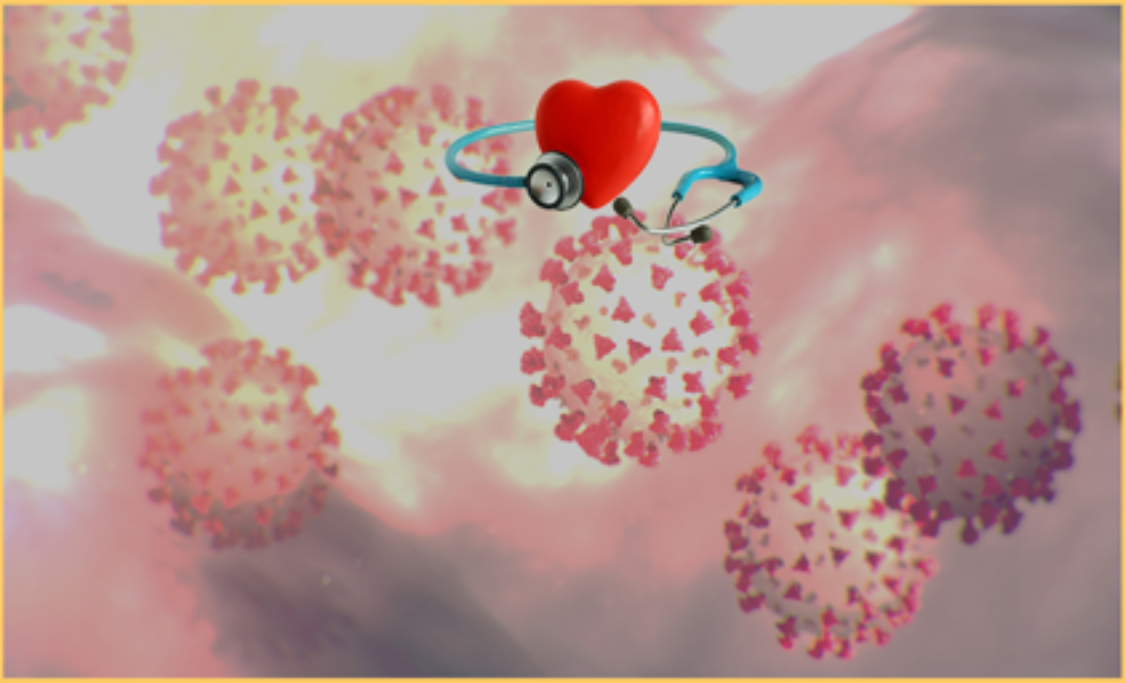
The Pandemic and Independent Countries

the failure of hegemonic neoliberalism, liberal denials
and lessons from socialist systems



by Tim Anderson
Centre for Counter Hegemonic Studies

Published by the Centre for Counter Hegemonic Studies, Sydney
http://counter-hegemonic-studies.site

The Pandemic and Independent Countries

The failure of hegemonic neoliberalism, liberal denials and lessons from socialist systems

CENTRE FOR COUNTER HEGEMONIC STUDIES

Table of Contents

PAGE

To the many selfless public health workers who helped protect literally billions of people during this difficult time, not least the many who laboured under economic siege and those who gave their lives in the course of this tremendous work.

1. Introduction: the pandemic and independent countries

Independent countries have used multilateralism for decades to escape the dictates of the former colonial powers.

THIS BOOK BRINGS TOGETHER a series of research essays prepared during the COVID19 pandemic of 2020. I am principally a political economist but also have a background in public health. My studies of Cuba impressed on me the importance of humanism, science and social solidarity, and of what could be achieved by an organised people. After some study, between 2006 and 2014, I published ten academic articles on health systems and infectious disease, the Cuban response to HIV/AIDS, human rights in public health, health training and international medical cooperation (see Appendix). I also acted as an advisor in Pacific Island-Cuba relations and made a dozen short documen-

taries on Cuban medical internationalism and doctor training in East Timor and the Pacific Islands.

This book has a unique political-economic perspective, addressing the 2020 crisis through its impact on health systems and their associated political economic contexts. Its themes reflect on methods used in understanding contemporary social controversies. In particular, it draws on values of humanism and social solidarity, and of shared science, while identifying interests in debate, using diverse and independent sources and looking for corroboration across competing perspectives.

In its first theme the book argues that the COVID-19 pandemic exposed as never before the failings of the hegemonic neoliberal approach to public health. This is most obviously seen in the sad fact that many of the countries which had been rated highly in 'preparedness' for health crises (IPT 2020), actually performed amongst the worst. Those nations which had heavily commercialised their health systems also undermined key social values and weakened their capacity to respond collectively to public health crises. That weakness is at the root of the high death toll in the neoliberal states, led by the USA and the UK.

The second theme explains the response of a number of independent countries, notably China, Cuba and Syria, responses which show the importance of well organised and resilient social systems, relatively independent of hegemonic neoliberalism. Why these three? First, all of them had health systems which were substantially independent of the western neoliberal model; second, China set the initial benchmark for responses to the virus; and third, I had some detailed knowledge of the both the political economy and the health systems of Syria and Cuba. Social organisation, political will and independence were clearly important, especially in allowing the broader ideas of social medicine to take root. The responses of Syria and Cuba were also instructive because these were small countries labouring under an economic siege (US 'sanctions') which aimed to subjugate them. The fact that both dealt quite effectively with their epidemics, under these circumstances, is testament to the potential of small, well organised states.

The third theme addresses myths put out by a significant minority of western libertarians and populist liberals, those who simply denied there was a serious health crisis and, in some cases, argued that the pandemic was worldwide conspiracy. Relying primarily on claims of individual liberties, this form

of western hyper-liberalism reacted against preventive health measures in an often arrogant and abusive manner. Their myth making tended to obscure the neoliberal failures and reinforce hostility to 'dictatorial' public health systems. The most obvious anti-scientific feature of pandemic denialism has been its disinterest in evolving knowledge about the disease or the growing death toll. 'No worse than a flu' was a common chant, whether the deaths were 8,000 or 800,000. Simplistic ideas, such as assuming that surviving a one-time contact with a new and unknown virus was enough to confer life-long immunity, were common. This failure to appreciate or respect scientific method and principles of public health deserves separate treatment.

There are a number of good books on the history of epidemics and pandemics, up to and including COVID-19. Richard Horton, Editor in Chief of the Lancet produced *The COVID-19 Catastrophe*, looking at what he calls the failures of 'science policy', or how so many western governments failed to heed the warnings, leading to "reckless acts of omission" which costs tens of thousands of avoidable deaths. There are many longer history tracts, such as Michael Oldstone's *Viruses, Plagues and History*, Mark Honigsbaum's *The Pandemic Century: One Hundred Years of Panic, Hysteria, and Hubris*, and more practically focussed works such as Jonathan Quick and Bronwyn Fryer's policy oriented *The End of Epidemics*. Amongst others we could mention Adam Kucharski's *The Rules of Contagion: why things spread and why they stop*, David Waltner-Toews' book *On Pandemics*, and earlier works such as Laurie Garrett's The *Coming Plague: Newly Emerging Diseases in a World Out of Balance*. Epidemics have been studied extensively.

Also relevant to any study of pandemic management is a full century of work on social medicine, including Howard Waitzkin's *The Second Sickness: Contradictions of Capitalist Health Care* (2000) and Salvador Allende's 1938 classic *Chile's Medical-Social Reality*. The late Chilean President, then a young Health Minister, famously set out his vision:

> "to reacquire the physiological capacity of a strong people, recover its immunity against epidemics; all of which will allow a better performance in national production while also providing a better disposition and spirit to live and appreciate life."

Allende's classic and related resources are available at the excellent online journal Social Medicine: https://www.socialmedicine.info/index.php/socialmedicine/index

Understanding the COVID-19 crisis requires an interdisciplinary approach, of medical science, public health principles, civil rights and political economic systems. Science is important because, as epidemiologists like to say, "if you've seen one pandemic, you've seen ... one pandemic" (Van Beusekom 2007; Osterholm 2012; Horton 2020: 9). That is to say, even when looking for common patterns of contagion, there are unique features of each virus and its epidemic. One reviewer said "COVID-19 doesn't behave like flu, which doesn't behave like Ebola" (Spinney 2020).

The distinct character of each virus and disease has implications for understanding both chronic illness and 'immunity'. In some cases, contact with a new virus might be widely overcome through natural immune processes. In other cases insufficient immunity is developed, without a vaccine, and that immunity is often not passed on to children, as with smallpox and measles. There may also be chronic-persistent infections, as with the retroviruses which cause HIV/AIDS (Oldstone 1998: 16-23). Further, those who dismissed COVID19 as just another flu did not seem to recall that some influenzas, like the 1918-19 'Spanish Flu', have been extremely deadly (see Chapter Three).

The concept of 'herd immunity', which had been popular in eugenic circles in the 1930s, re-emerged as a neoliberal rationale for doing little in public health terms, except to allow some type of natural selection to take its course. There are serious uncertainties that beset this idea. In particular, combinations of antibodies and T-cell immunity in areas heavily infected with COVID-19 have remained quite low (Jones and Helmreich 2020; Pitt 2020; Woodley 2020b). A number of studies have examined non-specific and pre-existing immunity through T-cell reactivity, alongside specific antibodies. Given the highly contagious nature of the new virus it has been assumed that any 'herd immunity' requires very high levels (perhaps 85%) of immunity, through vaccination. No observed natural levels of antibodies or T-cell reactivity come even close to this (Pitt 2020; Doshi 2020).

The deadly impact of a disease is normally expressed as an infection mortality rate (IFR), lower than the proportion of those who present with illness, which is known as a case fatality rate (CFR). Once the initial COVID-19

CFRs of 3% or more came down we saw epidemiologist calculations of IFRs mostly between 0.5% and 1% (Mallapaty 2020; Elaheh et al 2020; Verity et al 2020). There are some outliers, saying it could be as low as 0.2 or 0.3% (Bhattacharya 2020), or from 0.2% To 1% (CDC 2020); with others as high as 1.3% (Basu 2020: 5). While it is possible that IFR estimates may fall further, over time, no responsible health official could simply cherry pick the most optimistic estimates because, if the estimates relied on were wrong, the official could be responsible for many thousands of avoidable deaths. That is why an epidemiological consensus remains important.

At the same time, responsible preventive measures must have a plan with a clear aim and specific targets for restoration of a more normal regime. The neoliberal systems of the USA and the UK, which delayed and then imposed erratic preventive measures, face the double dilemma of soaring deaths rates combined with seemingly endless 'lockdowns'.

The IFR of the so called 'Spanish Flu' of a century ago, which killed tens of millions, has been estimated at between 1% and 3%; while the IFR of the 2009 'swine flu' pandemic was between 0.001% and 0.007%, with 200 or 300 thousand deaths worldwide. Both affected younger people (CDC 2019). Nevertheless, as each new disease carries unknown elements, preventive steps are taken. In the USA the swine flu led to high alerts and school closures. A vaccine was produced after five months, but by that time the second wave of infections had already peaked (CDC 2019).

Virologists and immunologists have told us that this new virus is more contagious than deadly, but still up to ten times more deadly than a seasonal flu. Current data tends to confirm that. By late September 2020, that is seven or eight months into the pandemic, more than a million people were recorded as having died from COVID19. That compares to an average of about 400,000 per year from seasonal influenza (Paget 2020).

Scientists say that, more than just a respiratory disease, it attacks vascular systems, creating inflammation (Raghab 2020) and vascular leakages (Teuwen, Geldhof, Pasut and Carmeliet 2020; Matacic 2020); and that while naturally developed specific immunities to COVID-19 have been recorded in Europe, they only reach about a 10% level (Habib 2020; Pitt 2020; Rolander 2020). There is also evidence of up to 30% with some sort of non-specific immunities (ECDC 2020). However the low levels of COVID-19 antibodies demonstrat-

ed so far, and uncertainties over how immunity works creates great doubt over the potential for any sort of natural 'herd immunity' (WHO 2020); nor is it known how long any such immunities might last (Woodley 2020b; Poltorak 2020).

As with any epidemic of severe illness, there is a sequel of many who survived but are left with chronic illness (Couzin-Frankel 2020). By late July there was only one peer reviewed study of long term illnesses from COVID-19, from Rome; but there are many reports of lung damage, heart damage, brain inflammation and neurological conditions amongst COVID19 survivors (Wark 2020; Marshall 2020). A number of these are amongst "young, healthy, active people" (Couzin-Frankel 2020). Some large studies have begun to follow the many thousands of survivors, over time.

Transmission is also still under study. While it is assumed that symptomatic persons are the main vector of contagion, and that there is both tactile and airborne contagion, debate persists about the extent of asymptomatic and pre-symptomatic contagion. In June the WHO recognised there was still uncertainty on this question, and that there had been some estimates of as much as 40% asymptomatic transmission. One Australian study suggested that "asymptomatic coronavirus cases account for around 15% of COVID-19 infection, but that these people spread the disease at a 'considerably lower rate" (Woodley 2020a).

Public health specialists and epidemiologists must combine these understandings with the best available evidence on contagion and population vulnerability, to develop preventive strategies. Amongst other things they look at particular reproduction rates (R) for diseases, in both contagion and control (Kucharski 2020: 54-59). Yet all their suggested strategies are mediated by political economic systems which often have quite pre-determined approaches. Social medicine approaches, like that of Allende, have their own, wider views of social solidarity. In contrast, we live in a world which, from the last quarter of the 20th century, had rapidly commodified and degraded public health services. This is part of a global neoliberal project which has created grave consequences for how societies address health crises, and for how we understand those crises.

For those reasons this book maintains focus on its three themes: the neoliberal failures, the importance of independent countries and the myths thrown up by western liberalism.

If we do not recognise the underlying ideologies that reshape political economic regimes, including health systems, we are at risk of mistaking symptoms of the crisis for causes. The best example of this in the COVID-19 crisis was the polemic set up between the 'lockdowns' of the USA and the UK and the relatively limited restrictions imposed in Sweden. This false dichotomy misses the common neoliberal features of all three: maximum individualism and commercialism in health services, privatised systems and neglect or abandonment of preventive health. It misses the fact that neoliberal leaders in the USA and UK also tried to avoid quarantine measures as long as possible, thereby delaying responses and aggravating their epidemics. The Anglo-Americans only imposed quarantine restrictions in a delayed and clumsy manner, when infections and death were alarming their health systems. The 'anti-lockdown' crowd missed important contradictions within those states, for example the serious tensions between the CDC and the Trump Administration. They also missed the contradictions between neoliberal states and the World Health Organization, not least the Trump Administration withdrawing US funds for the W.H.O..

After seven months, the worst COVID19 outcomes in terms of infections and deaths were in the highly privatised health systems of Europe, the USA and Latin America. Here 'privatisation' means a combination of private for profit health care, greater commodified treatment focus, less preventive care, lack of agency coordination and greater 'consumer choice' in insurance or service providers. Table 1 below shows the 'worst outcome' countries, those (at 9/9/20) with more than 500 deaths per million population, compared to the World average and the rates in China and Cuba. While this data (in fact any international data comparisons) has its problems, it is the best we have so far. We have to account for those uncertainties as best we can. High levels of testing in most listed countries make the infection data better than it was earlier in the year.

Table 1: COVID19 deaths, worst outcome countries

	Cases /m	Deaths / m
USA	19,656	585
Brazil	19,569	599
Peru	20,920	907
Mexico	4,935	525
Spain	11,431	633
Chile	22,225	610
UK	5,188	612
Italy	4,635	588
Belgium	7,653	854
Sweden	8,476	577
World average	3,556	115.6
China	59	3
Cuba	386	9

Source: Worldometers 2020; Note: 'worst outcomes' = those countries with more than 500 deaths per million population; at 9 Sept 2020

WHY WERE THE WEALTHY countries so poorly prepared? Health care in Europe steadily privatised during and after the 1980s, alongside a decline in the growth of public spending (Maarse 2006: 1008) and a neglect of principles associated with public and preventive health. Rachel Tansey (2017) has prepared a valuable article on the 'creeping privatisation' of health systems in Europe, during and after the 1980s, even in those countries where (unlike in the USA) there remained some sort of universal service guarantee. This "marketisation of healthcare" was aided by European Commission policies and accompanied by "trading health for profit", with the growth of public private partnerships alongside public spending cuts (Tansey 2017). Yet the prevention of contagious diseases was clearly one of the elements of public health which could not be properly regulated by commercial market principles (André and Hermann 2009: 129-130).

It is not just that many European countries (e.g. Britain, France, Belgium, Netherlands, Sweden) saw a steady contraction of public investment in health care throughout the 1980s and 1990s (Maarse 2006: 993). Principles of health care changed. Increased fee for service regimes were accompanied by the view of health as a commodity for the treatment of individuals, at the expense of preventive systems. In social medicine, by contrast, there is an emphasis on the efficiencies of prevention and promotion. The residual preventive capacities of the neoliberal countries (e.g. in salaried doctors, nurses, health educators and hospital beds) were rapidly threatened, if not overwhelmed, and this appeared to leave little option for those states but the use of police or even the military for social regulation. That in turn led to popular reactions against preventive health measures.

Brazil, Peru, Chile and Ecuador, the worst performing Latin American states, had also reverted to privatised health systems (Henderson 2020; Enriquez, Rojas Cabal and Centeno 2020), with weak preventive systems and limited public sector capacity. By contrast, the much maligned socialist systems of China, Cuba and Venezuela fared much better, with a fraction of the deaths. Such countries imposed quarantine restrictions early and their overall response was mostly led by health authorities.

To effectively confront this pandemic did not necessarily require a socialist system; but it did require an organised society with significant political will, independent of the relentless commercialising logic of large private corporations. After that, a more socialised system which shared the costs of the crisis could soften the blow. In East Asia we saw surprisingly low levels of infection and death (considering that the first recorded outbreak was in China) and high survival rates, for example in South Korea, Singapore and Vietnam. Similarly Cuba and Venezuela stood apart from the mass deaths in much of the rest of Latin America. We do not yet know all the reasons for these large differences and it is possible that new waves of infection will emerge. Nevertheless, after seven months and with almost one million COVID-19 deaths worldwide, it seems that the better performing states had averted many thousands of preventable deaths. An Oxford University epidemiologist said in March "even if there were 20 or 40 times more cases ... [China's] control measures worked" (Cyranoski 2020).

Not every independent state had superior outcomes. The Islamic Republic of Iran certainly qualifies as an independent country, so independent that it faces a harsh economic siege from Washington. Iran also has quite a good network of primary health services, with its challenges more in chronic than in infectious disease (Moghadam, Sadeghi and Parva 2011). Yet the country faced the worst epidemic in West Asia, and in particular a fierce second wave of infection and death (BBC 2020; Tasnim 2020). This seems due to a combination of factors. First, there was a premature (April-May) lifting of quarantine measures, under pressure of the US 'maximum pressure' campaign and influenced by the economic liberalism of Iran's current ruling party. A Brookings Institute report acknowledges that US coercive measures had an impact: "had sanctions eased when the pandemic hit Iran, thousands of Iranian lives could have been saved" (Salehi-Isfahani 2020). Second, many of the infections seem to have come from unsanitary practices around the country's many shrines, despite enhanced sanitary regulations (Al Monitor 2020). Iran's death rate is alarming (see Table 2), but still only half that of the worst ten (see Table 1).

Table 2: COVID19 deaths, better outcome countries

	Cases /m	Deaths / m
China	59	3
South Korea	435	7
Singapore	9,797	5
Vietnam	11	0.4
Thailand	50	0.8
Iran	4,774	275
Syria	201	9
Lebanon	3,565	35
World average	**3,744**	**119.1**
Venezuela	2,130	17
Cuba	414	10

Source: Worldometers 2020; at 14 Sept 2020

THE INDEPENDENT CASE studies of this book look at the experiences of China, Cuba and Syria. In each case we saw rapid preventive responses by health authorities, followed by (at least in China and Cuba) systematic testing and tracing. Western liberals might consider these independent experiences before spreading wild claims about globalist conspiracies. In any case, a proper response to the pandemic requires human values, regard for science and consideration of the impact on wider society, rather than a reaction of individuals confronting a monolithic state.

A humanist sense was often lacking in western responses, as Lebanese Resistance leader Hassan Nasrallah pointed out, on hearing many trivialise the threat, and saying that it mainly affected older people:

> "'let these old people die' [they say, but] ... this is a descent in humanity ... when humans get older, our human and ethical responsibility towards them becomes much bigger, even when it comes to your choice of words with them. So how could we abandon the elderly?" (Nasrallah 2020).

After this introduction the book chapters proceed as follows:

2. 'How the pandemic defrocked hegemonic neoliberalism' is the lead chapter, showing in some detail the 'denial, prevarication and avoidance' behaviour of the US and UK neoliberal leadership, including the wild swings in their responses from denial and inaction to ad hoc repressive action. It outlines misinformation from sceptics who, rather than examining the US-UK failures, launched a range of wild, anti-science theories. Finally the chapter argues the central importance of strong public health systems to pandemic responses.

3. 'COVID-19 and recovery: an early perspective' is an early (10 April 2020) comparative study of the COVID19 phenomenon, drawing on principles of public health and epidemic control, developed from historical experience. It articulates broader lessons about health systems, and draws some interim conclusions on the differing impact in various countries.

4. 'Wuhan and lessons from China' looks at the first recorded outbreak of the virus in China, at the controversy over sharing information and at lessons

from China's experience. Amongst its findings are that: (i) there were only small delays in China's reporting the new virus to the W.H.O., but what took some time was confirmation of human to human transmission; (ii) the subsequent long delays in the Trump administration enacting public health measures cancelled any possible disadvantage to the USA as a result of any Chinese delays; (iii) mounting evidence suggests that COVID-19 did not originate in China (Yu, Tang and Corlett 2020; Holland 2020; Forster, Forster, Renfrew and Forster 2020). It seems to have been active in several other countries – France (Chik 2020), Italy (AFP 2020) and the USA (Elmore et al 2020) – by late 2019; (iv) Chinese preventive health measures were quite effective in limiting the epidemic in China; (v) nevertheless, US-driven propaganda against China continues to distort information and undermine international cooperation.

5. 'Cuba faces the Pandemic' reviews the small but famous Cuban health system, mobilised at home and abroad. It examines Cuba's initial response to the epidemic at home and also the Cuban doctor missions sent to assist with epidemic control and treatment in a large number of other countries. Unlike the UK and USA, Cuba imposed preventive measures before any infections were registered in the country.

6. 'A tale of two cruise ships' compares the disembarkation of two infected cruise ships, on the same day, one in Havana, Cuba and the other in Sydney, Australia. The disembarkation of the British ship Braemar, was successful while that of the second, the Ruby Princess, resulted in at least 21 deaths, 700 infections and a criminal investigation. The chapter looks at the question: why was there such a big difference?

7. 'The Swedish model' during the pandemic was often said to be a distinct approach, but that confused symptoms with causes. Sweden's approach, I argue, is best seen as a variant of neoliberalism, far from the past reputation of Sweden as a social democracy. This was a privatised system which had channelled primary care into 'free choice models' with a treatment focus. Preventive care was largely abandoned and the government led a 'voluntarist' approach to conventional public health goals, relying on individual compliance and limited testing. Later, reactively, the state imposed some additional restrictions. By its own admissions the government failed in its aims of protecting the elderly and vulnerable and, following public disquiet and criticism, an official inquiry was es-

tablished. A key methodological error by the Swedish government was to claim that no public health measure could be imposed when knowledge of the virus was inadequate. That simply ignored principles of precautionary and preventive health.

8. 'War-torn Syria and the virus' explains how Syria, a small country targeted by war and economic siege, emerged mid-year with the lowest number of cases and deaths in the entire Middle East region. Like Cuba, Syria imposed preventive measures, including a curfew and school closures, before any infections were registered in the country. Health officials led and adapted the country's response.

9. 'Myths of the western pandemic deniers' is an extended chapter which analyses, with some detailed evidence, western liberal myths about the pandemic. These have been driven by neoliberal leaders, right libertarians and populist liberals. The main myths are that (1) systematic evidence can be ignored, as science is was seen as an individual choice, to be cherry picked; (2) COVID19 is 'no worse than a seasonal flu'; (3) the 'lockdown' causes more deaths than the virus; (4) the lockdown is a conspiracy to lock everyone up; and (5) vaccines are a toxic part of this lockdown conspiracy. I deal with each myth in turn, using the best available evidence.

10. 'Vaccines and the second wave' is a brief epilogue, reviewing the competition and cold war rivalry between more than 300 vaccine candidates. A great deal is at stake in the wider technological competition between the USA and China, due mostly to the ongoing US pretensions at global hegemony. Between October 2020 and March 2021 at least six vaccines will complete their third human trials and may be licensed for public use. International protocols from about August onwards typically require COVID-19 tests, temperature checks and quarantine periods for overseas travellers. Vaccine certification is likely to be added to this list, as it was back in the day when smallpox was active. Within countries we will see a greater variety of public health regimes. There is a brief update on the second wave and what it tells us about immune responses.

Finally, I should thank the many selfless public health workers who helped protect literally billions of people during this difficult time, not least the many who laboured under economic siege and those who gave their lives in the course of this tremendous work.

REFERENCES

AFP (2020) 'Virus already in Italy by December, sewers show', MedicalXpress, 19 June, online: https://medicalxpress.com/news/2020-06-virus-italy-december.html

Al Monitor (2020) 'Iran reopens holy shrines amid easing of coronavirus restrictions', 26 may, online: https://www.al-monitor.com/pulse/originals/2020/05/iran-shrines-reopen-coronavirus-rouhani-shia-mosques.html

Ali, Zulfiquar (2020) 'Coronavirus: How Iran is battling a surge in cases', BBC, 20 August, online: https://www.bbc.co.uk/news/52959756

Allende, Salvador (1938) Chile's Medical-Social Reality, online: https://www.socialmedicine.info/index.php/socialmedicine/article/view/4

André, Christine and Christoph Hermann (2009) 'Privatisation and Marketisation of Health Care Systems in Europe', pp.129-144, in Marica Frangakis, Christoph Hermann, Jörg Huffschmid, Károly Lóránt (2009) Privatisation against the European Social Model: A Critique of European Policies and Proposals for Alternatives, Palgrave Macmillan, London

Basu, Anirban (2020) 'Estimating The Infection Fatality Rate Among Symptomatic COVID19 Cases In The United States', Health Affairs, 7 May, online: https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.00455

Bhattacharya, Jay (2020) 'We Must Question The COVID-19 Status Quo (w/ Dr. Jay Bhattacharya)', ZDoggMD, YouTube, 14 September, online: https://www.youtube.com/watch?v=T_COvdCujaA&feature=emb_title

CDC (2019) '2009 H1N1 Pandemic (H1N1pdm09 virus)', Center for Disease Control and Prevention, Washington, 11 June, online: https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html

CDC (2020) 'COVID-19 Pandemic Planning Scenarios', US Centre for Disease Control and Prevention, 20 May, online: https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html

Chik, Holly (2020) 'France had Covid-19 in November, hospital says after analysis of chest scans', SCMP, 8 May, online: https://www.scmp.com/news/china/society/article/3083599/france-had-covid-19-november-hospital-says-after-analysis-chest

Couzin-Frankel, Jennifer (2020) 'From 'brain fog' to heart damage, COVID-19's lingering problems alarm scientists', Science, 31 July, online: https://www.sciencemag.org/news/2020/07/brain-fog-heart-damage-covid-19-s-lingering-problems-alarm-scientists

Cyranoski, David (2020) 'What China's coronavirus response can teach the rest of the world', Nature, 17 March, online: https://www.nature.com/articles/d41586-020-00741-x

Doshi, Peter (2020) 'Covid-19: Do many people have pre-existing immunity?', BMJ, 17 September, online: https://www.bmj.com/content/370/bmj.m3563

ECDC (2020) 'Immune responses and immunity to SARS-CoV-2', European Centre for Disease Prevention and Control, 30 June, online: https://www.ecdc.europa.eu/en/covid-19/latest-evidence/immune-responses

Elaheh, Abdollah; David Champredon, Joanne M. Langley, Alison P. Galvani and Seyed M. Moghadas (2020) 'Temporal estimates of case-fatality rate for COVID-19 outbreaks in Canada and the United States', CMAJ Canada, 22 June, online: https://www.cmaj.ca/content/192/25/E666

Elmore, Joann G. et al (2020) 'Excess Patient Visits for Cough and Pulmonary Disease at a Large US Health System in the Months Prior to the COVID-19 Pandemic: Time-Series Analysis', JMIR, Vol 22 No 9, September, online: https://www.jmir.org/2020/9/e21562/?fbclid=IwAR2fwDOYrlpb-dLLg4uzb2iaen2QJZGJsalE9ABRoRotrFNxRE3YneetNcRw

Enriquez, Diana; Sebastián Rojas Cabal, and Miguel A. Centeno (2020) 'Latin America's COVID-19 Nightmare: Lessons From the World's Hardest-Hit Region', 1 September, online: https://www.foreignaffairs.com/articles/americas/2020-09-01/latin-americas-covid-19-nightmare

Forster, Peter; Lucy Forster, Colin Renfrew, and Michael Forster (2020) 'Phylogenetic network analysis of SARS-CoV-2 genomes', PNAS, 8 April, online: https://www.pnas.org/content/early/2020/04/07/2004999117

Garrett, Laurie (1995) The Coming Plague: Newly Emerging Diseases in a World Out of Balance, Penguin, London

Goudriaan, Jan Willem (2016) 'The rising wave of privatisation damages healthcare in Europe', 7 April, online: https://www.euractiv.com/section/health-consumers/opinion/the-rising-wave-of-privatisation-damages-healthcare-in-europe/

Habib, Heba (2020) 'Has Sweden's controversial covid-19 strategy been successful?', BMJ, 12 June, doi: https://doi.org/10.1136/bmj.m2376

Henderson, Hayley (2020) 'From the COVID-19 epicentre: lessons from Latin American cities' successes and failures', The Conversation, 16 August, online: https://theconversation.com/from-the-covid-19-epicentre-lessons-from-latin-american-cities-successes-and-failures-144000

Holland, Kate (2020) 'Sorry, conspiracy theorists. Study concludes COVID-19 'is not a laboratory construct', ABC News, 27 March, online: https://abcnews.go.com/US/conspiracy-theorists-study-concludes-covid-19-laboratory-construct/story

Horton, Richard (2020) The COVID-19 Catastrophe, Polity, Cambridge MA

Honigsbaum, Mark (2020) The Pandemic Century, Penguin, London

IPT (2020) 'Global Health Security Index', Index Project Team (IPT) [comprising the Nuclear Threat Initiative (NTI), the Johns Hopkins Center for Health Security (JHU) and The Economist Intelligence Unit (EIU)], online: https://www.ghsindex.org/wp-content/uploads/2020/04/2019-Global-Health-Security-Index.pdf

Jones, David and Stefan Helmreich (2020) 'A history of herd immunity', The Lancet, 19 September, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31924-3/fulltext

Kucharski, Adam (2020) The Rules of Contagion: why things spread and why they stop, Profile Books, London

Maarse, Hans (2006) 'The Privatization of Health Care in Europe: An Eight-Country Analysis', Journal of Health Politics, Policy and Law, Vol. 31, No. 5, October 2, online: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.865.1942&rep=rep1&type=pdf

Mallapaty, Smriti (2020) 'How deadly is the coronavirus? Scientists are close to an answer, Nature, 16 June, online: https://www.nature.com/articles/d41586-020-01738-2

Marshall, Michael (2020) 'The lasting misery of coronavirus long-haulers', Nature, 14 September, online: https://www.nature.com/articles/d41586-020-02598-6

Matacic, Catherine (2020) 'Blood vessel attack could trigger coronavirus' fatal 'second phase'', Science, 2 June, online: https://www.sciencemag.org/news/2020/06/blood-vessel-attack-could-trigger-coronavirus-fatal-second-phase

Moghadam, Mahmoud Nekoei; Vahideh Sadeghi and Sahar Parva (2011) 'Weaknesses and Challenges of Primary Healthcare System in Iran: A Review', 18 October, online: https://onlinelibrary.wiley.com/doi/abs/10.1002/hpm.1105

Nasrallah, Hassan (2020) 'Hezbollah chief Hassan Nasrallah damns Western countries COVID?19 response', VK, online: https://vk.com/video404210594_456239520 - also at: https://twitter.com/Leila_MA/status/1247880659579756544

Oldstone, Michael (1998) Viruses, Plagues and History, Oxford University Press, New York

Osterholm, MT (2012) 'Final column: pandemic preparedness after H1N1: remember if you've seen one pandemic, you've seen one pandemic', CIDRAP Business Source. June 2, 2011. In Gigi Kwik Gronvall (2012) Preparing for Bioterrorism, Center for Biosecurity of UPMC, Maryland, online: https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2012/sloan_book/Preparing%20for%20Bioterrorism_Gigi%20Kwik%20Gronvall_December%202012.pdf

Paget, James et al (2019) 'Global mortality associated with seasonal influenza epidemics: New burden estimates and predictors from the GLaMOR Project', J Glob Health. 2019 Dec; 9(2): 020421., online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6815659/

Pitt, Sarah (2020) 'What will happen if we can't produce a coronavirus vaccine? And is herd immunity the answer?', The Conversation, 15 August, online: https://www.abc.net.au/news/2020-08-15/coronavirus-herd-immunity-unlikely-without-vaccine/12559298

Poltorak, Alexander (2020) 'Declining antibodies and immunity to COVID-19 – why the worry?', The Conversation, 26 August, online: https://theconversation.com/declining-antibodies-and-immunity-to-covid-19-why-the-worry-143323[1]

1. https://theconversation.com/declining-antibodies-and-immunity-to-covid-19-why-the-worry-143323#_853ae90f0351324bd73ea615e6487517__4c761f170e016836ff84498202b99827__853ae90f0351324bd73ea615e6487517_text_43ec3e5dee6e706af7766fffea512721_If_0bcef9c45bd8a48eda1b26eb0c61c869_20antibodies_0bcef9c45bd8a48eda1b26eb0c61c869_20decline_0bcef9c45bd8a48eda1b26eb0c61c869_2C_0bcef9c45bd8a48eda1b26eb0c61c869_20what_0bcef9c45bd8a48eda1b26eb0c61c869_20does_c0cb5f0fcf239ab3d9c1fcd31fff1efc_will_0bcef9c45bd8a48eda1b26eb0c61c869_20survive_0bcef9c45bd8a48eda1b26eb0c61c869_20and_0bcef9c45bd8a48eda1b26eb0c61c869_20escape_0bcef9c45bd8a48eda1b26eb0c61c869_20destruction

Quick, Jonathan and Bronwyn Fryer (2018) The End of Epidemics, St Martin's Press, London

Ragab, Dina; Haitham Salah Eldin, Mohamed Taeimah, Rasha Khattab and Ramy Salem (2020) 'The COVID-19 Cytokine Storm; What We Know So Far', Frontiers in Immunology, 16 June, online: https://www.frontiersin.org/articles/10.3389/fimmu.2020.01446/full

Rolander, Niclas (2020) 'Swedish PM Defends Covid Plan as Immunity Fails to Catch On', Bloomberg, 15 July, online: https://www.bloomberg.com/news/articles/2020-07-15/sweden-says-latest-covid-immunity-not-enough-to-protect-citizens

Salehi-Isfahani, Djavad (2020) 'Iran: The double jeopardy of sanctions and COVID-19', Brookings, 23 September, online: https://www.brookings.edu/opinions/iran-the-double-jeopardy-of-sanctions-and-covid-19/

Spinney, Laura (2020) 'The Rules of Contagion by Adam Kucharski review – outbreaks of all kinds', The Guardian, 25 March, online: https://www.theguardian.com/books/2020/mar/25/the-rules-of-contagion-by-adam-kucharski-review-outbreaks-of-all-kinds

Tansey, Rachel (2017) 'The creeping privatisation of healthcare: problematic EU policies and the corporate lobby push', Corporate Europe Observatory, 2 June, online: https://corporateeurope.org/en/power-lobbies/2017/06/creeping-privatisation-healthcare

Tasnim (2020) 'Coronavirus Cases in Iran Surpass 400,000', 13 September, online: https://www.tasnimnews.com/en/news/2020/09/13/2347993/coronavirus-cases-in-iran-surpass-400-000

Teuwen, Laure-Anne ; Vincent Geldhof, Alessandra Pasut & Peter Carmeliet (2020) 'COVID-19: the vasculature unleashed', Nature, 21 May, online: https://www.nature.com/articles/s41577-020-0343-0

Van Beusekom, Mary (2007) 'Is the pandemic threat receding, or does it just look that way?', CIDRAP, 10 May, online: https://www.cidrap.umn.edu/news-perspective/2007/05/pandemic-threat-receding-or-does-it-just-look-way

Verity, Robert et al (2020) 'Estimates of the severity of coronavirus disease 2019: a model-based analysis', Lancet, 30 March, online: https://www.thelancet.com/action/showPdf?pii=S1473-3099(20)30243-7&fbclid=IwAR3Ly0mFOWWh3E74id0uHphEcKK0R0gp0-uXOP-D5Euj0jvKzqbdGIeKCF0

Waitzkin, Howard (2000) The Second Sickness: Contradictions of Capitalist Health Care, Rowman & Littlefield Publishers, Lanham, Maryland

Waltner-Toews, David (2020) On Pandemics: Deadly Diseases from Bubonic Plague to Coronavirus, Greystone Books, Vancouver

Wark, Peter (2020) 'Here's what we know so far about the long-term symptoms of COVID-19', The Conversation, 27 July, online: https://theconversation.com/heres-what-we-know-so-far-about-the-long-term-symptoms-of-covid-19-142722

WHO (2020) '"Immunity passports" in the context of COVID-19', World Health Organization, 24 April, online: https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19[2]

Woodley, Matt (2020a) 'WHO official clarifies position on asymptomatic COVID-19 spread', RACGP, 10 June, online: https://www1.racgp.org.au/newsgp/clinical/who-official-clarifies-misleading-position-on-asym

Woodley, Matt (2020b) 'More evidence suggests no long-term COVID-19 immunity', News GP, 13 July, online: https://www1.racgp.org.au/newsgp/clinical/more-evidence-suggests-no-long-term-covid-19-immun

Yu, Wen Bin; Guang da Tang and R.T. Corlett (2020) 'Decoding the evolution and transmissions of the novel pneumonia coronavirus (SARS-CoV-2) using whole genomic data', Research Gate, pre-print, February, online: DOI: 10.12074/202002.00033

==========

Appendix: the author's academic public health publications

(2014) 'Unlikely partners: challenges for an Australia - Cuba collaboration in Pacific Health', Journal of Australian Political Economy, Issue 73, Winter, online: http://australianpe.wix.com/japehome

(2012) 'Medisina Sosial iha Timor-Leste', in Michael Leach, Nuno Canas Mendes, Antero B. da Silva, Bob Boughton and Alarico da Costa Ximenes (Eds) Peskiza foun kona ba/ Novas investigações sobre / New research on/ Penelitian baru mengenai Timor-Leste, Hawthorn: Swinburne Press, pp.42-52

(2010) 'Cuban Health Cooperation in Timor Leste and the South West Pacific', in The Reality of Aid (2010) South-South Development Cooperation: A challenge

2. https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19?gclid=EAIaIQobChMItq74jPrq6wIVVyUrCh3i3AkWEAAYASAAEgKNivD_BwE

to the aid system?, online at: http://www.realityofaid.org/roareports/index/secid/373/part/3

(2010) 'Social medicine in Timor Leste', Social Medicine, Vol 5 No 4, 182-191, online at: http://www.socialmedicine.info/index.php/socialmedicine/article/view/480/1028; Spanish version: http://www.medicinasocial.info/index.php/medicinasocial/article/view/511/1026

(2009) 'HIV/AIDS in Cuba: a rights-based analysis', Health and Human Rights: an international journal, Vol 11 No 1, pp.93-104, online at: http://www.hhrjournal.org/index.php/hhr/article/viewArticle/138

(2009) 'HIV/AIDS in Cuba: lessons and challenges', Revista Panamericana de Salud Publica / Pan American Journal of Public Health, Rev Panam Salud Publica. 2009;26(1):78–86, online at: http://www.scielosp.org/pdf/rpsp/v26n1/12.pdf

(2008) 'Solidarity aid: the Cuba - Timor Leste health program', The International Journal of Cuban Studies, Issue 2, December, http://www.cubastudiesjournal.org/issue-2/international-relations/solidarity-aid-the-cuba-timor-leste-health-programme.cfm

(2007) 'Health, income and public institutions: explaining Cuba and Costa Rica', New School Economic Review, Volume 2 (1), 2007, 22-37, online at: http://www.newschooljournal.com/files/22-37%20NSER2-1%20Anderson.pdf

(2006) 'The structuring of health systems and the control of infectious disease: looking at Mexico and Cuba', Pan American Journal of Public Health, Vol 19(6), June 2006, pp.423-431, online at: http://journal.paho.org/index.php?a_ID=524

(2006) 'Policy Coherence and Conflict of Interest: the OECD guidelines on health and poverty', Critical Public Health, Vol 16 No 3, September, pp.245-257

(2006) ' Social values embedded in health systems: infectious disease in Mexico and Cuba', in Michael J. Selgelid, Margaret P. Battin and Charles B. Smith (Editors) (2006) Ethics and Infectious Disease, Blackwell, Oxford

2. How the Pandemic defrocked Hegemonic Neoliberalism

THE GLOBAL PRETENSIONS of the USA and the UK have been stripped naked by the virus and responses to it. These profit-driven systems failed to protect lives. Only the fabricated anti-China hysteria and the pseudo-science of the pandemic sceptics hides this. In a diverse post neoliberal world, strong public health systems will be crucial.

