factors, being employed, earning higher income and owning computer were positive predictors of online health information seeking. It is important to explore other means of reducing the disparity in information access by improving skill and health literacy among the low social class who cannot afford internet ready devices. Health care providers should recognize that patients are using the internet for health information and should be prepared to assist and promote internet user skills among their patients.

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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: Intermittent Preventive Treatment with sulfadoxine-pyrimethamine in infants (SP-IPTi) is a malaria control strategy which, together with the delivery of routine childhood immunizations, as recommended by the World Health Organization (WHO) was implemented in Lilongwe district of Malawi from September 2008 to November in 2009. A study was performed by Lilongwe District Health Office (DHO) in collaboration with funding from UNICEF to evaluate the safety of SP-IPTi and identify potential new Adverse Events (AEs) spontaneously identified, reported, monitored and evaluated. Methods: A cohort event monitoring study was conducted on 15, 000 infants in 4 Health Facilities (HFs) after administration of SP-IPTi to infants during routine immunizations. A total number of about 50 Community Health Workers (CHWs) and volunteers were trained in pharmacovigilance and supervised by senior personnel in all the five HFs. Infants received half tablets of SP immediately after receiving DPT-HepB+Hib (Pentavalent) 2 vaccine / (IPTi 1), Pentavalent 3 /(IPTi 2) at 10 and 14 weeks respectively and Measles vaccines/(IPTi 3) at 9 months. These children were recorded and their mothers were given diary cards with pictures of possible AEs. Community Health Workers (CHWs) and volunteers followed up every child after 10 days of administration/registration to collect the diary cards where parents indicated the types of AEs they observed on their children as well as starting and end dates of such possible AEs. The indicated AEs were entered into a computer database from all the collected diary cards according to HFs. Possible side effects/AEs that were looked for were; persistent crying, fever, vomiting, diarrhoea, skin rashes, abdominal pains, insomnia, nausea, mouth sores, and itching among other related possible side effects. Results: A total of 15,105 children received the IPTi and were followed in all four health facilities. Out of this, 50.3% (7,594) were male while 49.7% (7, 511) were females. Of these, 19.2% [1247], 95% CI (276-304) developed AEs as follows; 42% persistent crying, 28% fever, 18% vomiting, 5.2% skin rashes and 6.8% presented with other minor symptoms while 80.8% (13,858) did not develop any side effects. 43.2% (1254) of those who showed symptoms were IPTi1 recipients, 35.3% (1022) received IPTi2 while 21.5% (624) were from those who received IPTi3. Conclusions: This study showed that simultaneous administration of SP-IPTi together with immunizations was a safe strategy for implementation with very minimal serious AEs to infants. In this case therefore strategies towards strengthening such spontaneous reporting in Malawi should not only be left to service providers but also to beneficiaries or their caregivers.

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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 purpose of current research is to assess the eHealth literacy level in the family caregivers of the elderly with hypertension and type-II diabetes. Methods: A total of 160 caregivers completed the eHEALS questionnaire. The effect of participants" gender, education, and age on eHealth literacy was evaluated. For evaluation of the correlation between the accession of health information importance and the internet usefulness for decision-making, Spearman's correlation coefficient was applied. Results: The participants eHealth literacy mean score was 26.163(SD=8.83). The age of participants had a meaningful impact on the level of eHealth literacy (t=6.074; P<0.001). Furthermore, among variant education levels in terms of eHealth literacy score significant differences existed (F=5.222; P=0.001). Discussion: Family caregivers have a poor level of eHealth literacy. eHealth information is more important for family caregivers with a higher eHealth literacy, which may be due to their higher skills in obtaining health and medical information from the internet. Caregivers" age should be considered once recommending them for the internet using to obtain health information, as the age was an affecting factor. Conclusion: Health centers and authorities in charge of the elderly health are recommended to train caregivers with proper skills to use online health information, such that the elderly enjoy the benefits, including improved care conditions and savings in terms of treatment costs and time.

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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 will discuss whether bots, particularly chat bots, can be useful in public health research and health or pharmacy systems operations. Bots have been discussed for many years; particularly when coupled with artificial intelligence, they offer the opportunity of automating mundane or error-ridden processes and tasks by replacing human involvement with bots. This paper will discuss areas where there are greater advances in the use of bots, as well as areas that may benefit from the use of bots, and will offer practical ways to get started with bot technology. Several popular bot applications and bot development tools along with practical security considerations will be discussed, and a toolbox that one can begin to use to implement bots will be presented.

