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Comparing West Nile Virus and COVID-19

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In 2013, we wrote a *Sociology of Health & Illness* article as part of a special issue on 'Pandemics and Emerging Infectious Diseases.' We focused on the first U.S. occurrence of West Nile Virus (WNV) – the 1999 outbreak in New York City – and used the disease as a case study in the creation of Public Health Emergencies by governments, to understand both their immediate effects and long-term consequences.

At the time, West Nile Virus was the first infectious disease to be formally declared an emergency by the U.S. Federal government. This declaration had long-term consequences for State-level action on WNV and public health infrastructure in the long-term. On March 13th of this year, the President of the U.S. declared COVID-19 a nationwide emergency. Given the similarities – and differences – between these diseases and the U.S. government's response, this seems an important time to compare the two and reflect on what the novel coronavirus may mean for American citizens and populations worldwide now and in the future.

First, an important caveat: West Nile Virus and the novel coronavirus currently wreaking havoc across the globe are very different. The former is vector-borne (spread by mosquitoes), the latter is infectious. We've had much more time to understand the transmission, symptoms and treatments for West Nile, whereas understanding and treating COVID-19 remains a steep, and deadly, learning curve. And though the statistical understanding of the novel coronavirus remains in flux, the cases and fatality numbers for the two diseases just in the U.S. make the differing scale of the problem very clear: since the 1999 outbreak through 2018, there were 50,830 total reported cases of West Nile Virus, and 2330 deaths. As of this writing (on the 10 of August, 2020), the Johns Hopkins Coronavirus Resource Center puts the number of confirmed COVID cases at 5,044,864, with 162,938 deaths and a case-fatality rate of 3.2%.

That said, what we found with West Nile Virus may have important applications for COVID-19. In our original article, we argued that…'the construction of crisis as a state of emergency…allows those in power to assert social and technological control over populations by implementing practices that would, under normal circumstances, require public deliberation…[enabling] potentially marginalising crisis interventions. These interventions…outlast the initial moment of crisis to become the structurally favoured solution thereafter'. This argument is related to a number of similarities and differences between WNV and the coronavirus.

First is the initial confusion at the outset of these epidemics. In the case of WNV, the virus in question was initially misidentified by the U.S. Center for Disease Control (CDC) as most likely St. Louis Encephalitis, only to be correctly identified by the U.S. Army's Armed Forces Institute of Pathology *after* the peak in human cases. Analysts after the fact described this confusion as a result of the lack of communication between different public health agencies and, in this instance of a zoonotic disease, ineffectual communication between human and animal

Note: Additional COVID19-related content is available online at https://onlinelibrary.wiley.com/doi/toc/10.1111/(ISSN)1467-9566.covid-19-content.

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health agencies. And today, analysts like Princeton political scientist Tali Mendelberg describe the relatively slow and patchwork response to COVID-19 in the U.S. as a result of America's multiplicity of agencies related to health and disease, with no clear chain of command (exacerbated by a relatively weak response by the current Federal administration).

Also similar is the lack of preparedness for these two illnesses – indicating a public health infrastructure that is ill-suited to the nature of the disease or simply ineffectual. In the case of WNV, mosquito management was the structurally favoured solution, which resulted in pesticide spraying that may have created additional long-term health effects. And the many ways in which health systems in U.S. States and the Federal government were underfunded and not prepared for COVID has resulted in higher death rates in the short term, at least.

This lack of robust and appropriate public health infrastructure has had disproportionate effects on people of colour and marginalised communities. The City of New York used its emergency powers to enact a rapid regimen of possibly unnecessary and toxic pesticide applications, involving the ground and aerial spraying of malathion over the entire city multiple times. Marginalised communities spoke out against this action, feeling the City's response was *too* rapid – enforcing a dramatic control measure with little notification and no deliberation, possibly just trading one risk (infection) for another (malathion exposure). Although the communities involved are different, and the frequent critique of the U.S. government now is that it has been too *slow* to react, we again see marginalised communities bearing the brunt of the emergency and of the structurally favoured response (or lack thereof) – in the case of the coronavirus, vulnerable populations, communities of colour and those in institutions like prisons and nursing homes have been disproportionately affected by COVID-19.

Given the differences in scale, it is difficult to tease out the implications of these similarities and differences. But one paradoxical suggestion of the responses to disease outbreaks like WNV and COVID in the U.S. is that the decentralised nature of the public health system can be both a liability and an opportunity. As we pointed out in our 2013 article, there were other options for WNV response other than the blanket spraying of pesticides that New York City chose. In the state of Connecticut, adjacent to New York, a much more limited spraying regime was able to maintain a very low rate of human infection, and as WNV spread across the country, different states and regions were able to adopt and adapt different strategies for containment. Similarly, while the lack of a centralised, coordinated response to the coronavirus has been problematic in the U.S., it also provides the opportunity to learn from cities and regions that have done a better job of containing COVID-19 over the past months. New York, once the epicentre of the epidemic in America, can now serve as both a cautionary tale and a model for states like Texas and Florida seeing massive spikes of infections in the wake of 're-opening'.

Finally, the selective attention paid to experts and public health expertise (even including military science) plays a role in the response measures (again, or lack thereof) in both cases. If we had anticipated these emergent vector-borne diseases – as climate scientists had been projecting prior to WNV – or listened to the military scientists who, for example, warned of our unpreparedness for a coronavirus outbreak years ago, we may have saved many lives.

As we argued with regard to WNV, understanding public health emergencies in the past is an important part of learning and planning for emergent diseases in the future. And given the longevity of public health infrastructure, investing in expertise and protecting the marginalised now will help structurally favour the voices and lives of our most vulnerable citizens during this and future pandemics.

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