Cases in An Equity Approach to Pandemic Preparedness and Response
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The 21st Century Pandemic: COVID-19 and Health Equity

On December 31, 2019, China first reported a cluster of cases of pneumonia of unknown cause in Wuhan City (WHO, 2020c). By January 12, it had identified a novel coronavirus as the cause, and shared its genetic sequence with the world. By January 23, 2020 the World Health Organization (WHO) had confirmed human-to-human transmission and China had shut down the city of Wuhan, population 11 million.

While the world has long feared the health and economic impact of a "pandemic flu" (Lau, Hauck, & Miraldo, 2019; Meltzer, Cox, & Fukuda, 1999), less attention has been paid to the massive inequities that will be worsened during such an event.

Even in China--a country with near universal health coverage--there were early warnings of these inequities (The Commonwealth Fund, 2020). It was immediately recognized that the elderly were far more likely to die due to COVID-19 and that those with so-called pre-existing conditions had higher fatality rates (Zhou et al., 2020). But what was less publicized was that people with COVID-19 coming from poorer and polluted districts in China and Italy had poorer outcomes (Davis, 2020).

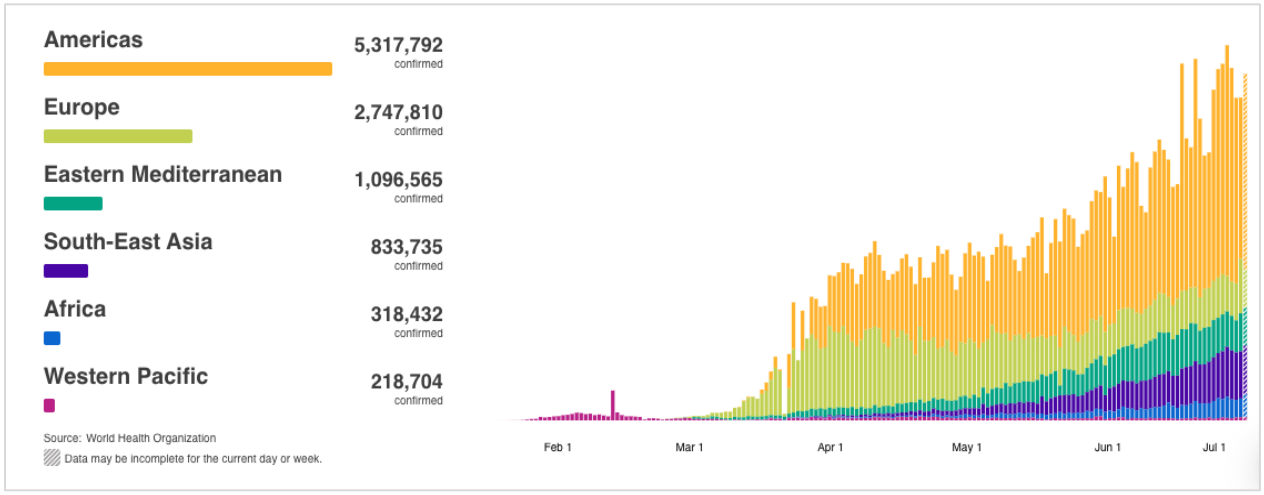
To those practicing social medicine, however, differences in risk, severity, and outcome of diseases are always linked to the social determinants of health, or realization of basic human rights (Farmer, 1996). Pandemic task forces, experts in epidemiology, and those studying the biology of disease will fail to control epidemic diseases if health equity is not at the root of the response. Particularly with infectious diseases, crowded living conditions, lack of water and sanitation, food insecurity and lack of access to timely health care are major drivers of epidemics. This case focuses on the preparation and response to the global COVID-19 pandemic and the dimensions that successfully address the mitigation of risk from an equity lens.

In the case of COVID-19, despite the speed of discovery and action, global travel and trade had already seeded the virus in countries around the world. Isolated cases, and then outbreaks, began popping up. On January 30, 2020, WHO designated the outbreak a Public Health Emergency of International Concern. When the organization designated COVID-19 as a pandemic on March 11, there were 118,000 known cases in 114 countries, and 4,291 deaths (WHO, 2020d). And by July 2, there were more than 10.5 million confirmed cases of COVID-19 disease and nearly 513,000 deaths globally. The numbers continue to climb, and the global economy has been brought to its knees.