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

Abstract

Data mining is a technique for analyzing large amounts of data, in various formats, often called Big Data, in order to gain knowledge about it. The healthcare industry is the next Big Data area of interest as its large variability in patients, their health status and their records which can include image scans, graphical test results, and hand-written physician notes, has been untapped for analysis. In addition to data mining, there is a newer analysis method called process mining. Process mining is similar to data mining in that large data files are reviewed and analyzed, but in this case, event logs specific to a particular process or series of processes, are analyzed. Process mining allows one to understand the initial baseline, determine any bottlenecks or resource constraints, and evaluate a recently implemented change. Process mining was conducted on a hospital event log of patients entering the emergency room with sepsis, to better understand this newer analysis method, to highlight the information discovered, and to determine its role with data mining. Not only did the analysis of the event logs provide process mapping and process analysis, but it also highlighted areas in the clinical operations in need of further investigation, including a possible relationship with patient re-admission and their release method. In addition, the data mining method of creating a histogram, of the process data, was applied, allowing data mining and process mining to be utilized complimentary.

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

Abstract

Introduction Health inequality measurements are vital in understanding disease patterns to identify high-risk patients and implementing effective intervention programs in treating and managing sexually transmitted diseases. Our study seeks to measure and identify inequalities among chlamydia and gonorrhea rates using Gini coefficient measurements and spatial visualization mapping from geographical information systems. Additionally, we seek to examine trends of disease rate distribution longitudinally over a ten-year period for an urbanized county. Methods Chlamydia and gonorrhea data from January 2005 to December 2014 were collected from the Indiana Network for Patient Care, a health information exchange system that gathers patient data from electronic health records. The Gini coefficient was used to calculate the magnitude of inequality in disease rates. Spatial visualization mapping and decile categorization of disease rates were conducted to identify locations where high and low rates of disease persisted and to visualize differences in inequality. A multiple comparisons ANOVA test was conducted to determine if Gini coefficient values were statistically different between townships and time periods during the study. Results Our analyses show that chlamydia and gonorrhea rates are not evenly distributed. Inequalities in disease rates existed for different areas of the county with higher disease rates occurring near the center of the county. Inequality in gonorrhea rates were higher than chlamydia rates. Disease rates were statistically different when geographical locations or townships were compared to each other (p < 0.0001) but not for different years or time periods (p = 0.5152). Conclusion The ability to use Gini coefficients combined with spatial visualization techniques presented a valuable opportunity to analyze information from health information systems in investigating health inequalities. Knowledge from this study can benefit and improve health quality, delivery of services, and intervention programs while managing healthcare costs.

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

Abstract

Investments over the past two decades to collect and store immunization events established a national population health data asset. The ability to track vaccine usage and storage has increased accountability, lowered wastage, protected valuable resources, and provided the correct vaccines at the right time. Sixty-four immunization registries support the current immunization ecosystem, yet all investments to date have been through state and federal funding. Much of the technology supporting these registries is becoming harder to support, limiting the utilization of the data. For the most part all current systems have legacy second-generation technology and architectures as their foundation. Current technology investments in these national assets tend to be for systems that within the next five years will not be cost effectively sustainable with only federal, state and local funding. Yet quality data is being reported by immunization providers across the health care network that is increasing exponentially through electronic data exchanges integrated within Electronic Health Records (EHR) and Pharmacy Management Systems (PMS). This increase in high-quality patient immunization records creates opportunity to build immunization intelligence from the data. However, second-generation Immunization Information Systems (IIS) limit the effective and timely use of this information. Considering the increasing value of the data to public and private sectors working to close immunization care gaps in populations supporting technology must ensure easy access. This is the first of two papers that highlights the power of these national registries and the data they contain to provide opportunity intelligence to the immunization ecosystem user community. Paper one illustrates the "why" for change and the need for a truly community collaborative path forward to move from second- to third-generation systems through partners that leverages cost sharing and common goals. The end goal is to establish new supporting technology assets that accelerate the use of data to impact vaccine preventable disease (VPD) outcomes which create a new model for public-private investments to sustain the IIS national infrastructure. The second paper will share cost and investment strategies to complete the migration and create sustainable immunization systems for the future.

