Unprecedented challenges face the healthcare system as individuals, communities, and nations around the world respond to COVID-19. Informatics solutions support global pandemic response. This article follows the development of a COVID-19 response guideline from inception on March 9, 2020, to deployment over a period of less than a week, using the Omaha System, a multidisciplinary healthcare terminology.

The Omaha System Community of Practice (OSCOP), a grass-roots organization loosely connected through social networking platforms such as Facebook, LinkedIn, Twitter, and e-mail discussion list communications among professional societies, mobilized to address the need for a guideline. The OSCOP holds webinars four times per year to share innovations in practice, research, and education updates to the expanding portfolio of evidence-based, encoded guidelines available at omahasystemguidelines.org. Participants from practice, academia, and industry in several countries share resources to build healthcare quality, maximizing the use of the Omaha System, their mutual language/terminology, as a communication and evaluation model. Facing the threat posed by COVID-19, members of the OSCOP announced on Monday, March 9, 2020, a webinar “to facilitate a conversation around best practices for using the Omaha System to support COVID-19 disease prevention and control activities and documentation at the individual, family, and community levels. Evidence-based guidelines will be shared that will enable local and state public health agencies to disseminate best practices in software and to generate consistent data regarding COVID-19 pandemic preparedness and responses. Your participation is critical to ensure the guidelines reflect your perspective.” Approximately 130 public health experts and others registered for the webinar. All registrants were promised the recording of the webinar if unable to attend in person.

On Wednesday, March 11, 2020, the World Health Organization (WHO) characterized COVID-19 as a pandemic, and on Thursday, March 12, 2020, 56 participants from China, the Netherlands, New Zealand, Singapore, Turkey, and numerous states in the United States attended the Omaha System COVID-19 webinar. In advance of the webinar, the OSCOP leadership and interested stakeholders compiled evidence-based interventions for public health, long-term care, healthcare, community, policy makers, and self-care, in a combined, coordinated resource to support COVID-19 response efforts. See Table 1 for the public health interventions directed to the Omaha System Problem “Communicable/Infectious Condition.” We based the comprehensive international perspective on WHO, US Centers for Disease Control and Prevention (CDC), and Minnesota Department of Health (MDH) references, with additional validated resources from other sources, all of which are organized by intervention within the COVID-19 guideline.

During the webinar [https://tinyurl.com/OmahaSystemCOVID19], the participants critiqued and expanded the guideline and reached consensus on the content and structure, ensuring that evidence-based guidance from WHO, CDC, or MDH supported each intervention. We cross-referenced and added clinical terminology codes for all interventions. One day after WHO’s COVID-19 pandemic announcement, the OSCOP published the evidence-based guideline online at Omaha System Guidelines to support the international COVID-19 Response as a clinical decision support reference and documentation tool. Following our standard guidelines dissemination process, the COVID-19 guideline was dual encoded with SNOMED Clinical Terms (CT) and Omaha System codes for ease of incorporation within any electronic health record. We documented metadata detailing our process and contributors and posted it online together with the webinar recording and the guideline itself.

Electronic health records and other platforms rapidly implemented the guidelines. We standardized the guideline with SNOMED CT and Omaha System coding, which enabled industry partners to immediately implement it within products without changes in hard coding. Notably, other applications in the same organization had a significant lag time for hard coding changes. On March 13, 2020, and continuing into the present, we invited participation from all stakeholders in updating the guideline weekly based on emerging evidence and guidance from the WHO and the CDC.
Key factors contributing to the success of the 2020 COVID-19 Response Guideline initiative were the urgency of the problem, the existing international network of Omaha System users, and use of crowdsourcing techniques with virtual meeting methods. We made this resource available within communities for prevention and mitigation activities through radio broadcasts and other electronic media, for self-care prevention and mitigation activities, as well as for documentation of healthcare practice and use in research.\textsuperscript{14}

As with previous Omaha System guideline development initiatives, the outstanding collaboration of informaticians and community partners made possible rapid guideline development, deployment extending guidelines into real-time practice, and further collaboration.\textsuperscript{11–13}

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