THE COVID19 PANDEMIC has laid bare the human disaster that is hegemonic liberalism, a project of the Anglo-American powers. In terms of the basic protection of human life the virus has made it plain that there are few countries whose performance is as bad as that of the USA and the UK.

Quite recently those two presented themselves as number one and number two in the 'Global Health Security' rankings of those most prepared for an epidemic (IPT 2020). In fact, during the first wave of the pandemic over March-May 2020, the USA and the UK showed the largest absolute numbers of deaths and amongst the highest death rates on earth (Worldometer 2020). In future, few serious analysts will take seriously the 'most prepared' status, the slogans and 'model' of the Anglo-American duo.

What was Anglo-American hegemonic liberalism? It was a political project for propertied and imperial elites, later corporate privilege, which made selective use of nice sounding liberal or 'open market' ideas. Historically those ideas helped a massive expansion of private slavery, entrenched colonialism, privileged the US dollar and made use of financial leverage for global domination.

In recent times that model preached small and weak states (except for the 'necessary hegemon'), destruction of social controls on global capital and the erosion of public services and social guarantees in favour of privatisation and private 'partnerships'.

In practice this meant that public health guarantees were blocked in the USA while a once decent National Health Service (NHS) in the UK was run down and its public subsidies diverted to private health companies.

The consequences of hegemonic liberalism were dire, both for the populations of 'peripheral' states and for the mass 'metropolitan' populations of Britain and North America. Weak to non-existent health guarantees led to catastrophic epidemic death rates amongst disadvantaged classes (Schifferes 2020), much higher than the high national averages. Poor preventive health preparation (inherent to heavily privatised systems) caught these wealthy countries off guard. The inconsistent and often incoherent responses of leaders Donald Trump and Boris Johnson were not simply idiosyncratic but reflected a long term commitment to corporate profiteering before human life. The primacy of corporate privilege blinded these states to well established principles of public health. And when the seriousness of the pandemic imposed itself, the Anglo-America duo swung from one extreme to the other – from libertarian slogans to repressive measures.

In countries where there was some culture of public health, relative trust in health authorities allowed a fairly rapid collective response. Yet where corporate privilege had become central to the system, populations reacted with fear, anger and cynicism. Accusations of a 'planned' epidemic or a plan for forcible mass vaccinations, covered up the real crime, that these neoliberal systems were designed to abandon human life in favour of corporate profit.

The first section of this chapter sets out in some detail the behaviour of the US and UK leadership, to show their essential consistency with the neoliberal project. There was denial, prevarication and avoidance of the serious public health threat. When the level of illness and death imposed itself on those regimes, there were wild swings in their responses from inaction to repressive action. The public health outcomes were very poor and should spark serious debate about those systems. Yet Washington's anti-China campaign and an anti-science brigade of Pandemic Sceptics tend to obscure this failure.

In the second section I outline some of the misinformation from these sceptics who, rather than critically examining the US-UK failures, have launched a range of wild and basically anti-science theories. In the name of opposing greedy corporations they lash out at all medical science and at a 'lockdown' they wrongly imagine was planned by the big powers. The libertarian critiques mostly echo the approach of right wing populists like Trump and Johnson; while the left populist sceptics (which rightly expose greedy private health corporations) are mostly shallow, attacking symptoms rather than causes.

The third section argues the central importance of public health systems to pandemic responses, showing how proper understandings can inform practical politics, to help mitigate the present and contain future crises. This logic bypasses the overly general and clichéd arguments about capitalism versus socialism. Decent preventive and public health systems can and should be demanded in every society.

1. RESPONSES OF THE USA and UK

Both Donald Trump and Boris Johnson showed, in their reactions to the pandemic and their focus on economic 'normalisation', that public health was no natural priority. The particular idiosyncrasies of these men should not prevent us from recognising that they faithfully represented a long standing system of corporate privilege through 'open economy' ideology.

Washington moved indecisively, with a series of complacent and repeated assurances throughout February from President Trump, that "we have it very well under control" (Brewster 2020; Guerra 2020). Over an extended period of time, when there were many warnings, Trump tried to play down the virus and play up the economy. On 24 February he said the virus "is very much under control" and the stock market was "starting to look very good to me". On the 26th of February Trump claimed the US was "really prepared" and on the 29th of February claimed that the US was "leading in testing" for the virus (AJ 2020).

In fact, while most countries had not yet published data on testing, at that time, of those which had the USA showed the third lowest testing rate (above that of Nepal and Serbia). Table 1 shows that there were higher testing rates in

at least 15 countries (Ourworldindata 2020). The point here is not that President Trump was an unreliable source of information, though that is obvious; it is that he was consistently downplaying the severity of the epidemic and exaggerating the preparedness and capacity of Washington.

Table 1: COVID19 testing rates in 18 countries, 29 Feb 2020

Country	*Testing /1,000*
Austria	0.183
Czech Republic	0.019
Estonia	0.033
Finland	0.069
France	0.029
Hong Kong	4.081
Iceland	0.199
Israel	0.145
Italy	0.309
Japan	0.018
Latvia	0.061
Mexico	0.015
Nepal	0.008
Serbia	0.005
South Korea	1.671
Switzerland	0.209
United Kingdom	0.154
USA	0.013

Source: Ourworldindata 2020

TRUMP ANNOUNCED TRAVEL bans on those coming from China, on 31 January, and from Europe on 11 March, the day the W.H.O. declared a global pandemic. On that same day Trump persisted with this complacency, telling

his supporters at a rally in New Hampshire he believed the virus would go away with the warm weather in April: "a lot of people think that goes away in April, with the heat, as the heat comes in, typically that will go away in April ... We're in great shape, though. We have 12 cases, 11 cases, and many of them are in good shape now" (Levin 2020). In fact on 11 March the USA recorded 1,301 cases of COVID19 infections and 38 deaths (Worldometer 2020). On 13 March the President declared a 'national emergency', but that was to provide the legislative trigger for a $50 billion package of subsidies to be passed to the states and territories. At the same time he warned against testing those without symptoms. This was "totally unnecessary" he said, as "this [virus] will pass" (AJ 2020).

It was not until 17 March that Trump asked all workers to 'stay at home', claiming he had "always known this is real, this is a pandemic. I've felt it was a pandemic long before it was called a pandemic" (Koning Beals 2020). A week later, on 24 March, Trump went back to his theme of re-opening the economy by April. On Twitter he argued that "we cannot let the cure be worse than the problem itself", as US economic output was crashing. He said he would make a decision within 15 days (Trump 2020b; Haberman and Sanger 2020). After that period, on 3 April, the USA recorded 283,477 cases and 8,839 deaths, and the death count was rising. There were 1,263 US COVID19 deaths that day. Those deaths would surpass 2,000 every day for most of the period between 7 April and 7 May, after which numbers began to subside (Worldometer 2020).

Trump signed a $2.2 trillion emergency spending bill on 27 March, which included both corporate and social welfare, including a huge $180 billion allocation to private health corporations. The President blamed China and the previous Obama administration, then began to advocate dubious and unproven 'cures' such as use of the malaria drug hydroxychloroquine (see Wong 2020), and the use of bleach (AJ 2020). Much of this should be seen as bluster, simply designed to hide his inconsistent and incompetent reactions.

Similarly, British leader Boris Johnson was accused of complacency, being "slow to act" and even – on 12 March, the day after the W.H.O. announced a global pandemic – suggesting that some natural "herd immunity" might be necessary. This was reported as sounding like the UK government "was deliberately aiming for 60 percent of the populace to fall ill" (Stewart, Weaver and Proctor 2020; Yong 2020). Without proper treatment or vaccines such 'herd

immunity' would mean many tens of thousands could die. The UK government clearly tried to keep business open as long as possible, on 11 March directing 30 billion pounds to "protect the economy against coronavirus" and another 330 billion in loans and 20 billion in "tax cuts and grants for companies threatened with collapse" (Manning 2020; Emberson-Dennis 2020). Johnson consulted Trump about the pandemic on 14 March (Manning 2020). They clearly used this moment share ideas on priorities. Then on 16 March, 12 days after COVID19 cases in Britain began to surge, Johnson urged citizens to work from home and to avoid pubs and restaurants, but without mandating measures. It was not until 20 March that the UK government ordered "all pubs, restaurants, gyms and other social venues" to close; on the same day schools were ordered to close (Embury-Dennis 2020; Manning 2020). By that time there were 3,983 recorded COVID19 cases and 194 deaths in the UK. Between 27 March and 12 April Johnson himself contracted the virus and was hospitalized. By the end of April the UK recorded 171,253 cases and 26,771 deaths (Worldometer 2020).

On 13 April, at the height of the crisis, Trump claimed 'total authority' over the states and governors, for the agenda of "reopening" the economy (White 2020). This once again showed his anxiety to resume 'normal' economic activity. It incited public clashes with some Governors. It turns out the 'total authority' claim was overstated; nevertheless, on 16 April the President issued guidelines for the states on reopening businesses and local economies (AJ 2020). A week after he himself had recovered from the virus, Boris Johnson again spoke with Trump and on 22 April they jointly announced "close cooperation through the G7 and G20 to reopen global economies and ensure medical care and supplies reach all those in need" (Reuters 2020).

That is all background to the dismal performance of the US and the UK in face of the virus.

These two countries, which had been ranked first and second in 'global healthy security', and specifically in preparedness for an epidemic, had amongst the highest death rates in the world. Table 2 below shows a selection of countries alongside the Anglo-American duo. It includes those with at least two months of infections, some 'pairs' in apparently similar circumstances (France and Germany; Sweden and Norway) and some independent countries (Iran and Cuba). The final column shows how many days each country had more one

death per 10 million people. Less than this effectively signals no health crisis. All countries, by mid-May, had quite high levels of testing. China's testing rates does not appear in the same datasets, but other sources tell us that it was also very high. China had been carrying out mass testing from early days, including on symptom-free people (Wee 2020; Bloomberg 2020a).

Table 2: Better and worse performance in COVID19 management @ 18 May 2020

	'Global Health Security' rank	Cases / million	Deaths / million	Tests / million	Popn million	Days of more than 1 death per 10m popn
USA	1	4,619	275	35,903	330	60+
UK	2	3,592	511	38,040	67	64+
Netherlands	3	2,568	332	16,809	19	64+
Sweden	7	2,987	365	17,589	10	62+
South Korea	9	216	5	14,693	51	43 ended
France	11	2,752	431	21,218	65	67+
Germany	14	2,109	96	37,584	84	60+
Norway	16	1,523	43	39,946	5	25 ended
Greece	37	272	16	12,324	10	0 ended
China	51	58	3	Na *	1,439	5 ended
Iran	97	1,433	83	8,191	84	79+
Cuba	110	165	7	7,232	11	25 ended

Sources: Data @ 18 May 2020. IPT 2020; Worldometer 2020; JHCRC 2020; for China's testing see: Bloomberg 2020a, Wee 2020

OBSERVE THE VERY HIGH death rates in the USA and UK, as also in France, the Netherlands and Sweden. These are all countries that were said to rank highly in their preparedness for just such an epidemic. Observe also the relatively low death rates in South Korea, Cuba and China, and the much worse outcomes in France compared to Germany and similarly the much worse out-

comes in Sweden as compared to Norway. South Korea, Norway, Greece China and Cuba all 'flattened the curve' to the point that their crisis was over in less than two months. The others (USA, UK, Netherlands, Sweden, France, Germany and Iran) had not done so, after more than two months. Comparing such data sets has its problems but this is the best available evidence. We have no better option but to use it while recognising its limitations.

For example, while some have suggested COVID19 deaths might be over-estimated by conflation with other illnesses, especially amongst older people (Schwalbe 2020), there is also good reason to consider that such deaths may be under-estimated, because of deaths amongst those who did not present and were not diagnosed as infected (Walsh 2020). Serious analysis has to look widely and not just rely on sources which seem to confirm pre-formed ideas.

In any case, the practice and outcomes in the USA and the UK were very poor. The pandemic showed the 'Global Health Security' rankings (IPT 2019) as meaningless. The Anglo-American duo were poorly prepared. They showed great reluctance to identify and act to contain the threat. Maintaining systems of production and accumulation – of corporate profits – remained their top priority. That helps explain their failure to protect human life.

Evidence of these failures keeps emerging. Whistleblower Rick Bright – former director of the Biomedical Advanced Research and Development Authority (BARDA) – told a Congress panel that as early as January he was removed from meetings with the Health Secretary Alex Azar because he was "causing a commotion" over the virus (Naylor 2020). The views of such people were dismissed. Studies show that the introduction of 'stay at home' regimes even a few days earlier could have made a significant difference in infections and lives: "simulation on early-implementation and removal of SAHO reveals considerable impact on COVID-19 daily new cases and deaths" (Xu et al 2020). Stocks of protective equipment were extremely low in the USA and by early April Washington had resorted to buying up stocks destined for other hard hit countries, like Germany and France (Willsher, Borgia and Holmes 2020). One study said tens of thousands of lives could have been saved "if authorities had acted more swiftly in recommending self-isolation and the wearing of face masks" (Chen 2020).

However these failures have been masked in two ways. First there is the 'blame China' campaign, pushed by Trump. The US President claimed that the

virus had its origin in China and that the Chinese government had withheld information from the international community (Trump 2020a). Both suggestions were quite false. Early on China warned that the virus was dangerous and published the genome, a fact reported on 11 January (Cohen 2020a). Further, while the first recorded mass outbreak of infections came from the Huanan Seafood Market in Wuhan city, multiple studies suggest its origin was not China. Such findings parallels the so called Spanish Flu of 1918-19, which was later found to have its origins in Kansas, USA (Burnet and Clark 1942; Barry 2004).

An early Chinese genetic study suspected that COVID-19 came to Wuhan from elsewhere, suggesting that the virus "was potentially imported from elsewhere; the crowded market then boosted SARS-CoV-2 circulation" (Yu, Tang and Corlett 2020). Another Chinese study of the first hospitalised patients observed that 66% "had been exposed to Huanan seafood market" but 33% had not (Huang et al 2020). "That's a big number, 13 , with no link" said infectious disease specialist Daniel Lucey of Georgetown University (Cohen 2020b). Professor Robert Garry, from the University of Tulane in New Orleans, also pointed out "our analyses, and others too, point to an earlier origin than [Wuhan]. There were definitely cases there, but that wasn't the origin of the virus" (Holland 2020). Then a British study, looking at 160 varieties and combining them in three groups, with A as the ancestral strain, found that most of the COVID19 varieties from Wuhan and from east Asia were Type B and non-ancestral (Forster, Forster, Renfrew and Forster 2020).

The second smokescreen is a proliferation of anti-science Pandemic Sceptic theories, which distract from the root problems. These claims deserve separate treatment.

2. THE PANDEMIC SCEPTICS

Obscuring neoliberal failures in health are a series of claims by 'Pandemic Sceptics', a wide group of western populists and libertarians who share many features with climate change sceptics. Most have adopted 'anti-vax' positions and most are critics of government responses to the pandemic. But they typically misread both the pandemic and the government responses.

Virtually all these theories are deeply anti-science. Hardly any of the proponents have expertise in public health or epidemiology and, what is worse, they see no need to listen to those who do have such expertise. They reject entirely all official data on illness and death and refer only to select dissident figures, just like the climate change sceptics. The libertarian critiques mostly echo the approach of right wing populists while the left populist attacks are most often shallow, attacking symptoms rather than causes. Most deny the seriousness of the pandemic and avoid the public health implications.

At the extreme ends of these theories are those which claim the pandemic was either (a) harmless, just like the common cold, or (b) a planned assault, to kill off millions and reduce the human population (see Joyce 2020). Many raise alarms that the crisis is a plot to impose mandatory and dangerous vaccines. Others link, without evidence, the new 5G microwave networks to the COVID19 virus (Shanapinda 2020). The 'toxic vaccine' theory was a key theme of the documentary 'Plandemic', which relies on fringe scientist Dr Judy Mikowits. That documentary was controversially banned on YouTube, but her ideas are available in many other videos and sites, notably on the site of Robert F. Kennedy Jr (2020), politician and prominent anti-vaccine campaigner (Mole 2019). Dr Mikowitz's arguments are basically these: she helped discover the HIV/AIDS virus; but her work has been suppressed by prominent people, in particular US health official Anthony Fauci; she linked a virus to Chronic Fatigue Syndrome (CFS) and this virus "entered the human virome through a contaminated blood supply and vaccines"; many vaccines including the common MMR (measles, mumps and rubella) and polio are contaminated and are creating diseases such as autism (Kennedy 2020). Many scientists have debunked virtually all Dr Markowitz's claims, including those about MMR, CFS and the viral contamination of vaccines (Enserink and Cohen 2020; Neuman 2020; Kasten 2020). There is no need to spend more time on that matter here.

Broader anti-vaccine claims have become popular but are not backed by most scientific studies. For example, multiple studies have found no evidence to support claims linking the MMR vaccine and the preservative thimerosol with autism (Gerber and Offit 2009; Woodley 2019). That some vaccines contain mercury is partly true but misleading. The preservative thiomersal contains ethylmercury (cleared from the body more rapidly than the methylmercury found in certain fish) but the tiny amounts used in the MMR vaccine have not been

shown to endanger human health or, in particular, any of "the neurodevelopmental disorders of autism, ADHD, and speech or language delay" (Stratton, Gable, McCormick 2001). Nevertheless, because of public alarm, thimerosol in children's vaccines was replaced in the USA by substitute preservatives back in the year 2001. Many scientists, including childhood specialists, have expressed concern at the constant attacks on life-saving vaccines, on the 'mercury' basis, when there is more mercury in a small can of tuna than in a tiny thimerosol preservative (WHO 2011; CDC 2013; Kiefer 2020).

Nevertheless, because of the decades long compromises of neoliberal states, private interests have been embedded in public policy. Pandemic Sceptics use this corporate influence as a pretext to reject all state public health advice and all official statistics. Yet in their place the sceptics use far more dubious, anecdotal or entirely baseless 'facts'.

For example, journalist Vanessa Beeley (2020a; 2020b), while avoiding some of the extreme theories, simply rejects all official statistics. Yet she then uses poor logic and weak evidence to advance her central argument that 'lockdown' is the enemy. Like many, she mistakes the symptoms of the crisis for the causes. She wrongly suggests that, because big health corporations dominate health policy in the UK and the US, (a) the private cartel therefore aimed at a 'lockdown' and that (b) this 'lockdown' is responsible for more death and illness than the virus. Having told us "it is impossible to rely on official statistics" she presents a graph of those same statistics to suggest that more have died under 'lockdown' regimes than in 'non-lockdown' regimes. She says this "demonstrates the lack of correlation between lockdown and 'saving lives'". Not so.

First, the polemic between 'lockdown and 'non-lockdown' is a straw man. Countries have imposed a range of protective or quarantine like measures, according to their circumstances, their public health capacity and the approach of their governments. The bipolar division is arbitrary. In China the extreme measures taken in Wuhan and parts of Hubei province were called a "lockdown", while other parts of China were subject to "slow down" or "shut down" (Fuller 2020). Almost all states (whether their health policy is captured by private cartels or not) have practised some form of quarantine, including 'stay at home' advice. How that was done varied. But it should have been difficult to ignore the fact that leaders of the more independent countries - like Vietnam, Cuba, Syria

and Iran - set examples by appearing in public wearing face masks. They did not deny or avoid the pandemic.

Second, to suggest that 'lockdown' is associated with high death rates (or 'not associated' with low death rates) is to put the cart before the horse. One reason for stronger protective measures must be the magnitude of the threat. Wuhan, for example, had a lockdown because local health authorities suddenly discovered many infections and they acted (quite successfully it seems) to prevent the disease spreading throughout China. In countries with lower infection rates less severe measures were justified.

However, there was another important reason behind the most harshly imposed quarantine measures. After China, the worst 'lockdown' measures came in those regimes which rejected or dismantled public health systems and reacted slowly to their epidemics. They wanted to protect their own profitable corporate regimes. It was the combined pressure of illness, death, public health advice and fear that forced them to change course. Britain and the USA swung from libertarian positions to more repressive policing, because they had little public health capacity and were forced to shift their positions. So to attack the 'lockdown' as a oligarchical plan is to confuse the symptoms with the cause. Throughout the crisis pressures for 'reopening' were confronted with genuine public health warnings, over a possible 'second wave' of infections.

It is similarly illogical to suggest that 'lockdowns' were imposed, through captured states, by the 'Big Pharma' cartel. Vanessa Beeley observes that vaccine industry revenue was "projected to reach almost $60 billion by 2020; [and that] this number may well increase with the arrival of COVID-19" (Beeley 2020a). But how could Big Pharma incite the British state, or any other state, to 'lock down' much of the world? Global economic losses by mid-April were estimated at $7.8 trillion (Fraser 2020), affecting many sectors other than the vaccine industry. In mid-May the US Congress passed a $3 trillion subsidy and stimulus package (Business Standard 2020). How could any corporate elite justify a general 'lockdown' simply to add pressure for a few billion more for the vaccine industry? And all that assumes that a better and cheaper Chinese vaccine does not come out first, undercutting and destroying any anticipated 'vaccine bonanza'. That argument is just absurd.

To support a claim that the lockdown kills more than the virus, Vanessa Beeley reproduces a Twitter post by journalist John Pilger, which speaks of an

'expert' estimate of 150,000 deaths as a result of the lockdown". No source is given. However it seems to refer to a British Daily Mail post, which cited an anonymous source on a "tentative estimate circulating in Whitehall" (Chalmers 2020). Well no doubt there are serious psychological costs of social isolation, even though mental health workers in many countries maintain their services. But why, on such an important claim, should anyone rely on an anonymous claim in the tabloid media, while ignoring all official statistics about death and illness? Nevertheless, the costs of the 'lockdown' is a serious question which I examine in more detail in Chapter 9.

There is a second claim that the British lockdown "is ensuring conditions that will suppress immune systems to dangerous levels and create the perfect environment for COVID-19 to flourish" (Beeley 2020b). Once again, although there are other similar popular media assertions, no scientific evidence at all is given to back up the claims. This claim relies on the simplistic notion that immunity can be developed for any disease, simple by exposure.

There has been a public health consensus on testing, tracing and protective quarantine (including 'stay at home' regimes), in face of a new and unknown epidemic, until infections subside and proper treatments and/or vaccines are in place. Vanessa ignores this and argues (rather like the climate change sceptics) that science is divided: "Scientists, epidemiologists and analysts are not speaking as one voice on COVID-19'. This seems a device to qualify her selective use of public health dissidents, such as Knut Wittkowski, who opposes 'lockdown and social distancing'. She does not cite any of the NHS workers who support protective quarantine measures. Misunderstanding British health policy and practice is easy if one ignores the history and public health ideas of Britain's National Health Service (National Archives 2020), and the views of NHS workers. By pretending that public health policy and practice simply do not exist – rather than being in a compromised relationship with the private cartel – responses to the pandemic can be portrayed as all just a commercial game.

Similarly, the threat of 'mandatory vaccines' and mandatory biometric tracing may indeed be on the agenda of some ambitious corporations. However these issues are hardly foregone conclusions that can be collapsed into a singular 'vaccine agenda'. Well before greedy corporations began to capture patents on medicines there were public health reasons in favour of vaccines. Neither

vaccines nor biometric tracing have been generally mandatory, except for international travellers.

Australia's Deputy Chief Medical Officer Paul Kelly, for example, said he was opposed to any mandatory vaccine. But he expected, in this case, people would be "queuing up" for it (McIlroy 2020). Today, of the many COVID19 vaccines under study, very few of them are financed by the Pandemic Sceptics' favourite villain, Bill Gates. And contrary to many assertions, there is no such thing as a 'global patent', nor a pre-emptive patent. No billionaire can capture future patents. By May 2020 China had five COVID19 vaccines in the second stage of human trials (Bloomberg 2020b) and Chinese Premier Xi offered the first of them free or at low cost, as a "global public good" (Wheaton 2020).

There is, however, a global oligarchy which will use its weight in attempts to squeeze out Chinese companies from particular national markets. Whether they succeed depends on national struggles, to ensure equitable access to safe and effective treatments. In some cases there will be socialised generic treatments, in other cases (as in my country, Australia) there are state schemes to pay Big Pharma massive amounts for bulk purchases, then provide them at nominal cost to the public; in the USA there is a much harsher commercial user-pays logic. It is quite likely that multiple vaccines and various anti-viral treatments for COVID19 will appear and compete, in a huge propaganda war.

Many sceptics doubt the fact that governments, by May 2020, had reported over 300,000 deaths from the virus. The British alt-media group OffGuardian asserted: "as we have been pointing out since day one ... the virus is 'mild' or even asymptomatic in the majority of cases, and chiefly a danger only to the already ailing or severely immuno-compromised" (Black 2020). Such arguments not only misunderstand the epidemic but encourage the same complacency shown by the neoliberal regimes. These views seemed not to change with hundreds of thousands more deaths.

Simplistic Pandemic Sceptic theories with little real evidence do not help a critical understanding of the virus and responses to it. Considering public health principles alongside commercial agendas would allow us to see corporations as raiders rather than simple purveyors of false 'snake oil' remedies. Because Big Pharma made billions out of HIV/AIDS drugs, do we condemn those drugs? Of course not.

The libertarian arguments ('my freedoms above all else') are basically expressions of anti-social western individualism, similar to those run by Donald Trump, Alex Jones and the 'Minnesota Freedom' groups. Collective action to combat an epidemic can go to hell, they say. Yet when the quarantine ends we will return to an individualistic 'everyone for themselves' health system, based on private insurance and Big Pharma. No room for paternalistic or 'dictatorial' public health in this mindset.

There is also what has been presented as a "left argument against lockdowns". Alexis Fitzgerald argues that lockdowns are causing an economic depression and this will disproportionately hurt the working class and marginalised people. He continues "it is not just our liberty we are losing but our livelihoods and our young peoples' futures" (FitzGerald 2020). This is a clear line of logic, but it also begins on the wrong foot. 'Lockdowns' did not start this crisis. He ignores both the public health arguments and the real politics. The first rebuttal should be obvious: "saving lives will save livelihoods" (Cherukupalli and Frieden 2020). If there is a 'second spike' of infections and deaths, as occurred in cities like San Francisco and St Louis, which opened up too soon during the 1918-1919 influenza epidemic (Strochlic and Champine 2020), many more lives will be lost. The burden of death, illness and unemployed in this case will fall disproportionately on working class and marginalised populations. That is already happening in the current crisis, with African-Americans in the USA (Aratani and Rushe 2020). For those who follow public health science this was obvious.

If lockdowns are one's main concern, why not address the proportionality of particular local issues such as the role of police, limits on movement, curfews and/or school closures? Quarantine regimes vary enormously across countries. Some are terribly repressive, others have already been removed. In mid-May in Britain, with hundreds of COVID19 deaths each day, only 5% of school teachers felt safe to return to school (Hockaday 2020); whereas in Australia, with less than one death per day, schools had already resumed. There is international 'proportionality' law on liberties and freedom of movement (HRC 1999: 14), but I am yet to see it seriously cited by the Pandemic Sceptics. They tend to keep their arguments global.

To sum up, Pandemic Sceptics present a range of fanciful ideas which, by raising baseless conspiracy claims, obscure the Anglo-American neoliberal fail-

ure to protect lives. Their common failures are to deny or avoid public health principles and replace social evidence with anecdotes and baseless conspiracy stories. Blind opposition to protective public health measures, or to vaccines, runs a big risk of throwing out the public health 'baby' with the Big Pharma 'bathwater'. That is both misleading and disempowering.

3. THE IMPORTANCE OF public health systems

Meaningful critiques of the current crisis should focus on mitigating the crisis and helping contain future crises. Both the pandemic and responses to it deserve assessment, and a focus on public health systems is important. Protective responses have varied across countries according to (1) the severity and trajectory of infections, (2) decisions of the political leadership, and (3) the strength or weakness of the local public health system. The latter is a project built over time in particular circumstances, as a result of popular pressures.

Apart from the vagaries of where infection hot-spots first arose, the pandemic has already shown that those countries which have done better are well organised societies with strong social guarantees and investment in preventive and public health. This cannot be a simple matter of capitalism versus socialism, since all societies have public institutions, services and guarantees, which can be built or weakened. Every country can build or improve its health system, and strong, well-resourced public health systems offer the best protection against exclusion, unaffordable and/or inappropriate treatments and corporate control.

It is important to recognise that most of the Pandemic related failures of Anglo-American Hegemonic Neoliberalism flow directly from their particular rejection of public health and social support. The following links can be made:

- Weak or undermined public health guarantees, which led to a failure to protect citizens and so mass illness and death;
- Weak or undermined preventive health systems, which caused slow and limited capacity responses to the pandemic;
- Privatised, use-pays approach to health care, which led to complacent and delayed responses, after which pressure of mass illness and death cause reactions from one extreme to the other, with protective

response led by policing rather than the public health system;

- 'Managed Care' (USA) which allows corporations to determine treatment, which caused fear and distrust of any treatment or even information, whether from government or companies;
- Primacy of commercial processes and corporate privilege, which led to a failure to recognise key principles of public health;
- Economic siege warfare (and other forms of warfare) on dozens of countries, in pursuit of hegemonic control, which undermined international cooperation and sabotaged the availability of health resources (e.g. protective personal equipment) in other countries.

Table 3 below characterises types of systems, pointing to the competing influence of the privatised and public systems. Strong public health systems can ensure the foundational health of all citizens and limit the compromises of private commercial interests. They necessarily include preventive health and health education, efficiencies ignored by commercialised systems. Good public health systems have been created in many countries and they help explain their relatively better performance in face of threats.

Table 3: How health systems determine public health responses

	Highly privatised systems	Universal cover hybrid systems	Public health systems
e.g.	e.g. USA (<50% public) with 'managed care'	e.g. west Europeans, Australia, Canada (65-80% public)	e.g. Cuba (>95% public)
Character & orientation	Private finance given control of services; curative and commercial	Public guarantee subsidises private and providers; some public health; curative with some preventive	State guarantor of services; preventive and social medicine
Role of private finance?	PF directs treatment, blocks universal guarantee	Public system subsidises PF, which in turn influences services	Little; but PF controls international markets
Emergency response?	Private insurance and the 'National Guard'	Some public health capacity to extend social guarantees	Social guarantees, health authority manages

THE THEMES OF TABLE 3 help us understand the links between highly privatised systems and repressive responses. There is neither the capacity nor the trust that is available in strong public systems, to respond rapidly and effectively. Several countries with very low levels of infection closed their schools as a pre-emptive measures to stop the possible spread of infection. The neoliberal regimes dithered. Children were not at great risk of death from COVID-19 it seems, but they did pose a risk of taking and spreading infections back into the home. In countries where the quarantine measures were led by a Ministry of Health, there was often much greater trust. Whereas in the US and the UK, the switch from complacency to 'lockdown' was handed to police and the national guard. President Trump saying he would "rapidly" mobilize the U.S. military to distribute a coronavirus vaccine once it was ready can only add to fear, greater distrust and groundless conspiracy theories (Watson 2020).

Better understandings of epidemics and health systems help inform political engagement. Dramatic misinformation disempowers and distracts. Neoliberal ideology has repeatedly blocked the construction of social institutions, under the pretext of governments not interfering in markets. Yet the Pandemic has provided a unique opportunity to challenge that dogma. Bregman (2020) observes that even bastions of neoliberal ideology, like Britain's Financial Times, recognise that neoliberal doctrine is at risk. In early April that paper acknowledged:

> "To demand collective sacrifice you must offer a social contract that benefits everyone. Today's crisis is laying bare how far many rich societies fall short of this ideal ... Radical reforms - reversing the prevailing policy direction of the last four decades - will need to be put on the table. Governments will have to accept a more active role in the economy. They must see public services as investments rather than liabilities, and look for ways to make labour markets less insecure ... Policies until recently considered eccentric, such as basic income and wealth taxes, will have to be in the mix" (Financial Times 2020).

No doubt the financialised world will press its own new agendas, trying co-opt popular themes such as health, incomes and the environment. However those concerned at building public health systems, social support and more accountable states should not miss this chance. Universal health protection is very popular, except amongst private finance.

For example, in the UK the crisis should empower demands for reconstruction of the NHS, an institution built on decent universal service principles (National Archives 2020). Critics of the corporate infiltration and undermining of the NHS should use this moment to elevate the voices of NHS health workers and those health professionals and analysts who have tried to defend it for many years. They know the problems and where reconstruction is needed.

In the USA the decades long movement to actually create a public health guarantee, betrayed by both major parties, could be put back 'on the rails'. Yet in the 2020 election year the Democrats joined the Republicans in a new round of subsides for the private health insurance companies (Johnson 2020), maintain-

ing the dreadful user-pays status quo that was so powerfully exposed by Michael Moore's film Sicko (Moore 2007).

The demand for social support schemes such as guaranteed minimum income (GMI), or universal basic income (UBI), so valuable during long periods of unemployment, has already gained impetus with this crisis. Some wealthier countries which already have social security, like Australia, extended that during the crisis into 'job keeper' schemes (Cassells and Duncan 2020), to maintain positions and business during an expected 2 to 3 month quarantine period. In poorer countries we see renewed reliance on the subsidies of basic food items, a practice neoliberalism tried to suppress, because such subsidies distorted 'open markets'. These are precedents, the logic of which can be developed.

The important field of vaccines has been attacked for years by an anti-vaccine movement, a bandwagon which most Pandemic Sceptics have joined. Most of the generic criticisms of vaccines are unfounded. Vaccines have saved millions of lives, particularly in infectious diseases such as smallpox, measles and tuberculosis (Anderson 2006). Yet failures in public support for the MMR vaccine led to dozens of children's deaths in Samoa (UNICEF 2020).

Vaccines present no single answer to an epidemic. The threat will diminish with protective measures, effective treatment and a subsidence in rates of infection. But a safe and effective vaccine could save millions of vulnerable lives. Anti-vaccination campaigns have had their greatest impact in parts of Europe, but worldwide "79% of people agree that vaccines are safe and 84% agree that they are effective" (Wellcome 2019). In the USA polls show there has been a fall in confidence, but 84% still believe "say vaccinating children is important" (Reinhardt 2020). New treatments from China may even preclude the need for a vaccine. Laboratory manufactured 'neutralising antibodies' are said to "shorten the recovery time ... and even offer short term immunity". Unlike plasma from recovered patients, which is also effective, this treatment can be mass produced (Ye and Knight 2020). Wider options are always a good thing.

China's 'public good' vaccine proposal will be met by the anti-China 'international investigation' plan, into what Trump has already branded a 'Chinese virus' (Trump 2020a). Meantime the Trump administration is reported as having taken steps to hijack and divert protective equipment destined for several other countries, to control exports of experimental treatments and to claim exclusive access to new vaccines (Jeffery 2020; Oltermann 2020). This mercantile

behaviour led the Chair of the Coalition for Epidemic Preparedness Innovation (CEPI), Jane Halton to warn against "vaccine nationalism" as it amounted to a threat to public health (McIlroy 2020).

China's commitment is a real blow to hegemonic neoliberalism, which typically aims to capture new technology and resell it at a maximum price. That is exactly the neoliberal theory of international 'technology transfer' (Reddy and Zhao 1990): that the transmission of new knowledge between countries occurs through the 'normal' commercial activities of multinational private companies. Cooperation can change that. Yuanqiong Hu, senior legal and policy adviser for MSF Access Campaign, pointed out that international debate at the WHA may "be key to devising [new] rules for how countries collaborate" (Wheaton 2020).

International cooperation, or lack of it, remains a key issue. The Chinese initiative of 'public good' vaccines may widen or be limited, depending on levels of cooperation. Its main current obstacle seems to be the 'blame China' campaign. Yet there are enormous potential benefits in enhanced international cooperation. First of all sharing lessons between countries is of critical importance. China took a first step by publishing the genome of COVID19 and the emerging giant has helped many other countries with test kits and PPE supplies, including the USA (Stevenson, Kulish and Gelles 2020). But obstacles to the importation of treatments are often created within national health systems, largely through the influence of Big Pharma and local regimes. For example, Cuba has unique treatments for diabetic ulcers and lung cancer, and these are available in a number of countries but blocked in others, such as the USA (Reed 2016; Almendrala 2016). Partnerships with US companies have been made difficult, so Cuba has developed agreements with Russia and China.

Similarly, China has for some time produced the best anti-malarial medicine, from the *Artemesia* plant, but various obstacles (e.g. US influence through the W.H.O.) delayed international recognition for decades (White, Hien, and Nosten 2015). In the current crisis a group of US Congress members introduced a "COVID-19 Vaccine Protection Act, to prevent the Chinese Communist Party from stealing or sabotaging American COVID-19 vaccine research" (PTI 2020). That foreshadows the competitive battle to come over treatments and vaccines. Greater cooperation could remove such obstacles.