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

Abstract

Real time data provided by frontline clinicians could be used to direct immediate resources during a public health emergency and inform increased preparedness for future events. The [group name removed for blind review], a group of expert critical care and emergency medicine physicians at various academic medical centers across the US, aims to enhance the national capability of rapid electronic data collection, along with analysis and dissemination of findings. To achieve these aims, [group name removed for blind review] created a process for real-time data capture that relies on a curated and engaged network of clinical providers from various geographical regions to respond to short online “Pulse” queries about healthcare system stress. During a period of three years, five queries were created and distributed. The first two queries were used to develop and validate the data collection infrastructure.Results are reported for the last three queries between June 2015 and March 2016. Response rates consistently ranged from 39% to 42%. Our team demonstrated that our system and processes were ready for creation and rapid dissemination of episodic queries for rapid data collection, transmittal, and analysis through a curated national network of clinician responders during a public health emergency. [group name removed for blind review] aims to further increase the response rate through additional engagement efforts within the network, to continue to grow the clinician responder database, and to optimize additional query content.

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

Abstract

Objective: To share lessons learned with experience in concept development of electronic disease early warning system (eDEWS) as a standardized informatic tool for optimal disease surveillance for early warning and response Network (EWARN) during humanitarian crisis. Methods: We did literature search, review and analysis to document system attributes of existing electronic tools being used for disease surveillance, early warning and health management information system (HMIS). We generated baseline information and conducted multiple planning sessions with stakeholders for EWARN system requirement elicitation and validation to inform concept development of standardized electronic tool. Results: We identified 98 electronic health projects, classified 22 projects under 'Disease and epidemic outbreak surveillance' theme, whereas only four electronic tools met our selection criteria and were reported to be implemented in humanitarian settings complimentary to EWARN. Baseline information was obtained to guide work on requirement gathering and analysis process, and development of concept for a standardized electronic tool for EWARN. Discussion: The eDEWS was enhanced with an objective to develop standardize electronic tools and data collection procedures to monitor diseases and health events for alert detection in global humanitarian settings. The enhanced system could be harnessed as a powerful tool by outbreak response teams in getting vital epidemiological information for appropriate and timely response during emergencies. Conclusion: eDEWS experiences in Yemen, Somalia, Liberia and Pakistan offers an opportunity to learn and apply lessons to improve future health informatics initiatives or adapt eDEWS as a feasible standardized approach to enhance EWARN implementation during humanitarian crisis, and potential integration into routine surveillance systems.

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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: In recent years, the devastating effects of U.S. opioid epidemic has been making news headlines. This report explores background information and trends on opioid misuse, overdose fatalities and its impact on public health. In addition, various efforts to improve surveillance, timeliness of data and Prescription Drug Monitoring Program (PDMP) integration and interoperability are reviewed. Method: PubMed and internet searches were performed to find information on the U.S. opioid epidemic. In addition, searches were performed to retrieve information about PDMPs and state-specific mandates along with presentation slides and learnings from the 2018 National Rx Drug Abuse & Heroin Summit in Atlanta, GA. Results: It is clear that the U.S. opioid epidemic has a tremendous impact on public health including the next generation of children. Various data, surveillance & technology-driven efforts including CDC-Funded Enhanced State Opioid Overdose Surveillance Program (ESOOS) and use of telemedicine for opioid use disorder treatment aim to improve prevention, treatment and targeted interventions. In addition, PDMP integration and interoperability efforts are advancing to provide prescribers meaningful decision support tools. Discussion: The opioid epidemic has a complex impact on public health intertwined with variable factors such as mental health and social determinants of health. Given the statistics and studies that suggest many of the illicit opioid users start with prescription opioids, continued advancement in the area of PDMP integration and interoperability is necessary. The PDMP integrated clinical decision support systems need to supply to healthcare providers access to complete, timely and evidence-based information that can meaningfully inform prescribing decisions and communication with patients that affect measurable outcomes. Conclusion: While Prescription Drug Monitoring Programs (PDMPs) are valuable tools for providers in making informed prescribing decisions, the variable state mandates and varying degrees of integration and interoperability across states may limit their potential as meaningful decision support tools. Sharing best practices, challenges and lessons learned among states and organizations may inform strategic and systematic use of PDMPs to improve public health outcomes. Key Words: opioid epidemic, prescription drug monitoring programs (PDMPs), prescription monitoring programs (PMPs)

