

The COVID-19 Pandemic: An Opportunity to Transform Higher Education in Public Health

Public Health Reports
2021, Vol. 136(1) 23-26
© 2020, Association of Schools and
Programs of Public Health
All rights reserved.
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0033354920966024
journals.sagepub.com/home/phr



Beth A. Resnick, DrPH¹ ; Paulani C. Mui, MPH²; Janice Bowie, PhD, MPH³; Sukon Kanchanaraksa, PhD, MHS⁴; Elizabeth Golub, PhD, MEd⁵; and Joshua M. Sharfstein, MD¹

The coronavirus disease 2019 (COVID-19) pandemic has revealed deficiencies in our public health infrastructure and led to calls for long-overdue investment, an improved focus on equity, and new approaches to crisis readiness and response. Higher education in public health faces a similar moment of reckoning. The immediacy of the pandemic forced schools and programs of public health to shift to remote learning and to support response efforts. The pandemic provides an opportunity to consider fundamental changes to improve our approaches to, effectiveness in, and impact on public health education.

Immediate Educational Changes Undertaken

Schools and programs of public health were forced to move quickly in response to COVID-19 to keep teaching students, supporting the training needs of public health agencies, engaging the public, assisting communities, working across sectors, and conducting research.

The immediate shift from onsite to remote learning forced rapid adaptations to teach and engage with students at a distance, including the use of online formats for classroom teaching, webinars, discussion groups, mentoring, and applied learning. Sheltering in place also elevated the need for student engagement in research and practice activities to assist communities in their COVID-19 response in myriad ways. For example, public health students across the country assisted with performing contact tracing, monitoring statistics on cases, staffing COVID-19 testing sites and help lines, creating COVID-19 educational materials in multiple languages, collecting data on personal protective equipment needs, working with senior centers to obtain contact information, and assisting with food distribution.¹

In response to urgent needs in the field, schools and programs of public health quickly developed specialized training in contact tracing, surveillance measures, data analysis, and risk communication. Examples of this specialized training include the Johns Hopkins University's online contact-tracing course that was required training for contact tracers in multiple states; more than 200 000 people enrolled in the course during its first 2 weeks.² In

addition, the Rutgers School of Public Health New Jersey Community Contact Tracing Corps Program launched in May 2020 in collaboration with the New Jersey Department of Public Health to train at least 1000 contract tracers to work in New Jersey.³

Academic experts have been highly sought after as public health communicators in the demand for COVID-19 information. Faculty from public health institutions across the country have provided continual updates through television, radio interviews, podcasts, social media posts, and popular as well as peer-reviewed publications and academic presentations.

Research collaborations were quickly forged among schools and programs of public health, health care providers, and scientific and technology experts to study the epidemiology, pathogenesis, and therapeutics of severe acute respiratory syndrome coronavirus 2.

Schools and programs of public health have engaged in cross-sector collaborations to aid the COVID-19 response. In addition to traditional partnerships with health departments and hospitals, relationships with transportation systems, housing authorities, schools, and business communities, among others, facilitated a wide range of response activities. These activities included activation of incident command and emergency response measures,

¹ Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

² Office of Public Health Practice and Training, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

³ Department of Health Behavior and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

⁴ Center for Teaching and Learning, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

⁵ Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Corresponding Author:

Beth A. Resnick, DrPH, Johns Hopkins Bloomberg School of Public Health, Department of Health Policy and Management, 624 N Broadway #457, Baltimore, MD 21205, USA.

Email: bresnick@jhu.edu

implementation and evaluation of prevention measures, and provision of food, medicines, and other necessities to populations in need.

Long-term Educational Investments and Innovations

During the past few years, changes have been made in public health education curriculum and approaches, including expansion of online degree offerings, increased opportunities for applied learning, and shifts to competency-based accreditation requirements. However, the COVID-19 pandemic has brought attention to educational gaps, creating an opportunity to reassess and make substantial changes for the long term. Such changes should include the following: (1) increased investment in educational infrastructure; (2) expanded practice-based educational approaches; (3) demonstrated commitment to educational diversity, equity, and inclusion; (4) increased access to education in public health; (5) deepened cross-sector collaborations; and (6) formalized training in public health advocacy.