What lessons can we learn from the more independent countries, like Vietnam, Syria and Cuba? (All COVID19 data in this paragraph is at 20 May 2020 and from Worldometer). Despite sharing a border with China and with a population of 97 million, at 20 May Vietnam had recorded only 324 cases and no deaths. Vietnam's response, led by the Health Ministry, closed all borders and schools and set in place state-hosted and funded quarantine for all those thought to be at risk. Testing, tracing, public education and face masks were used (Tran, Gregorio and Nixon 2020).

The experience in Syria was unique. Despite being occupied by three foreign armies and large terrorist gangs, war-torn by May 2020 Syria recorded only 58 infections and 3 deaths. It quarantined almost 7,000 and some particular areas, imposed a curfew and closed all schools before the country had even registered a single case. Testing was free of charge, but priority was given "to the elderly, those with chronic diseases, pregnant women and people with disabilities" (Shaza 2020).

Cuba was exposed to infections from a very large tourist industry, and the first cases were registered amongst tourists; but after more than two months the country had only registered 1,887 cases and 79 deaths. While sending specialist brigades of doctors to more than 20 other countries, Cuba maintains a health system which has a presence in every residential block. Even when there were no recorded cases, Cuban health authorities began to impose quarantine measures, including 'stay at home' advice. Overseas tourism was shut down. Public transport was shut down except for essential workers (Anderson 2020b; Sánchez 2020). In each case the response was led by health authorities and followed the W.H.O. agreed principles of protective measures, testing and tracing, according to each country's circumstances. These examples are valuable, as they help distinguish practice based on widely accepted public health principles, from those that are far more heavily influenced by corporate lobbies.

Public exposure of the failures of Anglo-American hegemonic neoliberalism opens a number of doors. Many raise the reasonable question: what could have been done in health and preventive health systems in the USA, if it were not for the six trillion dollars spent on multiple wars across the Middle East (Baraka 2019; Cole 2020) in the largely futile attempts at extending its influence in that region? Others are pointing out that the proverbial 'emperor' has no clothes: "the world stands aghast at the naked truth that America is not on-

ly incapable of leading the world, but [is] also failing to protect its own people" (Zogby 2020). Lessons can certainly be learned, across cultures, but 'models' cannot be simply copied or transplanted from one country to another. They must be built on the historical circumstances of each particular country (Anderson 2010). There are a range of possible outcomes in a post neoliberal era, but none of them should neglect a decent public health system.

REFERENCES

AJ (2020) 'A timeline of the Trump administration's coronavirus actions', Al Jazeera, x April, 24 April, online: https://www.aljazeera.com/news/2020/04/timeline-trump-administration-coronavirus-actions-200414131306831.html

Almendrala, Anna (2016) 'Cuba Has Made At Least 3 Major Medical Innovations That We Need', Huffpost, 15 March, online: https://www.huffpost.com/entry/cuba-medical-innovations_n_56ddfacfe4b03a4056799015

Anderson, Tim (2006) 'The structuring of health systems and the control of infectious disease: looking at Mexico and Cuba', Revista Panamericana de Salud Pública 19(6):423-31, July, online: https://www.researchgate.net/publication/6821627_The_structuring_of_health_systems_and_the_control_of_infectious_disease_Looking_at_Mexico_and_Cuba

Anderson, Tim (2010) 'Social medicine in Timor Leste', Social Medicine, Vol 5 No 4, online: https://www.socialmedicine.info/index.php/socialmedicine/article/view/480

Anderson, Tim (2020a) 'Public Health, COVID-19 and Recovery', American Herald Tribune, 10 April, online: https://ahtribune.com/world/covid-19/4062-public-health-covid-19-recovery.html

Anderson, Tim (2020b) 'How Has Cuba Faced the COVID-19 Epidemic?', American Herald Tribune, 14 April, online: https://ahtribune.com/world/americas/4076-cuba-faced-the-covid19.html

Aratani, Lauren and Dominic Rushe (2020) 'African Americans bear the brunt of Covid-19's economic impact', The Guardian, 28 April, online: https://www.theguardian.com/us-news/2020/apr/28/african-americans-unemployment-covid-19-economic-impact

Baraka, Ajamu (2019) 'U.S. Militarism and the One-Sided Class War', Counter Punch, 5 July, online: https://www.counterpunch.org/2019/07/05/u-s-militarism-and-the-one-sided-class-war/

Barry, John M. (2004) 'The site of origin of the 1918 influenza pandemic and its public health implications', J Transl Med. 2004; 2: 3. 20 Jan. doi: 10.1186/1479-5876-2-3, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC340389/

Beeley, Vanessa (2020a) 'Who controls the British Government response to COVID-19?', UK Column 22 April 2020, online: https://www.ukcolumn.org/article/who-controls-british-government-response-covid19-part-one

Beeley, Vanessa (2020b) 'COVID-19: the Big Pharma players behind UK Government lockdown', UK Column, 6 May, online: https://www.ukcolumn.org/article/covid–19-big-pharma-players-behind-uk-government-lockdown

Black, Catte (2020) 'WATCH: UK Chief Medic confirms (again) covid19 harmless to vast majority', OffGuardian, 15 May, online: https://off-guardian.org/2020/05/15/watch-uk-chief-medic-confirms-again-covid19-harmless-to-vast-majority/

Bloomberg (2020a) 'China's Data on Symptom-Free Cases Shows Most Never Get Sick', 15 April, online: https://www.bloomberg.com/news/articles/2020-04-15/china-s-data-on-symptom-free-cases-reveals-most-never-get-sick

Bloomberg (2020b) 'China Has 5 Vaccine Candidates in Human Trials, With More Coming', 15 May, online: https://www.bloomberg.com/news/articles/2020-05-15/china-launches-more-virus-vaccine-candidates-tests-thousands

Bosely, Sarah (2019) 'Survey shows crisis of confidence in vaccines in parts of Europe', The Guardian, 19 June, online: https://www.theguardian.com/society/2019/jun/19/survey-shows-crisis-of-confidence-in-vaccines-in-parts-of-europe

Bregman, Rutger (2020) 'The neoliberal era is ending. What comes next?', The Correspondent, 14 May, online: https://thecorrespondent.com/466/the-neoliberal-era-is-ending-what-comes-next/61655148676-a00ee89a

Brewster, Jack (2020) 'Fauci Says It's 'False' To Say The Coronavirus Outbreak Is Under Control; Here Are All The Times Trump Said It Was', Forbes, 5 April, online: https://www.forbes.com/sites/jackbrewster/2020/04/05/fauci-says-its-false-to-say-the-coronavirus-outbreak-is-under-control-here-are-all-the-times-trump-said-it-was/

Burnet, F.M. and Ellen Clark (1942) Influenza: a survey of the last fifty years, MacMillan, Melbourne

Business Standard (2020) 'US House passes $3-trillion coronavirus relief package to revive economy', 16 May, online: https://www.business-standard.com/article/international/us-house-passes-3-trillion-coronavirus-relief-package-to-revive-economy-120051600292_1.html

Cassells, Rebecca and Alan Duncan (2020) 'JobKeeper payment: how will it work, who will miss out and how to get it?', The Conversation, 31 March, online: https://theconversation.com/jobkeeper-payment-how-will-it-work-who-will-miss-out-and-how-to-get-it-135189

CDC (2020) 'Understanding Thimerosal, Mercury, and Vaccine Safety', Centers for Disease Control and Prevention (USA), February, online: https://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-thimerosal-color-office.pdf

Chalmers, Vanessa (2020) '150,000 Brits will die an 'avoidable death' during coronavirus pandemic through depression, domestic violence and suicides', Daily Mail, 10 April, online: https://www.dailymail.co.uk/news/article-8207783/150-000-Brits-die-coronavirus-pandemic-domestic-violence-suicides.html

Chen, Stephen (2020) 'Coronavirus: US death toll would have been halved had it acted 4 days sooner, study says', SCMP, 8 May, online: https://www.scmp.com/news/world/united-states-canada/article/3083368/coronavirus-us-death-toll-would-have-been-halved

Cherukupalli, Rajeev and Tom Frieden (2020) 'Only Saving Lives will save Livelihoods', Foreign Affairs, 13 may, online: https://www.foreignaffairs.com/articles/united-states/2020-05-13/only-saving-lives-will-save-livelihoods

Cohen, Jon (2020a) 'Chinese researchers reveal draft genome of virus implicated in Wuhan pneumonia outbreak', Science Mag, 11 January, online: https://www.sciencemag.org/news/2020/01/chinese-researchers-reveal-draft-genome-virus-implicated-wuhan-pneumonia-outbreak

Cohen, Jon (2020b) 'Not wearing masks to protect against coronavirus is a 'big mistake,' top Chinese scientist says', Science Mag, 27 March, online: https://www.sciencemag.org/news/2020/03/not-wearing-masks-protect-against-coronavirus-big-mistake-top-chinese-scientist-says

Cole, Juan (2020) 'If Only the US Had That $6.4 Trillion It Wasted on Iraq and Afghanistan Wars to Fight Covid-19 Pandemic', Common Dreams, 11 May, online:

https://www.commondreams.org/views/2020/05/11/if-only-us-had-64-trillion-it-wasted-iraq-and-afghanistan-wars-fight-covid-19

Embury-Dennis, Tom (2020) 'Coronavirus: A timeline of how Britain went from 'low risk' to an unprecedented national shutdown', The Independent, 21 March, online: https://www.independent.co.uk/news/uk/home-news/coronavirus-uk-timeline-deaths-cases-covid-19-nhs-social-distancing-a9416331.html

Enserink, Martin and Jon and Cohen (2020) 'Fact-checking Judy Mikovits, the controversial virologist attacking Anthony Fauci in a viral conspiracy video', Science, 8 May, online: https://www.sciencemag.org/news/2020/05/fact-checking-judy-mikovits-controversial-virologist-attacking-anthony-fauci-viral

Financial Times (2020) 'Virus lays bare the frailty of the social contract', Editorial, 4 April, online: https://www.ft.com/content/7eff769a-74dd-11ea-95fe-fcd274e920ca

FitzGerald, Alexis (2020) 'The Left-Wing Case Against Lockdowns', Lockdownsceptics, 14 May, online: https://lockdownsceptics.org/the-left-wing-case-against-lockdowns/[1]

Forster, Peter; Lucy Forster, Colin Renfrew, and Michael Forster (2020) 'Phylogenetic network analysis of SARS-CoV-2 genomes', PNAS, 8 April, online: https://www.pnas.org/content/early/2020/04/07/2004999117

Fraser, Douglas (2020) 'Economic cost of coronavirus lockdown keeps on rising', BBC, 16 April, online: https://www.bbc.com/news/uk-scotland-scotland-business-52307977

Fuller, Peta (2020) 'Wuhan's coronavirus lockdown is unprecedented, so how has China done it and what impact will it have?', ABC News, 25 January, online: https://www.abc.net.au/news/2020-01-25/wuhan-coronavirus-lockdown-how-has-it-worked/11896630

Gerber, Jeffrey S. and Paul A. Offit (2009) 'Vaccines and Autism: A Tale of Shifting Hypotheses', Clin Infect Dis. 2009 Feb 15; 48(4): 456–461. doi: 10.1086/596476, National Center for Biotechnology Information, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2908388/

Guardian (2020) 'PM's Covid-19 timeline: from 'mild symptoms' to a brush with death', 13 April, online: https://www.theguardian.com/world/2020/apr/05/timeline-boris-johnson-and-coronavirus

1. https://lockdownsceptics.org/the-left-wing-case-against-lockdowns/?fbclid=IwAR0id3gcXEl4kqXv8B0naqzmhUYsDcAtAALp-FYNlIWzdOdK7ZnEl0_XDWkE

Guerra, Angel (2020) 'Trump y la negación del coronavirus', La Jornada, 26 March, online: https://www.jornada.com.mx/2020/03/26/opinion/024a1mun

Haberman, Maggie and David E. Sanger (2020) 'Trump Says Coronavirus Cure Cannot 'Be Worse Than the Problem Itself'', New York Times, 23 March, online: https://www.nytimes.com/2020/03/23/us/politics/trump-coronavirus-restrictions.html

Hall, Richard (2020) 'Alex Jones joins Texas protest against coronavirus lockdown orders as crowds chant 'Fire Fauci'', The Independent, 18 April, online: https://www.independent.co.uk/news/world/americas/alex-jones-coronavirus-lockdown-protest-texas-anthony-fauci-fire-a9472611.html

Hockaday, James (2020) 'Only 5% of teachers feel safe reopening schools from June 1', Metro, 19 May, online: https://metro.co.uk/2020/05/19/5-teachers-feel-safe-returning-school-12729344/

Holland, Kate (2020) 'Sorry, conspiracy theorists. Study concludes COVID-19 'is not a laboratory construct', ABC News, 27 March, online: https://abcnews.go.com/US/conspiracy-theorists-study-concludes-covid-19-laboratory-construct/story

HRC (1999) 'Human Rights Committee, General Comment 27, Freedom of Movement (Art.12), U.N. Doc CCPR/C/21/Rev.1/Add.9, online: http://hrlibrary.umn.edu/gencomm/hrcom27.htm

Huang, Chaolin et al (2020) 'Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China', The Lancet, 15 February, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext

IPT (2020) 'Global Health Security Index', Index Project Team (IPT) [comprising the Nuclear Threat Initiative (NTI), the Johns Hopkins Center for Health Security (JHU) and The Economist Intelligence Unit (EIU)], online: https://www.ghsindex.org/wp-content/uploads/2020/04/2019-Global-Health-Security-Index.pdf

Jeffery, Lynsey (2020) 'German, French Officials Accuse U.S. Of Diverting Supplies', NPR, 4 April, online: https://www.npr.org/2020/04/04/827321294/german-french-officials-accuse-u-s-of-diverting-supplies

Johnson, Jake (2020) 'COVID-19: Democrats' Plan Denounced as Gift to Health Insurers, Consortium News, 14 May, online: https://consortiumnews.com/2020/05/14/covid-19-democrats-plan-denounced-as-gift-to-health-insurers/

JHCRC (2020) 'Mortality in the most affected countries', John Hopkins Coronavirus Resource Centre, online: https://coronavirus.jhu.edu/data/mortality

Kasten, Jennifer (2020) 'What Judy Mikovits Gets Wrong — Pretty much everything, pathologist argues', MedPage Today, 12 May, online: https://www.medpagetoday.com/infectiousdisease/generalinfectiousdisease/86461

Kennedy, Robert F (2020) 'The Truth About Fauci—Featuring Dr. Judy Mikovits', Children's Health Defence, 20 April, online: https://childrenshealthdefense.org/news/the-truth-about-fauci-featuring-dr-judy-mikovits/

Kiefer, Amy (2020) 'Get Angry About Mercury in Fish, Not in Vaccines', Bloomlife, online: https://bloomlife.com/preg-u/where-mercury-in-fish-comes-from/

Koning Beals, Rachel (2020) 'Trump believes coronavirus will vanish with April temps — experts are skeptical warm weather alone is enough', Market watch, 16 March, online: https://www.marketwatch.com/story/trump-believes-coronavirus-will-vanish-with-april-temps-experts-are-skeptical-warm-weather-alone-is-enough-2020-03-12

Levin, Bess (2020) 'Trump claims coronavirus will "miraculously" go away by April', Vanity Fair, 11 March, online: https://www.vanityfair.com/news/2020/02/donald-trump-coronavirus-warm-weather

Manning, Ellen (2020) 'Coronavirus: A timeline of what Boris Johnson has done to tackle the outbreak', Yahoo News UK, 27 March, online: https://au.news.yahoo.com/coronavirus-timeline-boris-johnson-164726225.html

McIlroy, Tom (2020) ''Vaccine nationalism' a threat to public health in pandemic', Australian Financial Review, 18 May, online: https://www.afr.com/politics/federal/vaccine-nationalism-a-threat-to-public-health-in-covid-19-pandemic-20200518-p54u0e

Mole, Beth (2019) 'Robert F. Kennedy Jr. is the single leading source of anti-vax ads on Facebook', Ars Technica, 15 November, online: https://arstechnica.com/science/2019/11/robert-f-kennedy-jr-is-the-single-leading-source-of-anti-vax-ads-on-facebook/

Moore, Michael (2007) Sicko, documentary, IMDB, details online: https://www.imdb.com/title/tt0386032/

Naylor, Brian (2020) 'Ousted Scientist Says His Pandemic Warnings Were Dismissed As 'Commotion'', NPR, 14 May, online: https://www.npr.org/2020/05/14/855254610/ousted-scientist-says-window-of-opportunity-to-fight-coronavirus-is-closing

National Archives (2020) 'The Cabinet Papers: origins of the NHS', online: https://www.nationalarchives.gov.uk/cabinetpapers/alevelstudies/origins-nhs.htm

Neuman, Scott (2020) 'Seen 'Plandemic'? We Take A Close Look At The Viral Conspiracy Video's Claims', NPR, 8 May, online: https://www.npr.org/2020/05/08/852451652/seen-plandemic-we-take-a-close-look-at-the-viral-conspiracy-video-s-claims[2]

Oltermann, Philip (2020) 'Trump 'offers large sums' for exclusive US access to coronavirus vaccine', The Guardian, 15 March, online: https://www.theguardian.com/us-news/2020/mar/15/trump-offers-large-sums-for-exclusive-access-to-coronavirus-vaccine

Ourworldindata (2020) 'Coronavirus (COVID-19) Testing: Full list cumulative total tests per thousand', update 12 May, online: https://ourworldindata.org/coronavirus-testing

PTI (2020) 'Coronavirus originated from China, not going to take it lightly: Donald Trump', Business Today, 22 May, online: https://www.businesstoday.in/current/world/coronavirus-originated-from-china-not-going-to-take-it-lightly-donald-trump/story/404605.html

Reddy, N. Mohan and Liming Zhao (1990) 'International technology transfer: A review', Research Policy 19, 285-307, online: https://tarjomefa.com/wp-content/uploads/2019/11/F1573-TarjomeFa-English.pdf

Reed, Gail A. (2016) 'Let's open the door to Cuba and its promising diabetes treatments', SF Chronicle, 18 March, online: https://www.sfchronicle.com/opinion/article/Let-s-open-the-door-to-Cuba-and-its-promising-6921055.php

Reinhardt. R.J. (2020) 'Fewer in U.S. Continue to See Vaccines as Important', Gallup, 14 January, online: https://news.gallup.com/poll/276929/fewer-continue-vaccines-important.aspx

Reuters (2020) 'Boris Johnson, feeling better, agrees with Trump on need to reopen economies: statements', 22 April, online: https://www.reuters.com/article/us-health-coronavirus-britain-usa/boris-johnson-feeling-better-agrees-with-trump-on-need-to-reopen-economies-statements-idUSKCN2232EU

Sánchez, Iroel (2020) 'Fidel y su aporte para enfrentar la Covid-19 y la etapa pos pandemia', Al Mayadeen, 18 May, online: https://espanol.almayadeen.net/articles/

2. https://www.npr.org/2020/05/08/852451652/seen-plandemic-we-take-a-close-look-at-the-viral-conspiracy-video-s-claims?fbclid=IwAR03oHEq1rdexZBDrVhnErPRLIfznJhrq9L99PutsqGznycaU0QwPsGt-qY

entrevistas-exclusivas/1398866/fidel-y-su-aporte-para-enfrentar-la-covid-19-y-la-etapa-pos

Schifferes, Steve (2020) 'The coronavirus pandemic is already increasing inequality', The Conversation, 10 April, online: https://theconversation.com/the-coronavirus-pandemic-is-already-increasing-inequality-135992

Schwalbe, Nina (2020) 'We could be vastly overestimating the death rate for COVID-19. Here's why', WEF, 4 April, online: https://www.weforum.org/agenda/2020/04/we-could-be-vastly-overestimating-the-death-rate-for-covid-19-heres-why/

Shanapinda, Stanley (2020) 'No, 5G radiation doesn't cause or spread the coronavirus. Saying it does is destructive', The Conversation, 9 April, online: https://theconversation.com/no-5g-radiation-doesnt-cause-or-spread-the-coronavirus-saying-it-does-is-destructive-135695

Shaza (2020) 'Health Ministry: 4224 out of 6781 quarantined people discharged so far', Syrian Arab News Agency, 14 May, online: https://www.sana.sy/en/?p=191687

Stevenson, Alexandra ; Nicholas Kulish and David Gelles (2020) 'Frantic for Coronavirus Gear, Americans in Need Turn to China's Elite', New York Times, 24 April, online: https://www.nytimes.com/2020/04/24/business/us-china-coronavirus-donations.html

Stewart, Heather; Mathew Weaver and Kate Proctor (2020) ''Nonchalant': Boris Johnson accused of Covid-19 complacency', The Guardian, 28 March, online: https://www.theguardian.com/world/2020/mar/27/nonchalant-boris-johnson-accused-of-covid-19-complacency

Stratton K, Gable A, McCormick MC (Eds) (2001) 'Immunization Safety Review: Thimerosal-Containing Vaccines and Neurodevelopmental Disorders', online: https://www.ncbi.nlm.nih.gov/books/NBK223724/

Strochlic, Nina and Riley D. Champine (2020) 'How some cities 'flattened the curve' during the 1918 flu pandemic', National Geographic, 27 March, online: https://www.nationalgeographic.com/history/2020/03/how-cities-flattened-curve-1918-spanish-flu-pandemic-coronavirus/

Tran, Chung Chau; Michael D. Gregorio and Nicola Nixon (2020) 'Vietnam: a COVID-19 success story', DevPolicy, 18 May, online: https://devpolicy.org/vietnam-20200518-2/

Trump, Donald (2020a) ''Not racist at all': Donald Trump defends calling coronavirus the 'Chinese virus'', The Guardian, 18 March, online: https://www.theguardian.com/world/video/2020/mar/18/not-racist-at-all-donald-trump-defends-calling-coronavirus-the-chinese-virus-video

Trump, Donald (2020b) 'We cannot let the cure be worse than the problem itself', Twitter, 23 March, online: https://twitter.com/realDonaldTrump/status/1241935285916782593

UNICEF (2019) 'Vaccinate Children. Save Lives', online: https://www.unicef.org.au/appeals/vaccinate-children-save-lives

Walsh, (2020) 'The Mystery of 'Excess Fatality', Intelligencer, 4 April, online: https://nymag.com/intelligencer/2020/04/coronavirus-is-only-part-of-the-excess-fatality-mystery.html

Watson, Kathryn (2020) 'Trump says he would mobilize military to distribute coronavirus vaccine when it's ready', CBS News, 15 May, online: https://www.cbsnews.com/news/trump-coronavirus-vaccine-military-distribution-ready/

Wee, Sui-Lee (2020) 'As Deaths Mount, China Tries to Speed Up Coronavirus Testing', New York Times, 9 February , online: https://www.nytimes.com/2020/02/09/world/asia/china-coronavirus-tests.html

Wellcome (2019) 'Wellcome Global Monitor 2018', online: https://wellcome.ac.uk/reports/wellcome-global-monitor/2018

Wheaton, Sarah (2020) 'Chinese vaccine would be 'global public good,' Xi says', Politico, 18 May, online: https://www.politico.com/news/2020/05/18/chinese-vaccine-would-be-global-public-good-xi-says-265039

White, Jeremy B. (2020) 'Trump claims 'total authority' over state decisions', Politico, 14 April, online: https://www.politico.eu/article/trump-claims-total-authority-over-state-decisions/

White, Nicholas J; Tran T. Hien, and François H. Nosten (2015) 'A Brief History of Qinghaosu', Trends Parasitol. Dec; 31(12): 607–610, doi: 10.1016/j.pt.2015.10.010, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4674626/

WHO (2011) 'Immunization, Vaccines and Biologicals: Thiomersal - questions and answers', World Health Organization, October, online: https://www.who.int/immunization/newsroom/thiomersal_questions_and_answers/en/

Willsher, Kim; Julian Borgia and Oliver Holmes (2020) 'US accused of 'modern piracy' after diversion of masks meant for Europe', The Guardian, 4 April, online: https://www.theguardian.com/world/2020/apr/03/mask-wars-coronavirus-outbidding-demand

Wong, Julia Carrie (2020) 'Hydroxychloroquine and coronavirus: a guide to the scientific studies so far', The Guardian, 24 April, online: https://www.theguardian.com/world/2020/apr/22/hydroxychloroquine-coronavirus-scientific-studies-research

Woodley (2019) 'New research again confirms no link between MMR vaccine and autism', Royal Australian College of General Practitioners, 6 March, online: https://www1.racgp.org.au/newsgp/clinical/new-research-again-confirms-no-link-between-mmr-va

Worldometer (2020) 'COVID-19 Coronavirus Pandemic: United States', Update 14 May, online: https://www.worldometers.info/coronavirus/country/us/

Xu, Jie et al (2020) 'Associations of stay-at-home order and face-masking recommendation with trends in daily new cases and deaths of laboratory-confirmed COVID-19 in the United States', MEDRXIV,12 May, online: https://www.medrxiv.org/content/medrxiv/early/2020/05/12/2020.05.01.20088237.full.pdf

Ye, Qian and Matthew Knight (2020) 'Scientists in China believe new drug can stop pandemic 'without vaccine'', Medical Express, 19 May, online: https://medicalxpress.com/news/2020-05-scientists-china-drug-pandemic-vaccine.html

Yu, Wen Bin; Guang da Tang and R.T. Corlett (2020) 'Decoding the evolution and transmissions of the novel pneumonia coronavirus (SARS-CoV-2) using whole genomic data', Research Gate, pre-print, February, online: https://www.researchgate.net/publication/339351990_Decoding_the_evolution_and_transmissions_of_the_novel_pneumonia_coronavirus_SARS-CoV-2_using_the_whole_genomic_data

Yong, Ed (2020) 'The U.K.'s Coronavirus 'Herd Immunity' Debacle', The Atlantic, 16 March, online: https://www.theatlantic.com/health/archive/2020/03/coronavirus-pandemic-herd-immunity-uk-boris-johnson/608065/

Zogby, James (2020) 'The End of US Empire: Covid-19 Exposes Once-Great Superpower as Epic Failure', Common Dreams, 11 May, online: https://www.commondreams.org/views/2020/05/11/end-us-empire-covid-19-exposes-once-great-superpower-epic-failure

3. COVID-19 and recovery: an early view

Masks were important during the 1918 influenza pandemic, with no vaccine and no antibiotics for pneumonia

THIS IS AN EARLY PERSPECTIVE on the Pandemic and recovery, written over March-April and published in American Herald Tribune on 10 April 2020.

IN ALL EPIDEMICS THERE are some principles which determine how well communities and nations will respond, how long the crisis will last and how soon there will be recovery. We can already draw some lessons from the very big differences between particular countries in the COVID-19 pandemic, in particular why some wealthy nations like the UK and the USA are amongst the hardest hit. Although the numbers infected are still rising and the impact has not yet peaked, in most countries, we are entitled to ask: why have some coun-

tries controlled infections and minimised deaths better than others? This question, I suggest, leads us to consider principles of public health systems, of health planning and of broader social coherence. In particular, we should observe renewed evidence which affirms that public health systems are best able to develop the planning, prevention measures and coordination necessary to deal with epidemics.

The year 2020 saw the rise of a global epidemic (a pandemic) with a new variety of coronavirus which attacks human respiratory systems. This virus is highly infectious, if not highly fatal, compared to the recent epidemics of SARS-1 and MERS. COVID-19 seems deadly mainly to the elderly and the unwell (Doherty 2020). Extremely restrictive measures have been applied across much of the globe, while health systems try to contain the crisis and work out how best to prevent and treat it.

Nevertheless, extraordinary levels of scepticism about the state in western societies have aggravated reactions to severe quarantine measures, leading some to question whether the epidemic even merits emergency attention. This is while we see reports of more than a thousand deaths every day in the USA, China's recovery after its extreme 'lockdown' measures, the scandal of dead bodies on the streets of Guayaquil in Ecuador (Gallón 2020), and while Cuban doctors help deal with the crisis in many countries (AP 2020). Scepticism has become cynicism in many western countries, due to a deep distrust of governments and their corporate partners. Undoubtedly powerful opportunists will exploit this crisis. Large corporations will automate and shed labour, some local authorities will extend arbitrary powers and Washington will persist with its economic and 'regime change' wars, using COVID-19 rationales where possible.

But this is a real public health crisis and it would be a mistake to ignore the fact that public health is, in itself, a central battleground. The same financial oligarchies that drive war and corporate privilege also block or colonise public health systems, which they see as multi-billion dollar milk cows. If individual liberties remain the central focus of critique, without recognition of the role of health systems, neoliberal ideologies will simply respond, as usual, on the 'individual right' to choose health insurance and to avoid 'authoritarian' public health systems. In the current crisis the principal alternatives we see to rapid response, protective public health measures is a neoliberal state which prevari-

cates, then resorts to heavy handed policing and its armed forces for social control (Haynes 2020; Browne 2020), when the crisis is undeniable and there is no adequate health workforce.

This is a comparative study of the COVID19 phenomenon, drawing on established principles of public health and epidemic control and making use of the best available epidemiological evidence. It aims to identify and articulate lessons about health systems. Key examples used are the USA and the UK, contrasted with China and South Korea. The Anglo-American duo have stressed more privatised health systems in recent decades, while both China and South Korea have moved from private insurance based systems to near universal coverage systems with national planning bodies and increased public investment in their health systems (Dai 2009, Qingyue, Hongwei, Wen, Qiang and Xiaoyun 2015; Kwon, Lee and Kim 2015). The comparison is not, therefore, between capitalist and 'socialist' or non-capitalist systems, but rather between systems which have weakened or reinforced their universal health guarantees and health planning commitments.

After some comments on the origins of COVID-19, and on general principles of epidemic control, I examine the interim evidence of differential impact in several countries. The conclusions are over which systems are best prepared, which will minimise casualties and which will recover sooner. These understandings deserve consideration in their own right.

1. THE ORIGINS OF COVID-19

Much is still unknown about the origin of the new coronavirus, and many of the early claims seem unfounded. A necessary agnosticism should accompany any honest study of this question of origin. COVID-19 (also called SARS-CoV-2) is the latest in the family of RNA coronaviruses, and at least 58 haplotypes (genetic varieties) have been identified, half from inside China and half from outside (Yu, Tang and Corlett 2020). China sequenced and published the virus genome in mid-January (Cohen 2020a) and since then Italian studies isolated and have been sequencing the genome of the Italian virus, showing a particular strain, slightly distinct from the Chinese varieties (Bergna 2020). Many new flu viruses come from animals, and COVID-19 has a possible link

to coronavirus haplotypes found in bats (Yu, Tang and Corlett 2020). The first recorded mass outbreak of infections came from the Huanan Seafood Market in Wuhan city, China.

However notice the difference between 'first recorded outbreak' and 'the origin'. There are several now which suggest that COVID-19 did not have its origins in Wuhan. This parallels the terrible 'Spanish Flu' epidemic of 1918-19, which is now generally thought to have not come from Spain. In that pandemic, where millions died, the flu was traced back to migrant workers from France, making it "unlikely" that the 1918 A(H1N1) influenza virus originated in Spain (Trilla, Trilla and Daer 2008). John M. Barry, in the Journal of Transnational Medicine, reviewed the literature on the origins of the 1918 pandemic and, drawing on US, British and Australian studies, concluded that "the most likely site of origin was Haskell County, Kansas". This county, an isolated area with many farm animals, had an outbreak of a virulent flu in January 1918, a flu which killed healthy young men. That flu spread to an army camp at Funston, and from there was carried to the war fields in France (Barry 2004). Australian Nobel laureate MacFarlane Burnet wrote that the evidence was "strongly suggestive" that the disease started in the United States and spread with "the arrival of American troops in France" (Burnet and Clark 1942). Barry concludes by saying "the fact that the 1918 pandemic likely began in the United States matters because it tells investigators where to look for a new virus. They must look everywhere" (Barry 2004).

An early Chinese genetic study suspected that COVID-19 came to Wuhan from elsewhere. This analysis suggested that the virus "was potentially imported from elsewhere; the crowded market then boosted SARS-CoV-2 circulation" (Yu, Tang and Corlett 2020). Another Chinese study of the first 41 patients admitted to hospital and diagnosed with COVID-19, observed that 27 (66%) "had been exposed to Hunan seafood market" (Huang et al 2020), but 13 (33%) had not. "That's a big number, 13 , with no link" said infectious disease specialist Daniel Lucey of Georgetown University (Cohen 2020). Professor Robert Garry, from the University of Tulane in New Orleans, also pointed out "our analyses, and others too, point to an earlier origin than [Wuhan]. There were definitely cases there, but that wasn't the origin of the virus" (Holland 2020). Then a British study, looking at 160 varieties and combining them in three groups, with A as the ancestral strain, found that most of the COVID19

varieties from Wuhan and from east Asia were Type B and non-ancestral (Forster, Forster, Renfrew and Forster 2020).

The transmission path was not well anticipated. Later genomic studies showed that most cases of the outbreak in New York came from Europe; these cases were detected late, due to a lack of testing. Presidents Trump's 31 January entry ban on people from China had no impact on this source of infection (Zimmer 2020). Later links were found to US warships and US military bases (Arkin 2020).

Many new viruses come from animals, and COVID-19 may have an ancestral link with coronavirus strains found in bats; however no definite link of this sort has been established with the Wuhan outbreak. Nevertheless, western media showed video of a Chinese woman eating a cooked bat, suggesting a Chinese origin. The BBC has pointed out this was from a 2016 travel show, shot on the Pacific island of Palau (BBC 2020).

Importantly, there are reports of earlier cases in both Italy and the USA. In northern Italy local doctors remember "a very strange pneumonia, very severe, particularly in old people" in November and December of 2019. That may mean that "the virus was circulating [there] ... before we were aware of this outbreak occurring in China" (Poggioli 2020). The first cases in the USA have also been linked to the many flu deaths throughout 2019. When Centre for Disease Control (CDC) Director Robert Redfield was asked whether some of the US 'flu deaths' might have been COVID19, and wrongly diagnosed, he replied "some cases actually have been diagnosed [that way] in the US to date" (New China TV 2020). This raised the possibility of 2019 cases in the USA, perhaps before Wuhan's December 2019 outbreak. That admission led Chinese official Lijian Zhao to demand 'transparency' from the US: "When did patient zero begin in the US? How many people are infected ... be transparent! Make public your data! US owes us an explanation" (Zhao 2020). The CDC's acknowledgement of early and perhaps widespread infections in the USA was reinforced by estimates from the Director of the Department of Health in the state of Ohio, Amy Acton. She was reported as saying that "the fact of community spread says that at least 1 percent ... is carrying this virus in Ohio today ... over 100,000" (Sullivan 2020). However the matter of 2019 infections and deaths in Italy and the USA is as yet unresolved.

There have also been suggestions that the virus may have come the biological warfare laboratories of the US military. Suspicions were aroused by the sudden closure of the US army's bioweapons research centre at Fort Detrick in Maryland, in August 2019. This closure was due to fears that "contaminated waste" or agents such as Ebola, smallpox and anthrax could leak from the facility (Wyatt 2020). There was also the presence of US soldiers at the Military World Games in Wuhan in October 2019, just before the Wuhan outbreak. Both issues create grounds for suspicion, yet no direct link has as yet been established. One group of mostly US-based scientists, looking at the characteristics of the virus, have asserted that SARS CoV-2 was "not a laboratory construct" but had natural origins (Anderson, Rambaut, Lipkin, Holmes and Garry). However the better view of their report - hedged with "likely", "probably", "not been described" (i.e. no evidence) and "we do not believe" qualifiers - is that they could find 'no evidence' of a laboratory origin. So evidence on this matter also remains unresolved.

Overall, there are several sources of evidence that suggest COVID-19 did not originate in Wuhan, nor its seafood market, although that was the first recorded largescale outbreak. Politicised talk of a 'Chinese virus' parallels the misnaming of the 1918 pandemic as 'Spanish Flu'. Most other claims are not well founded. In these circumstances an agnostic approach, open to new evidence, is necessary if we want to really understand the origin of COVID19.

2. PRINCIPLES OF EPIDEMIC control

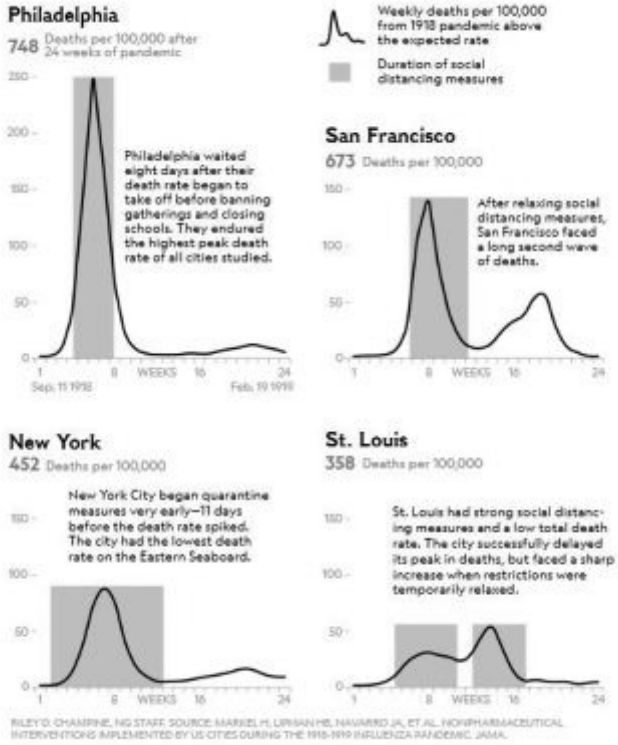
In 2018 the WHO, writing of 'challenges and risk factors' for epidemics, spelt out some contemporary risk factors and emphasised key features of an effective response. Current risk factors are aggravated by greater international travel, growing peri-urban areas which have contact with animals, the massive displacement of people by wars and disasters, the overuse of antibiotics which has created microbial resistance, new hazardous agricultural practices and "poor health care systems that have inadequate infection prevention and control practices" (WHO 2018: 25-26). Effective responses to an epidemic require early detection, then containment measures followed by control and mitigation then, if possible, elimination or eradication (WHO 2018: 28-30)

Health researchers have repeatedly argued that "to accurately predict, plan, and respond to current and future influenza pandemics, we must first better understand the events and experiences of 1918 ... we must remain vigilant and use the knowledge we have gained from 1918 and other influenza pandemics to direct targeted research and pandemic influenza preparedness planning, emphasizing prevention, containment, and treatment." (Morens, Taubenberger, Harvey and Memoli 2010). Of course, planning and prevention are notable features of public health systems, but quite scarce in systems that rely on private health care (Anderson 2007).

Nevertheless, even in the USA which have never had a well-developed public health system, components of a pandemic plan were utilized during the 1918–1919 flu crisis. There was "coordination between different levels and branches of government, improved communications ... mass dispensing of vaccines, guidelines for infection control, containment measures including case isolation and closures of public places, and disease surveillance", which were employed "with varying degrees of success" (Ott, Shaw, Danila and Lynfield 2007). Today the US maintains a Centre for Disease Control and Prevention (CDC), but it lacks a universal health guarantee and carries the burden of corporatised 'managed care' (Sekhri 2000).