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

Abstract

In the past three years, Scientific Technologies Corporation electronically sent one-hundred fifty million retail pharmacy patient immunization events to state and community public health immunization information systems. Today, as a conservative estimate, over 85% of the U.S. population has an immunization record in an electronic health information system. Health technology, data exchange and increasing online patient health records offer consumers, providers and the immunization community new platforms to proactively identify vaccine coverage gaps. As the value of online immunization information increases, the cost to sustain and leverage these new technologies escalates. Online immunization records and integrated decision support tools are being used extensively from the pharmacy to the emergency room. They are moving from health data vaults with few users to more ubiquitous point of care services and direct consumer engagement. The data and the supporting technology infrastructure empower the community within the immunization ecosystem. To use this opportunity to reduce the impact of vaccine preventable disease on populations, investment in sustaining and modernizing existing immunization health technology systems suggest models to articulate their value and return on investment. This paper illustrates cost and technology drivers that impact sustainability and modernization of the immunization information system infrastructure. It provides a model to support investment priority decisions and estimate costs. It reviews the technical evolution of public health immunization registries and their current legacy state providing a pathway to migrate to opportunistic third generation technology platforms. It will answer: How much should be budgeted? What can this budget achieve over the next five years? What investments should be prioritized? Is there opportunity for public-private partnerships to support sustainment cost sharing? It shows that an investment of fifty-million will modernize a quarter of the current second generation immunization systems and support the remainder over the next five years.

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Abstract

Objectives: The development of new information technology has significant effects on the health care system, and its implementation and the associated change management process can bring some positive changes and gains in understanding, but there are challenges with making the transition. These benefits and challenges are explored in the context of a hospital based dental department. Additionally, the concept of the integration of oral health to overall systemic health is explored in context with an Electronic Medical Records system implementation, and the American Dental Association's recent recognition of dental anesthesiology as a clinical subspecialty. Method: Qualitative survey of attending dental faculty members of the department, who represent a broad range of dental specialties and experience in private practice, hospital based practice, teaching, and public health practice. Results: The faculty survey yielded some consistent themes, ranging from enhanced information to make better diagnoses, to challenges in transitioning to EMR, as well as concerns about data security and too much time and effort in front of a computer screen. Discussion: A brief summary of the history of the stand-alone development of dentistry is given, which contributed to the separate development of dental EMRs from hospital EMRs. The various modalities of clinical care provided by the Department of Dentistry at Advocate Illinois Masonic Medical Center, Chicago, IL are presented to give a scope of the areas of need a successful EMR solution must meet in a hospital based dental setting. Public health aspects are included in the discussion. Conclusion: Macro level health data sets (ie NHANES, state level datasets) have the potential to be expanded to include more thorough data, combining medical health data and oral health data in the same datasets.

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Abstract

Background The current measuring metric and reporting methods for assessing maternal mortality are seriously flawed. Evidence-based prevention strategies require consistently reported surveillance data and validated measurement metrics. Main Body The denominator of live births used in the maternal mortality ratio reinforces the mistaken notion that all maternal deaths are consequent to a live birth and, at the same time, inappropriately inflates the value of the ratio for subpopulations of women with the highest percentage of pregnancies ending in outcomes other than a live birth. Inadequate methods for identifying induced or spontaneous abortion complications assure that most maternal deaths associated with those pregnancy outcomes are unlikely to be attributed. Absent the ability to identify all maternal deaths, and without the ability to differentiate those deaths by specific pregnancy outcomes, existing variations in pregnancy outcome-specific maternal deaths are masked by the use of an aggregated (all outcome) numerator. Under these circumstances, clear and accurate data is not available to inform evidence-based preventive strategies. As the result, algorithms applied for analyzing maternal mortality data may return distorted results. Conclusion Improvement in the effectiveness of maternal mortality surveillance will require: mandatory certification of all fetal losses; linkage of death, birth and all fetal loss (induced and natural) certificates; modification of the structure of the overall maternal mortality ratio to enable pregnancy outcome-specific ratio calculations; development of the appropriate ICD codes which are specific to induced and spontaneous abortions; education for providers on identifying and reporting early pregnancy losses; and, flexible information systems and methods which integrate these capabilities and inform users.

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