Increased Investment in Educational Infrastructure

The need for a strong educational infrastructure was apparent in the immediate shift in March 2020 to remote learning as a result of the COVID-19 pandemic. However, even in the absence of a global pandemic, a strong educational infrastructure is critical to supporting high-quality teaching and learning and ensuring readiness for schools and programs to adapt in response to future emergencies or ongoing public health challenges. Educational infrastructure is fundamental to schools and programs of public health and to ensure adequate response to public health threats. Thus, sustaining a strong educational infrastructure and committing to protect and promote the health of the public are critical to the core missions of schools and programs of public health.

Sustained investment in education from educational institutions and governmental, philanthropic, and the private sectors can support excellence in teaching and learning in public health. These investments may include formally supporting excellence in teaching with instructional designers or other educational technologists to provide training in pedagogy for faculty and teaching assistants for both in-person and online instruction. Investment in educational infrastructure should also extend to designing classrooms and providing equipment that is suitable for both active learning and full participation by remote learners through various technologies. Funding for research on educational methods, expanded training options for new faculty, and continuing education is also needed to keep staff up-to-date on new technologies and approaches to learning.

Underlying this sustained investment from educational institutions, industry, and government should be a commitment to improving the quality of learning for all students through the application of universal design for learning (UDL) principles.⁴ UDL principles facilitate improved learning outcomes by

making learning environments (face-to-face, online, and hybrid) inclusive to learners of varied backgrounds, geographic locations, and talents and abilities by ensuring multiple means of engagement, delivery of information, and opportunities for learners to set goals and build fluency via applied learning activities.

Expanded Practice-Based Educational Approaches

The pandemic has emphasized the importance of transdisciplinary practice-based approaches to education in public health. Schools and programs of public health quickly engaged in a wide range of practice and translation initiatives to guide pandemic response. Examples include developing COVID-19 data dashboards, communicating research findings to advance prevention and treatment efforts, and making evidence-based recommendations to inform the safe reopening of businesses, schools, and other community activities.

Curriculum changes in response to the pandemic fostered cross-disciplinary teaching and practice-based learning. For example, more than 450 students participated in a COVID-19 course at the Johns Hopkins Bloomberg School of Public Health in spring 2020. The course included experts from across disciplines explaining the epidemiology of COVID-19, treatment strategies, and policy options to prevent disease transmission. The applied learning component engaged students in data collection in real time on testing rates and stay-at-home orders in numerous countries that informed ongoing COVID-19 response efforts. Both the teaching faculty and students were eager to participate in the course.⁵

Demonstrated Commitment to Educational Diversity, Equity, and Inclusion

The pandemic has amplified inequities and disparities that have long existed; these disparities underscore the need for trusted public health experts to provide interventions that are structurally acceptable and train future public health practitioners to provide interventions. In this light, it is urgent not only for schools and programs of public health to assess and adapt their own curriculum and performance metrics to emphasize health equity, but also for schools and programs to be more representative of the populations they serve. In 2016, 11% of graduates of Association of Schools and Programs of Public Health (ASPPH)—member schools and programs of public health were Black and 13% were Hispanic,⁶ which falls short of racial/ethnic diversity of the US population (13% Black, 18% Hispanic).⁷ Although schools and programs of public health have made progress in diversifying the student population during the last several decades, more work needs to be done. At the faculty level, the diversity problem is more acute. In 2017, 6% of ASPPH-member faculty were Black and 6% were Hispanic; of these faculty, 3% of full professors were Black and 5% were Hispanic.⁶ Diversity and inclusion efforts need to be broadened to consider and collect data on senior staff positions and to consider other priority population groups in teaching and learning, such as people with disabilities.

Access to affordable, structurally competent education in public health aligned with UDL principles is a fundamental need that requires meaningful changes in our educational approaches and practices. For real change to occur, it will require creative thinking and new funding models for higher education. In addition, sustainable investment in educational infrastructure to support UDL modalities and expansion of scholarship programs is needed. The Gates Millennium Scholarship Program⁸ and the Robert Wood Johnson Foundation's Health Policy Research Scholars program⁹ are examples of support for racial/ethnic minority scholars that could be expanded and adapted on a larger scale to give underrepresented students (eg, low-income racial/ethnic minority groups) access to public health programs in higher education from undergraduate through doctoral levels at institutions nationwide.