There are some important lessons from the US experience in 1918-1919. Strochlic and Champine (2020) stress the danger of relaxing restrictive quarantine measures too soon – those US cities that kept social closures for some weeks after the peak of casualties avoided a second 'spike' and had the lowest overall death rates. Unlike New York today under COVID-19, a city with the highest rates of infection, New York City in 1918 began its quarantine measures early and kept them for four weeks after the spike in deaths. It then had "the lowest death rate of the eastern seaboard". San Francisco, St Louis and some other cities, which ended their quarantine measures earlier, had a second round of deaths and a second round of quarantine restrictions (Strochlic and Champine 2020). See Graphic 1 below. So the lesson here is to implement quarantine measures (1) early and (2) keep them going for some weeks after the peak in deaths.

GRAPHIC 1: 1918 RESTRICTIONS in US cities (Strochlic and Champine 2020)



IN SPAIN THE EPIDEMIC was first widely reported in late May 1918. Rates of death from influenza shot up, but the first epidemic seemed to have ended in 2 months. However a second epidemic began slowly in September, peaking in October. No antibiotics were then available for pneumonia, which was usually the final killer. A third and final period of the epidemic was from January to June 1919. Deaths were more common amongst babies and young people and more than 260,000 (1% of the Spanish population) died (Trilla, Trilla and Daer 2008).

So the current pandemic restrictive measures are not new: quarantine regimes including distancing and the wearing of masks, while treatments are developed and a vaccine to accelerate social immunity is found. Isolation measures, closures of social facilities and social distancing must be developed ac-

cording to local circumstance, preferably with popular education and broad social consent. Such measures are particularly important to slow the epidemic, especially when there is limited knowledge of how to treat and contain it.

There is a consensus on this across many different countries. George Gao, head of the Chinese CDC says "social distancing is the essential strategy for the control of any infectious diseases, especially if they are respiratory infections". "Non-drug measures" are particularly important, especially without clear knowledge of the appropriate drugs. This social distancing generally includes isolating those with the infection, quarantining their close contacts, suspending social gatherings and restricting movement, if not complete lockdowns (Cohen 2020). It has been suggested that, with general quarantine measures "compliance of below 70% is unlikely to succeed for any duration of social distancing, while a compliance at the 90% level is likely to control the disease within 13–14 weeks, when coupled with effective case isolation and international travel restrictions" (Chang, Harding, Zachreson, Cliff and Prokopenko 2020). More targeted quarantine measures would require large scale testing.

The phenomenon of 'herd immunity' can occur in two ways, (1) by 'natural selection', where largescale death will claim many and only those able to develop auto-immunity survive; or (2) by an accelerated method where a vaccine is given to rapidly increase the numbers of those with antibodies for the particular virus. This both slows down transmission and protects those with transmitted immunity (Regalado 2020). The wide use of mass vaccines across the 20th century saved millions of lives, from diseases such as smallpox, polio, cholera and measles. At least 16 vaccines for COVID-19 are under testing at the time of writing (Akst 2020), and estimates of availability range from two to eighteen months.

3. DIFFERENTIAL IMPACT

Even as COVID19 infection rates remain high in much of Europe and the USA, we can see important differences across countries in the impact, management and recovery from the virus. Interpreting interim data is difficult but necessary, if we are to learn contemporary lessons. The first obstacles to reading the data are that there is under reporting and low levels of testing. Problems for

learning also come from the commitment, in many countries, to highly privatised health systems. These are notoriously weak in preventive health and crisis management, There is also a great resistance in western societies to learning from other cultures. For example, it has been pointed out that when China was in the midst of its crisis, with hundreds dying, this was cited in western circles as "proof their government was incompetent"; yet when China's infection rates fell this was said to be "proof they were lying about numbers" (Mastracci 2020). Not so many were ready to learn from China.

We have to recognise some caveats about the use of contemporary, interim data. Although the WorldOmeter site collates COVID19 data from governments, and seems to do this fairly reliably, the state reports do vary considerably. Yet it is easy to check, for example, the published government data from (e.g.) the UK, South Korea and the USA (GOV.UK 2020, KCDC 2020 and CDC 2020) against that collated at WorldOmeter. Nevertheless, this raw data has to be treated with caution. Some useful caveats on using this epidemic data were spelt out in an article at the BBC. Henriques (2020) pointed out that the varied scale of testing will have a great impact on cited infections, suggesting that the "lack of widespread, systematic in most countries is probably the main source of discrepancies in death rates internationally" (Henriques 2020). As it happens, information on the level of testing in many country has since become available. Henriques also points out the difference between 'dying with' and 'dying from' the disease, including the fact that the reasons for medical registration of death varies between countries. The H1N1 epidemic of 2009 also showed wide cross-country variation in death rates, and some of the higher rates were later revised downwards when better information was available (Vaillant, La Ruche, Tarantola and Barboza 2009). Conversely, deaths may also be underestimated, as many are never tested. Most likely, infection rates are more unreliable than the death rates, due to under reporting and lack of testing. Finally, levels of bacterial resistance (important in the case of pneumonia, a major cause of COVID19 related death) may vary between countries. Differing demographics are also important. For example, there are said to be proportionally twice as many Italians over 65 years of age as there are Chinese (Henriques 2020). These are important factors to bear in mind, but should not deter us from making use of the best available evidence. Commentary without evidence is guesswork.

It is important to discuss, in particular, why the UK and US reactions and disease control seem to have been so poor. The Anglo-American duo have been presented, by UK and US agencies, as at the peak of "international preparedness for epidemics and pandemics" in measures of 'Global Health Security' (IPT 2020). Yet virtually none of the impact data supports that claim. Daily deaths from COVID19 in China began to fall in late February, to just a handful each day in the first week of April. In that same first week of April the USA was suffering more than one thousand deaths every day and the UK around 500 or more deaths every day (WorldOmeter 2020). Why did these two wealthy countries fare so badly?

The UK and USA reacted very slowly to the pandemic and, by early April when cases and deaths had fallen in China and South Korea, and were peaking in much of Europe (by late March in Italy and Spain), US and UK rates were still rising (Burn-Murdoch 2020). On 10 April COVID19 linked deaths were 4 times (in the USA) and 9 times (in the UK) the global average (WorldOmeter 2020). By that time the rate of testing in both countries was comparable and relatively high. Table 1 below shows testing in the UK rising strongly only in early April. This table has no data for China, but we have other sources which show that Chinese testing was intense, at least in the affected provinces.

Table 1: COVID19 tests per million population

	5 April	**10 April**
USA	5,306	7,167
UK	2,880	4,392
Netherlands	4,401	5,926
South Korea	8,996	9,310
France	3,436	5,114
Italy	11,436	14,114
Spain	7,593	7,593
China	na	na

Source: WorldOmeter 2020

GUANGDONG PROVINCE "did more than 320 000 RT-PCR tests on those who had attended fever clinics and hospitals over 30 days between January and February, 2020". This was "about ten times the baseline testing capacity for routine influenza-like illness surveillance during the influenza season of 2018" (Forster, Forster, Renfrew and Forster 2020). Indeed, the Chinese were the first to sequence and publish the genome of the virus, in mid-January, and to develop tests (Cohen 2020a). At the time of writing, "of 202 companies around the world producing commercialised Covid-19 test kits, 92 are from China" (Cookson and Hodgson 2020). WHO official Bruce Aylward pointed out that China had to innovate to stop the first largescale outbreak of the virus, and to isolate and quarantine those found to be infected. That meant testing. Yet as late as mid-March the UK government announced that it would only test for COVID-19 among people admitted to hospital, and that people with mild symptoms wouldn't be tested but should simply stay at home for seven days" (Hamzelou 2020).

By way of contrast, according to the WHO, South Korea was "pretty rigorous about testing all the suspect cases and finding all the contacts ... [and so] they seem to have turned a corner" (Hamzelou 2020). The much lower death rate in South Korea tends to bear that out. The contrast with an indecisive UK approach was noted.

"In contrast with the early stages in the UK – where Boris Johnson said coronavirus was likely to "spread a bit more", South Korean health officials quickly learned the lessons from Wuhan ... [they] prioritised identifying and isolating people testing positive for the disease, and developed capacity to run about 15,000 diagnostic tests a day" (Beaumont 2020).

Other sources noted the early high levels of testing in China and South Korea, including on many who had no symptoms of illness. "Widespread testing" in China, Iceland and South Korea "identified a high proportion of infections in people without discernible symptoms" (Gale 2020). The Chinese Centre for Disease Control and Prevention developed the earliest tests and "details of it were posted on the World Health Organization website on 24 January, just after the Wuhan lockdown was announced". By late March China had conducted "well over 320,000 tests" (Beaumont 2020). Cookson and Hodgson (2020) wrote that "Germany and South Korea have led the way in rolling out tests on a large scale, but the UK and US have been laggards".

It has emerged that US military bases and some warships have become strong sources of infection and likely also international transmission (Arkin 2020), as indeed they were a century ago, with the so-called 'Spanish flu'. That remains an as-yet unaddressed threat to the US population and the international community, given that the US has nearly 800 military bases around the world (Vine 2015). Crowded prisons have become an additional hotbed of COVID19 infection, and the US has the biggest prison system and the highest imprisonment rate on earth (Wagner and Sawyer 2018). This threatens the lives of prisoners and staff (Yan 2020) and creates a hotline of community transmission because, contrary to popular belief, there is constant high-level traffic between prisons and wider communities. There is little sign that either the US military or prison authorities have a plan to deal with these threats.

In the absence of a vaccine, drug treatments varied considerably, although similar drugs were potentially available. One large survey of more than 6,000 physicians from 30 countries sheds some light on the disparity. Substantial differences can be seen between US and Chinese doctors. The survey question was "of the medications you have personally prescribed or have seen used, please indicate which ones are most effective". Results are shown in Table 2 below.

Table 2: Medications used for COVID19 and thought to be "most effective"

	Hydroxychlor. or Chloroquine	Nothing	Anti-viral/ immunotherapy	Antibiotics	Analgesics	Plasma
USA	23%	51%	1% - 10%	18%	21%	48%
China	44%	4%	35% - 42%	33%	20%	3%

Source: Sermo 2020. (1) Plasma used was from recovered patients, a sort of pre-vaccine. (2) The antiviral-immunotherapy drugs included Lopinavir, Ritonavir, Remdisivir, Oseltamivir and Interferon-beta.

THE MOST STRIKING DIFFERENCES are that very many US doctors often regarded no medication as the best option, while Chinese doctors made

far greater use of anti-viral or immunotherapy drugs, and a type of pre-vaccine treatment of plasma from recovered patients. In early February the Cuban interferon variant (Interferon Alpha-2B Recombinant: IFNrec) was also being used in China, in combination with the anti-virals (Telesur 2020; O'Connor 2020). The top "more information topic" all doctors requested was more on "the efficacy of existing medicines" (Sermo 2020: 19). Clearly there was uncertainty, but Chinese doctors were using more sophisticated medication. Why were US doctors more reluctant to use anti-virals? First, they could not use the Cuban version of interferon because of the economic blockade imposed by their government against Cuban products (O'Connor 2020). Second, it seems likely that the medical consensus in the USA - dominated as it is by large private health corporations, managed care and expensive patented medicines - would not easily countenance the provisional use of unproven and expensive antivirals. In China, on the other hand, the antivirals were likely much more affordable.

Western scientists have acknowledged that the speed in vaccine development "is thanks in large part to early Chinese efforts to sequence the genetic material of Sars-CoV-2, the virus that causes Covid-19. China shared that sequence in mid-January (Spinney 2020; Cohen 2020a). By early April, vaccines in development were said to include two "frontrunners" in the US, one in China and one in the UK, all of which had clinical trials underway. Another 11 were in development (Akst 2020). In addition, the Hong Kong listed CanSino Biologics has a vaccine project with the Chinese military (Bloomberg 2020) and the UK giant GlaxoSmithKline has a collaborative vaccine project with China's Xiamen Innovax Biotech (Taylor 2020). There is clearly a race to produce first and to be recognised as safe and effective. Billions of dollars are at stake, as well as many thousands of lives. No doubt there will be a war of words when the first vaccines emerge. Estimates of vaccine readiness vary from two months to 18 months. However it seems likely that the Chinese companies, in particular, will fast track their process.

With the uncertainty about treatment and in the absence of a vaccine, 'non-pharmaceutical' means of containing the spread of the virus became important. That meant quarantine measures and limits on movement and association, to prevent an escalation of contagion. These measures must necessarily be tailored to particular circumstances and, to justify any curtailment of civil lib-

erties, should be 'proportionate' to the particular threat posed. The UN Human Rights Committee's General Comment on Article 12 ('Freedom of Movement') of the International Covenant on Civil and Political Rights, explains proportionality in this way:

"Restrictive measures must conform to the principle of proportionality; they must be appropriate to achieve their protective function; they must be the least intrusive instrument amongst those which might achieve the desired result; and they must be proportionate to the interest to be protected." (HRC 1999: 14)

In this sense, restrictive measures during the pandemic must relate to the threat and should be relaxed when the threat has diminished. Since a wide variety of restrictive measures have been imposed across a large range of countries, it necessarily falls to citizens of those places to demand accountability, full explanations and the best targeted and "least intrusive" measures. Nevertheless, as mentioned above, during the 1918 epidemic in the USA, the cities that relaxed too soon were hit by a second wave (Strochlic and Champine 2020). That potential threat is a relevant consideration. So the public health and civil rights logic is for gradual relaxation which allows for control of transmission, until proper treatment is found. A Chinese study on preventing a second wave of infections was widely misreported as saying that "lockdowns shouldn't be fully lifted until coronavirus vaccine found" (Reynolds 2020). In fact that study calls for a gradual response, with vigilance to "allow policy makers to tune relaxation decisions to maintain [low] transmissibility" (Leung, Wu, Liu and Leung 2020).

On quarantine, once again, we see big differences between China and the USA. In Wuhan, once the new virus was detected, there was an early and severe lockdown of the city and to some extent Hubei province, to prevent it from spreading to the rest of the country. That was only relaxed after 76 days, several weeks after new infections had peaked and fallen (CGTN 2020). In the US the restrictions were at first aimed at the supposed source in China, then others were imposed quite late. The US national health system, such as it is, was poorly equipped to manage the process. Washington moved slowly and indecisively, with a series of complacent and repeated assurances throughout February from President Trump, that "we have it very well under control" (Brewster 2020; Guerra 2020). Similarly British leader Boris Johnson was accused of

complacency, being "slow to act" and even suggesting that some natural "herd immunity" might be necessary. This sounded like the UK government "was deliberately aiming for 60 percent of the populace to fall ill" (Stewart, Weaver and Proctor 2020; Yong 2020). Without vaccine assisted "herd immunity", such an approach would mean tens and perhaps hundreds of thousands could die. As it turned out, Johnson himself contracted the virus and was hospitalised.

The rapid and strict Chinese measures seemed to contain the spread of the virus in Wuhan and some contiguous central provinces, while other provinces were less unaffected (Fan et al 2020). Another study showed a similar pattern, with western, northern and some of the eastern provinces relatively unaffected (Guan et al 2020). China's prompt and comprehensive measures (early detection, massive localised testing including temperature monitoring, treating, contact tracing and quarantine) allowed the hardest hit area, Wuhan, to gradually emerge from severe quarantine restrictions after 76 days. That city now has a colour coded, graduated system to allow progressively greater freedom to move around (Galindo 2020). In the USA the 'hot spots' have been New York and New Jersey, but very quickly high levels of infection, including community transmission, were reported on the west coast (California, Washington), in the great lakes area (Illinois, Michigan) and in the south east (Louisiana, Florida) (CDC 2020). By 9 April twelve US states had death rates of 35 per million, more three times the reported global average (WorldOmeter 2020).

Amongst the many institutional failures has been the failure to predict better 'preparedness' for such an epidemic. The crisis poses a great challenge to US ideology, based as it has been on corporate privilege and a belief in US technological superiority. In the past this neo-colonial approach was linked to the rationale of 'market solutions'. For example, in late 2019 an Anglo-American group created a 'Global Health Security Index' which ranked the USA at the top of countries able to deal with "infectious disease outbreaks that can lead to international epidemics and pandemics"; the UK was number two (IPT 2020). Yet after three months of the COVID-19 pandemic many of the GHS rankings seem absurd, with the top three (USA, UK and The Netherlands) showing significantly worse than world average fatality rates from COVID-19. Of the highly ranked GHS countries, only South Korea showed some consistency between GHS ranking and superior performance. See Table 3 below.

Table 3: GHS rankings vs. COVID-19 death rates

	GHS rank / 195	COVID-19 deaths / million **
USA	1	50
UK	2	118
Netherlands	3	140
WORLD		12.3
South Korea	9	4
China	51	2

Column 1: IPT 2020 (Top GHS rankings means those countries "most prepared" for an epidemic); Columns 2 & 3: WorldOmeter 2020, data at 10 April 2020;

SINCE ALL THE ABOVE states, by early April, had fairly high and comparable levels of testing (4,400 to 9,300 per million), and as death rates are more reliable than infection rates, we are entitled to use death rates as a rough inverse measure of epidemic preparedness. That is, unless we assume that the full extent of the virus has not yet been measured, or that the virus may be about to recur in China or Korea. There is not much reason, at this stage, to imagine that under-reporting of death is better or worse in any of those states.

Indeed South Korea, with an early and strong testing regime (KCDC 2020), was able to carry out more selective quarantine measures, "to make tactical decisions regarding schools ... movements ... to move forward without some of the draconian measures", and this allowed it to keep many factories, shopping malls and restaurants open (Beaubien 2020).

This brings us to the 'anti-authoritarian' argument, used by the Anglo-American duo. Both the US and the UK have either rejected a full, well-coordinated public health system (the US) or undermined it (in the UK) on the grounds of 'liberty' and the 'authoritarian' nature of large, well-resourced public health systems. Yet both, once they realised the scale of the epidemic, resorted to their police and armed forces to control civilian populations, recognising that such measures were beyond the capacity of their health workforce (Haynes 2020; Browne 2020). Where restrictive measures are imposed early by

local health authorities, there is more likely to be understanding and compliance.

4. LESSONS

There is also the question of culture and broader social cohesion. It has been suggested that eastern countries like South Korea and China have done better because of the "deep divisions and poor leadership in the west", and that "the trust that citizens must have in governments is low in the west and that has hurt its ability to mobilise people in a time of grave peril" (Chaulia 2020). The cynical reactions to the erratic behaviour of UK and US leaders lend some support to this claim. The western stereotype is often that "authoritarian" systems fail from suppressing information and communications (Gebrekidan 2020). But the suggested authoritarian-liberal dichotomy is a false one, because the late entry of the US and UK to quarantine restrictions was accompanied by severe policing, severe penalties, the use of police drone surveillance and the domestic deployment of armed forces (Castle 2020; Haynes 2020; Browne 2020). All public health systems are paternalistic, or maternalistic; but the use of armed forces due to incapacity in the public health system is a serious failing.

There are important lessons from China, as from principles drawn from past epidemic management, and the crisis has exposed weaknesses in the US and UK systems. The social mobilisation in Wuhan, organised by local authorities and backed by the central government, certainly helped early recovery from what could have been an even more devastating epidemic (Leung, Wu, Liu and Leung 2020). Other countries cannot copy that experience, but they can observe and draw lessons (CGTN 2020).

Early restrictive and quarantine measures were in principle justified, but by international law they should be 'proportionate' to the particular threat posed and employing the 'least restrictive' measures possible. Public health logic accepts that restrictions on movement and association should be relaxed as the infection rates abate, in coordination with an epidemiological vigilance to ensure that a second wave of infections does not arise (Leung, Wu, Liu and Leung 2020; EurekAlert 2020). Timeframes should reassure populations that there is

some end in sight to restrictive measures, and that relaxation can begin even before vaccines are available, when the disease is controlled.

It seems likely that greater experimentation with the use of anti-viral and immunotherapy drugs helped treatment in China, but this was impeded in the USA, where strong patent laws and corporate management make the newer forms of such drugs expensive. There is now strong competition to produce the first vaccine, and for that reason level some availability seems likely within two months. However we can expect to see a war of words between the companies involved, over questions of safety and efficacy.

Overall, countries such as the US and the UK, which had weak or run down public health systems, failed their own peoples by predictable deficits in preparedness, health workforces, protective equipment, preventive capacity, early detection and swift responses. When they did respond they tended to draw on security forces in lieu of an effective health workforce. Death rates were far higher than average and recovery may take longer. In the case of the US, the deficit is compounded by serious infection in the 150 military bases at home and the 800 US military bases abroad. Those pose a risk to the US population and to the many host countries. China and South Korea did better through their universal health cover, greater investment in health systems and greater commitment to health crisis planning

REFERENCES

Akst, Jef (2020) 'COVID-19 Vaccine Frontrunners', The Scientist, 7 April, online: https://www.the-scientist.com/news-opinion/covid-19-vaccine-frontrunners-67382

Andersen, Kristian G., Andrew Rambaut, W. Ian Lipkin, Edward C. Holmes & Robert F. Garry (2020) The proximal origin of SARS-CoV-2, 17 March, online: https://www.nature.com/articles/s41591-020-0820-9[1]

Anderson, Tim (2007) 'Health, income and public institutions: explaining Cuba and Costa Rica', New School Economic Review, Volume 2(1), 22-37

1. https://www.nature.com/articles/s41591-020-0820-9?sf231596998=1

AP (2020) 'Cuban Docs Fighting Coronavirus Around World, Defying US', New York Times, 3 April, online: https://www.nytimes.com/aponline/2020/04/03/world/europe/ap-cb-virus-outbreak-cuban-doctors.html

Arkin, William (2020) 'First Public map reveals military bases with coronavirus cases as Pentagon secrecy draws backlash', 9 April, Newsweek, online: https://www.newsweek.com/exclusive-first-public-map-reveals-military-bases-coronavirus-cases-pentagon-secrecy-draws-1496951

Barry, John M. (2004) 'The site of origin of the 1918 influenza pandemic and its public health implications', J Transl Med. 2004; 2: 3. 20 Jan. doi: 10.1186/1479-5876-2-3, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC340389/

BBC (2020) 'China coronavirus: Misinformation spreads online about origin and scale', 30 January, online: https://www.bbc.com/news/blogs-trending-51271037

Beaubien, Jason (2020) 'How South Korea Reined In The Outbreak Without Shutting Everything Down, NPR, 26 March, online: https://www.npr.org/sections/goatsandsoda/2020/03/26/821688981/how-south-korea-reigned-in-the-outbreak-without-shutting-everything-down

Beaumont, Peter (2020) 'Coronavirus testing: how some countries got ahead of the rest', The Guardian, 2 April, online: https://www.theguardian.com/world/2020/apr/02/coronavirus-testing-how-some-countries-germany-south-korea-got-ahead-of-the-rest

Bergna, Annalisa (2020) 'Coronavirus Diaries: I'm a Biologist in Milan Working Nonstop to Understand COVID-19', Slate, 18 March, online: https://slate.com/technology/2020/03/coronavirus-milan-biologist-sequencing.html

Bloomberg (2020) 'Chinese Vaccine Approved for Human Testing at Virus Epicenter', 18 March, online: https://www.bloomberg.com/news/articles/2020-03-18/chinese-vaccine-approved-for-human-testing-at-virus-epicenter

Brewster, Jack (2020) 'Fauci Says It's 'False' To Say The Coronavirus Outbreak Is Under Control; Here Are All The Times Trump Said It Was', Forbes, 5 April, online: https://www.forbes.com/sites/jackbrewster/2020/04/05/fauci-says-its-false-to-say-the-coronavirus-outbreak-is-under-control-here-are-all-the-times-trump-said-it-was/

Browne, Ryan (2020) 'US military preparing to deploy additional forces to support coronavirus response', 3 April, CNN, online: https://edition.cnn.com/2020/04/03/politics/us-military-additional-forces-coronavirus/index.html

Burnet, F.M. and Ellen Clark (1942) Influenza: a survey of the last fifty years, MacMillan, Melbourne

Burn-Murdoch, John (2020) 'Coronavirus outbreaks plateau in Italy and Spain', Financial Times, 3 April, online: https://www.ft.com/content/c764b98d-ae03-41ac-a2ca-8309f32d5e1c

Castle, Stephen (2020) 'To Enforce Coronavirus Rules, U.K. Police Use Drones, Shaming and Easter Egg Bans', New York Times, 1 April, online: https://www.nytimes.com/2020/04/01/world/europe/uk-police-coronavirus.html

CDC (2020) 'Coronavirus Disease 2019 (COVID-19): cases in US, online: https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html

CGTN (2020) 'What does Wuhan tell us?', 8 April, online: https://www.youtube.com/watch?v=q_z7dX4lGl0

Chang, Sheryl L.; Nathan Harding, Cameron Zachreson, Oliver M. Cliff and Mikhail Prokopenko (2020) 'Modelling transmission and control of the COVID-19 pandemic in Australia', 3 April, online: https://arxiv.org/pdf/2003.10218.pdf

Chaulia, Sreeram (2020) 'Why East beats West in the war against coronavirus', RT, 27 March, online: https://www.rt.com/op-ed/484298-east-west-war-coronavirus/

Cohen, Jon (2020a) 'Chinese researchers reveal draft genome of virus implicated in Wuhan pneumonia outbreak', Science Mag, 11 january, online: https://www.sciencemag.org/news/2020/01/chinese-researchers-reveal-draft-genome-virus-implicated-wuhan-pneumonia-outbreak

Cohen, Jon (2020) 'Not wearing masks to protect against coronavirus is a 'big mistake,' top Chinese scientist says', Science Mag, 27 March, online: https://www.sciencemag.org/news/2020/03/not-wearing-masks-protect-against-coronavirus-big-mistake-top-chinese-scientist-says

Cookson, Clive and Camilla Hodgson (2020) 'What coronavirus tests does the world need to track the pandemic?, Financial Times, 1 April, online: https://www.ft.com/content/0faf8e7a-d966-44a5-b4ee-8213841da688

Dai, Candace Tran (2009) 'New Reforms to the Health System', China perspectives, , No. 3 (79), pp. 108-109

Doherty, Peter (2020) 'The pandemic we had to have', The Saturday Paper, 28 March, online: https://www.thesaturdaypaper.com.au/opinion/topic/2020/03/28/the-pandemic-we-had-have/15853140009591

EurekAlert (2020) 'The Lancet: Modelling study estimates impact of relaxing control measures on possible second wave of COVID-19 in China', 8 April, online: https://www.eurekalert.org/pub_releases/2020-04/tl-pss040820.php

Fan, Jingchun; Xiaodong Liu, Weimin Pan, Mark W. Douglas, and Shisan Bao (2020) 'Epidemiology of 2019 Novel Coronavirus Disease-19 in Gansu Province, China, 2020', Emerging Infectious Diseases, Volume 26, Number 6—June 2020, online: https://wwwnc.cdc.gov/eid/article/26/6/20-0251_article

Forster, Peter; Lucy Forster, Colin Renfrew, and Michael Forster (2020) 'Phylogenetic network analysis of SARS-CoV-2 genomes', PNAS, 8 April, online: https://www.pnas.org/content/early/2020/04/07/2004999117

Gale, Jason (2020) 'Coronavirus Testing in China Finds More Symptom-Free Cases', Bloomberg, 3 April, online: https://www.bloombergquint.com/global-economics/fresh-coronavirus-testing-in-china-finds-more-symptomless-cases

Galindo, Ana (2020) 'Wuhan will emerge from the closure after 76 days', Viral Newsity, March 27, online: https://viralnewsity.com/wuhan-will-emerge-from-the-closure-after-76-days/[2]

Gallón, Natalie (2020) 'Bodies are being left in the streets in an overwhelmed Ecuadorian city', CNN, 4 April, online: https://edition.cnn.com/2020/04/03/americas/guayaquil-ecuador-overwhelmed-coronavirus-intl/index.html

Gebrekidan, Selam (2020) 'For Autocrats, and Others, Coronavirus Is a Chance to Grab Even More Power', New York Times, 30 March, online: https://www.nytimes.com/2020/03/30/world/europe/coronavirus-governments-power.html

GOV.UK (2020) 'Number of coronavirus (COVID-19) cases and risk in the UK', online: https://www.gov.uk/guidance/coronavirus-covid-19-information-for-the-public

Guan, Wei-jie et al (2020) 'Clinical Characteristics of Coronavirus Disease 2019 in China', New England Journal of Medicine, 28 February, online: https://www.nejm.org/doi/full/10.1056/NEJMoa2002032

2. https://viralnewsity.com/wuhan-will-emerge-from-the-closure-after-76-days/?fbclid=IwAR1Hqq2_lvq9avXQzLGMCn9R1Zn-Vky_ormPNXVN_yTIuwfG0y0mKmz0pJC4

Guerra, Angel (2020) 'Trump y la negación del coronavirus', La Jornada, 26 March, online: https://www.jornada.com.mx/2020/03/26/opinion/024a1mun

Hamzelou, Jessica (2020) 'WHO expert: We need more testing to beat coronavirus', New Scientist, 16 March, online: https://www.newscientist.com/article/2237544-who-expert-we-need-more-testing-to-beat-coronavirus/

Haynes, (2020) 'Coronavirus: Armed forces rapidly expand their response to COVID-19', Sky News, 7 April, online: https://news.sky.com/story/coronavirus-armed-forces-rapidly-expand-their-response-to-covid-19-11970136

Henriques, Martha (2020) 'Coronavirus: Why death and mortality rates differ', BBC, 2 April, online: https://www.bbc.com/future/article/20200401-coronavirus-why-death-and-mortality-rates-differ

Holland, Kate (2020) 'Sorry, conspiracy theorists. Study concludes COVID-19 'is not a laboratory construct', ABC News, 27 March, online: https://abcnews.go.com/US/conspiracy-theorists-study-concludes-covid-19-laboratory-construct/story[3]

HRC (1999) 'Human Rights Committee, General Comment 27, Freedom of Movement (Art.12), U.N. Doc CCPR/C/21/Rev.1/Add.9, online: http://hrlibrary.umn.edu/gencomm/hrcom27.htm

Huang, Chaolin et al (2020) 'Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China', The Lancet, 15 February, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext

IPT (2020) 'Global Health Security Index', Index Project Team (IPT) [comprising the Nuclear Threat Initiative (NTI), the Johns Hopkins Center for Health Security (JHU) and The Economist Intelligence Unit (EIU)], online: https://www.ghsindex.org

KCDC (2020) 'The updates on COVID-19 in Korea', online: https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030

Kwon S, Lee Tj, Kim Cy (2015) 'Republic of Korea Health System Review', Vol.5 No.4. World Health Organization, Manila

Leung, Kathy; Joseph T. Wu, Di Liu and Gabriel M. Leung (2020) 'First-wave COVID-19 transmissibility and severity in China outside Hubei after control measures, and second-wave scenario planning: a modelling impact assessment', The Lancet, 8 April, online: https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)30746-7.pdf

3. https://abcnews.go.com/US/conspiracy-theorists-study-concludes-covid-19-laboratory-construct/story?id=69827832

Mastracci, Davide (2020) 'Don't Blame China For Your Government's COVID-19 Failures', Passage, 7 April, online: https://readpassage.com/dont-blame-china-for-your-governments-failure-to-contain-covid-19/

Morens, David M; Jeffery K. Taubenberger, Hillery A. Harvey, and Matthew J. Memoli,

(2010) 'The 1918 influenza pandemic: Lessons for 2009 and the future', Crit Care Med. 2010 Apr; 38(4 Suppl): e10–e20, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3180813/

New China TV (2020) 'CDC director says some COVID-19 deaths diagnosed as flu-related in U.S.', 12 March, online: https://www.youtube.com/watch?v=Y_dU2RCqWs4

O'Connor, Tom (2020) 'Cuba uses 'wonder drug' to fight Coronavirus around the world despite U.S. sanctions', Newsweek, 24 March, online: https://www.newsweek.com/cuba-drug-fight-coronavirus-us-sanctions-1493872

Ott, Miles; Shelly F. Shaw, Richard N. Danila, and Ruth Lynfield (2007) 'Lessons Learned from the 1918–1919 Influenza Pandemic in Minneapolis and St. Paul, Minnesota', Public Health Reports, Nov-Dec; 122(6): 803–810, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1997248/

Poggioli, Sylvia (2020) ''Every Single Individual Must Stay Home': Italy's Coronavirus Surge Strains Hospitals', NPR, 19 March, online: https://www.npr.org/2020/03/19/817974987/every-single-individual-must-stay-home-italy-s-coronavirus-deaths-pass-china-s

Qingyue M, Hongwei Y, Wen C, Qiang S, Xiaoyun L. (2015) 'People's Republic of China Health System Review', Vol.5 No.7. World Health Organization, Manila

Regalado, Antonio (2020) 'What is herd immunity and can it stop the coronavirus?', MIT Technology Review, 17 March, online: https://www.technologyreview.com/s/615375/what-is-herd-immunity-and-can-it-stop-the-coronavirus/

Reynolds, Emma (2020) 'Lockdowns shouldn't be fully lifted until coronavirus vaccine found, new study warns', CNN, 9 April, online: https://edition.cnn.com/2020/04/09/world/lockdown-lift-vaccine-coronavirus-lancet-intl/index.html

Sekhri, Neelam K. (2000) 'Managed care: the US experience', Bulletin of the World Health Organization, 78 (6), 830-844, online: https://www.who.int/bulletin/archives/78(6)830.pdf

Stewart, Heather; Mathew Weaver and Kate Proctor (2020) ''Nonchalant': Boris Johnson accused of Covid-19 complacency', The Guardian, 28 March, online: https://www.theguardian.com/world/2020/mar/27/nonchalant-boris-johnson-accused-of-covid-19-complacency

Strochlic, Nina and Riley D. Champine (2020) 'How some cities 'flattened the curve' during the 1918 flu pandemic', National Geographic, 27 March, online: https://www.nationalgeographic.com/history/2020/03/how-cities-flattened-curve-1918-spanish-flu-pandemic-coronavirus/

Sermo (2020) 'Sermo's COVID-19 Real Time Barometer Study', 25-27 March, online: https://public-cdn.sermo.com/covid19/c8/be4e/4edbd4/dbd4ba4ac5a3b3d9a479f99cc5/wave-i-sermo-covid-19-global-analysis-final.pdf

Spinney, Laura (2020) 'When will a coronavirus vaccine be ready?', The Guardian, 7 April, online: https://www.theguardian.com/world/2020/apr/06/when-will-coronavirus-vaccine-be-ready

Sullivan, Peter (2020) 'Ohio health official estimates 100,000 people in state have coronavirus'. The Hill, 12 March, online: https://thehill.com/policy/healthcare/487329-ohio-health-official-estimates-100000-people-in-state-have-coronavirus

Taylor, Nick Paul (2020) 'GSK allies with Innovax for COVID-19 vaccine R&D project', Fierce Biotech, 3 April, online: https://www.fiercebiotech.com/biotech/gsk-allies-innovax-for-covid-19-vaccine-r-d-project

Telesur (2020) 'Chinese Doctors Are Using Cuban Antivirals Against Coronavirus', 6 February, online: https://www.telesurenglish.net/news/cuban-antiviral-used-against-coronavirus-in-china-20200206-0005.html

Trilla, Antoni; Guillem Trilla, Carolyn Daer (2008) 'The 1918 "Spanish Flu" in Spain', Clinical Infectious Diseases, Volume 47, Issue 5, 1 September 2008, Pages 668–673, https://doi.org/10.1086/590567

Vaillant, L; G La Ruche1, A Tarantola, P Barboza (2009) 'Epidemiology of fatal cases associated with pandemic H1N1 influenza 2009', Eurosurveillance, Volume 14, Issue 33, 20/Aug/2009, online: https://www.eurosurveillance.org/content/10.2807/ese.14.33.19309-en

Vine, David (2015) 'Where in the World Is the U.S. Military?', July-August, Politico, online: https://www.politico.com/magazine/story/2015/06/us-military-bases-around-the-world-119321

Wagner, Peter and Wendy Sawyer (2018) 'States of Incarceration: The Global Context 2018', Prison Policy Initiative, June, online: https://www.prisonpolicy.org/global/2018.html

WHO (2018) 'Managing epidemics', World Health Organization, online: https://www.who.int/emergencies/diseases/managing-epidemics-interactive.pdf

WorldOMeter (2020) COVID-19 CORONAVIRUS PANDEMIC, online: https://www.worldometers.info/coronavirus/

Wyatt, Tim (2019) 'Research into deadly viruses and biological weapons at US army lab shut down over fears they could escape', The Independent, 6 August, online: https://www.independent.co.uk/news/world/americas/virus-biological-us-army-weapons-fort-detrick-leak-ebola-anthrax-smallpox-ricin-a9042641.html

Yan, Holly (2020) 'Prisons and jails across the US are turning into 'petri dishes' for coronavirus. Deputies are falling ill, too', CNN, 9 April, online: https://edition.cnn.com/2020/04/09/us/coronavirus-jails-prisons/index.html

Yong, Ed (2020) 'The U.K.'s Coronavirus 'Herd Immunity' Debacle', The Atlantic, 16 March, online: https://www.theatlantic.com/health/archive/2020/03/coronavirus-pandemic-herd-immunity-uk-boris-johnson/608065/

Yu, Wen Bin; Guang da Tang and R.T. Corlett (2020) 'Decoding the evolution and transmissions of the novel pneumonia coronavirus (SARS-CoV-2) using whole genomic data', Research Gate, pre-print, February, online: https://www.researchgate.net/publication/339351990_Decoding_evolution_and_transmissions_of_novel_pneumonia_coronavirus_SARS-CoV-2_using_the_whole_genomic_data

Zhao, Lijian (2020) 'When did patient zero begin in US?' Twitter, 13 March, online: https://twitter.com/zlj517/status/1238114622684585984

Zimmer, Carl (2020) 'Most New York Coronavirus Cases Came From Europe, Genomes Show', New York Times, 8 April, online: https://www.nytimes.com/2020/04/08/science/new-york-coronavirus-cases-europe-genomes.html

4. Wuhan and lessons from China

WUHAN FACED A SEVERE 76 day lockdown, from 23 January to 8 April, but final-year students in Shanghai, Beijing and Guangzhou returned to class in late April. SCMP, 28 April 2020.

POPULAR WESTERN DISCUSSION of the role of China in the pandemic assumed cold war proportions. This was in large part due to the pre-existing jealousy in Washington over the economic and technological rise of the East Asian giant, and to a lesser extent because the pandemic was seen (probably in error) as coming from China. But the popular and foreign policy debate did not reflect international scientific discussion.

After the virus was first identified in the city of Wuhan and after China warned the world, the New York Times headlined "Coronavirus spreads, and the world pays for China's dictatorship" (29 January), while the UK Guardian

shouted "China's reaction to the coronavirus outbreak violates human rights" (2 February), Foreign Policy magazine claimed "China's Coronavirus Incompetence Endangered the World" (15 February), and the Washington Post chanted "China's draconian coronavirus lockdown" (17 March). Some western think tanks indulged themselves in a self-referential monologue, suggesting that "China's global image" had been damaged by this crisis (McGregor 2020).

Beyond this new orientalism there were more sober assessments from most of the international scientific community. Through swift and effective measures, China managed to control its epidemic so that, six months into the pandemic China ranked only 40th amongst nations in numbers of infections. However the western debate did serve to distract from China's tremendous achievement in containing the virus. This distraction mirrored western attempts to hide the country's achievements in lifting 850 million of its own people out of poverty (World Bank 2020).

