LETTER/OP-ED

An Opportunity for Future Public Health Professionals to Learn from Open Access COVID-19 Data

Robert C. Orellana, PhD, MPH[1]*; Angie Hetrick, MPH[2]; Shibani Chettri, MPH[2]; Zachary A. Weber, MS[2]; Sara Conroy, PhD[3]
[1]Bureau of Infectious Diseases, Ohio Department of Health, Columbus, OH
[2]College of Public Health, The Ohio State University, Columbus, OH
[3]Center for Biostatistics, Department of Biomedical Informatics, The Ohio State University, Columbus, OH
*Views of the author written here do not necessarily represent those of the employer.
Corresponding Author: Robert C. Orellana, 35 E. Chestnut, Columbus, OH 43215, (614) 477-6145, Robert.C.Orellana@gmail.com
Submitted June 13, 2020 Accepted June 23, 2020

In early 2020, the virus responsible for coronavirus disease 2019 (COVID-19), SARS-CoV-2, spread globally and was declared a pandemic by the World Health Organization (WHO).[1] During this time, Ohio has experienced widespread community transmission and, as of June 12, 2020, has reported 40 424 cases.[2] New partnerships quickly developed between health departments, schools, and programs of public health, medical, and research institutions, and the private sector, leading to increases in data collection and sharing.[3] Educators have an opportunity to use these data in the classroom to explore 3 critical skills for public health practice: (1) the appropriate use of open access, public health data, (2) the ethical considerations involved in balancing access with privacy and confidentiality, and (3) the recognition of data limitations.

Some health organizations have found ways to share their COVID-19 data publicly; for example, the Ohio Department of Health's COVID-19 dashboard has a de-identified data set updated daily.[2] These public data sets present opportunities to understand and interact with real data almost as quickly as it is collected.[4] Although the information provided is limited, it allows users to conduct descriptive epidemiologic analyses. Additionally, students could combine these data with other sources, like census bridged-race estimates, for more detailed analyses. Making public health data open access provides students the opportunity to apply their skills to real-world problems, potentially offering new and innovative insights.[4]

With increased availability of data comes the need to address privacy and confidentiality, which are essential to maintain the public's trust and protect citizen's rights.[4,5] For example, releasing data with more detailed information requires larger sample sizes so that individuals cannot be identified. Ethical considerations and legal implications are necessary to prevent breaches of personal identifiable information and ensure equitable use of data.[4] These should be taught alongside analytical approaches.

Public data limitations include changes in data collection processes and biases that are essential to understand when drawing conclusions from analyses. For example, incorporating changes of case definitions when describing incidence will help explain occasional increases in cases that might otherwise be attributed to increased disease prevalence. Restricting social factors protects identification of cases but inhibits evaluating how diseases exacerbate existing disparities, especially among vulnerable populations. The validity of interpretations and recommendations from limited publicly available data could be improved if students engage with subject matter experts from multiple areas, including health department staff.

The COVID-19 pandemic has emphasized the importance of public health while also addressing gaps in our field. The pandemic presents a unique opportunity for educators to prepare students for public health practice by teaching critical skills such as using publicly available data; understanding inherent ethical, confidentiality, and privacy issues; and identifying data limitations. Once students have been introduced to these skills, partnerships with health department experts can be used to better engage students for future careers including how to best communicate to the general public. It is our responsibility as public health professionals and advocates to inform the next generation of public health leaders of the best practices for using publicly available data.

REFERENCES

1. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Published 2020. Accessed December 6, 2020. https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

2. Ohio Department of Health. COVID-19 Dashboard. Accessed June 12, 2020. Published 2020. https://coronavirus.ohio.gov/wps/portal/gov/covid-19/dashboards

3. Infectious Diseases Institute at The Ohio State University. A Letter from the Director: The Infectious Diseases Institute partners with Ohio's Public Health Agencies to better understand and combat COVID-19. Accessed June 12, 2020. https://idi.osu.edu/news-articles/a-letter-from-the-director-on-covid-19

4. Edelstein M, Lee LM, Herten-Crabb A, Heymann DL, Harper DR. Strengthening global public health surveillance through data and benefit sharing. *Emerg Infect Dis*. 2018;24(7):1324-1330. doi:10.3201/eid2407.151830

5. Ienca M, Vayena E. On the responsible use of digital data to tackle the COVID-19 pandemic. *Nat Med*. 2020;26(4):463-464. doi:10.1038/s41591-020-0832-5