

PDA Covid-19 Series Vol.1 No.4

Pandemics and the Use  
of Non-Pharmaceutical  
Interventions:  
**Lessons from the 1918 Pandemic &**  
**COVID-19**

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# Pandemics and the Use of Non- Pharmaceutical Interventions: **Lessons from the 1918 Pandemic and Covid-19**

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***“History repeats itself, the first as tragedy, then as farce.”*** Karl Marx 1852

Late in August 1918, an American ship from Freetown, the SS Shonga, docked briefly in Cape Coast and proceeded to Accra by September 3rd. Onboard the vessel, the influenza virus made its way among the crewmen. Warnings from the Governor of Sierra Leone to the Governor of the Gold Coast, Hugh Clifford, about possible infections on the ship arrived late. By September 17, Cape Coast and Accra had recorded widespread infections triggering schools to be closed, public gatherings cancelled and market activities declined as a result. [The Gold Coast’s encounter with the virus was](#) short, but in just a few months, the epidemic will take thousands of lives and erode the fortunes of many.

A century after the arrival of the SS Shonga, we are faced with a similar situation. On March 12th, about three months after the novel coronavirus (Covid-19) began its accelerated march across the globe, Ghana recorded its first cases. The government quickly responded with travel restrictions, a ban on public gatherings, school closures and eventually a partial lockdown in parts of the country. [On April 20th, with a case count of 1,042, the government lifted the partial lockdown](#), citing enhanced testing capacity, opportunity to scale effective tracing and ‘severe impact on the poor and vulnerable’ among others. By [May 9th, the case count will surge to 4,263](#), raising doubts about lifting the lockdown and the entire efficacy of the government’s response to the epidemic.

In both epochs, the 1918 influenza and 2019 coronavirus, we observe the use of non-pharmaceutical interventions (NPIs) – restrictions on public gatherings and other social distancing measures – to help slow transmission and reduce mortality. In this essay, I assess the utility of NPIs in the Gold Coast during the 1918 influenza outbreak and in Ghana during the current Covid-19 pandemic. I present a twofold argument. First, I argue that though NPIs will see widespread adoption during pandemics, their efficacy in containing the situation will rest heavily on the speed of adoption and extent of enforcement. Secondly, though NPIs will reduce social interaction and economic activity in the short-term, they will ultimately mitigate possible economic fallouts resulting from the pandemic. I begin with a discussion on NPIs and their effects in containing pandemics.

## **Containing Pandemics - NPIs and their effects**

When there is an outbreak of an infectious disease, it takes a while, sometimes years, before an effective treatment or vaccine is developed. In such situations, alternative measures need to be put in place to help slow transmission and reduce mortality. Non-pharmaceutical interventions are community mitigation strategies used to contain pandemics/epidemics before medical treatments are developed. They range from social distancing measures such as restrictions on public gatherings and self-isolation to lockdowns, travel restrictions and quarantine. The effectiveness of individual measures on their own is limited and the combination of NPIs societies adopt will usually depend on the severity of the pandemic and nature of the society. As such, impacts of NPIs vary, partly as a result of the combination of measures adopted, and more importantly, the speed of adoption and extent of enforcement.

NPIs in theory can also have a positive or negative net effect on economic activity. The negative effect is a result of the natural design of NPIs in limiting social interaction which thereby impedes economic activity, whereas the positive effect occurs as a result of the direct effect of NPIs in mitigating the pandemic. This is because pandemics on their own exact an economic toll by constraining demand and supply forces. So, in essence, while a short-term economic decline is possible when NPIs are adopted, this will ultimately be offset in the long run due to the potency of NPIs in containing the pandemic. Thus, without NPIs, pandemics on their own can depress the economy in the short to long term. The 1918 pandemic, said to be the deadliest in history, witnessed the wide use of NPIs across the globe.

### **1918 Pandemic and the Gold Coast**

When the influenza virus was first noticed in 1918, [World War 1 was still underway](#). Spain, neutral in the war, was hard hit by the flu and the local media extensively covered the outbreak, leading many to believe it originated there. In fact, the flu was identified earlier among soldiers of the United States and other European countries, who, owing to their deep involvement in the war, suppressed any news of the outbreak to keep high wartime morale. In the months following the outbreak, [the war will inadvertently facilitate the rapid spread of the virus](#) through the movement of the soldiers. In the end, the flu will infect an estimated 500 million people worldwide, killing at least 40 million, more than the death toll of the war.

By the time the pandemic struck, the war had already resulted in gross economic devastation across the globe. Trade between countries had declined and inflation was soaring. With the exception of the US benefiting from [selling 'tools of war'](#) and lending money to the Allied nations, most other countries in Europe and elsewhere suffered a decline in production. The influenza pandemic will compound this by reducing the supply of labour. Distinct from other flu viruses, the influenza virus caused higher mortality among young adults between the ages of 20 to 40, a significant portion of the labour force. Additionally, some of the NPIs adopted to reduce physical contact further reduced economic activity.