This chapter explains developments around the first recorded outbreak of COVID19, in the Chinese city of Wuhan, before moving to the country's modified strategy in its second wave of infections and some of the lessons from China's experience.

1. THE WUHAN OUTBREAK

A polemic exists around China's first notifications of the disease, yet the facts are no secret. China first warned the W.H.O. of the virus on 31 December and published the genome at Virological.org on 11 January (WHO 2020: 12 Jan; Schnirring 2020; Cohen 2020a). However China did not confirm the danger of human to human transmission until later in January; they said that matter was not yet clear. Nevertheless the Wuhan market was closed on 1 January while local authorities investigated. Less than 10 days later national authorities took over the investigation (Horsley 2020).

The criticism which came later from US sources was that China did not immediately inform the W.H.O. and "downplayed – though never denied – the possibility of highly infectious human to human transmission" (Horsley 2020). However W.H.O. documents show that they received briefings (in Chinese) from the Wuhan Municipal Health Commission on 31 December and

again on 3 and 5 January. The 11 January report from China's National Health Commission indicated that there had been 41 confirmed cases and one death of "a patient with serious underlying medical conditions"; but that there was "no clear evidence of human to human transmission" (WHO 2020: 12 January; Schnirring 2020). The US criticism continued that Chinese officials characterised the risk of human to human transmission was "low", into mid-January. It was 20 January when the Chinese government announced a national offensive and "publicly confirmed its spread through human to human transmission". By then Wuhan's hospitals were "overwhelmed" (Horsley 2020).

There were initial problems of a "high false negative rate" in testing in Wuhan, while morbidity seemed to remain low. However in the second half of January there was said to be "a remarkable increase in the numbers of infected patients in affected cities outside Hubei Province", because of all the travellers over Chinese New Year. By the end of January the WHO estimated "more than 10,000 cases of COVID-19 across China" and, by 19 February, this had grown to "74,280 in China and to 924 in 25 countries outside China" (Zu et al 2020).

Chinese authorities did try to control early information on the virus. Ophthalmologist Dr Li Wenliang, one of several 'whistleblowers' in Wuhan, tried to warn of the dangers of the virus from late December. Working at Wuhan Central Hospital, he had seen several patients with severe acute respiratory illnesses and he published online warning messages for his colleagues. However both Chinese and outside sources confirm that, on 3 January, he was reprimanded by local police for spreading "online rumours" (Global Times 2020). Tragically, in mid-January Dr Li became infected and on 7 February he died from the viral illness (ABC News 2020). Chinese authorities admitted they had treated him badly. A senior epidemiologist in China's Centre for Disease Control said Dr Li had done a praiseworthy thing and was "wise before the outbreak" (Global Times 2020).

Yet even if there had been confirmed warnings of human to human transmission some weeks earlier in January it would hardly have helped policy and practice in the USA. Even though it seemed he knew better (Woodward 2020: 8-13), US President Donald Trump said on 10 February that, "by April ... when it gets a little warmer, [the virus] miraculously goes away" (Levin 2020). A month later, in mid-March, Trump came out against testing those without symptoms. This was "totally unnecessary" he said, as "this [virus] will pass" (AJ

2020). The US imposed travel bans on those coming from China but, as it happened, the first US cases in New York City were said (from genomic studies) to have "originated in Europe and [to have] occurred as early as February" (McCarthy 2020).

On January 30 the W.H.O. declared the outbreak to be a 'public health emergency of international concern'. By then China was already taking very strong quarantine measures in Wuhan city and in Hubei province, measures they called a "lockdown", while other parts of China were subject to a 'shut down' or a 'slow down' (Fuller 2020). Wuhan city would remain under this lockdown, where residents were generally not allowed out of their homes, for 76 days, from 23 January to 8 April. When this lockdown ended, according to a US site, there was an atmosphere of celebration, with people saying they had "defeated" the virus and that:

> "streets in the city of 11 million people were clogged with traffic and masked pedestrians visited the few snack shops that had reopened in the nightlife area. Long lines formed at the airport and train and bus stations as thousands streamed out of the city to return to their homes and jobs elsewhere. Yellow barriers that had blocked off some streets were gone, although the gates to residential compounds remained guarded" (McNeil 2020).

Nevertheless, lesser restrictions remained in place for some months. A semblance of normality returned on 1 September, when there were once again large cultural gatherings and all the schools and kindergartens were reopened. Teachers and students were still required to wear face masks when on campus (CNA 2020). But the disease had been contained. The severity of the Wuhan epidemic, in which several thousand died, was not experienced in other parts of the country.

What were the origins of this virus? While the first mass outbreak was recorded in the Huanan Seafood Market in Wuhan, several studies suggest its origin was not China. Retrospective studies place the virus at the Albert Schweitzer Hospital in Alsace, France, on 16 November (Chik 2020) and in waste water in Milan and Turin, Italy, on 18 December (AFP 2020). An earlier Chinese genetic study suggested that that the virus in Wuhan "was potentially

imported from elsewhere", with the Wuhan market boosting virus circulation (Yu, Tang and Corlett 2020). Another study of the first hospitalised patients observed that 66% "had been exposed to Huanan seafood market" but 33% had not (Huang et al 2020). Robert Garry from the University of Tulane in New Orleans, said his analyses pointed to "an earlier origin than [Wuhan] ... [suggesting Wuhan] wasn't the origin of the virus" (Holland 2020). Then a British study, looking at 160 varieties found that most of the COVID19 varieties from Wuhan and from east Asia were "non-ancestral" (Forster, Forster, Renfrew and Forster 2020). A subsequent study in the USA suggested the virus had been there as early as December 2019 (Elmore et al 2020). Attempts to politicise a Chinese 'responsibility' for the virus, such as that by Australian Prime Minister Scott Morrison (Dziedzic 2020), would have to navigate this series of inconvenient findings.

There may be reason for doubts about the Chinese data on infection and death; but there is little doubt in the international scientific community that China made a remarkable turn-around. China's testing rates were very high. It carried out mass testing from early days including (unlike in the USA, the UK and Sweden) on symptom-free people (Wee 2020; Bloomberg 2020a), recognising them as likely vectors of transmission. A mid-March analysis quoted Oxford University epidemiologist Christopher Dye saying "even if there were 20 or 40 times more cases, which seems unlikely, [China's] control measures worked" (Cyranoski 2020).

2. LESSONS FROM CHINA

With no specific treatment or vaccine for COVID-19, and with the virus still under study, China relied on a combination of quarantine, investigation and hygiene measures which are referred to as 'non-pharmaceutical interventions' (NPIs). These were consistent with WHO protocols developed even before COVID-19 human to human transmission was confirmed. The WHO advised national systems to develop their diagnostic / testing capacity, to build up stocks of Personal Protective Equipment (PPE), to develop a surveillance and risk assessment system, along with rapid response and case management teams, and to build an infection prevention and control program, including

triage, aerosol protection, disinfection and other sanitary procedures (WHO 2020: 9 January). In China these measures were incorporated into the Wuhan style 'lockdown', along with the travel bans, shutdowns and slowdowns in other provinces (Fuller 2020).

Chinese, US and UK researchers have studied and modelled the impact of China's travel bans. They found these bans along with "integrated NPIs" were effective. Without China's NPIs, the number of infections "would likely have shown a 67-fold increase (IQR: 44 - 94), with the effectiveness of different interventions varying" (Lai et al 2020). The measures could have been even more effective had they been introduced earlier. The study found that, if those same NPIs had been introduced "one week, two weeks, or three weeks earlier ... cases could have been reduced by 66%, 86%, and 95%, respectively". Had they been introduced "one week, two weeks, or three weeks later, the number of cases could have shown a 3-fold, 7-fold, and 18-fold increase ... respectively" (Lai et al 2020). This logic can be applied to other countries: delays in introducing NPIs (as in Sweden and in the UK and the USA) are highly likely to have led to higher numbers of infections and deaths.

China had its peak of infections and deaths between mid-January and mid-March, and a small second wave in June-July. By 10 September China had a thousand COVID-19 deaths less than Sweden, a country with 140th the population of China (Worldometer 2020). Until we know more about other possible factors affecting the relatively low levels of infection in East Asia, China's success seems due to its rapid and strong NPIs.

In treatment too, China was distinct. In the USA President Trump was promoting use of the malaria medication hydroxychloroquine, as a singular and cheap solution to COVID-19 (Milman 2020). The claims about hydroxychloroquine and COVID-19 remain controversial and generally unproven. Chinese doctors, on the other hand, without denying a possible role for hydroxychloroquine, were using a wide range of treatments, including traditional medicines, plasma from recovered patients and non-specific anti-virals such as lopinavir / ritonavir. Nevertheless, treatment addressing symptoms (vascular inflammation and blood clots, chest infections, respiratory insufficiency, etc.) remained the principal approach (Fan et al 2020; ABC News 2020).

Faced with a second wave of infections in Beijing over June-July, China moved quickly. Scientists from Edinburgh observed that the Beijing campaign

was more targeted than the lockdown in Wuhan. Authorities had "pinpointed places and people thought to be potential risks" and then relied on "tracing, testing and isolating people, focusing on the most vulnerable as well as those at risk due to their profession." China's lockdowns had become far more localised (Snape et al 2020).

North America's Time magazine recognised the success of this campaign, while referring to an "aggressive" and what they saw as an "overly cautious" testing campaign, where "more than 7 million residents of the city of 22 million were tested for COVID-19", followed by contact tracing (Campbell 2020). This was at a time when the US Government was recording 500 to 800 COVID-19 deaths every day. The western scientific media observed that Chinese authorities "did not repeat" the earlier shutdown, instead sealing off "a limited number of residences" and focussing on "mass testing" (Medical Xpress 2020).

From early days China had become a front runner in vaccine development, with several candidates beginning their final human trials in July-August. In mid-May Chinese Premier Xi Jinping offered the first of them to the world as a "global public good" (Wheaton 2020). He told the World Health Assembly "this will be China's contribution to ensuring vaccine accessibility and affordability in developing countries" (Wheaton 2020). China also helped a number of other countries with test kits and PPE supplies, including the USA (Stevenson, Kulish and Gelles 2020). This was at a time when Washington was grabbing resources destined for others in need (BBC 2020). None of that stopped the propaganda war over vaccines. The Chinese 'public good' initiative will likely be constrained if there are poor levels of international cooperation. A key obstacle is the 'blame China' campaign.

Nevertheless, China set an example in crisis management from which other countries were able to learn. It is a truism that practices cannot be copied across countries. To that extent the analysts who observed that China's "aggressive measures" might have worked in China but "may not work" elsewhere (Kupferschmidt and Cohen 2020b), is undeniable. However China set a standard in practice consistent with W.H.O. standards, concerning quarantine, hygiene, the use of masks, travel bans and other sanitary measures. It was noted that measures including early detection helped Singapore, where doctors rapidly identified and isolated cases through contact tracing (Cyranoski 2020). A Mid-

dle East analyst praised the Chinese example for its "high level of collective action", hoping that others could learn from China "and start implementing prevention and control strategies" (Al Takarli 2020). But that is a bitter pill for many western countries, humiliated by their own incapacity and immersed in a new cold war, largely of their own creation.

REFERENCES

ABC News (2020) 'Coronavirus whistleblower doctor Li Wenliang dies from infection in Wuhan, local hospital says', 7 February, online: https://www.abc.net.au/news/2020-02-07/doctor-who-warned-of-coronavirus-dies-in-china/11941948

AFP (2020) 'Virus already in Italy by December, sewers show', MedicalXpress, 19 June, online: https://medicalxpress.com/news/2020-06-virus-italy-december.html

AJ (2020) 'A timeline of the Trump administration's coronavirus actions', Al Jazeera, x April, 24 April, online: https://www.aljazeera.com/news/2020/04/timeline-trump-administration-coronavirus-actions-200414131306831.html

Al Takarli, N.S. (2020) 'China's Response to the COVID-19 Outbreak: A Model for Epidemic Preparedness and Management', Dubai Medical Journal, online: https://www.karger.com/Article/FullText/508448

BBC (2020) 'Coronavirus: US accused of 'piracy' over mask 'confiscation'', 4 April, online: https://www.bbc.com/news/world-52161995

Bloomberg (2020a) 'China's Data on Symptom-Free Cases Shows Most Never Get Sick', 15 April, online: https://www.bloomberg.com/news/articles/2020-04-15/china-s-data-on-symptom-free-cases-reveals-most-never-get-sick

Bloomberg (2020b) 'China Has 5 Vaccine Candidates in Human Trials, With More Coming', 15 May, online: https://www.bloomberg.com/news/articles/2020-05-15/china-launches-more-virus-vaccine-candidates-tests-thousands

Campbell, Charlie (2020) 'China Appears to Have Tamed a Second Wave of Coronavirus in Just 21 Days with No Deaths', 2 July, online: https://time.com/5862482/china-beijing-coronavirus-second-wave-covid19-xinfadi/

CDC (2018) '1918 Pandemic Influenza: Three Waves', Centre for Disease Control and Prevention, 11 may, online: https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/three-waves.htm

Chik, Holly (2020) 'France had Covid-19 in November, hospital says after analysis of chest scans', SCMP, 8 May, online: https://www.scmp.com/news/china/society/article/3083599/france-had-covid-19-november-hospital-says-after-analysis-chest

Chinazzi, Matteo et al (2020) 'The effect of travel restrictions on the spread of the

2019 novel coronavirus (COVID-19) outbreak', Science, 24 Apr 2020: Vol. 368, Issue 6489, pp. 395-400, DOI: 10.1126/science.aba9757; online: https://science.sciencemag.org/content/sci/368/6489/395.full.pdf

Cohen, Jon (2020a) 'Chinese researchers reveal draft genome of virus implicated in Wuhan pneumonia outbreak', Science Mag, 11 January, online: https://www.sciencemag.org/news/2020/01/chinese-researchers-reveal-draft-genome-virus-implicated-wuhan-pneumonia-outbreak

Cohen, Jon (2020b) 'The house was on fire.' Top Chinese virologist on how China and U.S. have met the pandemic', Science Mag, 22 May, online: https://www.sciencemag.org/news/2020/05/house-was-fire-top-chinese-virologist-how-china-and-us-have-met-pandemic

CNA (2020) 'Wuhan, ground zero for COVID-19 epidemic, reopens all schools', 1 September, online: https://www.channelnewsasia.com/news/asia/covid-19-china-wuhan-schools-reopening-coronavirus-13071664

Cyranoski, David (2020) 'What China's coronavirus response can teach the rest of the world', Nature, 17 March, online: https://www.nature.com/articles/d41586-020-00741-x

Dziedzic, Stephen (2020) 'Australia started a fight with China over an investigation into COVID-19 — did it go too hard?', ABC News, 20 May, online: https://www.abc.net.au/news/2020-05-20/wha-passes-coronavirus-investigation-australia-what-cost/12265896

Fan, Linzi ; Shuang Jiang, Xinrong Yang, Zhibin Wang & Chunjuan Yang (2020) 'COVID-19 Drug Treatment in China', Current Pharmacology Reports (2020) 6:146–154, 7 September, online: https://link.springer.com/article/10.1007/s40495-020-00218-5

Forster, Peter; Lucy Forster, Colin Renfrew, and Michael Forster (2020) 'Phylogenetic network analysis of SARS-CoV-2 genomes', PNAS, 8 April, online: https://www.pnas.org/content/early/2020/04/07/2004999117

Fuller, Peta (2020) 'Wuhan's coronavirus lockdown is unprecedented, so how has China done it and what impact will it have?', ABC News, 25 January, online:

https://www.abc.net.au/news/2020-01-25/wuhan-coronavirus-lockdown-how-has-it-worked/11896630

Global Times (2020) 'Virus 'whistleblower' doctor under emergency treatment: hospital', 7 February, online: https://www.globaltimes.cn//content/1178816.shtml

Holland, Kate (2020) 'Sorry, conspiracy theorists. Study concludes COVID-19 'is not a laboratory construct', ABC News, 27 March, online: https://abcnews.go.com/US/conspiracy-theorists-study-concludes-covid-19-laboratory-construct/story

Horsley, Jamie P. (2020) 'Let's end the COVID-19 blame game: Reconsidering China's role in the pandemic', Brookings, 17 August, online: https://www.brookings.edu/blog/order-from-chaos/2020/08/19/lets-end-the-covid-19-blame-game-reconsidering-chinas-role-in-the-pandemic/

Huang, Chaolin et al (2020) 'Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China', The Lancet, 15 February, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext

Kupferschmidt, Kai and Jon Cohen (2020) 'China's aggressive measures have slowed the coronavirus. They may not work in other countries', Science, 2 March, online: https://www.sciencemag.org/news/2020/03/china-s-aggressive-measures-have-slowed-coronavirus-they-may-not-work-other-countries#

Lai, Shengjie; Nick W Ruktanonchai, Liangcai Zhou, Olivia Prosper, Wei Luo, Jessica R Floyd, Amy Wesolowski, Mauricio Santillana, Chi Zhang, Xiangjun Du, Hongjie Yu, Andrew J Tatem (2020) 'Effect of non-pharmaceutical interventions for containing the COVID-19 outbreak in China', MedRxiv, 13 march, online: https://www.medrxiv.org/content/10.1101/2020.03.03.20029843v3

Levin, Bess (2020) 'Trump claims coronavirus will "miraculously" go away by April', Vanity Fair, 11 March, online: https://www.vanityfair.com/news/2020/02/donald-trump-coronavirus-warm-weather

McCarthy, Kelly (2020) 'New York coronavirus outbreak originated in Europe, new study finds', ABC News, 10 April, online: https://abcnews.go.com/Health/york-coronavirus-outbreak-originated-europe-study-finds/story?id=70062642

McGregor, Richard (2020) 'Inside China's Coronavirus response', Lowy Institute, 31 July, online: https://www.lowyinstitute.org/publications/inside-china-coronavirus-response

McNeil, Sam (2020) 'After 11 weeks, Wuhan ends lockdown', Christian Science Monitor, 8 April, online: https://www.csmonitor.com/World/Asia-Pacific/2020/0408/After-11-weeks-Wuhan-ends-lockdown

Medical Xpress (2020) 'China's new strategy to tame second-wave virus outbreaks', 9 July, online: https://medicalxpress.com/news/2020-07-china-strategy-second-wave-virus-outbreaks.html

Milman, Oliver (2020) 'Trump touts hydroxychloroquine as a cure for Covid-19. Don't believe the hype', The Guardian, 6 April, online: https://www.theguardian.com/science/2020/apr/06/coronavirus-cure-fact-check-hydroxychloroquine-trump

Schnirring, Lisa (2020) 'China releases genetic data on new coronavirus, now deadly', University of Minnesota, CIDRAP, 11 January, online: https://www.cidrap.umn.edu/news-perspective/2020/01/china-releases-genetic-data-new-coronavirus-now-deadly

Shunqing Xu and Yuanyuan Li (2020) 'Beware of the second wave of COVID-19', The Lancet, 8 April, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30845-X/fulltext

Snape, Holly; Hua Wang, Janet Duckett and Yingru Li (2020) 'Coronavirus: Beijing outbreak shows China's plan for preventing a second wave', The Conversation, 25 June, online: https://theconversation.com/coronavirus-beijing-outbreak-shows-chinas-plan-for-preventing-a-second-wave-141159

Stevenson, Alexandra ; Nicholas Kulish and David Gelles (2020) 'Frantic for Coronavirus Gear, Americans in Need Turn to China's Elite', New York Times, 24 April, online: https://www.nytimes.com/2020/04/24/business/us-china-coronavirus-donations.html

Trump, Donald (2020a) ''Not racist at all': Donald Trump defends calling coronavirus the 'Chinese virus'', The Guardian, 18 March, online: https://www.theguardian.com/world/video/2020/mar/18/not-racist-at-all-donald-trump-defends-calling-coronavirus-the-chinese-virus-video

Wee, Sui-Lee (2020) 'As Deaths Mount, China Tries to Speed Up Coronavirus Testing', New York Times, 9 February , online: https://www.nytimes.com/2020/02/09/world/asia/china-coronavirus-tests.html

Wheaton, Sarah (2020) 'Chinese vaccine would be 'global public good,' Xi says', Politico, 18 May, online: https://www.politico.com/news/2020/05/18/chinese-vaccine-would-be-global-public-good-xi-says-265039

WHO (2020: 9 January) 'National capacities review tool for a novel coronavirus', World Health Organization, online: https://www.who.int/publications/i/item/national-capacities-review-tool-for-a-novelcoronavirus

WHO (2020: 12 Jan) 'Novel Coronavirus – China, 12 January, online: https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/

WHO (2020) 'About pandemic phases', World Health Organization, online: https://www.euro.who.int/en/health-topics/communicable-diseases/influenza/data-and-statistics/pandemic-influenza/about-pandemic-phases

Woodward, Bob (2020) Rage, Simon and Schuster, New York

World Bank (2020) 'The World Bank In China', August, online: https://www.worldbank.org/en/country/china/overview

Worldometer (2020) 'COVID-19 Coronavirus Pandemic', 15 September, online: https://www.worldometers.info/coronavirus/

Yu, Wen Bin; Guang da Tang and R.T. Corlett (2020) 'Decoding the evolution and transmissions of the novel pneumonia coronavirus (SARS-CoV-2) using whole genomic data', Research Gate, pre-print, February, online: DOI: 10.12074/202002.00033

Zu, Zi Yue; Meng Di Jiang, Peng Xu, Wen Chen, Qian Ni, Guang Ming Lu, Long Jiang Zhang (2020) 'Coronavirus Disease 2019 (COVID-19): A Perspective from China', 21 February, online: https://pubs.rsna.org/doi/full/10.1148/radiol.2020200490

5. Cuba Faces the Pandemic

Cuban doctors arrive in Italy to help with what was then the worst COVID19 outbreak in the world.
Photo: REUTERS/Daniele Mascolo

BY MID-APRIL, MORE than 900 Cuban doctors and nurses had travelled to 17 countries to help with the COVID19 pandemic, with the first group of 53 arriving in hard-hit Italy on 22 March (Vicent 2020). Other countries with Cuban 'Henry Reeves' (international solidarity) brigades included Spain, Argentina and Angola (Rodríguez 2020). The pattern of financing Cuban medical assistance in recent years has been that countries 'compensate' according to their capacity; that means poor countries pay very little and rich countries pay more (Anderson 2014).

Cuba has become famous for its internationalism and solidarity. Many western commentators recognised the latest missions as yet another example of "Cuba's deep and long-lasting commitment to humanitarian solidarity with

other countries" (Kornbluh 2020). However in April the numbers of infections within Cuba itself began to rise. So how has Cuba dealt with the virus at home? Its approach is a useful reference point because Cuba has a proactive approach to public health and substantial independence from the corporate dominated models of most wealthy countries.

The first weeks of Cuban experience with COVID19 shows that responses to the epidemic share some common features but also have important differences. As pointed out in Chapter Three, both the UK and the USA, supposedly top ranked in 'preparedness' for epidemics (IPT 2020), showed very poor outcomes in terms of infections and deaths. Those outcomes and some adverse community reactions were aggravated by erratic policy and practice, where both the USA and UK seemed to swing from one extreme to another, in terms of protective measures (Anderson 2020).

The tens of thousands of deaths in many wealthy countries worsened already low levels of trust between citizenry and those states deeply embedded with large corporations. Recently in the USA, for example, only 39% of US citizens were said to trust their national government (UNDP 2018). More specifically, only 37% said they trusted the Trump administration to deal with the COVID19 crisis, with 60% saying they had "not very much or no trust at all" in what Trump was saying. (Montanaro 2020).

By contrast in a 2015 poll run by a Miami company and commissioned by The Washington Post "68% of Cubans" said they were "satisfied with their healthcare system". A 2007 Gallup poll had put the figure at 75%, compared to 57% in the rest of Latin America (Kunzmann 2015). Cuba's health system is 95% publicly funded and all its doctors are salaried. Further, Cuba has a much higher level of participation in elections and referenda on important issues than the USA. For example, "81% of the 8.7 million electorate" voted on the 2019 constitutional changes, after a long period of community discussion and hundreds of amendments to the original proposal (Frank and Acosta 2019). Voter turnout at Cuban elections has not fallen below 80% in recent decades, while in the USA it ranges from 40% to 65% (IDEA 2020). Mass organisations such as the Committees for the Defence of the Revolution (CDRs), the trade unions and the Federation of Cuban Women assist Cuba in matters of preventive health and health education (Bercovich 2020). All of that means that

Cuban citizens both understand and respond better to public health mobilisations.

This is important when it comes to social restrictions in the name of a public health crisis. Globally, there is a long history of quarantine measures being imposed, to the detriment of normal civil liberties, during and especially in the uncertainty period of a dangerous epidemic. The important question is, how are those measures formed, are they proportionate and the least restrictive possible in relation to the common threat? In relation to freedom of movement, for example, the UN Human Rights Commission has put it this way:

> "Restrictive measures must conform to the principle of proportionality; they must be appropriate to achieve their protective function; they must be the least intrusive instrument amongst those which might achieve the desired result; and they must be proportionate to the interest to be protected" (HRC 1999: 14).

Initially in Cuba there was no general mandatory quarantine but there were rising normative pressures and restrictions on transport increased. Commentators say there was faith in the government's public health aims and methods, and that social isolation measures gradually increased (Bercovich 2020). By contrast, the pandemic saw the western world hit with erratic political decisions which only helped inflame wild theories – for example claiming the epidemic did not really exist or was a monstrous plot – reactions which tended to throw the proverbial public health 'baby' out with the political 'bathwater'.

Recourse to evidence and reason is needed. So what might we learn from this independent nation, with its special focus on public health? Cuba confirmed its first cases of COVID19 on 10 March, they were three Italian tourists, staying in the southern town of Trinidad (Acosta and Marsh 2020). A week later they detected 16 cases, visitors and Cubans who had arrived from overseas (Cubadebate 2020a). After a month, on 10 April, there were 620 confirmed cases, most of them Cubans, and 16 deaths. Most of the critically ill were elderly Cubans (Cubadebate 2020b). The Ministry of Public Health classed the initial stage as 'pre-epidemic', but after 6 April it was called a 'Phase of Limited Community Transmission' (Carmona Tamayo and Fariñas Acosta 2020), see Graphic 2.

Graphic 2: Evolution of COVID19 in Cuba

Source: Carmona Tamayo and Fariñas Acosta 2020

Importantly, Cuba began quarantine-like measures before there were any detected cases, but aware of what had happened in other countries. The theme of 'stay at home' (quedese en casa) was put out in the Cuban media as early as 6 March (Granma 2020). But the government began to move into a more developed strategy a few days later, as the first infections were detected and when, on 11 March, World Health Organization Director General Tedros Adhanom Ghebreyesus declared a global pandemic. Cuba began to cooperate with the local branch of the WHO in preparing its response, including large scale testing, detection and community protection measures (OPS 2020). In mid-March there were only 60,000 tourists in the country. Stopping all tourist entries was one of the first measures, so most international flights were stopped on 1 April. 10 days later only 7,000 tourists remained (Bercovich 2020).

A specialist hospital with isolation wards was set up in Matanzas, for the first cases (OPS 2020). Community activist Marcia Iglesias says that early measures were some normative social isolation, plus the closure of airports and inter-provincial trains. Public and private transport was closed down, except transport for workers in essential industries. An initial aim was to reduce transport to 50%, to prevent overcrowding. Then there was obligatory use of masks in all transport. Elderly and vulnerable people (those with diabetes, high blood

pressure, other heart problems, bronchial asthma and kidney problems) were urged to remain at home and food was brought to them, either by younger family members or through the family assistance agency (Iglesias 2020).

The sale of alcoholic drinks was stopped and cafes and restaurants only sold take-away food. On 10 April there was free distribution to families of a module of soap and hygiene products (important because there had been a shortage of soap), and from that time only basic products including food and hygiene products were sold in shops. Large shops were closed (Iglesias 2020). Every day there were house to house surveys, to see the state of family health and to check for fevers. This is something embedded in the Cuban health system, which starts at the family doctor level; often Cubans don't go to the doctor, the doctor comes to them. The visits are carried out by one doctor, one nurse and two medical students (including students from other countries who study Cuba). Further, the whole population gets daily television education on the state of the epidemic. Every day at 11am the epidemiological situation of the country is explained, either by the National Director of Epidemiology, Dr Francisco Durán, or by the Minister of Health (Iglesias 2020).

So in Cuba's first month several quarantine-like restrictions were imposed, but with daily education, communication and some extra measures of social support. As in many other countries, this was not exactly a 'lockdown', in the manner of Wuhan or some parts of northern Italy. However the strong epidemiological surveillance, in particular from the house to house visits and testing, has led to some more focussed lockdowns. Communities have been classified according to their degree of contagion or from contacts made with those infected, and in some cases a more strict 14 days quarantine has been imposed just in those areas (Iglesias 2020). In April there was a specially strict 'lockdown' on 11 apartment buildings and 2 duplex houses in the city of Matanzas, where a group of infections had been detected (de Jesús 2020). This shows that careful vigilance can allow for focussed restrictions, rather than 'locking down' entire cities.

In pharmaceutical treatment, Cuba worked with China in Wuhan, presenting their version of the immunotherapy drug Interferon (Interferon Alpha-2B Recombinant - IFNrec) at the head of a group of 22 medications, including other anti-virals. Cuba and China have the joint venture Changchun Heber Biological Technology facility, based in Jilin, China. They are tested by both Chi-

nese and Cuban health authorities and are much the same medicines used in Cuba (del Sol González 2020). In contrast, very few doctors in the USA have been using antiviral drugs for COVID19 infections (Sermo 2020). Cuba is also working on its own vaccine for COVID19, aware that there are many more candidates for a vaccine, with some already in human trials (ACN 2020)

Cuba's approach to COVID19 tells us that lessons have been shared in public health on how to deal with epidemics, but important differences of approach remain. The Cuban population is more engaged and well educated on health matters, and has a relatively high degree of confidence in its public health system. Preventive quarantine measures were taken early, including the 'stay at home' campaign, even before there were any detected cases. After cases were detected there was a tightening of restrictions, to prevent contagion, but these were informed by a systematic vigilance of cases, which allowed severe quarantine only in communities or buildings known to have contagion, or contact with contagion.

Finally, Cuba and China moved early to use anti-viral and immunotherapy drugs, when the US leadership was promoting dubious anti-malarial drugs, or no drugs at all. The limited use of antivirals in the USA for COVD19 treatment is probably influenced by their high cost. Cuba has world class testing facilities and uses them to certify medications of for the ALBA group of Latin American companies. However, even if Cuba is not first to produce a vaccine – and it would be blocked from exporting it both by the US economic blockade and by Big Pharma oligopolies – it will certainly test and use its own vaccine at home. Treatment will be free for all Cubans.

REFERENCES

ACN (2020) 'Trabaja Cuba en vacunas preventivas específicas para la COVID-19', Agencia Cubana de Noticias, 10 April, online: http://www.acn.cu/salud/63181-trabaja-cuba-en-vacunas-preventivas-especificas-para-la-covid-19

Acosta, Nelson and Sarah Marsh (2020) 'Cuba confirms first coronavirus cases, urges citizens to make own masks', Reuters, 12 March, online: https://www.reuters.com/article/us-health-coronavirus-cuba-confirmed/cuba-confirms-its-first-three-cases-of-coronavirus-idUSKBN20Z04G

Anderson, Tim (2014) 'Unlikely partners: Challenges for an Australia-Cuba collaboration in Pacific health', Journal of Australian Political Economy, Issue 73 (Winter 2014)

Bercovich (2020) 'Cuba: toda la isla confía en la efectividad de su sistema público de salud', Tiempo, 12 April, online: https://www.tiempoar.com.ar/nota/cuba-toda-la-isla-confia-en-la-efectividad-de-su-sistema-publico-de-salud

Carmona Tamayo, Edilberto and Lisandra Fariñas Acosta (2020) 'Cuba en Datos: A un mes de la COVID-19 en Cuba', Cubadebate, 10 April, online: http://www.cubadebate.cu/especiales/2020/04/10/cuba-en-datos-a-un-mes-de-la-covid-19-en-cuba/#.XpJQWjfVJhE

Cubadebate (2020a) 'Ascienden a 16 los casos confirmados de COVID-19 en Cuba', 19 March, online: http://www.cubadebate.cu/noticias/2020/03/19/ascienden-a-16-los-casos-confirmados-de-covid-19-en-cuba/#.XpKjcjfVJhE

Cubadebate (2020b) 'Cuba reporta 56 nuevos casos de COVID-19, un fallecido y 26 altas médicas', 11 April, online: http://www.cubadebate.cu/noticias/2020/04/11/cuba-reporta-56-nuevos-casos-de-covid-19-un-fallecido-y-26-altas-medicas/#.XpKjsDfVJhE

de Jesús, Ventura (2020) 'Entran en cuarentena restrictiva 11 edificios y dos viviendas dúplex en Matanzas', Granma, 10 April, online: http://www.granma.cu/cuba-covid-19/2020-04-10/entran-en-cuarentena-restrictiva-13-edificios-de-un-reparto-en-matanzas

del Sol González, Yaditza (2020) 'BioCubaFarma guarantees production of 22 medications for the treatment of Covid-19', Granma, 17 March, online: http://en.granma.cu/cuba/2020-03-17/biocubafarma-guarantees-production-of-22-medications-for-the-treatment-of-covid-19

Frank, Marc and Nelson Acosta (2019) 'Cuba sees high turnout at polls for constitutional referendum', Reuters, 25 February, online: https://www.reuters.com/article/us-cuba-constitution-referendum/cuba-sees-high-turnout-at-polls-for-constitutional-referendum-idUSKCN1QD0JJ

Georgiades, Emilios George Ades (2020) 'FAQ COVID-19', Facebook, 12 April, online: https://www.facebook.com/george.ades.3/posts/2705632842989590

Granma (2020) '¿Cómo evitar el contagio?', 6 March, online: http://www.granma.cu/cuba-covid-19/2020-03-06/como-evitar-el-contagio-06-03-2020-02-03-47

IDEA (2020) 'Voter Turnout Database', April, online: https://www.idea.int/data-tools/data/voter-turnout

Iglesias Castano, Marcia (2020) Communications with this writer, 11 April

IPT (2020) 'Global Health Security Index', Index Project Team (IPT) [comprising the Nuclear Threat Initiative (NTI), the Johns Hopkins Center for Health Security (JHU) and The Economist Intelligence Unit (EIU)], online: https://www.ghsindex.org

Kornbluh, Peter (2020) '"Humanitarian Solidarity": Even Under U.S. Sanctions, Cuba Sends Doctor Brigade to Italy and More', Democracy Now, online: https://www.democracynow.org/2020/3/24/cuba_medical_diplomacy_italy_coronavirus

Kunzmann, Marcel (2015) 'Analysis: Cuba poll — handle with care', Cuba Standard, 30 May, online: https://www.cubastandard.com/analysis-cuba-poll-handle-with-care/

Montanaro, Domenico (2020) 'Poll: Americans Don't Trust What They're Hearing From Trump On Coronavirus', 17 March, NPR, online: https://www.npr.org/2020/03/17/816680033/poll-americans-dont-trust-what-they-re-hearing-from-trump-on-coronavirus

O'Connor (2020) 'Cuba Uses 'Wonder Drug' to Fight Coronavirus Around World Despite Sanctions', Newsweek, 24 March, online: https://www.msn.com/en-za/health/other/cuba-uses-wonder-drug-to-fight-coronavirus-around-world-despite-sanctions/ar-BB11FtQZ

OPS (2020) 'Pandemia COVID-19 y la respuesta en Cuba', Organización Panamericana de la Salud, online: https://www.paho.org/cub/index.php?option=com_content&view=article&id=1010:pandemia-covid-19-y-la-respuesta-en-cuba&Itemid=607

Rodríguez, Andrea (2020) 'Cuban doctors battle COVID-19 around the globe, defying U.S.', Peoples World, 8 April, online: https://peoplesworld.org/article/cuban-doctors-battle-covid-19-around-the-globe-defying-u-s/

Sermo (2020) 'Sermo's COVID-19 Real Time Barometer Study', 25-27 March, online: https://public-cdn.sermo.com/covid19/c8/be4e/4edbd4/dbd4ba4ac5a3b3d9a479f99cc5/wave-i-sermo-covid-19-global-analysis-final.pdf

UNDP (2018) 'Human Development Indices and Indicators, 2018 Statistical Update', United Nations Development Programme, Table 14, online:

http://hdr.undp.org/sites/default/files/2018_human_development_statistical_update.pdf

Vicent, Mauricio (2020) 'Cuba envía a Italia y América Latina brigadas médicas para enfrentar el coronavirus', El Pais, 22 March, online: https://elpais.com/sociedad/2020-03-22/cuba-envia-a-italia-y-america-latina-brigadas-medicas-para-enfrentar-el-coronavirus.html

6. A Tale of Two Cruise Ships

The Braemar crew thank the Cuban people

ON 19 MARCH TWO CRUISE ships with COVID19 infected passengers and crew were evacuated, one in Havana and the other in Sydney. The first evacuation, of the Braemar, was so successful and uneventful that it barely raised a ripple in the world media. The second, of the Ruby Princess, led to at least 21 deaths, 700 infections and a criminal investigation.

Why was there such a big difference and what can we learn from this contrast?

The evacuation of the British-American cruise ship Ruby Princess, with 2,700 passengers and 1,100 crew, was an unmitigated disaster and with the worst outcomes of all 28 cruise ship epidemics in early 2020. The ship returned early to Sydney after 13 passengers reported respiratory problems. COVID19 tests were taken of the sick passengers but on 19 March the other 2,700 were allowed to leave, apparently without proper health checks. Those people are now known to have spread the virus across Australia. A month later 190 crew had

become infected and it was reported that this mismanaged evacuation was responsible for more than 10% of all COVID19 infections in Australia.

Responsibility for the Ruby Princess disembarkation was shared between the ship, the federal agency Australian Border Force and the state Department of Health. The state police investigation of the incident arose because of "discrepancies" between versions of events given by the cruise line and the state agencies. The police will look for breaches of the law, but may not have much of a role in the oversight of failures in public health management.

Evacuation of the British-owned Braemar, on the other hand, was a successful operation. This ship had 682 passengers and 381 crew. After one disembarked passenger in Canada tested COVID19 positive, five more were detected on board. With this public knowledge, the British ship was refused disembarkation permission in Barbados and The Bahamas, even though both island-nations are members of the British Commonwealth. It was also refused access to Sint Maarten, a small Dutch territory. Finally Cuba allowed access.

On 16 March Cuban Foreign Affairs announced that it would:

> "allow the docking of this vessel [Braemar] and will adopt established sanitary measures to receive all citizens on board, in accordance with protocols established by the World Health Organization (WHO) and the Cuban Ministry of Public Health"

That meant thorough testing, sanitary protection measures and contact tracing. At this stage there had only been a handful of COVID19 infections in Cuba, including the death of one Italian tourist. Just a few days earlier Cuba had developed a national strategy to deal with the virus, in coordination with the regional branch of the WHO, the Pan American Health Organisation.

