Public Health: Our Time of Challenge

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This issue of the Journal of Public Health Management and Practice focuses on COVID-19 and the health of the public. This coronavirus pandemic, the public health crisis of our era, presents challenges unlike those ever faced before by our health agencies, at local, state, and federal levels. The surge of illnesses and deaths has overwhelmed our health care system. Indeed, parallels for this worldwide problem are unavailable except for the 1918 influenza epidemic and plagues and epidemics occurring in the 17th and 18th centuries. This issue was developed to provide relevant information to guide public health action and has replaced the original lineup for our July publication.

Our readers should also be aware of the COVID-19 resources on our companion Web site JPHMP Direct. Multiple posts are available on this site including posts on why social distancing is not working for young people, relevant funding considerations, determining actual death rates, ethical frameworks, and a series of podcasts by John S. Marr and myself on subjects including future scenarios and health care system capacity, and smarter public health strategies.1

Scientific articles in this issue include those on the severity of COVID-19 in children, and descriptions of the pandemic in Shanghai and China. Debra DeBruin and J. P. Leider have contributed a commentary on the difficult ethical issues that accompany responding to this crisis. They describe the shift between clinical ethics and public health ethics faced by those working on the front lines of medical care and those responsible for the health of communities. In the response to COVID-19, these 2 ethical frameworks intersect.

As more states and cities have started to release racial and ethnic data regarding tests and deaths from COVID-19, it is clear that African Americans are disproportionately impacted by the pandemic. Gulzar Shah and coauthors write on this disparity in their commentary on health equity and the social determinants of health. Daniel Barnett and coauthors report on readiness for a post–COVID-19 world.

With each issue we publish 4 columns, Management Moment, Getting Practical from the de Beaumont Foundation, News From NACCHO, and State of Health from the Association of State and Territorial Health Officials (ASTHO). All of these columns in this issue are targeted to COVID-19.

There has been extensive media coverage on the inability of the health care system to respond to the high number of severe COVID-19–related illnesses because of deficiencies in overall hospital inpatient capacity, availability of intensive care unit beds, and supply chain problems resulting in a shortage of critical items including masks, gowns, and ventilators.

Our public health system has also been challenged in responding to this crisis. Problems, long recognized, are now increasingly evident caused by the absence of public funding for surge demands and the associated insufficiency in public health infrastructure. Local and state health departments are still reeling from budget and staffing cuts over the last 2 decades. Local health departments have lost a quarter of their workforce.

Yet, public health practitioners, the readership of our journal, are showing outstanding leadership on the front lines comparable with heroic physicians, nurses, and other health care staff in responding to the needs of the community. Public health agencies have diverted staff to counseling elected officials, holding press briefings, and advising the public, including handling scores of phone calls from frightened individuals. Indeed, even in the absence of funding, this is the time where the community looks to public health leaders to navigate us through this crisis. We are all dependent on organized public health efforts to reduce the number of severe illnesses and deaths to the lowest levels possible. In this unprecedented public health threat, the mantra for public health could well be offered by Winston Churchill: “Let this be their finest hour.” In the commentary published in this issue by Paul Erwin, Dean of the University of Alabama School of Public Health, “We Can Choose Not to Fail,” he

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writes we need to consider what we can do and how we can prepare for future epidemics.

The first known cases of COVID-19 occurred in Wuhan, China, a city of 11 million. In December 2019, there were dozens of individuals with viral pneumonia in this city and probably thousands infected. Chinese officials did not alert the World Health Organization until December 31, 2019. After doctors in China started reporting patients with this mysterious pneumonia, local health officials, who did not want to share bad news, withheld information about these cases from the national reporting system. Central health authorities in China learned about the outbreak from 2 whistleblowers.2,3

During the Chinese Lunar New Year in January 2020, there was extensive travel by millions of individuals out of Wuhan. By the time the Chinese health officials acknowledged the risk of human-to-human transmission, there were outbreaks in Beijing, Shanghai, Tokyo, Singapore, Seoul, and Hong Kong. The first US case was in Seattle. By March 1, there were thousands of cases in Italy, Iran, and South Korea. By March 11, the virus was spreading in Seattle and New York City.3

As the virus spread across the United States, large-scale testing of individuals, which could have informed our public health response, did not happen because of flaws in test kits, bureaucratic problems, and lack of leadership at multiple levels of government.4 The response suffered greatly from the loss of a crucial 1 to 2 months after there was knowledge of the situation in China. Testing became targeted to hospitalized patients or those with apparent illnesses. Inability to test the general population resulted in a failure to learn the number of individuals actually infected in communities or the true denominator in calculating severity and fatality rates.

Various predictive models have been advanced to predict the course of the epidemic. These models result in a wide range of possible infections, from 25% to 60%, and a shocking number of fatalities. The problem with modeling is the uncertainty of the assumptions used for their inputs. More recent scenarios have been advanced that are hopeful that mitigation strategies, including social distancing, will flatten the curve or actually decrease the number of infections, critical illnesses, and fatalities.

What does the future hold? When and how will we be successful in stemming this scourge? Social distancing cannot go on forever. The examples of Singapore, Shanghai, and Taiwan have been advanced as success stories after their use of social distancing has resulted in diminution in the number of cases. However, Prime Minister Lee Hsien Loong hesitates to refer to their experience as a success story, but rather as a long future battle.5 Indeed, recently we have seen new cases appear in Singapore and Shanghai. Even if social distancing is successful, it is likely that a second wave of cases will appear as happened with the 1918 pandemic flu.

Modeling shows the most effective strategy to address spread of disease is identifying and isolating individuals with infections. Testing contacts of infected individuals is also effective. These are basic public health measures. Mitigation techniques including social distancing and quarantine are also important. But to the extent that they are “leaky,” or imperfect with respect to containing infected individuals, the epidemic curve can be prolonged and the number of total cases may increase over time.6

There is a need to explore smarter public health strategies.6 A major strategy is to develop serological IgG testing to look for antibodies to the virus among those individuals who have been exposed and recovered from the virus. There individuals are likely to have at least partial immunity to the coronavirus. Serological testing, if used broadly, will provide us with the prevalence of infection in our communities and the denominator for critical illnesses and death rates. It will also allow health care workers and the general population with antibodies to infection to return to work.

On April 16, 2020, President Trump announced a 3-phase plan to open the national economy. The phases would be based on 14 successive days of decreasing coronavirus infections, sufficient hospital capacity, and testing of health workers. In releasing this plan, there were recommendations for increased testing at sentinel sites and use of contact tracing. However, as of late April, there were no accompanying provisions and resources for the massive testing and contact tracing necessary to stem this pandemic. To ascertain the true extent of this infection, leadership is required to implement massive testing of the asymptomatic population. Mounting contact tracing will also require a major organizational effort with resources to develop a cadre of many thousands of trained workers. While the administration of these efforts will be in the province of state and local health departments, federal support for these measures must occur.

We cannot count on an end to this pandemic until a vaccine or curative drug(s) become available. There is a long lag time in developing these including clinical trials.4 As stated by Dr Anthony Fauci, these remedies may take 1½ years to develop and are most likely to be helpful to combat a second cycle of infection. For the next year, we are dependent on our public health and health care system workers to keep us well.
For more information about this issue on COVID-19, listen to the July edition of The Editor’s Podcast. (Supplement digital audio, available at http://links.lww.com/JPHMP/A666.)

References