Increased Access to Education in Public Health

Options beyond traditional degree programs for education in public health are needed, including alternative and accessible educational opportunities and modes of delivery that are lower in cost than traditional degree programs and available to the current public health workforce and diverse audiences worldwide. Findings from the 2017 Public Health Workforce Interests and Needs Survey indicated that fewer than 15% of the current public health workforce had received formal public health training,¹⁰ and even public health employees with formal training require skills to adapt to emerging challenges such as COVID-19, new technologies, and other innovations. Public health roles and responsibilities have been amplified in the wake of COVID-19 and have taken on a new urgency in areas of disease prevention and health protection, particularly for vulnerable populations, and emphasized the need for flexible curriculums and more practice-based public health training accessible to diverse audiences. Training courses aimed at public health practitioners in areas such as contact tracing and public health surveillance have been developed by schools and programs of public health.¹¹

However, outside of a pandemic, schools and programs of public health have a mandate to prepare future workers and maintain capacity of the current public health workforce. The Health Resources & Services Administration funds 10 regional public health training centers housed in schools and programs of public health¹²; however, the training centers are limited in scope, and funding for the centers has decreased since the late 2000s.¹³ In addition, many schools and programs of public health offer part-time online public health degree programs for working professionals; however, these programs tend to be costly and often include prerequisites for admission that preclude enrollment for many.

The nontraditional educational arena has had an expansion of curriculum in public health and offering of credentials that have fewer requirements and are less expensive than a traditional bachelor's or master's degree (eg, certificates, specializations) through massive open online courses on online platforms such as Coursera (coursera.com), edX (edX.com), and FutureLearn

(FutureLearn.com). These advances have enabled learners to expand their public health knowledge and skills at a lower cost and with easier access than traditional degree programs. However, the scope of these programs needs to be more far-reaching, affordable, and convenient to working populations and incorporate UDL principles to attract and serve people from communities with the greatest needs (eg, tribal communities). Furthermore, many existing curricula are limited in language availability and require members of online learning communities to commit to a specific educational institution or platform.

In times of public health crisis and to address pervasive health disparities, it is vital to innovate to get the expertise of faculty across institutions to the communities that need it most in the most efficient and affordable way possible. An example of such innovation is the development of an online curriculum that brings together contributions across multiple schools and programs of public health with a range of perspectives and expertise. The pandemic spurred innovation in this realm, as 3 public health training centers in different academic institutions worked together in 2020 to produce the "Thriving in an Online Work Environment" course to help public health professionals stay productive and connected in the remote work environment.¹⁴ Such collaborative efforts can serve as a model for future innovations to increase access to education in public health to communities that need it most, leverage resources, and expand offerings.

Deepened Cross-sector Collaborations

The pandemic has underscored the need for a broad view of public health that requires collaborative approaches with multiple stakeholders. In response to immediate needs during the pandemic, public health faculty and students have worked with private industry (eg, hospitals, personal protective equipment producers, drugstores, pharmaceutical companies, and the technology industry) to advance preventive measures. Partnerships among public health, schools, food banks, restaurants, farmers, and fisheries were forged to provide people with food. Collaborations with public transportation, housing, criminal justice, advocacy organizations, group homes, and senior facilities have focused on protecting vulnerable residents and priority populations.¹⁵

Schools and programs of public health now have an opportunity to build on these partnerships forged in the immediacy of the pandemic response to advance health equity. Cross-sector partnerships can provide opportunities for applied learning in various ways, including collaborative projects and communications, service learning, and co-teaching, that emphasize a broad perspective on public health and the social determinants of health. In addition, schools and programs can emphasize career trajectories and mentorship across sectors (eg, housing, transportation, public safety, economic development) to advance public health knowledge and foster long-term collaborations. With a new and broad set of partners, schools and programs of public health should play major roles in collective efforts to advance health equity and improve health outcomes.