This evacuation of around 700 people involved 43 Cuban doctors, port officials and bus drivers. Passengers were given medical check-ups, protective equipment and then taken to Jose Martí Airport to board four aircraft for the United Kingdom. Cuban authorities said any persons too sick to travel could remain under care in Havana. A British paper said a group of about 80 were sent to a British Ministry of Defence isolation hospital at Boscombe Down in Wiltshire. That group comprised two passenger and four crew plus 28 passen-

gers and 27 crew who had already been quarantined, along with isolated passengers' partners. There have been no reports of any deaths from the Braemar.

After that evacuation the 43 Cuban health and auxiliary workers involved in the operation were placed in an isolation hospital near Matanzas for two weeks. On 2 April, as they returned to their families, the 43 were met with a warm welcome at La Cujae University, 30 kilometres east of Havana, a marginal location, "to avoid large crowds of people" and thus prevent any further infection risk. All tested negative to COVID19 infection and none showed any fever or other symptoms during those 14 days.

Peter Deer, on behalf of the Braemar owners, expressed his "most sincere thanks to the Cuban authorities, the port of Mariel and the Cuban people for their support". British Ambassador Anthony Stokes was effusive, expressing his "immense gratitude and that of my country" for the Cuban operation. Ambassador Stokes addressed "the 43" in impeccable Spanish, which translates as follows:

> "I highly appreciate the courage and humanism of those who decided to be in the front line, knowing that this would be a complex and delicate operation, and that later they would have to be two weeks in isolation, separated from their families and dear ones. I am profoundly happy to know that, today, they have returned to their home, safe and sound ... During Operation Braemar I was witness to the numerous qualities of the Cuban people, their humanitarian principles, friendliness and industriousness, facets of the Cuban character which I have come to know and love."

So what are the lessons from the Havana operation, and what made it so different from the Sydney fiasco?

Dr Francisco Durán García, National Director of Epidemiology in Cuba's Ministry of Health, said that the final safety of the health workers "demonstrated the effectiveness of the strict measures taken during the operation, amongst others the isolation of the exposed personnel", which included bus drivers and port workers as well as health professionals. Cuban journalist Jose Díaz Pollán added that "each one of these people had effective protective equipment".

There are good and well equipped health workers in Sydney, too. However it seems evident that the effective coordination employed in Havana was lacking in Sydney. Cubans often speak of "inter sectoral coordination", which means strong links between education, health, transport, police and other authorities, in priority matters. This is often decried in western countries as the 'authoritarian' nature of socialist systems. But inter-sectoral coordination works well in public health, and that was clearly lacking in Sydney.

PHOTOS OF THE BRAEMAR operation, from Cuba's Granma newspaper, can be seen here:

http://www.granma.cu/cuba-covid-19/2020-03-18/imagenes-que-cuenta-el-historico-instante-en-que-cuba-salva-al-ms-braemar-fotos

REFERENCES

Anderson, Tim (2020) 'Public Health, COVID-19 and Recovery', American Herald Tribune, 10 April, online: https://ahtribune.com/world/covid-19/4062-public-health-covid-19-recovery.html

Anderson, Tim (2020) 'How Has Cuba Faced the COVID-19 Epidemic?', American Herald Tribune, 14 April, online: https://ahtribune.com/world/americas/4076-cuba-faced-the-covid19.html

Bellew, Lesley (2020) ''Quarantines and cancelled tours – but at least we get free drinks': A diary on board a cruise hit by coronavirus', The Telegraph, 19 March, online: http://www.mingrenmingpin.com/travel/cruises/articles/fred-olsen-braemar-coronavirus-affected-cruise-account/

Cockburn, Paige (2020) 'How the coronavirus pandemic would look in Australia if Ruby Princess had never docked', ABC, 23 April, online: https://www.abc.net.au/news/2020-04-23/coronavirus-across-australia-if-ruby-princess-never-docked/12172314

Cubadebate (2020) 'De alta médica los 43 cubanos que apoyaron la operación del crucero MS Braemar', 2 April, online: http://www.cubadebate.cu/noticias/2020/04/02/cuba-reporta-21-nuevos-casos-positivos-a-la-covid-19-y-una-alta-medica/#.XqTU4yPVJhE

Díaz Pollán, Jose Guillermo (2020) 'Sanos y en sus casas trabajadores de Transtur, GEMAR y la aduana vinculados al crucero Braemar', Cubadebate, 2 April, online: http://www.cubadebate.cu/noticias/2020/04/02/sanos-y-en-sus-casas-trabajadores-de-transtur-gemar-y-la-aduana-vinculados-al-crucero/#.XqTUTCPVJhE

Granma (2020) 'De alta médica los 43 cubanos que apoyaron la operación del crucero MS Braemar', 2 April, online: http://www.granma.cu/cuba-covid-19/2020-04-02/de-alta-medica-los-43-cubanos-que-apoyaron-la-operacion-del-crucero-ms-braemar-02-04-2020-15-04-40

Marsh, Sarah and Nelson Acosta (2020) 'Passengers of British coronavirus-hit cruise ship evacuate in Cuba', Reuters, 18 March, online: https://www.reuters.com/article/us-health-coronavirus-cuba/coronavirus-hit-cruise-ship-docks-in-cuba-for-passengers-to-evacuate-idUSKBN215130

MINREX (2020) 'Cuba will accept and assist travelers on British cruise ship MS Braemar', Granma, 16 March, online: http://en.granma.cu/cuba/2020-03-16/cuba-will-accept-british-cruise-ship-ms-braemar

Nguyen, Kevin and Sarah Thomas (2020) 'Ruby Princess coronavirus deaths to be subject of criminal investigation by NSW Police homicide squad', ABC, 5 April, online: https://www.abc.net.au/news/2020-04-05/ruby-princess-cruise-coronavirus-deaths-investigated-nsw-police/12123212

OnCubaNews (2020) 'In Cuba, British cruise ship with COVID-19 cases; evacuation of passengers underway', 19 March, online: https://oncubanews.com/en/cuba/in-cuba-british-cruise-ship-with-covid-19-cases-evacuation-of-passengers-underway/

Radio Rebelde (2020) 'UK thanks Cubans for supporting MS Braemar cruise', 19 March, online: http://www.radiorebelde.cu/english/news/uk-thanks-cubans-for-supporting-ms-braemar-cruise-20200319/

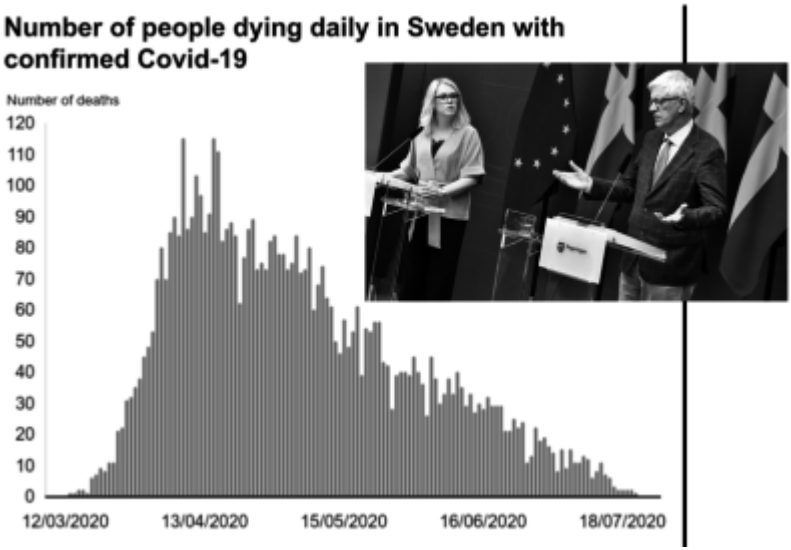
Rashad Rolle (2020) 'Virus Ship Told: You Can't Land – Cruise Liner With Five Infected Not Allowed To Dock', The Tribune, 12 March, online: http://www.tribune242.com/news/2020/mar/13/virus-ship-told-you-cant-land-cruise-liner-five-in/

Ross, Monique and Damien Carrick (2020) 'The Ruby Princess coronavirus saga could lead to homicide charges. These cases offer insight into a key legal issue', ABC, 23 April, online: https://www.abc.net.au/news/2020-04-24/coronavirus-ruby-princess-cruise-homicide-charges-causation-law/12171688

Stone, Jon (2020) 'UK thanks Cuba for 'great gesture of solidarity' in rescuing passengers from coronavirus cruise ship', Independent, 7 April, online: https://www.independent.co.uk/news/world/americas/coronavirus-cruise-ship-cuba-rescue-ms-braemar-havana-cases-a9451741.html

Zhou, Naaman (2020) 'Ruby Princess crew fear for their health as ship leaves Australia', The Guardian, 23 April, online: https://www.theguardian.com/australia-news/2020/apr/23/ruby-princess-crew-fear-for-their-health-as-ship-leaves-australia

7. The Swedish Model



Sweden's approach to the pandemic was essentially neoliberal, minimising preventive health. The country had a 5 to 10 times higher death rate than its Nordic neighbours

SWEDEN'S APPROACH TO controlling the COVID19 epidemic is often presented as an independent model and perhaps a *laissez faire* counter to the hard 'lockdown' approach attributed to China, the UK and the USA. However this is to confuse the symptoms with the causes. On closer examination, the Scandinavian country shared much with the neoliberal approaches of the UK and the USA (both of which, in their bewilderment, flipped from one extreme to the other). This was not the mid-20th century social democratic Sweden, fa-

mous for its welfare state and egalitarianism, but rather a 21st century Sweden, which had 'integrated' the remnants of its social democracy into a corporate driven neoliberalism. Major privatisations and 'market oriented' reforms had been carried out in the health sector, affecting primary health care and presented as 'free choice models' in which 'the money follows the patient'" (Dahlgren 2008).

In face of the epidemic Sweden nominally adopted most of the conventional public health aims, such as social distancing and hygiene measures, imposing only limited restrictions such as travel bans and limits on public gatherings. However, unlike the preventive health emphasis of most public health systems, it relied on individual compliance and limited testing. Later the state felt obliged to impose additional measures, such as wider testing and extended travel bans, before public discontent forced an official inquiry into the strategy. After six months Sweden's death rate (575 per million) was, with that of the UK (610) and the USA (545), amongst the worst on earth, and 5 to 20 times those of its Scandinavian neighbours. Further, by August it was clear that Sweden's economy had suffered as much damage as that of its neighbours, with an 8.6% slump in the second quarter (Baker 2020).

Comparing Sweden with neighbouring Nordic states (Finland, Norway and Denmark) makes good sense both because they are "culturally, economically, politically and geographically similar" and because they took differing approaches where "15 million people have been assigned to a lockdown, while a further 10 million [in Sweden] have been asked to simply act responsibly" (Franks 2020). Sweden's neoliberalism helped drive the stress on voluntarism and individual responsibility, with a sub-text of 'herd immunity'. This is an emphasis which, at the time of writing, was under consideration in the crisis-ridden USA (Abutaleb and Dawsey 2020). Sweden's second wave of infections may have appeared less dramatic, but that was mainly because its first wave was so large. To properly understand the 'Swedish model' we should examine policy and practice in a little detail, before moving to outcomes and criticism.

1. AIMS, POLICY AND practice

The Swedish government recognised the COVID19 epidemic, adopting conventional themes of social distancing and hygiene to reduce pressure on health systems; but it delayed its reactions and tried to make a virtue out of the themes of uncertainty, voluntarism and individual responsibility. It never had a 'let it rip' policy and practice, as some have suggested. Many have observed that "Swede's were not free to go about their lives as normal" (Duckett and Mackey 2020). There were some early ad hoc government measures: on 11 March public gatherings of more than 500 people were banned, on 14 March the government advised against "non-essential" international travel (on 27 March this became a ban on travel to the EU) along with a number of economic subsidy and social security initiatives (GOS 2020).

In early March Sweden recorded its first infections and first death, but a more considered strategy was not announced until 6 April, when 780 Swedish COVID19 deaths had been recorded (Worldometer 2020). Prime Minister Stefan Löfven announced COVID-19 "as a disease that constitutes a danger to society, opening the possibility of extraordinary communicable disease control measures". He declared the government's aim was "to reduce the pace" of the spread of the virus; "to flatten the curve, so that large numbers of people do not become ill at the same time" (GOS 2020: 6 April). Löfven stressed "the right measures at the right time", suggesting a reactive and not a precautionary approach. He "weighed" measures to reduce the virus spread against "their effects on society and public health in general", saying these measures would be "reviewed constantly". An important feature of the government's approach was that "every person in Sweden needs to take individual responsibility", while the state mobilised health resources and economic subsidies (GOS 2020: 6 April). This set in train a model which constantly stressed the responsibility of individuals, employers and the community, downplaying the protective role of the state.

Sweden's chief epidemiologist Anders Tegnall is said to have argued for 'herd immunity', where mass infections are supposed to generate immunity amongst the great majority, except those who are stricken down with illness or death. Tegnall denied that this was a government objective. However, email exchanges obtained by Swedish journalists show that he had indeed discussed it in the days after the WHO declared a global pandemic. He wrote to colleagues, "one point would be to keep schools open to reach herd immunity faster". In

response to Finland's modelling, which suggested that closing schools might reduce COVID19 infections amongst elderly people by 10%, Tegnall responded "10% might be worth it?" (Henley 2020a). Anders Bjorkman, a professor of infectious diseases, said the government "did not want to put it bluntly, but seeking herd immunity was always inherent in the Swedish strategy" (Habib 2020). The actually measured uptake of antibodies was not encouraging. By late May the Public Health Agency of Sweden announced that, in late April, 7.3% of Stockholm residents had developed COVID19 anti-bodies. That was similar to findings in France and Spain, and led the WHO to warn against dependence on herd immunity as a strategy (Habib 2020).

Most science was against the notion of herd immunity as a strategy, unless it were coupled with an effective and safe vaccine. A paper in late July summed it up this way: herd immunity with vaccine could be a "very successful strategy ... COVID19 vaccines will be essential in the future for reducing morbidity and mortality and inducing herd immunity" (Filtenborg-Frederiksen, Zhang; Foged and Thakur 2020). In August WHO Health Emergencies Programme Executive Director Michael Ryan warned that reliance on herd immunity was not an answer. He pointed out that, as at August, "we are nowhere close to the levels of immunity required to stop this disease transmitting. We need to focus on what we can do now to stop transmission and not live in hope of herd immunity being our salvation" (ABC News 2020). Academic biologist Sarah Pitt said that people misunderstand herd immunity, and that the possibilities vary depending on the virus. For example, herd immunity to measles cannot be achieved by natural infection, as "not enough people naturally became resistant to produce herd immunity" (Pitt 2020). Hence the ongoing reliance on measles vaccine. Studies of COVID-19 showed that, even in areas where there were large numbers of cases, "less than 10 per cent of the population show evidence of an immune system response from the infection" (Pitt 2020).

Within the framework of a reactive and "individual responsibility" strategy, Swedish policy and practice was adaptive. New measures were rolled out, in an incremental way. On 9 April Health Minister Lena Hallengren and head of the Public Health Agency Johan Carlson announced several protective measures: new powers in the Communicable Diseases Act, restrictions on dispensing medications, a limit on public gatherings of more than 50 persons, visit bans at aged care homes and an expansion in COVID-19 testing (GOS 2020:

9 April). Other measures followed, in reactive fashion: on 16 April the travel ban to the EU was extended; on 12 May there were new measures to strengthen aged care and those with health conditions; on 14 May the EU travel ban became a travel ban for all countries. Yet by mid-April COVID19 deaths in Sweden were "far exceeding the tolls of its nearest neighbours". In response, Anders Wallensten, the country's deputy chief epidemiologist, claimed that the number of new cases was starting to decline and he was "cautiously positive" Sweden was approaching its peak (Henley 2020a). His optimism was misplaced. Over the next two months the death toll would quadruple to more than 5,000.

Government and health officials became increasingly defensive. In late April Anders Tegnall asserted that Sweden had "flattened the curve", a necessary achievement until a vaccine was available. He maintained that closing borders was "ridiculous", that they could only react to the little that they knew about the virus (as opposed to precautionary and preventive measures), repeating that the government's voluntarism was "the core" of its strategy. He said individual responsibility was working, pointing out that the winter epidemics of influenza and norovirus (which causes gastroenteritis) had "dropped consistently" as a result of voluntary social distancing, less travel and sanitary measures. He maintained the government had not put lives at risk: "there has been an increase, but it is not traumatic so far" (Paterlini 2020). At that time there were about 2,000 deaths. Throughout, Tegnall kept insisting that face masks were "pointless" (van Leeuwen 2020b). Yet discontent grew over the large numbers dying.

Towards the end of April Minister Hallengren told the WHO that her government had followed the general guidelines of social distancing and stay at home, relying on voluntarism. They had maintained a "flexible" approach while increasing their intensive care facilities (Hallengren 2020a). In late May Hallengren maintained she had never wanted a "full lockdown", but blamed the deaths in elderly care homes on a "society wide failure". Using the theme of personal responsibility she attempted to deflect from governmental failures, pointing to relative 'success' in compliance through voluntary measures: long distance travel was down 96% during the Easter period and 84% had reported social distancing over April-May. It would be "unreasonable" for the government to assume all responsibility for the deaths, she asserted (Löfgren 2020).

This individual compliance theme was reinforced by a government media release of mid-June: travel within the Stockholm region was down 40% and "more than eight in ten Swedes are keeping a greater distance from others". Nevertheless, "new restrictions may be issued", the statement said, which could include bans on visits to old peoples' homes, bans on gatherings and rules regarding bars and cafes. Even if some restrictions were lifted "this does not mean that life can return to normal", she said (GOS 2020: 18 June).

By early August Tegnall admitted that spread of the infection to older people was happening far more in Sweden than in the neighbouring countries; but he maintained the official aversion to preventive measures (Holroyd 2020). Once again, prevention was rejected in favour of the supposed need to act on certainties; but there were few certainties. The Public Health Authority claimed it could not act on unknown factors: "since the virus is new, we still do not know enough about which groups are at risk of severe illness". The government maintained that citizens should individually decide to stay and work at home, to not create large gatherings and to seek assistance if they had COVID19 symptoms (Holroyd 2020). Nevertheless, bans on entry to Sweden were maintained and, in some respects, extended (GOS 2020: 13 August).

A key problem with Swedish understandings and responses was that levels of testing were low; testing was only encouraged for those with symptoms. By late May, according to Our World in Data (one of several sites which compiles information from official sources), Sweden had carried out 23.64 tests per 1,000 people as of 24 May, compared with 31.88 in Finland and 44.75 in Norway (Habib 2020). Some residents with symptoms complained that it was difficult to get tested; and without a test they were not able to receive proper care. Some reported that this lack of testing was reflective of a general attitude that the virus wasn't a serious threat (Bendix and Baker 2020).

In any event, the government fell short of its goal of 100,000 tests by mid-May. This was in part due to the fact that healthcare was not free until individual patients reached a so-called 'high cost ceiling'. Further, a medical referral was required and testing was still only encouraged for those with symptoms (The Local 2020a). Tests were increased in early June, hitting a weekly record of 49,200 tests, up from 36,500 the previous week. More infections were detected (Reuters 2020). In June Sweden began to offer free testing, but still only for

those showing symptoms; contact tracing of the infected was then carried out (AFP 2020)

By late June the WHO listed Sweden among 11 countries which had "accelerated transmission" which, if left unchecked "will push health systems to the brink once again" (NZ Herald 2020). Over July-August testing rates in Sweden still seemed lower than that of its neighbours, and far less than that of Denmark; though comparisons were difficult as Sweden's published data on testing was less up to date than that of others (Norrestad 2020).

2. OUTCOMES AND CRITICISMS

The outcomes of the Swedish approach can be measured in health and economic terms. For the first six months of the epidemic the health results were very poor. By late July infections and deaths had fallen substantially, to hundreds and several per day, respectively (Our World In Data 2020). However Sweden still had "the 7th highest per-capita death rate in the world ... [and] about ten times larger than its Nordic neighbours. Outbreaks spread to aged care facilities and the vulnerable" (Duckett and Mackey 2020). Sweden experienced by far the highest number of COVID19 infections and deaths amongst the Nordic countries, as shown in Table 1 below.

Table 1: COVID-19 in the Nordic states

Country/ COVID	Popn million	Deaths/million 23 Aug 2020	Tests/million 23 Aug 2020
Sweden	10.1	574	101K
Denmark	5.7	107	370K
Finland	5.5	60	98K
Norway	5.4	48	110K
Iceland	0.341	29	570K

Source: Worldometer 2020, 23 August

EVEN BY LATE MARCH Sweden's approach was being judged harshly in the medical literature. A Lancet editorial observed that

> "many countries are still not following WHO's clear recommendations on containment (widespread testing, quarantine of cases, contact tracing and social distancing) and have instead implemented haphazard measures .. the initial slow response in countries such as the UK, the USA and Sweden now looks increasingly poorly judged ... denial and misplaced optimism ... globally many people are afraid, angry, uncertain and without confidence in their national leadership" (The Lancet 2020: 1011).

An important rationale for limiting state quarantine measures was to preserve the Swedish economy, consistent with the neoliberal emphasis on the corporate sector. Many of the early state interventions were subsidies to maintain economic activity. A number of corporate media stories suggested that Sweden's higher infection rates might help develop 'herd immunity' and that Sweden might be "suffering less severe economic trauma than most major European nations" (Birrell 2020). However this was hardly the case, if we compare with its neighbours. By August Sweden had a less serious economic collapse than the EU average, but was faring no better than the other Nordic states (SBC 2020).

An early economic survey of Denmark and Sweden, over March-April, showed that spending dropped strongly in both countries, but almost as much in Sweden (25%) as in Denmark (29%), despite their different quarantine measures (Andersen, Hansen; Johannesen and Sheridan 2020: 13-16). By mid-June the government foreshadowed a 6 per cent fall in GDP for the year (GOS 2020: 18 June) but by July predictions had worsened. Analysts began to point out that Sweden's economy was "suffering just as badly as their neighbours with heavier lockdowns" (Duckett and Mackey 2020). Official figures showed that Sweden's GDP fell 8.6% during the second quarter of the year, more than that of Denmark's 7.4% crash and Finland at minus 3.2% (Baker 2020). Calendar adjusted, compared with Q2 in 2019, Sweden's GDP decreased by 8.2 percent (SBC 2020). The EU contraction was greater, at 12.1% in the Euro area and 11.9% in the EU (Eurostat 2020). Nevertheless, compared to its immediate region, Sweden's voluntary social distancing and stay at home measures, com-

bined with travel bans and international isolation, seem to have led to equivalent damage.

The large numbers of infections and deaths shook Swedish public opinion, which had initially backed the government. In a late April survey of 1,600 Swedes, 31% of respondents rated the nation's response to the outbreak as not forceful enough, while 18% were neutral and 51% considered the response forceful enough. Interestingly, those 50 years or older (and more at risk of the disease) were most supportive of the government while only 40% of 15-29 year olds thought the government response had been sufficient (Wengström 2020). Yet by late June an Ipsos survey showed confidence falling in the government's management of the epidemic. It fell 11 points to 45%, since April, and backing for the national public health agency had also fallen by 12 points (Henley 2020b). Those satisfied with the government's response to the pandemic fell to 38%, while the approval rating of Prime Minister Löfven dropped 10 points (Henley 2020b). Ipsos analyst Nicklas Källebring concluded that "the view of authorities' capabilities has taken a clear negative turn." The Ipsos poll confirmed an earlier study by Novus pollsters which showed only 45% of voters held a high degree of confidence "in the government's capacity to handle the crisis", compared to 63% in April (Henley 2020b).

The Swedish government's voluntarist, neoliberal approach provoked an ongoing storm of internal as well as external criticism. Even after government officials had admitted failures in protecting older people (Holroyd 2020), one of their key stated aims, some softer critiques argued that more time was needed to assess the approach. This came especially from those concerned to protect the economy. So German-born economist Andreas Ortmann was cautious, recognising by August that Sweden had "one of the worst [death rates] in the world" and that its economic performance "doesn't seem much better than Denmark's". However he noted that Sweden's deaths had fallen to "close to zero" [Sweden was still averaging a few deaths per day] while many other countries were experiencing a second wave of infections and deaths (Ortmann 2020). Another critique, observing that Sweden had imposed a new round of restrictions in summer pointed out that, after this, "its economy has suffered less than the European average in recent months, but at least as much and possibly more than its Nordic neighbours" (Milne 2020).

Others gave a harsher assessment. In mid-April a group of 22 doctors, virologists and researchers criticised the public health agency in the Dagens Nyheter newspaper, using the conventional public health recommendations. "The approach must be changed radically and quickly ... it is necessary to increase social distance. Close schools and restaurants. Everyone who works with the elderly must wear adequate protective equipment. Quarantine the whole family if one member is ill or tests positive" (Henley 2020a).

The Communist Party of Sweden (SKP) accused the government of putting at risk the lives of thousands of workers by not closing down non-essential production in different sectors in the country". They pointed out that the government had created "support packages of 1,300 billion Swedish Krone (USD 130.16 billion) to big banks and monopolies", while "even the most basic aid has been denied to the working population." At the same time special police units had been trained to "deal with protests at government insensitivity" during the epidemic (Peoples Dispatch 2020).

Swedish-Chilean Professor of Epidemiology Dr Marcello Ferrada de Noli said the government's approach had been a "conclusive disaster", as official data on infections and deaths testified. He said there were three key failures, an epidemiological failure, an ethical defeat with "thousands of unnecessary deaths" and a huge loss of "international prestige and credibility", from a state which in the past had a reputation of being a "humanitarian power". Tegnall's claims about weakening the virus and developing 'herd immunity' were all erroneous. Historical studies of epidemics had demonstrated that the "basic concept of quarantine remains completely valid" and that 'herd immunity' for this virus could only be achieved "with the help of an ad-hoc vaccine" (Ferrada de Noli 2020).

Similarly, Dr Lena Einhorn, virologist and prominent critic, refuted claims of 'herd immunity', saying of the autumn period, "if Sweden doesn't change its policy, we won't see the same thing — because the elderly are better protected — but the numbers will go up". She argued for mandatory use of face masks in crowded areas and contact tracing for all infected people (Milne 2020).

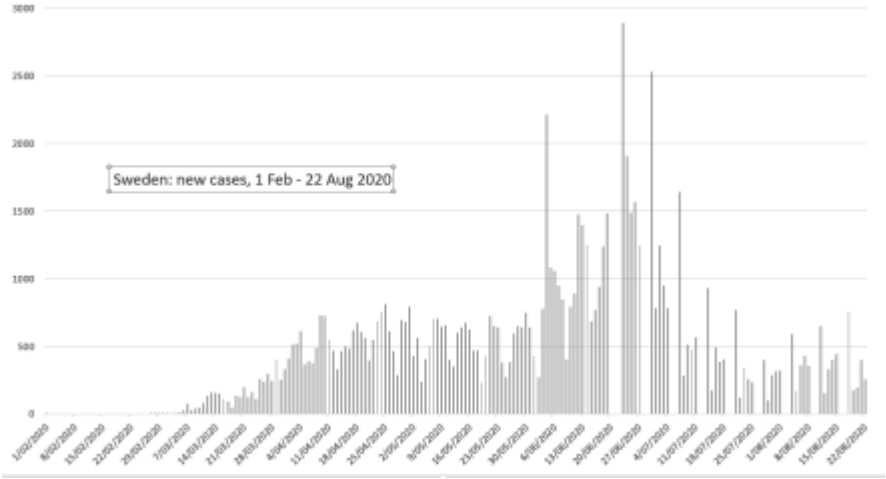
The poor health and economic outcomes, consistent criticisms and shifts in public opinion, reinforced by parliamentary opposition and partial admissions of failure by the government, led to the 1st July announcement of an official in-

quiry into the government's approach to the epidemic. In a fairly relaxed schedule, former judge Mats Melin was asked to deliver an interim report by 30 November 2020, and a final report by 31 October 2021 (GOS 2020: 1 July).

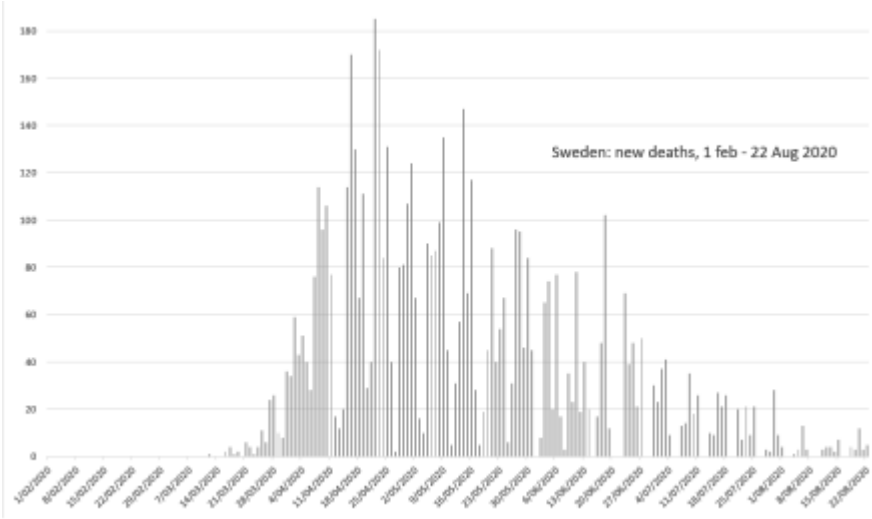
3. THE MODEL AND ITS consequences

By the time the Swedish parliamentary inquiry began, the government had some new arguments in defence of its approach. The 'curve' of new cases and new deaths had begun to flatten. How could this be best explained? Graphs 1 and 2 below, using official data (via OurWorldinData 2020), trace Sweden's daily new infections and new deaths, between February and August 2020. They show a strong surge in infections from early-March to early-July, and a gradual fall off through July and August.

GRAPH 1: DAILY NEW COVID19 cases in Sweden, 1 February to 22 August 2020



GRAPH 2: DAILY NEW COVID19 deaths in Sweden, 1 February to 22 August 2020



SWEDEN WAS MANAGING to flatten its curve but many questioned the cost (Fiore 2020). Chief epidemiologist Anders Tegnell announced that "the Swedish strategy is working", while Norwegian Professor of Immunology Anne Spurkland pointed to social factors including summer and the closure of schools, adding "perhaps Sweden has finally gotten better control over the disastrous spread of the virus in nursing homes". Almost half of Sweden's 5,730 deaths were in elderly care homes (Fiore 2020). Tegnell argued that there was "a relationship between the very quick drop of the last few weeks and the increasing immunity in many parts of Sweden" (Milne 2020). But this claim was not backed by antibody tests. Further, by late September, a second wave of infections had appeared and the government was about to impose some additional, short term restrictions (Tegnell 2020).

In mid-July Karin Tegmark Wisell, head microbiologist at Sweden's Public Health Agency, said most of the population remained vulnerable. According to the agency's data, about 10% of people in the capital Stockholm, the worst affected area, had developed antibodies, and only 17.6% of the 140,000 who volunteered for free antibody tests gave a positive result (Rolander 2020). That 10% was very close to antibody studies elsewhere (Pitt 2020).

However tests have also discovered the existence of non-specific immunity, where T-cells begin to deal with the virus without specific anti-bodies. Sweden's Karolinska Institute and Karolinska University Hospital found that "about 30% of people with mild or asymptomatic COVID showed T-cell-mediated immunity to the virus, even though they tested negative for antibodies". Those involved in the study could not link this phenomenon to Sweden's decline in cases (Fiore 20202). European studies of immunity and antibodies suggest that "immune response to SARS-CoV-2 involves both cell-mediated immunity and antibody production" but that, given the low levels of both, it is "unlikely that population immunity levels reached by winter 2020-2021 will be sufficient for indirect protection" (ECDC 2020).

Dr Mozhu Ding, epidemiologist at the Karolinska Institute, said the decline in cases is "likely to be a combination of measures taken by individuals, businesses and a widespread information campaign launched by the government" (Fiore 2020). Dr Ding pointed out that, even without a 'lockdown' order, "many businesses allowed employees to work from home, and universities are offering distance courses to the students ... individuals are also taking per-

sonal hygiene more seriously "(Fiore 2020). The generally improved survival rates may also be linked to evolving better treatments.

Underlining the ongoing appeal of Sweden's 'model' to neoliberals Washington, with a seemingly intractable second wave of infections and deaths, was said to be considering a Swedish style 'herd immunity' approach (Abutaleb and Dawsey 2020). Meanwhile Sweden's high rate of infections, like that of the USA, led to travel bans from its neighbours (Ellyatt 2020). Norway required Swedes to quarantine for 10 days when entering Norway, while Denmark also maintained restrictions on Swedes (Fiore 2020).

In summary, the Swedish approach to the COVID19 public health crisis was neither *laissez faire* nor social democracy, but rather an extended neoliberal model, with an emphasis on voluntarism (in quarantine measures and testing) and 'user pays' health care privatisation, delaying state interventions for as long as possible. Travel bans and limits on public gatherings were imposed, but lack of information on the virus (e.g. on the extent of asymptomatic transmission) was used as a pretext to delay state interventions. This contrasted with the more widely accepted precautionary and preventive measures. Sweden showed little if any benefit from this approach and its health outcomes were amongst the worst in the world. That is why, by July 2020, public opinion and opposition politicians forced an official inquiry into the 'Swedish model'.

REFERENCES

ABC News (2020) 'WHO says we must not live in hope of coronavirus herd immunity', 19 August, online: https://www.abc.net.au/news/2020-08-19/who-says-we-must-not-live-in-hope-of-coronavirus-herd-immunity/12572744

Abutaleb, Yasmeen and Josh Dawsey (2020) 'New Trump pandemic adviser pushes controversial 'herd immunity' strategy, worrying public health officials', Washington Post, 1 September, online: https://www.washingtonpost.com/politics/trump-coronavirus-scott-atlas-herd-immunity/2020/08/30/925e68fe-e93b-11ea-970a-64c73a1c2392_story.html

AFP (2020) 'Sweden offers free virus testing for all with symptoms', 5 June, online: https://www.thejakartapost.com/news/2020/06/05/sweden-offers-free-virus-testing-for-all-with-symptoms.html

Andersen, Asger Lau; Emil Toft Hansen; Niels Johannesen and Adam Sheridan (2020) Pandemic, Shutdown and Consumer Spending: Lessons from Scandinavian Policy Responses to COVID-19, 12 May, University of Copenhagen, online: https://arxiv.org/pdf/2005.04630.pdf

Baker, Sinead (2020) 'Sweden's GDP slumped 8.6% in Q2, more sharply than its neighbours despite its no-lockdown policy, Business Insider, 14 August, online: https://www.businessinsider.com.au/coronavirus-sweden-gdp-falls-8pc-in-q2-worse-nordic-neighbors-2020-8?r=US&IR=T

Bendix, Aria and Sinead Baker (2020) 'Sweden never locked down and isn't testing widely for the coronavirus. Residents with COVID-19 symptoms say they feel invisible', Business Insider, 6 June, online: https://www.businessinsider.com.au/sweden-coronavirus-testing-lags-patients-say-they-cant-be-treated-2020-6[1]

Birrell, Ian (2020) 'Why Sweden, pilloried by the whole world for refusing to lock down – with schools staying open and no face mask laws – may be having the last laugh as experts say Stockholm is close to achieving herd immunity', The Daily Mail, 10 August, online: https://www.dailymail.co.uk/news/article-8607731/Why-Sweden-pilloried-world-refusing-lock-having-laugh.html

Dahlgren, Göran (2008) 'Neoliberal reforms in Swedish primary health care: for whom and for what purpose?', Int J Health Serv. 2008;38(4):697-715. doi: 10.2190/HS.38.4.g. Online: https://pubmed.ncbi.nlm.nih.gov/19069288/

Duckett, Stephen and Will Mackey (2020) 'No, Australia should not follow Sweden's approach to coronavirus', The Conversation, 29 July, online: https://theconversation.com/no-australia-should-not-follow-swedens-approach-to-coronavirus-143540

ECDC (2020) 'Immune responses and immunity to SARS-CoV-2', European Centre for Disease Prevention and Control, 30 June, online: https://www.ecdc.europa.eu/en/covid-19/latest-evidence/immune-responses

Ellyatt, Holly (2020) 'Shunned by its Nordic neighbors for its coronavirus strategy, Sweden says there are 'wounds that will take time to heal', CNBC, 17 June, online: https://www.cnbc.com/2020/06/17/swedens-exclusion-from-nordic-travel-area-swedens-foreign-minister.html

Eurostat (2020) 'GDP down by 12.1% in the euro area and by 11.9% in the EU', 31 July, online: https://ec.europa.eu/eurostat/documents/2995521/11156775/2-31072020-BP-EN.pdf/cbe7522c-ebfa-ef08-be60-b1c9d1bd385b

1. https://www.businessinsider.com.au/sweden-coronavirus-testing-lags-patients-say-they-cant-be-treated-2020-6?r=US&IR=T

Ferrada de Noli, Marcello (2020) 'Sweden's Covid-19 strategy has resulted in a conclusive disaster', The Indicter 10 July, online: https://theindicter.com/swedens-covid-19-strategy-has-resulted-in-a-conclusive-disaster/

Filtenborg-Frederiksen, Lea Skak; Yibang Zhang; Camilla Foged and Aneesh Thakur (2020) 'The Long Road Toward COVID-19 Herd Immunity: Vaccine Platform Technologies and Mass Immunization Strategies', Frontiers in Immunology, 21 July, online: https://www.frontiersin.org/articles/10.3389/fimmu.2020.01817/full

Fiore, Kristina (2020) 'How Did Sweden Flatten Its Curve Without a Lockdown?', MedPage Today, 29 July, online: https://www.medpagetoday.com/infectiousdisease/covid19/87812

Franks, Paul W. (2020) 'Coronavirus: why the Nordics are our best bet for comparing strategies', The Conversation. 3 April, online: https://theconversation.com/coronavirus-why-the-nordics-are-our-best-bet-for-comparing-strategies-135344

GOS (2020) 'The Government's work in response to the virus responsible for COVID-19', Government Offices of Sweden, online: https://www.government.se/government-policy/the-governments-work-in-response-to-the-virus-responsible-for-covid-19/

Habib, Heba (2020) 'Has Sweden's controversial covid-19 strategy been successful?', BMJ, 12 June, doi: https://doi.org/10.1136/bmj.m2376

Hallengren, Lena (2020a) 'Speech by Minister for Health and Social Affairs Lena Hallengren at WHO briefing 23 April', 29 April, online: https://www.government.se/speeches/2020/04/speech-by-minister-for-health-and-social-affairs-lena-hallengren-at-who-briefing-23-april/

Hallengren, Lena (2020b) 'Minister for Health and Social Affairs Lena Hallengren on the Swedish COVID-19 strategy', Government Offices of Sweden, 17 June, online: https://www.government.se/government-policy/the-governments-work-in-response-to-the-virus-responsible-for-covid-19/

Henley, Jon (2020a) 'Critics question Swedish approach as coronavirus death toll reaches 1,000', The Guardian, 15 April, online: https://www.theguardian.com/world/2020/apr/15/sweden-coronavirus-death-toll-reaches-1000

Henley, Jon (2020b) 'Swedes rapidly losing trust in Covid-19 strategy, poll finds', The Guardian, 26 June, online: https://www.theguardian.com/world/2020/jun/26/swedes-rapidly-losing-trust-in-covid-19-strategy-poll-finds