Though there was widespread adoption of NPIs during the 1918 pandemic, their impact on the pandemic and economic activities were mix, within and across countries. In places where NPIs were adopted early with strict enforcement, not only was transmission significantly less, there were also relatively higher rates of economic recovery post-pandemic. For example, in the United States, the epidemiology literature suggests that even though all cities that adopted some combination of NPIs witnessed a net reduction in transmission, places like St. Louis that adopted early measures right after the arrival of the flu witnessed lower levels of mortality and experienced better post-pandemic economic recovery.<sup>1</sup> In contrast, cities like Philadelphia where interventions were adopted late with loose enforcement [experienced higher levels of peak mortality](#) and greater economic disruptions. This trend is evident for most places for which data is available.

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<sup>1</sup> Correia et al (2020). Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu.

The response to the 1918 influenza outbreak in the Gold Coast was similar to that in Philadelphia, albeit to different extents. Interventions began late, and in the absence of a coordinated response strategy from the colonial government, enforcement faltered. The earliest intervention was the attempted quarantine of the crewmen of the SS Shonga after their arrival in Accra. But this turned out to be an exercise in futility as ‘the stable was shut after the horse had bolted.’ The crewmen had already infected their contacts in Cape Coast and Accra, spreading the virus quickly to the remaining parts of the colony.

Limited accounts suggest that the influenza virus hit the Gold Coast at a time when the health system was ill equipped to handle such an outbreak. In his narration, Patterson notes that though inflows from cocoa exports had enabled modest improvements in the health service before the war, demands of war had significantly reduced the resources and personnel available. By 1918, there were less than fifty government physicians in the country, most of whom were concentrated in Accra and Kumasi.<sup>2</sup> Not all districts had physicians and at the peak of the outbreak, a lot of medical officers had to juggle more than one district. These challenges, compounded by the lack of a treatment or vaccine, presented clear limits to a medical response.

In the absence of a coordinated national strategy, the district commissioners and provincial medical officers took up initiatives to prevent the importation and spread of infections in their districts. The District Commissioner of Tumu for example tried to restrict travel to Tumu, but with only a few district officers, the enforcement was fraught. A similar attempt by the Chief Commissioner of Kumasi to stop passengers coming by rail was heavily resisted by the colonial authorities. NPIs that however saw widespread adoption by local officials were the school and market closures, and the restriction on public gatherings. No lockdowns or effective social distancing measures were implemented, allowing the virus spread quickly to the northern parts of the country.

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<sup>2</sup> K. D. Patterson. (1995) The Influenza Epidemic of 1918-1919 in The Gold Coast. *Historical Society of Ghana, No.1 (Vol. 16, no.2)*.

Though late to encounter the virus, the northern territories were the hardest hit in the Gold Coast. Public communication on the risk of infection and preventive measures was also extremely low. The only communication that went out in the newspapers grossly understated the risks of the influenza virus. In all, the colonial government's response was a colossal tragedy. In just a few months, [the country recorded over 50,000 deaths](#) related to the virus, though unofficial estimates show this to be higher.

The NPIs adopted had a marginal effect on transmission and mortality, precisely because they were adopted late and without strict enforcement. By the time the crewmen of the SS Shonga were quarantined, many of those they had been in contact with in Cape Coast and Accra were already infecting others. NPIs such as lockdowns and travel restrictions, which could have slowed transmissions were not adopted, allowing [the virus to spread to other parts of the country through main transport routes](#). Patterson notes that with regard to travel restrictions, the 'volume of trade and the probability that police barriers would be evaded, made such a policy impractical.'<sup>3</sup> As such, requests from officials in the Northern territories to close down roads and ward off the region from the influenza virus were flatly refused by the colonial government. In the end, though markets and schools were closed, and public gatherings restricted, the delayed adoption and weak enforcement of NPIs resulted in a health crisis with far reaching human and economic costs to the Gold Coast.

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<sup>3</sup> K. D. Patterson. (1995) The Influenza Epidemic of 1918-1919 in The Gold Coast. Historical Society of Ghana, No.1 (Vol. 16, no.2), P. 210

## **A Century After, Covid-19 in Ghana**

A century after the influenza, NPIs are again being widely adopted across the globe to stem the spread of the novel Covid-19. Beginning with a lockdown in Wuhan, China, travel restrictions and stay-at-home directives soon became widespread. By April, almost every affected country had adopted some combination of NPIs from basic sanitary measures like handwashing and the use of hand sanitizers to travel restrictions and draconian lockdowns and curfews. Similar to the 1918 pandemic, the impacts of NPIs in containing the spread, and on economic activities will differ, partly due to the speed and strictness of enforcement, and partly as a result of how measures are relaxed without an available medical remedy. [Countries like Italy](#) and the [UK that lagged](#) in the strict adoption and enforcement of NPIs have experienced severe outbreaks and high levels of mortality. While places such as South Korea, where NPIs were introduced early and tests ramped up from the beginning, have successfully flattened the curve in the first wave and are looking forward to a new normal that maintains the use of some NPIs.