For those who study and practice social medicine, it is not terribly surprising that the pandemic epicenter is in the United States where the factor most associated with a shortened life span is zip code. Zip code encodes centuries of slavery, stolen native lands, forcibly outlined reservations, decades of Jim Crow, red-lining, impoverished school systems, failed public housing projects, unsafe working conditions, and mass incarceration. Fig. 1 illustrates the number of confirmed COVID-19 cases by region.

The difference in life expectancy between the poorest communities in the U.S. and the richest ones is about 30 years (Mukherjee, 2017). This is similar to the differences in life expectancy between the U.S. overall and an impoverished country like Liberia (World Bank, 2018).

Figure 1. WHO Coronavirus Disease (COVID-19) by WHO region, July 2, 2020



Equity underpins the basic building blocks of pandemic preparedness, namely equitable and well-funded systems of prevention, care and treatment that are consistently and affordably available to all. In addition, leadership is a critical component of epidemic response. Particularly leadership that fosters equity and trust in science and the health care system. The U.S. can claim neither of these critical elements. Understanding what is needed from the health system and from leadership is crucial to stopping COVID-19, enabling safe re-openings, and avoiding future pandemics.

A Legacy of Past Pandemics

Pandemics have always disproportionately affected the poor and marginalized (Collazos, 2000). From the time of the Black Plague, the rich avoided the pestilence by "fleeing fast and far" (11) while the poor--materially trapped in confined quarters suffered and died. The father of modern medicine Rudolph Virchow studied this link in his famous 1848 report (Boydell & Brewer, 2004). Virchow saw physicians as the natural lawyers of the poor--needing to investigate the root of the medical problem, collect evidence and advocate for change. At the turn of the 21st century, the AIDS pandemic repeated this predilection that infectious diseases have for the poor. More than two-thirds of all people living with HIV today are in sub-Saharan Africa, a continent ravaged for centuries by the slave trade, colonialism and resource extraction. There is little reason to expect that COVID-19 would not adhere to these historical tenants.

The emergence of novel pathogens has been on the rise for several decades, and over 70 percent of emerging infectious diseases are zoonosis, passed from one species to another (Jones et al., 2008). This seats pandemics squarely with the threat of climate change--yet another geopolitical and biosocial phenomenon that disproportionately impacts the poor. This rise is the result of rapidly changing environments, with deforestation, land-use change and population growth increasing human exposure to diseases carried by animals and increasing food insecurity, migration and other factors that raise the vulnerability of the poor to these threats.

The Ebola epidemic in West Africa (2014-2016) and the Democratic Republic of Congo (2018-2020) also highlighted the social forces that underpinned the risk, transmission and outcomes of these diseases. The affected countries, impoverished by colonialism, resource extraction, and ongoing civil conflict had concomitantly weak health systems--with inadequate staff, medical supplies, infrastructure and systems of surveillance. Moreover, they are countries in which the lack of material means of daily survival complicates "care seeking" (Kleinman, 1977).

The responses to these and other threats demonstrated that a comprehensive response is needed that includes prevention and a public health approach, the provision of high-quality care, and the means to provide economic and social support to the vulnerable.

Preparedness today

While efforts have been made to develop pandemic preparedness guidelines and strengthen national influenza surveillance and response systems, as of early 2020, 99 out of 194 countries still lacked publicly available national plans for pandemic preparedness and risk management (WHO, 2020b). In Africa, only 6% of countries had such a plan (WHO, 2020b).

Even if plans are available, widespread impoverishment of people, governments and health systems inevitably limits preparedness. Without running water in a home or facility, the most basic education campaign--handwashing, cannot be followed. Health workers and home-based caregivers suffer high mortality without adequate personal protective gear (PPE). Adequately

funded, staffed, and equipped health systems are the cornerstone of building trust, treating the sick, and of pandemic preparedness. These are long term, not short term, investments. An assessment of global pandemic preparedness reported that 73% of the world's population lived in countries that scored below 50 in the health security index (LePan, 2020).

The United States, which initially invested heavily in establishing systems and tools to ensure an effective pandemic response, subsequently rolled back aspects of those preparations. Disbanding of the government unit responsible for pandemic planning, the Global Health Security and Biodefense Unit, in 2018, and a more general underfunding of public health contributed to pandemic vulnerability in the U.S., particularly in low-income and communities of color.