Henley, Jon (2020c) 'Sweden's Covid-19 strategist under fire over herd immunity emails', The Guardian, 18 August, online: https://www.theguardian.com/world/2020/aug/17/swedens-covid-19-strategist-under-fire-over-herd-immunity-emails

Holroyd, Matthew (2020) 'Coronavirus: Sweden stands firm over its controversial COVID-19 approach', 4 August, online: https://www.euronews.com/2020/04/06/coronavirus-sweden-stands-firm-over-its-controversial-covid-19-approach

Krisinformation (2020) 'Visiting Sweden during the covid-19 pandemic', 25 July, online: https://www.krisinformation.se/en/hazards-and-risks/disasters-and-incidents/2020/official-information-on-the-new-coronavirus/visiting-sweden-during-the-covid-19-pandemic[2]

Lancet (2020) 'COVID-19: learning from experience', 28 March, online: https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930686-3

Löfgren, Emma (2020) 'Swedish health minister: 'I can honestly say I would not have wanted a lockdown'', The Local, 27 May, online: https://www.thelocal.se/20200527/coronavirus-swedish-health-minister-lena-hallengren-i-can-honestly-say-i-would-not-have-wanted-a-lockdown

Milne, Richard (2020) 'Sweden's pandemic no longer stands out', FT, 9 August, online: https://www.ft.com/content/7acfc5b8-d96f-455b-9f36-b70dc850428f

Ministry of Health and Social Affairs (2020) 'Mats Melin to chair COVID-19 inquiry in Sweden', Government Offices of Sweden , 01 July, online: https://www.government.se/press-releases/2020/06/mats-melin-to-chair-covid-19-inquiry-in-sweden/

MOF (2020) 'Some signs of recovery in the economy – but situation still very serious', Ministry of Finance: Government of Sweden, 18 June, online: https://www.government.se/press-releases/2020/06/some-signs-of-recovery-in-the-economy—but-situation-still-very-serious/[3]

2. https://www.krisinformation.se/en/hazards-and-risks/disasters-and-incidents/2020/official-information-on-the-new-coronavirus/visiting-sweden-during-the-covid-19-pandemic#_853ae90f0351324bd73ea615e6487517__4c761f170e016836ff84498202b99827__853ae90f0351324bd73ea615e6487517_text_43ec3e5dee6e706af7766ff-fea512721_The_0bcef9c45bd8a48eda1b26eb0c61c869_20Swedish_0bcef9c45bd8a48eda1b26eb0c61c869_20Government_0bcef9c45bd8a48eda1b26eb0c61c869_20has_0bcef9c45bd8a48eda1b26eb0c61c869_20decided_c0cb5f0fcf239ab3d9c1fcd31fff1efc_the_0bcef9c45bd8a48eda1b26eb0c61c869_20spread_0bcef9c45bd8a48eda1b26eb0c61c869_20of_0bcef9c45bd8a48eda1b26eb0c61c869_20the_0bcef9c45bd8a48eda1b26eb0c61c869_20coronavirus

3. https://www.government.se/press-releases/2020/06/some-signs-of-recovery-in-the-economy--but-situation-still-very-serious/

Norrestad, F (2020) Number of coronavirus deaths in the Nordic countries as of August 2020, Statista, 14 Aug, online: https://www.statista.com/statistics/1113834/cumulative-coronavirus-deaths-in-the-nordics/

NZ Herald (2020) 'Covid 19 coronavirus: Sweden slams WHO over listing it among 'resurgence' countries', 27 June, online: https://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=12343482

Ortmann, Andres (2020) 'Sweden eschewed lockdowns. It's too early to be certain it was wrong', The Conversation, 5 August, online: https://theconversation.com/sweden-eschewed-lockdowns-its-too-early-to-be-certain-it-was-wrong-143829

Our World In Data (2020) 'Sweden: Coronavirus Pandemic Country Profile', 23 August, online: https://ourworldindata.org/coronavirus/country/sweden?country=~SWE

Paterlini, Marta (2020) 'Closing borders is ridiculous': the epidemiologist behind Sweden's controversial coronavirus strategy', Nature, 21 April, online: https://www.nature.com/articles/d41586-020-01098-x

Peoples Dispatch (2020) 'Swedish communists condemn bid to shift burden of COVID-19 on to workers', 15 April, online: https://peoplesdispatch.org/2020/04/15/swedish-communists-condemn-bid-to-shift-burden-of-covid-19-on-to-workers/

Pew (2020) 'More think their country has handled COVID-19 well, with the exceptions of the U.S. and UK', Pew Research Centre, 26 August, online: https://www.pewresearch.org/global/2020/08/27/most-approve-of-national-response-to-covid-19-in-14-advanced-economies/pg_2020-08-27_global-coronavirus_0-02/

Pitt, Sarah (2020) 'What will happen if we can't produce a coronavirus vaccine? And is herd immunity the answer?', The Conversation, 15 August, online: https://www.abc.net.au/news/2020-08-15/coronavirus-herd-immunity-unlikely-without-vaccine/12559298

Reuters (2020) 'Coronavirus cases hit daily record in Sweden as tests ramp up', 11 June, online: https://www.reuters.com/article/health-coronavirus-sweden/coronavirus-cases-hit-daily-record-in-sweden-as-tests-ramp-up-idUSL8N2DO3PN

Riksbank (2020) 'Economic development according to two alternative scenarios', Monetary Policy Report, July, online: https://www.riksbank.se/globalassets/media/rapporter/ppr/fordjupningar/engelska/2020/economic-development-according-to-two-alternative-scenarios-article-in-monetary-policy-report-july-2020.pdf

Rolander, Niclas (2020) 'Swedish PM Defends Covid Plan as Immunity Fails to Catch On', Bloomberg, 15 July, online: https://www.bloomberg.com/news/articles/2020-07-15/sweden-says-latest-covid-immunity-not-enough-to-protect-citizens

SCB (2020) 'GDP indicator: Sharp contraction in second quarter 2020', Statistics Sweden, 5 August, online: https://www.scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/national-accounts-quarterly-and-annual-estimates/pong/statistical-news/national-accounts-second-quarter-2020/

Tegnell, Anders (2020) ''We are going slowly but surely in the wrong direction' warns Sweden's state epidemiologist Anders Tegnell', The Local, 25 September, online: https://www.thelocal.se/20200925/we-are-going-slowly-but-surely-in-the-wrong-direction-warns-swedens-state-epidemiologist-anders-tegnell

The Local (2020a) 'Sweden's new plan to extend coronavirus testing: Here's how it should work', `12 June, online: https://www.thelocal.se/20200612/sweden-extends-coronavirus-testing-heres-how-it-should-work

The Local (2020b) 'Nearly 1.5 million people in Italy have coronavirus antibodies: study', 4 August, online: https://www.thelocal.it/20200804/more-than-1-million-people-in-italy-have-coronavirus-antibodies

Vally, Hassan (2020) '6 countries, 6 curves: how nations that moved fast against COVID-19 avoided disaster', The Conversation, 30 April, online: https://theconversation.com/6-countries-6-curves-how-nations-that-moved-fast-against-covid-19-avoided-disaster-137333

van Leeuwen, Hans (2020a) 'Pressured Sweden counts the cost of its idiosyncratic lockdown', 3 July, Australian Financial Review, online: https://www.afr.com/world/europe/pressured-sweden-counts-the-cost-of-its-idiosyncratic-lockdown-20200703-p558l3

van Leeuwen, Hans (2020b) 'Masks are pointless, says Sweden's maverick chief medic', 30 July, Australian Financial Review, online: https://www.afr.com/world/europe/masks-are-pointless-says-sweden-s-maverick-chief-medic-20200730-p55gre

Wengström, Erik (2020) 'Coronavirus: survey reveals what Swedish people really think of country's relaxed approach', The Conversation, 29 April, online: https://theconversation.com/coronavirus-survey-reveals-what-swedish-people-really-think-of-countrys-relaxed-approach-137275

8. Besieged Syria and the virus

Syrian President Bashar al Assad meets Iran's Foreign Minister Javad Zarif.

HOW IS IT THAT SYRIA, targeted by war and economic siege, had such striking initial success in controlling the COVID19 pandemic? With epidemics raging on either side – across Europe and all around the Persian Gulf – how did the embattled Syrian Arab Republic emerge (by mid-June) with so little damage indeed, by mid-year, with the lowest number of cases and deaths in the entire Middle East region?

This was not due to luck, nor to laissez faire practice. On the contrary, the Syrian government, with very limited resources: (1) took the virus threat seriously, communicating and maintaining trust with the Syrian people; (2) imposed strong quarantine and sanitary controls, but kept them under revision,

flexible and targeted, so far as possible; and (3) imposed its quarantine and sanitary measures rapidly, well before the first infection was even detected.

That rapid response was critical. Like a forest fire, if a new and potentially dangerous virus is not controlled early, it will rage out of control for much longer. We saw that in the US and the UK (and Brazil, Peru, Ecuador and Chile), where leaders refused to take the threat seriously for many weeks, and were forced to act only when infections and deaths had reached into the thousands. In Syria the threat remained low, while in the US and Britain the crisis was deep, prolonged and facing resentment, aggravated by heavy handed and belated controls.

By contrast, the Syrian government acted rapidly to mobilise its health system, close borders and close schools, before they had detected any infections. Soon after the first case was found the government imposed a night-time curfew, to prevent large gatherings. Curfews had rarely been used, even during nine years of war. That rapid response helps explain why, by 18 June, there were less than 200 cases and only 7 deaths in Syria (SANA 18/6). This is despite the fact that the country was still occupied by three foreign armies and their proxy terror groups.

As part of its propaganda war, the US government attacked Damascus precisely for its protective measures, claiming ulterior motives. An article in US state media (Gavlak 2020) claimed that the Syrian Government, "to consolidate its control ... has practised misinformation and intimidation over COVID19 from the start ... it threatened hospitals and doctors that cited coronavirus cases. It deployed members of its secret police in hospitals." US sources claimed (without much real evidence beyond media rumours) that Syria had more infections and the Syrian Government was covering them up.

Citing studies by a US foundation and a US-based cybersecurity firm, the article claimed the Damascus government had "planted spyware in citizens cell phones" and that its "repressive" practices included imposing a night-time curfew, restricting travel between provinces, shutting schools and universities and banning gatherings at mosques and other public events (Alkoutami and Fahim 2020; Gavlak 2020). Apart from the spyware claim, the other measures are uncontested. The Syrian government spelt out these measures in daily public reports, beginning in early March 2020.

Many pandemic deniers, including some western friends of Syria, repeated similar criticisms, while remaining silent over Syria, or pretending that the government had barely acted at all. They attacked the W.H.O. and the use of life-saving vaccines, while saying nothing about Syria's collaboration with the W.H.O. or its mass vaccination campaign. Yet Syria was clearly not part of any US-centred 'conspiracy'.

To get a better picture, let's review Syrian policy and practice, from the beginning. By late March, all the Middle East governments were reporting serious COVID19 epidemics, and closing their borders. By 19 June 2020 Iran had reported 9,272 COVID19-related deaths, Turkey 4,882, Egypt 1,938, Saudi Arabia 1,139, Iraq 856, Israel/Palestine 312, Armenia 309, Kuwait 308, the U.A.E. 298, Greece 188, Qatar 86, Bahrain 55, Tunisia 50, Lebanon 32, Jordan 9 and Syria just 7 (Worldometer 2020). So how had Syria, by that stage, apparently achieved better outcomes than its neighbours?

On 3 March Syria had no COVID19 cases, but the Health Ministry formed an emergency committee with branches in each province. They developed a "national work plan to confront the virus" along with the development of diagnosis kits, quarantine facilities and training of medical staff (SANA 3/3). On 13 March the country had still not detected any cases, but the Health Ministry was promoting awareness and asking that citizens "should go to hospital when they come up with the symptoms of the virus" (SANA 13/3).

Schools and universities were suspended on 13 March, and work hours were cut (SANA 13/3). On 15 March the cabinet approved a plan which focused on making ready sanitary products and medical equipment for diagnosis and quarantine (SANA 15/3). Some additional decisions on how to deal with the epidemic were made between 17 and 22 March, while tests carried out on 31 people at Damascus Airport proved negative (SANA 17/3 to 22/3).

However on 22 March the first case (a person from abroad) was detected. On that same day all public transport and private transport between the provinces was suspended and crossing points to Lebanon were stopped for all except cargo trucks. Cabinet adopted the plan of the Health Ministry to expand quarantine and isolation centres, with 19 emergency teams and additional diagnosis labs (in Damascus, Lattakia and Aleppo), "in cooperation with the World Health Organization" (SANA 22/3).

Night-time curfews from 6am to 6pm were imposed in Damascus on 24 March and in Aleppo on 25 March, and a nation-wide curfew was put in place on 31 March (SANA 27/3, 3/4). A total curfew was imposed on the Tartous sea waterfront, on 2 April, until further notice (SANA 2/4), while more total 'lockdowns' were imposed on the shrine town of Al Sayeda Zainab and the tourist spot of Tal Mnin, Damascus areas which were considered 'hotspots' of infection. On 3 April the Friday and Saturday curfews were extended from 12 midday to 6am the next day (SANA 3/4).

A Damascus doctor told me on 24 April that shops which had been closed were being opened at special times for example: clothes shops on Monday and Wednesday. Syria's Health Department coordinated with the W.H.O., which was providing some test kits. The W.H.O. representative also "appears on our TV and radio".

Syria's President Bashar al Assad, himself a medical doctor, was seen wearing a face mask in his 20 April meeting with Iran's Foreign Minister Javad Zarif, who was also wearing gloves. This was likely a precaution against infections from Iran, which at that time had the highest level of infections in the region. It may also have been to show an example of precautionary behaviour. Syria did not adopt any requirement for wearing face masks. However it is clear that Syria's low levels of infection did not prevent President Assad from taking the virus seriously. In early May he told the Government Committee which oversees the pandemic response that the low level of infections did not mean Syria had escaped the "circle of danger ... these figures could suddenly spike in a few days or few weeks and we would see in front of us real catastrophe that exceeds our health and logistical abilities" (Reuters 2020).

A member of the Ba'ath Party told me the curfew period had been "devastating", as there was "no income no food nothing" and everyone had their own struggles. Yet when Ramadan arrived on 23 April the curfew was set back to start at 7.30pm (SANA 23/4). That adjustment showed some flexibility and adaptation, as did the subsequent lifting of closures on Al Sayeda Zainab and Tal Mnin.

Syrian nationals kept returning to the country, across land and air borders, including by use of Syria's national airline; even though this introduced new cases, particularly from Kuwait (SANA 25/5). However they were all subject to screening, not too different from the procedures in other countries (a 14 day

special quarantine period), except that they were housed and fed in fairly basic state run facilities. Several thousand people were subject to this sort of preventive quarantine (SANA 18/4, 14/5).

Eventually, on 26 May after 2 months of strong control measures and with a very low level of infections, the curfew was lifted completely. Nevertheless, the Health Ministry warned that there was "still a possibility of a full curfew in the future depending on developments related to the pandemic" (SANA 25/5). The quarantine measures had been imposed rapidly but were also relaxed rapidly, as a result of the country's relative success. Schools, which had gone online since March, began a cautious reopening. A Damascus headmistress told me that year 9 and 12 students were returning for their exams on 21 June.

The overall Syrian approach was similar to that of Cuba, in that it was led by the Health Ministry, there was daily information from health authorities, strong quarantine measures were imposed, even before infections were detected, and severe lockdowns were imposed on specific 'hot spots' which had outbreaks of infection.

Similarly, Cuba began its quarantine measures several days before any detected cases, but aware of what had happened in other countries. The theme of 'stay at home' was put out in the Cuban media several days before the first detected case. Importantly, in both countries, and despite the measured restriction of liberties, the public maintained a strong degree of trust in health authorities. In Syria this relationship and 'commitment', according to a former Syrian soldier, remains the key to Syria's advances.

The quarantine measures in Syria were more severe than those of many other countries, such as my own country Australia. We had no curfew and some states did not close schools. Yet we had often arbitrary and changeable rules. An Australian minister said in June that his government would probably not allow tourism nor allow residents to leave the country "any time soon" (MacMillan 2020; Van Leeuwen 2020). A mobile phone application to allow Australians to detect others who had been infected was at first pressed as a necessity but quickly became "irrelevant" (Taylor 2020). Much the same thing happened in Britain (Sky News 2020). Meantime, Syria made clear initiatives for reopening, including reopening its borders by July.

Accepting quarantine measures in principle (as distinct from criticisms likely to be made about restrictive practice, in particular contexts) also implies a

measure of responsibility. That was lacking in many western cultures, where little regard was often shown for the impact on old, frail and disadvantaged people. This particular virus hit those groups the hardest.

That disregard was shocking to Lebanese Resistance leader Sayyed Hassan Nasrallah (2020), who characterised the laissez faire western approach in this way:

> " 'let these old people die, no problem, let's leave them alone without care or support, so that the youth, who are the country's future, workforce and economy, may survive'. This is a descent in humanity ... on the contrary, when humans get older, our human and ethical responsibility towards them becomes much bigger, even when it comes to your choice of words with them. So how could we abandon the elderly? Why?"

In mid-June Damascus resumed its long standing campaign of mass child vaccination. With vaccines Syria had eliminated polio in 1997, tetanus in 1997 and had made key advances against measles. In the resumed campaign, eleven vaccines are being given to all children under five, especially the 240,000 children who missed out on vaccinations due to the war. Hundreds of centres and mobile teams were set up, including in those areas still controlled by armed gangs. More than 8,000 health workers were mobilised (SANA 14/6). Such campaigns are an essential part of all decent public health systems.

Latin American writer Pasqualina Curcio pointed out that the pandemic had highlighted the failures of neoliberal systems. These were systems which preached 'liberty' and opposition to 'paternalistic' public health systems, so as to facilitate private corporate control. Curcio (2020) also observed that the 3.7 billion people worldwide living in poverty were far worse affected, during the pandemic, by both the disease and the crash in their incomes and livelihoods. Subsequent studies have showed both the health and economic impact of the crisis falling most heavily on disadvantage minorities. Black Americans were "dying of Covid-19 at three times the rate of white people" (Pilkington 2020). A disproportionate incidence of death from COVID19 had also fallen on Black and Asian people in Britain (Mannix 2020). That was the result of a weakened public health system combined with an exclusionary society.

So how did Syria produce the best results in its region? Even when facing an intensified genocidal siege from the US and the EU, the Syrian government was able to effectively defend public health. Damascus did not sit on its hands, like Boris Johnson, waiting for 'herd immunity' to sweep through the country. Nor did it, like Donald Trump, proclaim that the warmer weather would blow the virus away. The Syrian government acted quickly and decisively, to protect the Syrian people.

REFERENCES

Most of the sources here are from the Syrian Government newsagency SANA, the English version, with dates attached. Online: https://www.sana.sy/en/

Alkoutami, Sandy and Khulood Fahim (2020) 'Revived by Disease: The coronavirus crisis in Syria has created political openings for Bashar al-Assad's regime', Carnegie Middle East Center, 11 May, online: https://carnegie-mec.org/diwan/81755

Anderson, Tim (2020) Public Health, COVID-19 and Recovery, 10 April: https://ahtribune.com/world/covid-19/4062-public-health-covid-19-recovery.html

Anderson, Tim (2020) How Has Cuba Faced the COVID-19 Epidemic?, 14 April: https://ahtribune.com/world/americas/4076-cuba-faced-the-covid19.html

Anderson, Tim (2020) A Tale of Two Cruise Ships: The Cuban Difference, 26 April: https://ahtribune.com/world/americas/4109-two-cruise-ships-cuba.html

Anderson, Tim (2020) How the Pandemic Defrocked Hegemonic Neoliberalism, 22 May: https://ahtribune.com/world/covid-19/4181-pandemic-defrocked-hegemonic-neoliberalism.html

Curcio, Pasqualina (2020) 'COVID-19: A Polygraph for These Times', Resumen latinoamericano and the Third World, 15 June, online: https://www.resumen-english.org/2020/06/covid-19-a-polygraph-for-these-times/

Gavlak, Dale (2020) 'Assad Exploiting COVID-19 Prevention Measures to Consolidate Grip on Syria, Observers Say', Voice of America, 18 May, online: https://www.voanews.com/middle-east/assad-exploiting-covid-19-prevention-measures-consolidate-grip-syria-observers-say

MacMillan, Jade (2020) 'Australian borders likely to stay closed until next year, Tourism Minister says', ABC News, 17 June, online: https://www.abc.net.au/news/2020-06-17/borders-likely-closed-until-next-year-coronavirus-restrictions/12365978

Mannix, Liam (2020) 'In the UK, being black or Asian makes you more likely to die from COVID-19', Sydney Morning Herald, 11 May, online: https://www.smh.com.au/national/in-the-uk-being-black-or-asian-makes-you-more-likely-to-die-from-covid-19-20200511-p54rvt.html

Nasrallah, Hassan (2020) 'Hezbollah chief Hassan Nasrallah damns Western countries COVID?19 response', VK, online: https://vk.com/video404210594_456239520 also at: https://twitter.com/Leila_MA/status/1247880659579756544

Pilkington, Ed (2020) 'Black Americans dying of Covid-19 at three times the rate of white people', The Guardian, 21 May, online: https://www.theguardian.com/world/2020/may/20/black-americans-death-rate-covid-19-coronavirus

Reuters (2020) 'Syria's Assad warns of 'catastrophe' if coronavirus cases spike', 5 May, online: https://www.reuters.com/article/us-health-coronavirus-syria-assad/syrias-assad-warns-of-catastrophe-if-coronavirus-cases-spike-idUSKBN22G25J

Sky News (2020) 'Britain abandons coronavirus tracing after app failures', 19 June, online: https://www.skynews.com.au/details/_6165475291001

Taylor, Josh (2020) 'How did the Covidsafe app go from being vital to almost irrelevant?', The Guardian, 24 May, online: https://www.theguardian.com/world/2020/may/24/how-did-the-covidsafe-app-go-from-being-vital-to-almost-irrelevant

Van Leeuwen, Hans (2020) 'Australia 'very unlikely' to allow foreign tourists in 2020', Australian Financial Review, 17 June, online: https://www.afr.com/politics/federal/australia-very-unlikely-to-allow-foreign-tourists-in-2020-20200617-p553a6

Worldometer (2020) 'COVID-19 CORONAVIRUS PANDEMIC', online: https://www.worldometers.info/coronavirus/

9. Myths of the western pandemic deniers

If the Titanic were sinking today: "it's dry here, the sinking is a hoax! nobody can force me to wear a life jacket! if I drink fuel I won't freeze! only elders and non-swimmers will die! the lifeboat industry funded this! 1500 dead? more people die from heart disease every year!
Credit: Anon.

SEVERAL WESTERN GROUPS reacted to the COVID19 epidemic with startling myths, reflecting disbelief that their world could be shaken by something so trivial and random as a virus. Common to all was the idea that the new virus was not as dangerous as health agencies suggested, and that public

health quarantine measures were totally unjustified. Defending individual liberties was their central theme.

Neoliberal government leaders, who stress liberty to defend a world of corporate privilege, denied the threat and delayed protective measures, until the weight of disease and death forced their hands. By that time they were presiding over the deepest of crises, in countries such as the USA, the UK, Brazil, Chile and Ecuador. These are corporate power brokers using ideas of 'liberty' and 'choice' to undermine and privatise public health institutions. Preventive health is at the core of public health systems but mostly ignored by curative private health. So neoliberal leaders typically resist substantial preventive measures. For example, US President Donald Trump played down the COVID19 problem for well over a month (AJ 2020; Brewster 2020) and, on the very day that the W.H.O. declared a global pandemic, suggested that the warmer weather in April could blow away the virus (Levin 2020). Similarly UK Prime Minister Boris Johnson (before he himself was hospitalised with the virus) opposed "draconian measures", including widespread testing or 'track and trace' measures. Johnson's scientific adviser Patrick Vallance suggested that "probably about 60 percent" of people would need to be infected to achieve "herd immunity" (Yong 2020). But such 'herd immunity' is usually achieved by vaccines, not by general exposure to a potentially deadly virus.

Right libertarians, particularly in the USA, simply opposed any form of quarantine, holding their individual freedoms above all public health concerns. Climate science deniers and right libertarians like Alex Jones, who regards the virus as a "hoax" were said to be in the "forefront" of pandemic denial (Holden 2020). Similarly 'conservative' commentators like Peter Hitchens stridently opposed quarantine measures, claiming that "the primary purpose of enforced muzzle wearing in public spaces (which protects nobody against anything) is to humiliate the wearer and make him or her accustomed to unquestioning obedience to authority" (Hichens 2020). The attack on liberties was called unjustified by a tenacious denial crowd. Australian right wing commentator Alan Jones called out the "dangerous virus theory" as "hysteria and alarmism", in mid-March (Seidel 2020). He held to that line four months later, when deaths worldwide had risen to 600,000 (SkyNews 2020). Of course, none of these people were health specialists.

Similarly, a group of western populist liberals, applying an individualist and rejectionist logic, claimed conspiracy by states and powerful companies to deprive them of their freedom, and to forcibly submit them to harmful medications or vaccines. While most western liberals accepted quarantine rationales, whether because of their faith in state institutions, or for some other reason, the populist deniers were cynical and often abusive, reacting against the idea of a pandemic and rejecting practical engagement with the common threat. They presented a denialist argument which, in its naïve arrogance, joined with the right libertarians and the neoliberals to trivialise the epidemic.

The populist group rejected public health rationales with a shallow anti-corporate critique. They accused pharmaceutical monopolies (Big Pharma) of a secret globalist agenda, claiming that states and the W.H.O. had already been captured by vaccine magnate Bill Gates and associates like top US health official Anthony Fauci (Bedo and Brown 2020; Bauder 2020; Marsh 2020). This was not a 'left' position as it used individualistic logic to reject preventive public health measures, asserting 'my rights' above all. It shared with the others a deeply anti-science bias, replacing systematic evidence with selective anecdotal accounts.

Pandemic deniers typically reject state data on COVID19 infections and deaths, claiming with naive certainty that the disease is 'no worse than a seasonal flu'. Like the right libertarians they claimed that face masks were useless: "[they] work well for surgeons who want to avoid dribbling or sneezing into their patients, but are useless when it comes to stopping viral infections ... there is no evidence that they achieve anything at all" (Davis 2020). This claim ignores a series of scientific findings, outlined below in section 1.1.

All three groups fail to recognise the social, educative and preventive character of public health systems. Yet they differ in approach, particularly in how they see the role of the state. The neoliberals advance 'liberties' and 'choice' in health treatment, deferring to private curative medical services, until they are forced to address the competing demands on the state. Right libertarians also cry 'freedom', while relying on a strong state to defend property and privilege. Populist 'woke' liberals see virtue in opposing the state and the corporate media. Instead of an intelligent reading of the contradictions of the state, they pretend to reject it all, except when tabloid headlines suit their purpose.

Yet they share common myths which reinforce the rejection of public and preventive health, ignoring the efforts of public health workers, reinforcing privatised-curative health systems and, in the case of the anti-vaccine campaigners, putting at risk the lives of millions, mostly children (see 1.5).

The deniers shared a type of autistic sensibility, oblivious to human suffering and the notion of common cause. Denying science on the pandemic – just like denying science on human induced global warming, or denying wars of aggression – only distracts and disqualifies themselves from important public debates. First amongst these was how to manage the protective measures, for example to ensure that such measures are led by public health professionals and not relegated to para-military repressive measures. Similarly, the deniers could not credibly engage in debates over the ways and means of improving social security, how to reopen and restructure economies and how to strengthen public health systems. How could they? Most denied there was a serious disease. But their myths deserve rebuttal. This paper will address five such myths, most of which are poorly articulated but ubiquitous on social media.

1. THE KEY MYTHS

Pandemic denial claims are all over the corporate and social media but, due to their erratic character, there is little systematic literature to examine. I will characterise them without much referencing, leaving that for the rebuttals. I will also ignore some of the more marginal claims, such as attempts to link 5G technology to the virus, amateur debates over appropriate medication and claims that the virus is a deliberate attempt to reduce the world population.

The central myths are that (1) systematic medical and health system evidence can be ignored, because evidence can be regarded simply as an individual choice; (2) COVID19 is no worse than a seasonal flu or a common cold; (3) the 'lockdown' (strong quarantine measures) causes more deaths than the virus. Many of the populist liberals add to these that (4) the 'lockdown' is a US-based globalist conspiracy to lock everyone up and then forcible medicate us, and (5) vaccines are toxic, and part of the lockdown conspiracy.

1.1 MYTH: SYSTEMATIC evidence can be ignored, evidence is an 'individual choice'

Having discovered that there are uncertainties in contemporary epidemiological evidence, the pandemic deniers say this means all state and public health evidence is exaggerated and can be safely ignored. They proceed to replace social evidence with anecdotal evidence, as though that were somehow better. The typical assertion is that COVID19 deaths are exaggerated due to their conflation with deaths from other causes. At a time of uncertainty, one right wing columnist writes, all data is unreliable and "no one can accurately tally up unrecorded cases of COVID-19 and that single fact renders the modelling inaccurate. If the true fatality rate is closer to 1 per cent" then "locking down the world" would be "totally irrational" with potentially tremendous social and financial consequences may be totally irrational". There was a need to "push back" against expert advice and government dictates (Albrechtsen 2020). Right libertarians and liberal populists basically agree on this. Never mind that 1% of the world is about 78 million people.

Methodological weaknesses are at the root of this myth. The first is an asserted certainty, when public health science has been grappling with uncertainty. Somehow, based on some sort of instinct or intuition, western amateurs say they know what damage the new virus causes and they are certain that it is relatively harmless. The unfolding of new evidence does not seem to influence this type of naïve arrogance, whether that is discoveries about what damage the virus causes, what sort of immunity is possible, or where the global death toll is heading. For example, it only emerged after some months that the virus affects not just respiratory systems but also vascular and nervous systems (Criado 2020; Bleicher and Conrad 2020). If we have regard for science, the nature of the disease should influence how we see the questions of co-morbidity and co-mortality.

Second, instead of adjusting for the inevitable uncertainties in case of a new disease – as is the practice of all public health specialists – the pandemic deniers simply discard all health department evidence and, with a naive certainty, claim selected anecdotal opinions as a proper substitute. Where epidemiologists account for under-estimates as well as over-estimates, the pandemic deniers use a one sided logic which asserts that all death counts are overestimated. This illusory certainty, combined with adamant opposition to protective mea-

sures, means that the deniers effectively exclude themselves from meaningful discussions about how to manage the protective measures. What do they have to contribute, if they do not recognise the problem?

Third, this anti-science denialism is plagued by poor logic. A number of online accounts, for example, like to show correlations between 'lockdown' countries and high rates of infection. Suggesting a causal link in the desired direction, they show little understanding of the distinction between correlations and causes. Many do not seem to recognise that some heavy quarantine measures ('lockdowns') came about after serious infections, nor that many serious epidemics came after significant delays in imposing quarantine measures. In short, they mistake symptoms for causes.

Scientific evidence is routinely ignored. On the question of the uses of face masks, for example, there are masses of assertions that there is "no evidence" that masks help prevent infection. That is just incorrect. While it is true that there is scientific debate over masking, it is not at all true to say that there is "no evidence" in support of masking as a defence against COVID19.

There was, however, "no evidence" of any sort on the new virus until January 2020, when Chinese scientists identified it and published its genome. Since then, however, there have been a number of studies which range from cautious to strong support for mask wearing, especially as a supplemental means of virus control and in crowded areas. Let's look at those studies at their source, not just through popular media accounts.

At the cautious end a New England Journal of Medicine report said that "universal masking alone is not a panacea. A mask will not protect providers caring for a patient with active Covid-19 if it's not accompanied by meticulous hand hygiene, eye protection, gloves, and a gown" (Klompas, Morris, Sinclair, Pearson and Shenoy 2020). Two other cautious reports came from the University of East Anglia and CIDRAP. The East Anglia report said that "wearing facemasks can be very slightly protective against primary infection from casual community contact, and modestly protective against household infections when both infected and uninfected members wear facemasks" (Brainard, Jones, Lake, Hooper and Hunter 2020). The CIDRAP report, an assessment by an individual doctor, claimed there was "no evidence" masks were effective in COVID19 control, but accepted that "surgical masks likely have some utility as source control ... from a symptomatic patient in a healthcare setting to stop the

spread of large cough particles and limit the lateral dispersion of cough particles. They may also have very limited utility as source control or PPE in households" (Brosseau and Sietsema 2020).

Many other recent studies have been more positive about masks. A Lancet article called masking "a useful and low-cost adjunct". This paper addressed some "uncertainty", in particular because "the WHO had not yet recommended mass use of masks for healthy individuals ... [this was in part because] previous research on the use of masks in non-health-care settings had predominantly focused on the protection of the wearers and was related to influenza or influenza-like illness." However this report concluded that "mass masking for source control is in our view a useful and low-cost adjunct to social distancing and hand hygiene during the COVID-19 pandemic" (Cheng, Lam and Leung 2020).

A British Royal Society study found that universal masking could help manage the pandemic and prevent a second wave of infections:

> "even when it is assumed that facemasks are only 50% effective at capturing exhaled virus inoculum ... [even] home-made facemasks consisting of one facial tissue (inner layer on the face) and two kitchen paper towels as the outer layers achieved over 90% of the function of surgical mask ... [nevertheless] a high proportion of the population would need to wear facemasks to achieve reasonable impact of the intervention ... facemask use by the public, when used in combination with physical distancing or periods of lock-down, may provide an acceptable way of managing the COVID-19 pandemic and re-opening economic activity" (Stutt, Retkute, Bradley, Gilligan and Colvin 2020).

Another study in the American Thoracic Society found that masks could help as a preventive measure:

> "the mask can mitigate the current pandemic, as it may reduce coronavirus in aerosols and respiratory droplets ... Although universal masking may seem tedious and is criticized by the lack of high-quality supporting evidence, we think it is reasonable to re-consider such

> a measure in all but sparse areas in the public" (Wong, Teoh, Leung, Wu, Yip, Wong and Hui 2020).

Yet another study showed that mask wearing was "associated with" lower mortality and that where "societal norms and government policies supporting mask-wearing by the public [this was] independently associated with lower per-capita mortality from COVID-19". They concluded that "the use of masks in public is an important and readily modifiable public health measure" (Leffler, Ing, Lykins and Hogan 2020).

Similarly, a study published at the National Academy of Sciences found that face mask wearing was "the most effective means", when combined with other measures, to prevent the spread of COVID19. The authors wrote:

> "the wearing of face masks in public corresponds to the most effective means to prevent inter-human transmission, and this inexpensive practice, in conjunction with extensive testing, quarantine, and contact tracking, poses the most probable fighting opportunity to stop the COVID-19 pandemic, prior to the development of a vaccine" (Zhang, Li; Zhang; Wang; and Molinae 2020).

Another review of evidence called mask wearing a low cost and effective intervention.

> "The preponderance of evidence indicates that mask wearing reduces the transmissibility per contact by reducing transmission of infected droplets in both laboratory and clinical contexts. Public mask wearing is most effective at stopping spread of the virus when compliance is high. The decreased transmissibility could substantially reduce the death toll and economic impact while the cost of the intervention is low" (Howard et al 2020).

The point of citing this catalogue of recent studies on face masks is not to advocate for universal masking. There can be no doubt that face masks are more appropriate in some circumstances than others. Similarly, imposed public health restrictions must remain proportionate to the threat (HRC 1999: 14). The point here is to demonstrate that those claiming that there is "no evidence"

or no public health rationale for face masks, have joined in a campaign of disinformation. That campaign, whatever its motive, is fundamentally anti-science and counter to the preventive health values at the core of any decent public health system.

Pandemic deniers show little interest in emerging evidence on the actual disease (e.g. Wortham et al 2020) or on the uncertainties over whether any lasting immunity, or whether 'natural herd immunity' through mass infection or by vaccine, is even possible (McMillan 2020). This sort of naïve arrogance sees little need for systematic science.

1.2 MYTH: COVID19 IS 'no worse than a seasonal flu'

The argument that the new virus was 'no worse than a common cold or seasonal flu' has been endlessly asserted, with characteristic over-confidence. The limited evidence brought to support this claim consists of opinions from occasional dissident medical workers. Much of this assertion came at a time when epidemiologists were still collecting evidence. A key reason pandemic deniers give for rejecting systematic data on death and illness is that deaths from some other reason or from some combination of illnesses (co-morbidity) are often wrongly cited as COVID19 deaths. Never mind that co-morbidity dangers apply to almost every other infectious disease. Never mind that COVID-19 can catalyse vascular disease. Official data is accused of over-estimates but not under-estimates.

The weight of scientific studies by mid-2020 show the claim of 'no worse than a common cold or seasonal flu' to be quite false. To demonstrate this we must review the measures used. The evidence on lethality of a disease uses two common measures: a case fatality rate (CFR) and an infection fatality rate (IFR). The CFR is a ratio which "measures the number of confirmed deaths among the number of confirmed cases of a particular disease at a given time". CFRs are typically overstated in the early days of a new disease, as only those badly affected seek medical assistance. An IFR estimates the deaths as a proportion of the total number infected, including "asymptomatic and undiagnosed infections" (Shabir 2020). Estimating an IFR is difficult and relies on estimates and inference from groups which have been more thoroughly tested, such as

those on cruise ships (Russell et al 2020). The US Center for Disease Control (CDC) in its May 2020 planning scenarios made estimates of between 20% and 50% undiagnosed cases, at that time (CDC 2020a).

Comparisons with the IFR for influenza are open to some doubt, partly because of limited past data and partly because some influenza outbreaks have been very serious. The only data we have from the deadly influenza epidemic of 1918-19, for example, are the records of mortality (Frost 1920: 584). In 2009 the estimated CFR for A/H1N1 influenza in England in 2009 was 0.026, and for those 65 years old or more 0.98% (Donaldson et al 2009). In the USA the H1N1 flu CFR in New York was estimated at between 0.54 and 0.86%, and for those 65 and over 0.94 to 1.5% (Hadler et al 2010). Estimating influenza IFRs is difficult, because deaths from influenza are generally not subject to mandatory reporting.

Early reported CFRs for COVID19 gave both over-estimates and underestimates. Rates of 3% to 5% deaths initially came from some European countries. CFRs were high because only those quite ill were presenting to hospitals (Damania 2020). Indeed in the early months many countries discouraged testing unless people were ill. An early paper in the British Medical Journal said that the first CFRs were likely overstated due to limited testing; the authors added that this matter "should not distract from the importance of aggressive, early mitigation to minimise spread of infection" (Niforatos, Melnick, and Faust 2020). Indeed, as testing widened, those CFRs were revised downwards. On the other hand, underestimates also came from amateur surveys which excluded the very ill. For example, the Bakersfield (California) clinic report from doctors Daniel Erickson and Artin Massihi suggested very low mortality (Shepard 2020). However this report systematically excluded more serious cases, which had been referred to hospitals. Based on that biased survey Erickson and Massihi wrote that "COVID-19 is no worse than influenza, its death rates are low and we should all go back to work and school". Yet infectious disease specialist Carl Bergstrom said Erickson and Massihi had used "methods that are ludicrous to get results that are completely implausible" (Ostrov 2020). This "reckless" report was condemned by the American College of Emergency Physicians as "inconsistent with current science and epidemiology regarding COVID-19" (ACEP 2020).