Learning from the early experience of countries in Asia and Europe, the Ghana government was quick to act when the outbreak began locally. A day before the country recorded its first two cases, the [President instructed](#) the Finance Minister to make available the Ghana cedi equivalent of \$100 million to aid the country's response. To guide its response, the government quickly put together an [Emergency Preparedness and Response Plan \(EPRP\)](#), and an Inter-Ministerial Coordinating Committee (IMCC) as a steering committee. With the Ministry of Health as the implementing agency, the objective of the EPRP is to limit transmission, isolate and care for identified patients, facilitate countrywide communication on the virus, strengthen the national and subnational health systems, and minimize the socio-economic impact through multi-sectoral partnerships. The [World Bank will bankroll](#) this project through a \$100 million facility to the Ghana government.



Unlike the Gold Coast in 1918, the use of NPIs began early in Ghana. By March 15th, three days after the first cases were reported, the government had banned all public gatherings including religious gatherings, closed all schools, and on March 22nd, closed the country's borders. A three-week partial lockdown in Accra and Kumasi began on March 30th, and relief packages were rolled out for the poor and vulnerable in addition to cancelled water bills and [halved electricity prices](#) for three months. Travellers who entered the country right before the lockdown were either quarantined and tested or asked to self-isolate for 14 days. Public communication on the virus also began early and has been frequent. The president has delivered at least nine public addresses on Covid-19 at the time of writing and the Ministry of Information continues to provide regular updates on case counts, treatment and other response measures. The Ghana Health Service's website also hosts a regularly updated dashboard with visualized data and analytics on the case situation in Ghana.

The early adoption of these measures proved useful in preventing the importation of new cases into the country, containing in-country transmission and raising public awareness on preventive measures and the risk of infection. Yet, if experiences from the 1918 Pandemic and in other countries during this Covid-19 pandemic are anything to go by, the end of the partial lockdown and growing non-compliance with other NPIs can potentially reverse the current gains and push the country into a severe health crisis. This is for the simple reason that the lockdown is by design an extreme measure to restrict social interaction. Adopting it suggests that the situation is dire or the threat imminent, causing people to become more cautious. So as expected, even though Ghana's case count was less than 200 at the time the lockdown was imposed, compliance was widespread in lockdown areas save a few exceptions. With social contact effectively constrained, avenues through which the virus could spread were in effect foreclosed. Immediately the lockdown was lifted, social interaction and physical contact quickly increased.

Since the lockdown was lifted, the country's case count has grown by over 400% and early peak suggested by the Director of Public Health of the Ghana Health Service appears untenable. In an attempt to explain away the rising case count, the president indicated in one of his addresses to the nation that the new cases – which include 533 infections in one factory alone – are as a result of a backlog of cases dating back to before April 26th. Let's agree with the president for the sake of argument. Now consider this: if the backlog of cases dates back to before April 26th and the lockdown was lifted on April 20th, then that means many of the infections occurred during the lockdown when social activities were curtailed, and the brief period after. Which begs the question, if over 4000 infections can occur when physical contact and social activities are reduced, then how many will be recorded now that such social activities have increased post-lockdown.

In fact, some countries that have lifted their lockdowns or eased some NPIs are beginning to experience [a new wave of infections](#). In China, where strict lockdowns were enforced in places such as Wuhan, there has been an uptick in cases following the removal of the lockdown. Similarly, in South Korea there have been new cases recorded relating to nightclubs and bars following the easing of some NPIs. Even when we go back to the 1918 pandemic, despite initial success in containing the spread, [St Louis also experienced a brief uptick in cases](#) following the premature easing of some NPIs. These examples illustrate the point that the premature easing of NPIs, particularly lockdowns, may result in a new wave of infections, potentially reversing earlier gains in containment.

Admittedly, the NPIs do have an effect on economic activity by constraining social interaction. Such an impact is likely to be more severe in economies like Ghana where informal activities dominate. So understandably, the main reason for lifting the partial lockdown in parts of the country was economic, and [Ghana's Finance Minister has been candid](#), that given the salience of the informal sector, sustaining the lockdown for more than three weeks would have been impossible. Yet this removal of the lockdown has opened up potential avenues for widespread transmission by increasing social and physical contact. A point I have laboured to illustrate is that despite their short-term economic effects, NPIs,

by containing a health crisis will ultimately have a net positive effect on post-pandemic recovery. This will in turn offset any short-term losses resulting from the containment measures. The dilemma for policy makers is to assess the trade-offs between economic stability and containing a health crisis.

NPIs, in the absence of medical treatments, remain the next best option in addressing pandemics. As I have illustrated in this piece, their effectiveness will however vary depending on the time of adoption and extent of enforcement. Preceding analysis of the 1918 pandemic in the Gold Coast and in cities in the United States such as Philadelphia and St Louis buttress this point. Current evidence from countries like China and South Korea also reinforces this argument. Though economic concerns remain salient among the reasons why restrictions are eased early, premature easing of NPIs is likely to reverse containment gains.