Formalized Training in Public Health Advocacy

The COVID-19 pandemic laid bare shortcomings in our public health infrastructure and pervasive health and social inequities. Solving these challenges will require advocacy. Implicit in the educational mission of schools and programs of public health is training students both in the classroom and in the field to advocate for improved public health. Schools and programs of public health must work to address the social influences and inadequate policies that drive the inequities so often seen in the communities in which these institutions reside, as well as conduct research and seek to serve. Engaging students in advocacy efforts as part of their public health educational experience through a range of opportunities, including advocacy centers, internships, and grassroots efforts, should not be an elective option but a core component of a public health education.

Conclusion

Schools and programs of public health have been actively engaged in the response to the COVID-19 pandemic. Institutions, government agencies, and industry should capitalize on the opportunity of this moment to invest in and institutionalize improvements in teaching, learning, and practice in education in public health to improve our educational effectiveness and lead the charge in shaping future public health leaders to better protect and promote the health of all populations.

Acknowledgments

The authors thank Laura Morlock, PhD, executive vice dean for academic affairs at the John Hopkins Bloomberg School of Public Health, for her educational leadership and input on this article.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Beth A. Resnick, DrPH  <https://orcid.org/0000-0001-6214-9378>

References

1. Association of Schools and Programs of Public Health. ASPPH fellows on the frontlines of COVID-19. June 11, 2020. Accessed September 8, 2020. <https://www.aspph.org/aspph-fellows-on-the-frontlines-of-covid-19>
2. Johns Hopkins University. COVID-19 contract tracing: about this course. Accessed June 5, 2020. <https://www.coursera.org/learn/covid-19-contact-tracing?edocomorp=covid-19-contact-tracing>
3. Rutgers School of Public Health. New Jersey COVID-19 Community Contact Tracing Corps Program: information about student contact tracers. May 14, 2020. Accessed September 7, 2020. <https://sph.rutgers.edu/covid19/index.html>
4. CAST. About universal design for learning. Accessed September 7, 2020. <http://www.cast.org/our-work/about-udl.html#.X1eebB17mL4>
5. Pearce K. With “lightning speed,” Johns Hopkins develops a course focused on COVID-19. March 27, 2020. Accessed September 7, 2020. <https://hub.jhu.edu/2020/03/27/covid-19-public-health-course>
6. Goodman MS, Plepys CM, Bather JR, Kelliher RM, Heaton CG. Racial/ethnic diversity in academic public health: 20-year update. *Public Health Rep.* 2020;135(1):74-81. doi:10.1177/0033354919887747
7. US Census Bureau. American Community Survey demographic and housing estimates 2016. Accessed June 5, 2020. <https://data.census.gov/cedsci/all?tid=ACSDP1Y2016.DP05&hidePreview=false>
8. United Negro College Fund. Gates Millennium Scholars Program. Accessed June 8, 2020. <https://gmsp.org>
9. Robert Wood Johnson Foundation. Health Policy Research Scholars. Accessed June 8, 2020. <https://healthpolicyresearch-scholars.org/>
10. De Beaumont Foundation. Public Health Workforce Interests and Needs Survey: 2017 national findings. 2018. Accessed June 5, 2020. <https://www.debeaumont.org/phwins-signup/ph-wins-explore-the-data/ph-wins-2017-national-findings/>
11. Public Health Foundation. Coronavirus disease 2019 (COVID-19) training. Accessed September 7, 2020. http://www.phf.org/resourcestools/Pages/Coronavirus_Disease_2019_COVID_19_Training.aspx
12. Health Resources & Services Administration. Regional Public Health Training Centers. Updated April 2020. Accessed June 8, 2020. <https://bhwh.hrsa.gov/grants/publichealth/regionalcenters>
13. US Department of Health and Human Services. HHS FY 2020 budget in brief. Accessed June 8, 2020. <https://www.hhs.gov/about/budget/fy2020/index.html>
14. Rocky Mountain Public Health Training Center. Thriving in an online work environment. Accessed August 2, 2020. <https://rmphtc.org/thriving-in-an-online-work-environment/index.html#>
15. Piramal S. How future partnerships, collaborations will roll out in a COVID world. *Business Today.* August 10, 2020. Accessed September 7, 2020. <https://www.businesstoday.in/opinion/columns/how-future-partnerships-collaborations-will-roll-out-in-a-post-covid-world/story/412511.html>