
COVID-19 IS THE FIRST GLOBAL PANDEMIC IN THE DIGITAL AGE

Chad Gaffield | April 17, 2020

COVID-19 is the first pandemic in the global era of widespread mobile-device-supported social media, Big Data and AI.

Sustaining crucial physical distancing policies depends on effective digital connectedness for health care systems, businesses, schools and indeed most aspects of daily life.

The general difficulty is that massive data tsunamis and high-performance computing offer both unprecedented opportunities and challenges that do not fit well with many twentieth-century policies and practices. The use of computer technology across society including in medicine and schools began in the 1950s and 1960s. Despite rapid technological achievements over the decades, no one anticipated an emergency need to rely on virtual capacity in the absence of any physical contact in a society. As we are now realizing, fulfilling this need appears more complex all the time especially in health, education, and welfare.

Previous pandemics teach two important lessons that are highly relevant today. First, we must prepare for pandemics since they will happen again. Today, this preparation must include a robust plan to go completely or primarily virtual on short notice in order to support physical distancing policies.

Second, pandemics characteristically have a differential impact within and across societies. While mortality rates across jurisdictions have rarely been identical, the overall pattern makes clear that previously vulnerable populations are at even greater risk of life-threatening infection.

This historic pattern takes on increased importance in the Digital Age. The history of computing shows that digital technologies can rapidly multiply and heighten both the positive and negative societal consequences of human actions. While enthusiasts have frequently promoted digital technologies as social levelers, the past half-century reveals that they often accelerate and deepen familiar inequalities.

The [World Social Science Report for 2016](#) concluded that “The world is converging around high levels of inequalities.” In 2019, the International Science Council warned that “we risk deepening digital divides, potentially increasing inequalities and concentrating power in the hands of the technologically advanced, with knock-on consequences for sustainable development, for effective democracies and for civil rights.” In their 2018 [statement](#) on *Realizing our Digital Future*, the G7 national science academies led by the Royal Society of Canada agreed that “a central challenge of our time consists of harnessing this wave of widespread disruption to ensure that benefits are distributed equitably, that deleterious effects and vulnerabilities are addressed, and that increasing risks are contained.”

These history lessons dominate my thinking these days in unanticipated ways. Despite using digital technologies since the 1970s to study socio-demographic change, and giving university courses on topics like the history of disasters and the making of the Digital Age, I had never imagined a need to combine

society-wide physical distancing with emergency virtual connectedness. This urgency emphasizes the importance of thinking through the history of both pandemics and digital technologies to help make timely decisions that anticipate and avoid familiar negative consequences.

COVID-19 is, like previous pandemics, starkly exposing societal fault lines. Contagious diseases can affect everyone but they do so in different ways according to individual circumstances. The usual pattern is a greater negative impact on populations that are already vulnerable for other reasons including poverty and prejudice. Recent studies of the 1918 Flu such as by RSC Task Force member, [Esyllt Jones](#), consistently emphasize the complex relationship between the pandemic's consequences and social differences. The common result around the world was, for example, that the poor had the highest pandemic mortality as a result of greater residential density, inferior nutrition, and other disadvantages.

Similarly, complex patterns are now emerging in real-time for COVID-19. As now evident in Canada as elsewhere, the frequent outbreaks among today's unprecedentedly large elderly cohort highlight the importance of paying special attention to vulnerable groups especially those living in close quarters such as in long-term care facilities or dense urban housing. In emphasizing the world's one billion people living in slums, [The New York Times](#) emphasized on April 8, 2020, that "The most important factor in enabling the spread of pandemics in slums is the neglect of these marginalized populations by governing elites."

Reports have been increasingly emphasizing the added risk for visible minorities living in poor neighbourhoods. By April 6, 2020, the [Associated Press](#) was already noting that "Chicago's rate of coronavirus deaths, illness among Black residents alarms U.S. cities." Public health experts were not surprised given the "decades-old barriers to health care in the geographically divided city" where those in the south and west sides have "poorer access to health care, higher poverty rates and jobs that require them to keep showing up while others are able to work from home."

In Norway, [Dr. Sverre-Erik Mamelund](#) who specializes in the demography of epidemic diseases lamented in 2018 that "social inequalities in pandemic outcomes do not form part of the discussion in international preparedness plans for pandemic influenza."

How can we break the historic pandemic pattern of social differentiation in outcomes? One key step is to focus on how best to harness data and digital technologies to confront differentiation rather than increase inequality when replacing physical presence. Unfortunately, even the use of digital technologies to observe societal health patterns remains a work in progress. In privileged countries like Canada, comparable health data across institutions and jurisdictions often still requires special labour-intensive efforts to monitor the differential impact of COVID-19 within and across jurisdictions.

Moreover, health care systems are not yet able to ensure that everyone has access to e-health support especially, perhaps, those most in need of assistance. Despite life-changing advances in applying digital technologies in medicine, COVID-19 is reminding everyone that health care still relies on physical presence in almost all cases. The [New England Journal of Medicine](#) admitted that "As an analogue system, health care is ill-equipped to cope with this swiftly emerging epidemic." Earlier this year, [Policy Options](#)

[politiques](#) emphasized that “Canadians want digital health care solutions, but the system lags behind. We need a national strategy on digital health care innovation.”

Research on past pandemics also reveals how their differential impacts were reflected in who was blamed implicitly and explicitly. Until recently, for example, a specific flu was usually known as Spanish or Hong Kong rather than today’s characteristic use of a scientific name.

Similarly, pandemics exposed ethnocultural prejudice among societal leaders. In 1832, the Bishop of Montreal [highlighted](#) the seriousness of the cholera epidemic in terms of “the invasion of our uncultivated land by British immigrants who threaten to drive us out of our country and reduce our ‘*Canadien*’ population, year after year, by the spread of disease.”

Reports of ethnic and racist sentiments related to COVID-19 are now permeating social media. On March 11, Bill de Blasio, New York City’s mayor, [admitted](#) that “Right now, we’ve seen particularly troubling instances of discrimination directed at Asian communities, particularly in the Chinese community.” He insisted that “This is unacceptable.”

Global News reported on April 4, 2020, that Montreal’s Jewish community felt targeted during the COVID-19 emergency both by unfounded complaints about gatherings and overreactions by the police in response. [Rabbi Reuben Poupko](#) was said to be feeling that “too many are unfairly laying blame for the spread of the virus on Montreal’s Jewish community.”

The challenge of combining physical distancing, digital connectedness, and social equity goes far beyond health care. Schools are now similarly struggling to optimize digitally-enable approaches that do not include face-to-face interaction. In light of the modest results of broadcast-style on-line learning, educators have been developing innovative hybrid interactive curricula that aim to integrate the best of virtual and physical resources in multiple ways to suit diverse students. Far less attention has been paid in most institutions to developing total e-learning programs.

One result in the current emergency period is that special efforts must be made to ensure that the rapidly digitally-revised courses are accessible to all especially for those who had been relying on school computer facilities. The history of technology suggests that families of knowledge workers have clear advantages that may increase as communities confront COVID-19.

These examples suggest that the historic pattern in which pandemics have a socially differential impact within societies may continue and perhaps worsen without special attention to digital divides in confronting COVID-19. We must learn as much as possible now to enhance policies and practices for the inevitable next time that successful physical distancing depends on digitally-enabled social connectedness. In so doing, we should also be able to develop more equitable ways to integrate virtual and physical presence in the pursuit of healthier, resilient societies.