Appendix B: Content Summaries of Selected Best Papers for the 2021 IMIA Yearbook, Special Section on Managing Pandemics with Health Informatics


Novel approach to support rapid data collection, management, and visualization during the COVID-19 outbreak response in the World Health Organization African Region: development of a data summarization and visualization tool

*JMIR Public Health Surveill* 2020;6(4):e20355

This article introduces readers to COVID-19 Information Management Resources Repository created by the U.S. Centers for Disease Control and Prevention (CDC). The free, online resource contains a wealth of information about emerging as well as harmonized data and information standards relevant to managing the COVID-19 pandemic. Health care and public health organizations needed to rapidly access information on data standards, including International Classification of Disease (ICD), LOINC (Logical Identifiers Names and Codes), and Current Procedural Terminology (CPT) codes, to apply in electronic health record (EHR) and other clinical information systems when documenting and/or sharing data on diagnoses, symptoms, and outcomes. The repository also contained documentation and details on CDC case definitions for confirmed and probably cases, as well as guidelines for defining patients under investigation (PUIs). These are critical resources for local jurisdictions as well as clinical organizations and researchers. The article nicely summarizes the variety of data, information, process, and workflow standards necessary for development by national public health authorities to support the management of patients and populations during a pandemic.


Centers for disease control and prevention 2019 novel coronavirus disease (COVID-19) information management: addressing national health-care and public health needs for standardized data definitions and codified vocabulary for data exchange

*J Am Med Inform Assoc Jul* 2020;27(9):1476-87

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Rapid response to COVID-19: health informatics support for outbreak management in an academic health system

*J Am Med Inform Assoc Jun* 2020;27(6):853-9

Hospitals in many nations were overwhelmed with patients affected by SARS-CoV-2. In response to the pandemic, hospitals leveraged multiple information systems to triage patients based on acuity, expand capacity to care for growing numbers of patients, and keep clinicians and other employees healthy. This case report from the University of California San Diego Health system summarizes the various activities many hospitals and health systems undertook to leverage the EHR and other information systems to manage their response to COVID-19. The case study highlights how a commercially used EHR
system was expanded to implement new order sets, triage protocols, and documentation templates rapidly. Upon establishing an Incident Command Center, the health system identified several operational areas that would benefit from expanded use of their informatics infrastructure. A dashboard streamlined access to data and information for clinical operations leaders, and a patient portal became a hub for virtual visits as ambulatory centers were closed to allow for expansion of inpatient services for those severely ill from COVID-19. The EHR played a central role in collecting data and communicating information out to leaders and clinicians. This case study is also important because it detailed the many practical challenges the health system faced in deploying technologies in the wake of the pandemic. The evidence base for screening and treating COVID-19 patients changed almost daily. Guidelines, order sets, and documentation requires rapidly changed, and there was no time to train staff on these frequent system updates. The Incident Command Center played a central role in disseminating information and identifying failures to inform iterations of the informatics tools. The lessons in this case report are important for the health system to note as the pandemic continues and preparedness begins for the next pandemic.