As the threat of a novel pandemic emerged in early 2020, WHO recommended that countries invest in a variety of efforts, from the engagement of affected and at-risk communities to the implementation of context-appropriate public health measures to slow transmission and control sporadic cases. WHO also called for the preparing of health systems to maintain essential health services and protect health workers (WHO, 2020a).

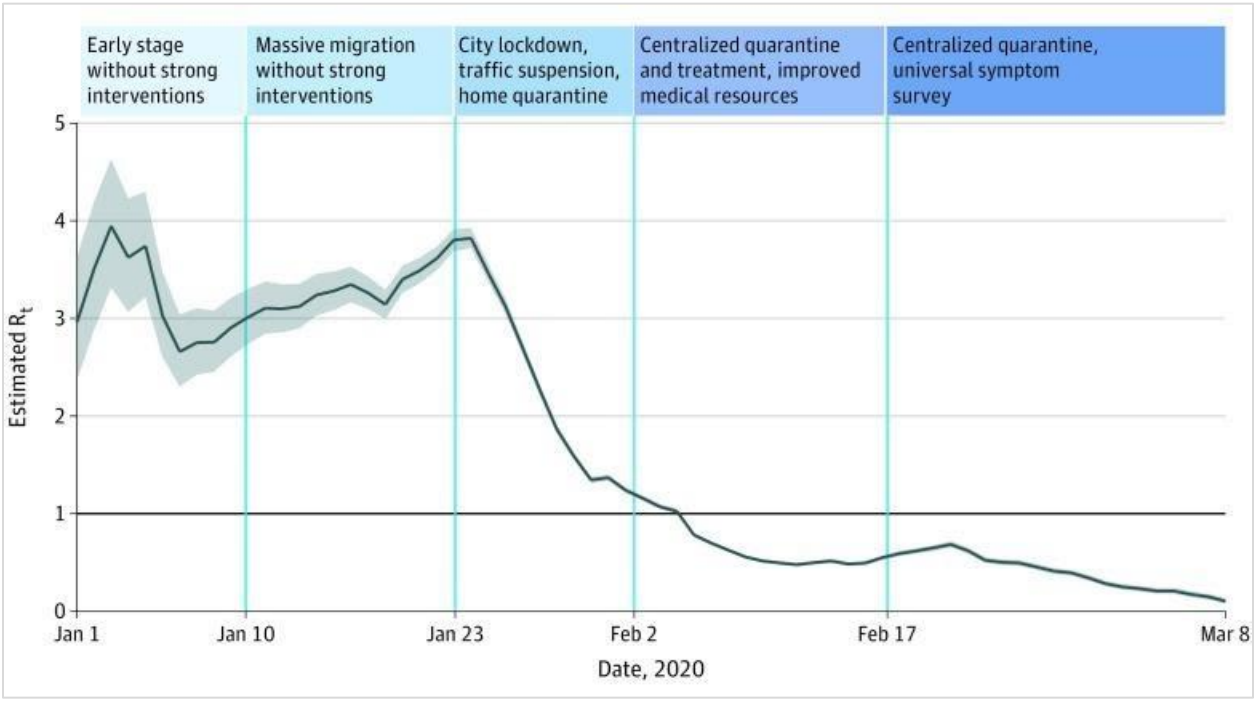
In the COVID-19 response, the elements of leadership, health systems equity and attention to the social determinants of health have differentiated countries with a successful response from those who suffer ongoing transmission, morbidity, and death.

Only a health equity response can contain the pandemic

Sadly, in many countries the major tools that have been deployed to address COVID-19 to date are economically regressive. Social distancing, lock-downs, quarantine, and travel bans require the economic means to separate yourself from others. It means still getting paid, still having food and having adequate space in your home. Although these blunt tools have slowed transmission in some places, they cannot end the pandemic.

In China, the average number of people infected by one person with COVID-19 dropped from more than three to as low as 0.1 after the implementation of a full scope of public health interventions fig.1 (Pan et al., 2020).

Figure 2: Mean number of secondary cases generated by a typical primary case in Wuhan, China.



