

Editorial

Informatics is a critical strategy in combating the COVID-19 pandemic

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This issue of *Journal of the American Medical Informatics Association* issue includes 6 articles^{1–6} and a Correspondence⁷ that address the coronavirus disease 2019 (COVID-19) pandemic. We published the articles through Advanced Access immediately after acceptance to disseminate innovative informatics strategies and thought-provoking perspectives to inform clinical practice as well as policy decision making. This Open Access content is also available at jamia.org and on our publisher's COVID-19 hub (<https://academic.oup.com/journals/pages/coronavirus>).

The role of biomedical and health informatics has been critical in the system response to the COVID-19 pandemic. Thus, it is fitting that this issue starts off with an American Medical Informatics Association Position Paper that describes a health informatics practice analysis⁸ that complements the previously published American Medical Informatics Association clinical informatics subspecialty practice analysis.⁹ As compared with the latter, which focused on physicians, the focus of Gadd et al⁸ is on health informatics professionals comprising practitioners with clinical (eg, dentistry, nursing, pharmacy), public health, health informatics, or computer science training. The authors applied 2 methods to meet the practice analysis objective of developing a comprehensive and current description of what health informatics professionals do and what they need to know. First, 6 independent subject matter expert panels contributed to the development of a draft health informatics delineation of practice. Second, an online survey was distributed to health informatics professionals to validate the draft delineation of practice by rating the draft items related to domain, tasks, knowledge, and skills; qualitative feedback was also provided on the completeness of the delineation of practice. Informed by a sample of >1000 survey participants, this resulted in 5 domains, 74 tasks, and 144 knowledge and skill statements. Study findings will inform health informatics certification, accreditation, and education activities.

The 4 COVID-19 articles highlighted in this editorial reflect the 5 domains identified in the health informatics practice analysis: foundational knowledge; enhancing health decision making, processes, and outcomes; health information systems; data governance, management, and analytics; and leadership, professionalism, strategy, and transformation,⁸ as well as similar domains in the physician clinical informatics subspecialty practice analysis.⁹ The 3 clinical articles illustrate the important relationships among technical knowledge and skills domains and those focused on decision making, processes, and outcomes, and leadership. Moreover, 2 articles highlight the important linkage between rapidly evolving federal policy and informatics practice during the pandemic.^{3,4}

Reeves et al,¹ from University of California, San Diego, describe the rapid implementation of technological support for optimizing clinical management of the COVID-19 pandemic from the perspective of an academic medical center. Critical to these efforts was the establishment of an Incident Command Center on February 5, 2020, for 24-hour monitoring and adaptation to rapidly evolving conditions and recommendations on a local, state, federal, and global scale. A second significant component informing the response was an assessment of the current state with regard to this context, which revealed institutional needs requiring technology support. This included the design and implementation of electronic health record (EHR)-based rapid screening processes, as well as expansion of system-level EHR documentation templates (eg, urgent care/emergency department screening or testing), clinical decision support (eg, isolation, who should be tested), reporting tools (eg, operational dashboard and tracking system for persons under investigation), and patient-facing technology (eg, video visits for outpatient encounters) related to COVID-19. The inclusion of information services representation in the Incident Command Center enabled real-time identification of failures and successes and a focus on evolving needs,

which was foundational to building cohesive systems as an institutional response to the COVID-19 pandemic.

Judson et al,² from University of California, San Francisco, rapidly deployed a patient-facing self-triage and self-scheduling tool on their patient portal using a toolkit provided by their EHR vendor. They made the tool available to primary care patients with active portal accounts (about two-thirds of their 90 000 patients). Through the UCSF Coronavirus Symptom Checker module, basic demographic information is populated from the EHR, and asymptomatic patients are asked about exposure history and then provided relevant information. In contrast, symptomatic patients are triaged into 1 of 4 categories (emergent, urgent, nonurgent, or self-care) and subsequently connected to care via telephone hotline or self-scheduling. All responses and interactions are stored in the EHR. During the first 16 days of use, the tool was accessed 1129 times by 950 unique patients. The triage dispositions of the 72% of symptomatic patients were emergent (24%), urgent (24%), nonurgent (12%), and self-care (40%). The primary benefit of the tool beyond its efficiency for patients is prevention of unnecessary in-person encounters, which diminishes patient exposure, decreases personal protective equipment (PPE) use, and enables clinicians to focus on more acutely ill patients.

In a Perspective, Turer et al,³ from Vanderbilt University Medical Center, describe an approach they call electronic PPE (ePPE) within the context of emergent policy changes related to telemedicine and the Emergency Medical Treatment and Labor Act during the COVID-19 pandemic. As distinct from telemedicine, they define ePPE as the use of telemedicine tools by on-site medical providers to perform electronic medical screening exams while limiting physical proximity. The authors discuss the safety, legal, and technical factors necessary for implementing such a pathway. In terms of safety, they recommend performing medical screening exams using ePPE only on “low-risk patients (ie, 4 [less urgent] to 5 [nonurgent]) with reassuring vital signs, few comorbidities, and chief complaints suggesting lower respiratory infection (fever, cough, shortness of breath).” Legally, ePPE is supported by a March 30, 2020, Centers for Medicare and Medicaid Services update to Emergency Medical Treatment and Labor Act enforcement that allows for on-site and off-site medical screening exams by qualified medical personnel using telemedicine equipment. From a technical perspective, they recommend using consumer devices such as FaceTime, Skype, and Zoom instead of dedicated telemedicine platforms because of their familiarity to providers. The approach of ePPE has the potential to facilitate more frequent patient-provider interactions in other settings while reducing exposure and conserving PPE.

In a Perspective focused on balancing health privacy, health information exchange (HIE), and research in the context of the COVID-19 pandemic, Lenert and McSwain⁴ argue that “our current regulations on the flows of information for clinical care and research are antiquated and often conflict at the state and federal levels” and call for proposed changes to privacy regulations. They recommend consideration of 3 possible actions to enable the rapid communication of required health data necessary for a pandemic response by waiving the current legal barriers to HIE while ensuring the privacy of individual health information:

1. The enactment of the Health Insurance Portability and Accountability Act’s complete federal preemption of all other data sharing and consent laws.

2. The Office for Civil Rights should create a safe harbor business associate agreement that covers entities and that other supporting organizations can rapidly adopt for HIE about COVID-19.
3. The Office for Civil Rights should issue guidance that clarifies that there is no requirement for minimal information in exchange of data for care of patients, and that transmission of minimal information does not apply to public health entities during this crisis.

The authors conclude that use of emergency federal powers to create a unified framework for data exchange is an essential step toward effective response to the clinical, public health, and research challenges of the COVID-19 epidemic.

In my first editorial as Editor-in-Chief, I called for a consequentialist informatics approach in which we focus our informatics research and its translation in practice on important health issues.¹⁰ The articles in this issue that focus on COVID-19 exemplify this approach and highlight the centrality of informatics in combating this devastating pandemic by doing what matters most.

CONFLICT OF INTEREST STATEMENT

None declared.

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