Source: Pan A *et al.* 2020

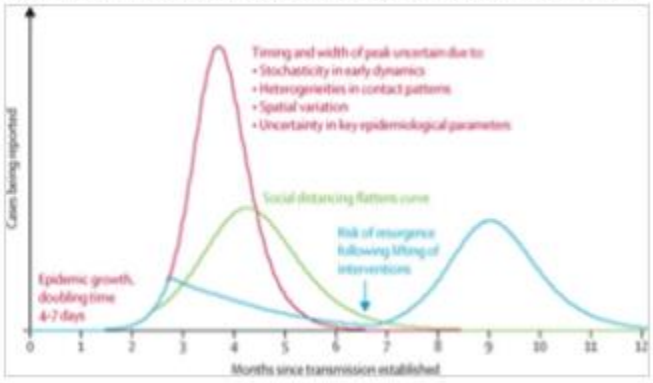
Poverty itself is shaping this pandemic. COVID-19 has exposed and heightened deep divides globally and within nations. For 1.3 billion people around the world who lack access to clean water or who work in the informal economy, hawking wares or firing bricks, and relying on daily wages to buy food, recommendations such as hand-washing and quarantine are difficult or impossible to implement.

Although Anderson et al. demonstrated the need for case isolation as a strategy to flatten the curve (fig. 2) (Anderson, Heesterbeek, Klinkenberg, & Hollingsworth, 2020), it is next to impossible in tight living quarters or densely packed communities. With over 40 percent of Africans still living on less than US$1.25 a day (World Bank, 2019), the implementation of such measures was improbable from the start. In many countries worldwide that have been unable to provide social support or ensure food security, lockdowns have been either ineffective or caused immense suffering.

Immigrant, refugee and migrant communities, and homeless populations in both rich and poor countries have been particularly vulnerable. In the U.S., the mortality rate for Black Americans is about 2.3 times as high as the rate for whites (APM Research Lab, 2020).

In low-income countries, the lack of resources translates into a lack of testing, contact tracing and critical care. Growing food and nutritional insecurity and neglect of other health issues is contributing to widespread societal crisis.

Figure II. Illustration of Covid-19 transmission model



Source: Anderson *et al.* 2020

In high-income countries, including the U.S., gaps in wealth and social and economic inequities are driving an explosion of death and disease in the most vulnerable communities. In Navajo nation, within the U.S., 30% of the population lives without running water and the health system for Native Americans receives 30% less funding per capita than that which is allocated in the federal Medicare program. Not surprisingly, in mid-May the per-capita infection rate of the Navajo Nation--which has suffered from genocide, forced displacement and ongoing racism--surpassed that of New York and New Jersey (Silverman H, Toropin K, Sidner S, Perrot L, 2020).

Toward a Comprehensive, Equity-Based Approach

Thankfully, there are lessons learned from epidemic responses that serve the vulnerable and mitigate the impact of epidemics. Partners In Health has fought epidemic diseases for 35 years from tuberculosis to HIV, Ebola to cholera and now COVID-19. From these experiences and our unique proximity both to governments and affected communities we have garnered key lessons that will be shared in this course.

1. Public Health messages and programs (lockdowns, social distancing) will fail when people do not have the agency to carry out these messages. If you have no food, money or housing, it is impossible to adhere to prevention.
2. A global health equity approach demands resources targeted to vulnerable communities. Assuring food security, addressing housing, providing transportation fees and cash are crucial principles to mitigate harm.
3. Community members who are most affected by adverse social forces and diseases have a central role to play in responding to crises. Their lived experience positions them well to find and attend to the vulnerable, trace contacts and inform communities of threats. When this work is adequately compensated, it fulfills a double purpose of reaching the most vulnerable and adding jobs in a difficult financial environment.
4. Support for the public provision of healthcare prior to, during and after the epidemic is the most durable form of pandemic preparedness. The provision of clinical care is a basic human right and instills long term trust between the community and health system. No

matter how much prevention is done, there will be sick people who need care. High quality care needs resources for oxygen, medicines, ventilators, and staff.

5. Contact investigation and tracing helps to stop the spread of epidemics; it is best done by community members and in the context of available, high quality care and social support.
6. Leadership in pandemic response should always be accountable for the outcomes of the most vulnerable.

Conclusion

Without addressing health equity, we cannot effectively respond to COVID-19 or prepare for other epidemics. Countries must invest in social protection, health care delivery, and public health systems to enable equitable, fast and effective outbreak responses.

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