So, after several months, what credible evidence do we have on the fatal danger of COVID19? In mid-June Dr Timothy Russell, a mathematical epidemiologist at the London School of Hygiene and Tropical Medicine, said that "the studies I have any faith in are tending to converge around [a COVID19 IFR rate of] 0.5–1%" (Mallapaty 2020). In May 2020 Professor Anirban Basu estimated an COVID19 IFR in the USA of 1.3%, "substantially higher" than that for seasonal influenza "which is about 0.1%" (Basu 2020: 5). In May 2020 the US CDC (the federal agency charged with vigilance and preventive health) gave 'five scenarios' of possible COVID19 outcomes, for the USA. These gave "symptomatic case fatality ratios" (CFRs) ranging from 0.2% to 1% overall, and from 0.6% to 3.2% for those 65 and older (CDC 2020a). That included estimates from the sceptic Dr Jay Bhattacharya (2020), who has spoken of IFRs as low as between 0.2-0.3%. All of these scenarios were much higher than the suggested 0.1% IFR for the 'seasonal flu'. A Canadian study in June showed an adjusted CFR of 1.6% for Canada and an adjusted CFR of 1.78% for the USA, as at 20-22 April (Abdollah et al 2020). An early study had estimated an "overall" IFR for China at 0·66% (0·39–1·33), "with an increasing profile with age" (Verity et al 2020). All that indicated a COVID19 IFR roughly ten times the IFR for the seasonal flu. And the character of the new virus was still under study.

Globally the evidence has been diverse. Writing in March Oke and Heneghan (2020) observed that CFRs "vary significantly, and over time" between countries, which creates "considerable uncertainty" over exact CFRs. However early cases did show that cardiovascular disease was highly "prevalent" amongst those who died from the virus. British epidemiologist Robert Verity said that early estimates "hovered around 0.9% - 9 deaths for every 1,000 people infected – with a broader range of 0.4 to 3.6% (Mallapaty 2020: 2). While higher figures were cited for different countries, several researchers provide IFR estimates of between 0.5% and 1%. Australian epidemiologist Gideon Meyerowitz-Katz stresses that substantial uncertainty remains (Mallapaty 2020: 4).

No responsible health official could simply rely on the most optimistic estimates as, if they were wrong, the official could be responsible for many thousands of deaths. Hence the need to have regard to the epidemiological consensus. The grim fact of one million reported COVID019 deaths worldwide in late September, after seven or eight months of pandemic, certainly goes well beyond

the average 400,000 seasonal flu deaths each year, over the past decade (Paget et al 2019).

In late April Hendrie (2020) wrote that the CFR for the virus "sits within a hugely broad range around the globe". That for Belgium was extraordinarily high, for example. Virologist Ian Mackay said differences in testing were "likely to be the key". But the way deaths were reported also differed. While many say that COVID19 deaths are overestimated, having been conflated with those from other reasons, or from co-morbidities, Melbourne University epidemiologist Alan Lopez says official statistics have been "vastly underestimating" the true death toll, because of a likely hidden number of undiagnosed cases. He says co-morbidity and undiagnosed deaths are important, arguing for estimates based on excess deaths (Hendrie 2020).

The more serious impact on both older people and those with chronic diseases – especially cardiovascular disease, diabetes, chronic kidney disease, chronic lung disease, neurological disease, obesity and immune-suppression conditions (Wortham et al 2020: 5-6) – provides another reason for caution. There is said to be an eight fold risk of death "when moving from the 60-69 age group to the 70 and above range" (Sandefur et al 2020: 2). Further, co-morbidities such as diabetes, hypertension and heart disease "matter a lot". They can scale COVID19 IFRs up, as well as down, for example one study calculates that "the probability from dying from a COVID19 infection for patients under 40 is roughly 134 times higher [if they have] a relevant co-morbidity" (Sandefur et al 2020: 3). That is, the new virus can seriously exploit chronic illness amongst younger people.

Developing countries have special vulnerabilities, often having a younger population but also higher morbidity amongst young people, combined with weak health system capacity. So "when high quality intensive care is lacking, the advantages of youth are more muted". In low income countries "advantages" with respect to COVID19 IFRs "are likely to be partially offset by disadvantages in terms of the age distribution of comorbidities and even more so by gaps in health system capacity" (Sandefur et al 2020: 5-6).

In sum, the virus is certainly more dangerous than the average flu and still has some unknown features. Those claiming certainty to the contrary are fooling themselves and others.

1.3 MYTH: THE 'LOCKDOWN' causes 'more deaths than the virus'

With systematic evidence on death and illness ignored, all versions of the western pandemic deniers (neoliberal, right libertarian and liberal populists) allege that the negative effects of quarantine (such as depression, lack of medical care, domestic violence and suicides) outweigh any death or illness from the virus. If this were true it would be a serious matter; indeed it must be considered. However the deniers produce little more than assertions, in the course of rejecting quarantine and other preventive health measures. They typically do not complain about specific heavy handed measures, such as the inappropriate use of police powers. General opposition to 'lockdown' is more often characterised by a categorical rejection of preventive health measures, based on individualistic logic.

So the British site OffGuardian asserts: "the lockdown will kill more people than the virus ... we're choosing between a mild to moderate disease and a devastating lockdown". The article repeats, for emphasis: "The. Lockdown. Is. Killing. People." (Knightly 2020). This is mostly a rhetorical onslaught. The British tabloid media made a greater effort to present evidence. So an early April media report in the Spectator and Daily Mail claimed that "150,000 Brits will die an 'avoidable death' during coronavirus pandemic through depression, domestic violence and suicides". At that time about 9,000 were listed as having died in Britain from the virus. However no source or detailed rationale for the "150,000" predicted deaths was given for the claim (Chalmers 2020).

Media references to what appeared to be the same report resurfaced in July, this time referring to "200,000 deaths" in Britain from the lockdown. This story was also said to be based on a government report and to have emerged in a more recent briefing by the UK Government's Chief Scientific Advisor Patrick Vallance. Once again, the original report was neither linked nor published. Nevertheless, the UK Telegraph reported that more than 90% of the predicted 200,000 deaths were to come from "delayed healthcare" during the lockdown, and the rest from recession, suicide, domestic violence and accidents at home (Knapton 2020). The paper did provide some supporting detail: a forecast of 20 more domestic violence deaths in 2020; 500 more suicides; a deferral or cancelation of 75% of "elective care" over six months; a big fall in urgent refer-

rals "in the early weeks of lockdown"; reports of delays in cancer diagnosis and treatment by the Institute of Cancer Research, which could lead to "4,700 extra deaths per year in England"; and "5,000 fewer heart attacks patients had attended hospital from March to May" (Knapton 2020).

There should be little doubt that delayed healthcare, particularly in urgent cases, can be a real cost of severe quarantine measures. This is a critical issue which must be addressed by health systems. Yet quantifying such risks requires systematic analysis and (at the time of writing) we do not have the actual report. On the other side the Telegraph acknowledged that the official report had suggested 200-500 fewer deaths from "road traffic and air pollution", 67 fewer murders and an estimate of 500,000 COVID19 deaths "if the virus had been allowed to run through the population unchecked" (Knapton 2020). On balance, then, this unpublished report, assuming it were credible, was said to suggest more than double the deaths with 'lockdown' than without, thus contradicting the suggested 'more harm than good' headline.

A more serious criticism of quarantine regimes came in late July, with the heads of four U.N. agencies warning of the impact on child malnutrition. Children were suffering more from the 'lockdown' than from the disease, they said. The heads of UNICEF, the W.H.O., the F.A.O. and the World Food Programme issued a statement saying that "the COVID19 pandemic is undermining nutrition across the world ... physical distancing, school closures, trade restrictions and country lockdowns are impacting food systems ... [and] without timely action ... 47 million children younger than 5 years [will be] affected by wasting", most of them in Africa and South Asia (Fore, Dongyu, Beasley and Ghebreyesus 2020). Without discounting the need for sanitary measures against the pandemic they called for action to prevent child malnutrition, during the crisis, in particular to ensure:

- "Nutritious, safe and affordable diets" for all children
- "Investments ... to improve maternal and child nutrition"
- "services for the early detection and treatment of child wasting"
- "Maintain the provision of nutritious and safe school meals"
- "Social protection to safeguard access to nutritious diets and essential services"

(Fore, Dongyu, Beasley and Ghebreyesus 2020).

Once again, the British tabloid media misrepresented this report with one headline claiming 'Coronavirus restrictions killing 10,000 children per month' (Miler 2020). In fact the Lancet article said that might happen "without timely action" (Fore, Dongyu, Beasley and Ghebreyesus 2020). W.H.O. Director General Tedros Adhanom Ghebreyesus, co-author of this U.N. report, had urged preventive measures against the virus from the beginning.

Nevertheless, the UN statement draws attention to the importance of managing quarantine regimes, including the school and economic re-openings, rather than sterile debates over the virus versus the lockdown. It was known from early days that most vulnerable to this virus were older people and those with chronic illness, and that children would carry the virus into homes.

There have been a series of media reports on lockdown costs. In late May a CNN report (John 2020) posed the same question "is the damage caused by the lockdown worse than the virus itself?" that its political adversary President Trump had put two months earlier: "we can't let the cure be worse than the problem itself" (Samuels and Klar 2020). The CNN report then addressed the question, with some recognition of the costs in unemployment and recession, and noting that Trump had claimed "You're going to lose more people by putting a country into a massive recession or depression". However CNN concluded this was a "false choice" and that economists had found the 'more harm than good' arguments to be "unconvincing" (John 2020). None of this was substantial, it simply illustrates the matter in public debate.

The conservative UK Telegraph has given greater weight to the argument. Without minimising the devastation of the pandemic, the paper cited several substantial costs of the 'lockdowns', mostly to do with delayed healthcare: the risks of children dying of malaria, pneumonia or diarrhoea; many millions of babies at risk of diseases die to cancelled vaccination services; a "tsunami of mental health cases" and 1.6 billion children forced out of school (Rigby 2020). Substantial challenges but, once again, no actual cost benefit accounting was attempted.

So what about the published, systematic studies on the important question of the costs of quarantine? These seem to fall into two broad groups: comparative mortality, mostly through delayed healthcare and economic cost-benefit analyses.

On the question of delayed healthcare due to COVID19 restrictions, Dr Renata Thronson prepared a report for the Journal of the American Medical Association in which she recognised that (in highly privatised health systems like that of the USA) the pandemic and associated restrictions caused many to lose their work-linked health insurance, while many also avoided treatment out of fear of exposing themselves to infection at the healthcare site. Emergency visits were said to have declined 42% in the USA and a majority (60%) of doctors believe that patients will experience "avoidable illness" due to delayed or avoided care (Thronson 2020; Definitive Healthcare 2020). Problems are identified but no final accounting ledger of predicted deaths is presented.

A Swiss study of the "psychosocial consequences of COVID19 mitigation strategies" used measures of 'years of lost life' (YLL) and tried to account for a range of factors: suicide, depression, alcohol use disorder, marriage stress and breakdown, childhood trauma and social isolation. They calculated that Switzerland "the average person would suffer 0.205 YLL due to psychosocial consequence of COVID-19 mitigation measures", yet this burden would fall "entirely" on the shoulders of 2.1%, who would suffer an average 9.79 YLL (Moser, Glaus; Frangou and Schechter 2020). They are speaking of vulnerable groups, the elderly and those with chronic illness.

The economic analyses begin with estimates of comparative death and move into dollar values. In early May economists Neil Bailey and Daniel West tried to estimate the cost in lives of the COVID19 'lockdown' in Australia (less severe 'lockdowns' than those of Wuhan and Hubei), calculating the likely extra suicides plus deaths "associated with loneliness from a lock down of six months" and some other lockdown caused deaths e.g. from alcohol abuse. They used three different regimes (1) normal plus targeted quarantine, (2) an easing to allow for 'herd immunity' through mass infection, and (3) the maintenance of restrictions until the virus is contained, followed by extensive tracking and tracing aimed at eliminating the virus". They came down in favour of (3), saying that "when it comes to human lives, far fewer will be lost by continuing restrictions than would be lost by ending them now" (Bailey 2020). Similarly, a study on the economic costs of lockdown in the US and EU concluded that the likely hospitalization costs of mass infection were massive. So while "the economic costs of the great lockdown, while very high, might still be lower than the med-

ical costs that an unchecked spread of the virus would have caused" (Gros 2020: 7).

Putting a financial value on human life (US$10 million in the USA, A$4.9 million in Australia), economists Richard Holden and Bruce Preston calculated an unprotected loss of life in Australia (at IFR=1%) of 225,000 deaths and therefore a loss of A$1.1 trillion, compared to an estimated A$180 billion cost (-10% GDP) of the Australian lockdown. On that basis they concluded that the costs of the 'shutdown' were "outweighed by its benefits" (Holden and Preston 2020).

On the other side of that economic debate, economist Gigi Foster, working with 'value of a statistical life' (VSL) measures, suggested that "Australia's lockdown was a mistake" (Foster 2020). In the UK economist David Miles, using 'quality adjusted life years' (QALYs) and looking at the "future damage of huge disruption to education", suggested that "extending the UK lockdown beyond three-months was not likely to be optimal (Miles 2020). Similarly, a British banking group warned of the mounting costs of the lockdown (Lea 2020) while another conservative economist, without much evidence, suggested that the costs of lockdown "could far outweigh the benefits" (Ormerod 2020).

In a similar vein, in what was said to be the first peer-reviewed study to comprehensively assess potential global supply chain effects of COVID19 lockdowns, a group of economists modelled the impact of lockdowns on 140 countries, including those not directly affected by COVID19. This paper looked at productivity losses, used three types of lockdown (strict, moderate and lighter) and drew attention to the greater damage in extended lockdowns. It concluded that "losses are more sensitive to the duration of a lockdown than its strictness. However, a longer containment that can eradicate the disease imposes a smaller loss than shorter ones. Earlier, stricter and shorter lockdowns can minimize overall losses" (Guan et al 2020). That is, the equation was likely to change with longer lockdowns.

The cost of delays in imposing the US lockdown have also been modelled, at Columbia University. The estimate of that study in infectious disease modelling, published in mid-May, was that if quarantine measures had been imposed two weeks earlier, about 54,000 fewer deaths would have occurred (Glanz and Robinson 2020). Those delays can be likened to the failure to contain a forest

fire in its early stages, a failure which leads to a much wider blaze, far more difficult to control.

As it happened, many of the quarantine regimes did relax, after two to four months duration. Not that this mattered much to many populists, who maintained that even after easing "we are very much still under lockdown" (Knightly 2020). Nevertheless, after three and a half months the British Office of National Statistics carried out a mid-July survey which showed that a great majority (93%) of British adults were leaving their homes, more than half (61%) were wearing face masks in public, about half (55%) said they were maintaining some form of "social distancing" and half (50%) of those over seventy years old were having visitors at their homes (ONS 2020). How that relaxation fares in Britain's 'second wave' of infections remains to be seen.

While there are many conservative and populist assertions and some economic and media assessments which argue that the costs have been great, or too great, overall the systematic studies favour the quarantine measures, so long as they (a) are as targeted as possible and (b) observe some proportionate and finite limits.

1.4 MYTH: THE LOCKDOWN is a 'conspiracy' to lock us all up

This argument comes from both right libertarian and populist liberals. They say the restricted measures are not only unjustified but that have been put in place to benefit either an inexorably repressive state or a cabal of private companies, such as a Bill Gates-led vaccine industry. One conservatives claimed: "the primary purpose of enforced muzzle wearing ... [is to promote] unquestioning obedience to authority" (Hichens 2020); while some populists point to shadowy links between "philanthro-capitalism, Big Pharma and government agencies, all effectively working in lock-step to promote the global immunisation agenda, with massive projected profit for the Big Pharma complex and in particular for the members closely associated with Gates, the WHO, UNICEF, and world governments" (Beeley 2020). The populist conspiracy theory, despite its rhetoric against Big Pharma, is not a left argument. This method is individualistic and centres on a rejection of preventive health. In substance such

populists misread the behaviour of oligarchies, mistaking symptoms of the crisis for its causes.

Now while it is certainly true that big western drug companies will try to exploit any crisis to make money, and that the US system is geared up to subsidise that process (Lerner 2020), the US Government was clearly wrong footed by this pandemic and has not (to its frustration) been driving the pandemic agenda. Those alleging a lockdown conspiracy fail to see that the leaders of the US and UK delayed quarantine measures for weeks and, as a result, ended up being forced to act in the face of mass infection and death. Most economies incurred massive economic losses and the US is not in the lead of vaccine development.

Table 1 below sums up the factors which demonstrate that there cannot be a globalist lockdown conspiracy.

Table 1: How we know the 'lockdown' is NOT a globalist conspiracy

1.	Key neoliberals leaders (e.g. Trump) resisted quarantine for many weeks, before technocrats pressured them into it; only after that they applied repressive measures.
2.	Big Pharma revenue is about 1% of total revenue lost by the global lockdown; the corporate world did not want a shutdown in production.
3.	Vaccines are about 3.5% of Big Pharma medicine revenue; those companies make far more money from treatments than from vaccines.
4.	The four leading COVID19 vaccine candidates (at July 2020) were three from China and one from Britain, and all carry some form of non-profit promise.
5.	Notions of a US-based globalist conspiracy to impose 'lockdowns' ignores the parallel public health measures of independent countries e.g. China, Cuba, Syria.

THE ABSURDITY OF THE conspiracy claim should have been obvious. First of all, corporate capitalism needs a free moving and complaint workforce, to generate profits. Most corporations did not want any sort of lockdown and, after it was imposed, they want to be rid of it as soon as possible, to restore pro-

duction. The corporate media, particularly the financial media, is full of this argument.

The epidemics in each country caught neoliberal leaders like Donald Trump and Boris Johnson by surprise. They did not act out any repressive plan in the early months, and only resorted to 'lockdown' measures when the logic of events overtook them. They flip-flopped from talking down the problem and doing nothing, then reverting to heavy handed police measures.

The logic behind the shift from 'do nothing' to repressive measures came from the neoliberal instinct to leave health issues to 'market forces', that is, at the mercy of giant corporations. Then individual 'consumer choice', based on user pays systems, would regulate health care. The western populist 'anti lockdown' crowd seemed to not recognise how close their rhetoric was to that of Donald Trump.

After the 'do nothing' phase, the epidemic took off in neoliberal countries, with infection and death tolls mounting. That was noted by technocrats, who pressured the neoliberal leaders to impose protective measures, in particular quarantine and other sanitary requirements.

Using the USA as an example we can see this tension within the neoliberal state. Despite its corporate sponsorship, which is ubiquitous in the USA, the Center for Disease Control and Prevention (CDC) is one of the few elements of a US public health system. It collates information from states and territories and can advise on prevention campaigns. Through its National Center for Health Statistics the CDC publishes extensive information on how data is revised, not least on how COVID19 deaths are reported and collated (NCHS 2020). The populist deniers saw its compromised public-private links and naively decided that it was part of the corporate conspiracy. They missed some important tensions.

From the first weeks of the epidemic in the USA there were 'mixed messages' from the CDC and the Trump administration, in particular over the need for protective measures (Lutz 2020; Shear 2020). Then in April the CDC Director distanced himself from Trump's criticism of the W.H.O. (Joseph 2020). In May Trump was said to have 'sidelined' the CDC in his urge to reopen the US economy (W. Roberts 2020). By July Trump had pushed the CDC out of its role to collate and publish data on the epidemic (Stolberg 2020) and was attacking CDC scientists on how to safely reopen schools (Mur-

phy and Stein 2020). In the meantime Trump withdrew US funding from the W.H.O., enraged at its public health advice and apparently pro-China position (Chappell 2020). Both the W.H.O. and the CDC had important differences with Washington's economic managers.

Second, there was negligible economic incentive for any lockdown which would shut down entire economies. Some populist deniers suggested that, because there are government-corporate links between health systems and drug companies, especially in neoliberal states like the US and the UK, the 'lockdown' was therefore driven by a plan to frighten and medicate us all (e.g. Beeley 2020 Alba 2020). That claim bears little relation to the realities of the privatised health industry, let alone the wider economy.

The pandemic and protective responses catalysed a huge crisis, in reality multiple crises in health, social security, finance and economy. In June 2020 the IMF conservatively estimated negative global growth of minus 4.9% for 2020 (IMF 2020), and worse in the wealthy countries, meaning at least a 5% fall in the global output of 86 trillion dollars (World Bank 2020: using 2018 data). A preliminary gross economic loss estimate of the pandemic (without counting the million plus lives lost) was at least 4.3 trillion dollars. That was far more than the few billion thought to be gained in profit from the sale of vaccines. Not even the most predatory capitalist state represents just one fraction of the corporate world.

Third, while there can be no doubt that Big Pharma seeks to exploit the crisis, vaccines represent a small fraction of their revenue stream and profits. Vaccine revenue of around 35 billion is likely less than 3.5% of the total pharmaceutical revenue of around US$1 trillion (Evaluate Pharma 2017), highlighting the fact that curative drugs are far more lucrative than immunity inducing vaccines. There are only two vaccines in Big Pharma's top 50 revenue earning medications, the vaccines for pneumonia and HPV (Evaluate Pharma 2017: 36-37).

Drawing on the estimated (and high) median profit margins in Big Pharma – and there is no reason to believe that vaccine profit margins are higher than those of other pharmaceuticals – of 13.8% (Ledley, McCoy and Vaughan 2020; see also Slovak 2018), the total annual Big Pharma profits on vaccines might amount to as much as US$4.87 billion in 2022. That is not much more than one thousandth part of the general economic losses during this crisis.

Table 2: Vaccine revenue is a small part of Big Pharma Revenue

	2017	2022
Total drug revenue	774 USD bn	1060 USD bn
Total vaccine revenue	27.5 USD bn	35.3 USD bn
Vaccine revenue as % total drug sales	3.55%	3.3%
Profit on vaccine sales (@13.8%) *	3.80 USD bn	4.87 USD bn

Sources: Evaluate Pharma 2017: 8, 31, 36-37; and * Ledley, McCoy and Vaughan 2020

ONE ANALYST REASONABLY concludes that Big Pharma could reap far more revenue and profit from the ongoing treatment of diseases than through vaccine sales (Skeptical Raptor 2019). And that is assuming there will be any bonanza at all in vaccine sales.

This brings us to lockdown conspiracy myth-busting reason number four: notwithstanding the ambitions of big American and European drug companies, there has always been considerable uncertainty over whether there will be any 'pot of gold' at the end of the pandemic 'rainbow'. Contrary to the globalist assumption that the USA runs the world, the leading US COVID19 vaccine candidate, that produced by Moderna (NIH 2020), is running behind four other candidates, three from China (Sinovac, the Wuhan Institute/Sinopharm and the Beijing Institute/Sinopharm) and one from Britain (the Oxford/AstraZeneca partnership), all of which had entered their final phase three trials by July 2020 (Butantan 2020; Chen 2020; O'Reilly 2020; W.H.O. 2020).

All four leading vaccine candidates are subject to political promises that they will be provided, during the pandemic, on a not for profit basis. The strongest promise comes from Chinese President Xi Jinping, who in May said: "COVID-19 vaccine development and deployment in China, when available, will be made a global public good. This will be China's contribution to ensuring vaccine accessibility and affordability in developing countries" (Wheaton 2020). A similar if weaker commitment was linked to the Oxford/AstraZeneca vaccine project, even though it is a public-private partnership, with reports that: "The Company is seeking to expand manufacturing capacity further and

is open to collaborating with other companies in order to meet its commitment to support access to the vaccine at no profit during the pandemic" (University of Oxford 2020). The odds therefore seem against the pandemic leading to a vaccine bonanza for US drug companies. Nevertheless, that leaves open the field of drugs for COVID19 treatment.

The fifth and final reason against a 'lockdown conspiracy' is that a number of independent countries – without the remotest link to the alleged Gates-Fauci-W.H.O. cabal – adopted quarantine measures even more rapidly than those of the US and UK. Once again, globalist assumptions mislead the pandemic deniers. Even a brief review of the responses of countries mostly cut off from the US-EU oligarchy – such as north Korea, Cuba, Syria, Iran and Venezuela – would have detected strong quarantine measures in all countries. Reading the experience of other countries can often help us understand international phenomena.

1.5 MYTH: VACCINES are a 'toxic' part of the lockdown conspiracy

A second leg of the 'lockdown conspiracy' myth has been that this conspiracy includes a plan to forcibly medicate us all with toxic vaccines (Alba 2020). In this respect the pandemic deniers mostly adopt the stories of a pre-existing anti-vaccine campaign, which has gained some ground amongst western liberals in recent decades (Cassella 2019). The argument here is that all or most vaccines are dangerous and have, amongst other things, caused autism in children. During the COVID19 pandemic the denier argument has been that panic over the epidemic gives the state and/or Big Pharma a chance to make vaccination mandatory.

In the previous section the argument that vaccines provided a commercial rationale for the lockdown was discounted. Big pharmaceutical companies make far more money from drugs which treat disease than by vaccines, which stimulate immune systems to develop anti-bodies and other non-specific immune capacity. This section will address the claim that vaccines are dangerous, then present evidence on the benefits of vaccines and address the concern about mandatory vaccines.

The western populist liberal campaign against vaccines sometimes speaks of particular vaccines or particular vaccine owners, but it mostly fuels a general fear and rejection of all vaccines, reverting to liberal 'individual choice' arguments above considerations of public health. One commentator says, of what he calls an anti-vaccine "religion", that they maintain "beliefs that vaccines cause autism, that HPV vaccines are dangerous, or that vaccines contain a dangerous amount of [contaminants like] aluminium. These faith-based myths have been shown to be demonstrably false, again and again" (Skeptical Raptor 2018). Nevertheless, the anti-vaccine campaign seemed to gain a boost in 1998 when the former British doctor Andrew Wakefield published a paper in The Lancet alleging a proven link between the measles, mumps, and rubella (MMR) vaccine and autism in children. Very quickly MMR vaccination rates "began to drop because parents were concerned about the risk of autism after vaccination" (Sathyanarayana Rao, and Andrade 2011).

However Wakefield's data was found to have been fabricated. The General Medical Council of Britain struck him off the register of doctors in 2010, after this fraud was exposed. The former doctor, who portrays himself a victim of Britain's medical establishment, was found guilty of "offences relating to dishonesty and failing to act in the best interests of vulnerable child patients" (Boseley 2010). In a rare act the Lancet editors retracted the paper (Offitt 2010). Many subsequent studies have found no link between the MMR vaccine and autism. Citing several subsequent studies (e.g. DeStefano, Price and Weintraub 2013), the US CDC has repeatedly stated that 'there is no link between vaccines and autism' (CDC 2020b). The finding of "no increased risk for autism after MMR vaccination" has been replicated in other countries, such as Denmark (Hviid, Hansen; Frisch and Melbye 2019).

Linked claims from the anti-vaccine campaigners include allegations that toxic substances (mercury, aluminium, offal, viruses) are placed in vaccines, for unexplained reasons. Regarding mercury there is a 'true but meaningless' link with the preservative thimerosal. This substance (containing ethyl mercury) was used until about 2001 as a preservative in some vaccines. However several studies have demonstrated, firstly, no evidence of harm from the quantities of thimerosal which were used – less ethyl mercury than the more toxic methyl mercury which can be found in a small can of tuna. Secondly, after 2001, on precautionary grounds and following public concern, "thimerosal was removed

or reduced to trace amounts in all childhood vaccines except for some flu vaccines" (CDC 2013; CDC 2020b). More than a decade back "twenty epidemiologic studies have shown that neither thimerosal nor MMR vaccine causes autism" (Gerber and Offit 2009). The basis for the mercury scare was like saying multivitamin pills contain cyanide, which indeed they do but in insignificant amounts, via the compound for Vitamin B12. None of this was missed by health agencies across the world, which often assume responsibility for checking that their medicines, including vaccines, are safe.

Vaccines, unlike curative drugs, form part of preventive health. They are more economical and their occasional use poses fewer risks than ongoing medication. It is well established that the persistent use of curative drugs (many are prescribed to be taken daily over many years) increases the risk of positively identified 'side effects'. That is far less the case with one off or occasional vaccines. Vaccines can have side effects, but serious effects, like allergic reactions, are estimated to be very low, perhaps one or two per million (HHS 2020).

Vaccines have brought about dramatic improvements in human health and so are adopted by virtually all public health authorities. Smallpox, caused by the variola virus, killed literally hundreds of millions. It is the only human disease to have been completely eradicated and this happened by a one-time vaccine (Bradford 2019; Henderson and Klepac 2013). Polio is a paralytic disease which can have severe effects on children, It is caused by three types of virus, but they have been controlled by two types of vaccine, one using an active (OPV) and the other an inactive (IPV) vaccine. There were some risks of resurgence with the active vaccine (OPV), but these are being removed by a general reversion to the inactive version (Baicus 2012). In the year 2000 there were 30 million to 40 million cases of measles, which caused 777,000 deaths, or "nearly half of the 1.7 million annual deaths due to childhood vaccine-preventable diseases". The measles vaccine, typically combined with that for Mumps and Rubella (the MMR vaccine combination) has drastically reduced death and illness from this disease. The WHO and UNICEF say that "failure to deliver at least one dose of measles vaccine to all infants remains the primary reason for high measles morbidity and mortality" (WHO-UNICEF 2002).

Vaccines have been and remain great life savers, helping prevent rather than cure illnesses. Britain's NHS says that "vaccination is the most important thing we can do to protect ourselves and our children against ill health. They pre-

vent up to 3 million deaths worldwide every year" (NHS 2020). The World Health Organization says that: "vaccines prevented at least 10 million deaths between 2010 and 2015, and many millions more lives were protected from illness." They are referring to success stories in preventing pneumonia, diarrhoea, whooping cough, measles, and polio, mostly in children (WHO 2017).

Yet undermining public confidence in vaccines, with false scare stories like the false MMR-autism claims, puts children's lives at risk. In 2018, 140,000 died from measles, "overwhelmingly children under 5 years of age" (WHO 2019) Unfortunately scares around vaccines have undermined public confidence in some countries. For example in Samoa, after a dramatic fall in the levels of child MMR vaccination (following two deaths which followed medical malpractice), there was an outbreak of measles in which 72 people died, mostly children. That led to an introduction of mandatory MMR vaccination in Samoa, in late 2019 (Gibney 2019; Isaacs 2020). More recently, vaccination campaigns have been stopped in countries like the Democratic Republic of the Congo (DRC) due disruptions caused by the COVID19 crisis (L. Roberts 2020).

Yet when it comes to COVID19 there is reason to believe that immunity from the emerging vaccines may not last long (McMillan 2020), and that might mean repeated treatments, like the influenza vaccines, perhaps once a year. Even in this circumstance, it has been shown that it is more economical (and drug companies gain less revenue) from once per year vaccinations than they would from drugs used to treat sick patients. Régnier and Huels (2013) concluded that "manufacturers may see higher incentives to invest in curative treatments rather than in routine vaccines". This reinforces the point that big drug companies, and highly privatised health systems, have less to gain from vaccines than from curative medicines.

The anti-vaccine campaigners have tried to turn the public health argument into an individual liberties argument ('my body, my choice'), to argue that vaccines should not be mandatory. Like the face mask debate, this seeks to turn the concerns of social responsibility and preventive health into simple matters of individual choice. Naturally that acts to undermine public health systems, founded as they are on health education and preventive measures. In fact (except for public health workers and international travellers) vaccines have generally not been compulsory for adults. Nevertheless, many countries have al-

ready introduced mandatory testing (and the requirement of a negative test) for COVID19, as a condition for the entry of international travellers. This is distinct from the responsibility to receive and look after their own citizens, regardless of illness. In the 1960s and 1970s there were requirements for mandatory smallpox vaccination, for most international travellers. There can be no doubt that states are entitled to use such measures, to protect their own populations from the risk of imported infection. When registered, safe and effective vaccines emerge they are likely to become requirements for entry to many countries.

2. IN CONCLUSION

The three mostly western groups described here – neoliberals, right libertarians and populist liberals – share much in their efforts to create myths which confuse the public over universal public health measures. These have been adopted in most countries, including many quite independent from the US corporate world. These myths distract from many necessary and practical debates during the pandemic crisis: how to actually manage the protective measures, how to improve social security, how to reopen and restructure economies and how to strengthen public health systems.

The naïve arrogance of the myth builders projects a certainty not shared by scientific study of the new virus. Substituting select anecdotal evidence for systematic evidence, many pandemic deniers berate people to 'wake up' to the 'truth' they discovered long ago, unburdened by recourse to any emerging evidence on the virus or on human morbidity and mortality.

Their myths can be characterised in five main themes. First, there is a naïve certainty in beliefs which have little scientific foundation. They reject systematic evidence on the disease. Because contemporary official data carries uncertainties, that is considered good enough reason to reject it all, putting in its place selected anecdotes and opinions.

Second, the COVID19 virus is repeatedly said to be 'no worse than a common flu', when most epidemiologists place it as five to ten times more dangerous and with new features beyond a simple respiratory disease. 'Death from other causes' is chanted as a means of denying death counts across multiple

countries, without recognising that co-morbidity applies to virtually all serious disease.

Third, sections of the corporate media, right libertarians and western populists alike claim that 'the lockdown cause more deaths than the disease', without ever presenting substantial evidence to back up this claim. The damage caused by quarantine measures is real enough – notably delayed health care (including delayed vaccination programs and treatment of chronic illness) and child nutrition – but these problems must be assessed in a rational way.

The 'lockdown is the problem' idea masks the failures of highly privatised, neoliberal health systems to protect their own populations. A 'lockdown' was neither planned nor wanted by western oligarchies, led by giant corporations. To the contrary, it hurt their capacity to exploit labour and the environment and so generate profits. Key neoliberal representatives such as Donald Trump and Boris Johnson maintained the liberal line as long as they could. Their delay in imposing protective measures led to deeper and longer lasting epidemics than in many other countries. Their delayed, clumsy reactions led to repression and so generated further resentment. Pandemic deniers missed this, confusing symptoms of the crisis for its causes.

Fourth, many libertarians and populists claimed a conspiracy to lock us all up as part of a totalitarian plan, sometimes said to be for the commercial advantage of a corporate drug industry. This theory ignored the opposition to economic shutdowns by much of the corporate sector, the minimal and fragile expectations of profit from any new vaccines and the adoption of similar quarantine measures across a range of quite independent countries. Further, the populist claim effectively supports a corporate driven neoliberalism which rejects public health systems in favour of individual choice in private health treatment. The social character of public health values and public health systems, including preventive measures which barely exist in privatised health systems, was lost in the liberal obsession with individual choice.

Finally, the pandemic denial myths often adopt the pseudo-science of anti-vaccine campaigns, which have a longer history. Even though there is not yet any proven COVID19 vaccine (though dozens are in development), the very possibility of a vaccine is said to be part of a conspiracy against public health. That claim draws on comprehensively disproven claims made against several life-saving vaccines, including those for measles and polio. For some peculiar

reason, harmless vaccines have attracted more fear and suspicion than the far more profitable treatment drugs, many of which must be taken continuously, raising the likely incidence of harmful side-effects.

The character of pandemic denial is rooted in an anti-social western individualism, which rejects preventive health measures and effectively undermines public health systems, in favour of the privatised models. Yet these are the very systems which failed so badly in the current crisis. Through their absolutism the libertarian and populist pandemic deniers effectively disqualified themselves from engagement in the important debates over management of quarantine measures, social security and economic restructuring. The myths of this crisis acted to negate the demand for stronger public health systems. Those myths should be more fully discussed if there are to be advances in public health.

REFERENCES

ACEP (2020) 'ACEP-AAEM Joint Statement on Physician Misinformation', American College of Emergency Physicians, 27 April, online: https://www.acep.org/corona/covid-19-alert/covid-19-articles/acep-aaem-joint-statement-on-physician-misinformation/

Adrian, Tobias and Fabio Natalucci (2020) 'Financial Conditions Have Eased, but Insolvencies Loom Large', 25 June, online: https://blogs.imf.org/2020/06/25/financial-conditions-have-eased-but-insolvencies-loom-large/

AJ (2020) 'A timeline of the Trump administration's coronavirus actions', Al Jazeera, 24 April, online: https://www.aljazeera.com/news/2020/04/timeline-trump-administration-coronavirus-actions-200414131306831.html

Alba, Davey (2020) 'Virus Conspiracists Elevate a New Champion', New York Times, 9 May, online: https://www.nytimes.com/2020/05/09/technology/plandemic-judy-mikovitz-coronavirus-disinformation.html

Albrechtsen, Janet (2020) 'Coronavirus: It's time for us to decide if the cure is worse than the disease', The Australian, 27 March, online: https://www.theaustralian.com.au/inquirer/coronavirus-its-time-for-us-to-decide-if-the-cure-is-worse-than-the-disease/

Baicus, Anda (2012) 'History of polio vaccination', NCBI, World J Virol. 12 Aug; 1(4): 108–114, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3782271/

Bailey, Neil (2020) 'The calculus of death shows the COVID-19 lockdown is clearly worth the cost', MedicalXPress, 8 May, online: https://medicalxpress.com/news/2020-05-calculus-death-covid-lockdown-worth.html

Basu, Anirban (2020) 'Estimating The Infection Fatality Rate Among Symptomatic COVID19 Cases In The United States', Health Affairs, 7 May, online: https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.00455

Bauder, David (2020) 'Sinclair pulls show where Fauci conspiracy theory is aired', PBS, 10 May, online: https://www.pbs.org/newshour/science/sinclair-pulls-show-where-fauci-conspiracy-theory-is-aired

BBC (2020) 'Coronavirus: Trump stands by China lab origin theory for virus', 1 May, online: https://www.bbc.com/news/world-us-canada-52496098

Bedo, Stephanie and Natalie Brown (2020) ''We don't consent': Dramatic scenes at anti-lockdown protest', Daily Mercury, 10 May, online: https://www.dailymercury.com.au/news/we-dont-consent-dramatic-scenes-anti-lockdown-prot/4012592/

Beeley, Vanessa (2020) 'COVID-19: the Big Pharma players behind UK Government lockdown', UK Column, 6 May, online: https://www.ukcolumn.org/article/covid–19-big-pharma-players-behind-uk-government-lockdown

Bhattacharya, Jay (2020) 'We Must Question The COVID-19 Status Quo (w/ Dr. Jay Bhattacharya)', ZDoggMD, YouTube, 14 September, online: https://www.youtube.com/watch?v=T_COvdCujaA&feature=emb_title

Bleicher, Ariel and Katherine Conrad (2020) 'We Thought It Was Just a Respiratory Virus', UCSF, Summer, online: https://www.ucsf.edu/magazine/covid-body

Boseley, Sarah (2010) 'Andrew Wakefield struck off register by General Medical Council', The Guardian, 25 May, online: https://www.theguardian.com/society/2010/may/24/andrew-wakefield-struck-off-gmc

Bradford, Alina (2019) 'Smallpox: The World's First Eradicated Disease', Live Science, 23 April 23, online: https://www.livescience.com/65304-smallpox.html

Brainard, Julii; Natalia Jones, Iain Lake, Lee Hooper, Paul R Hunter (2020) 'Face-masks and similar barriers to prevent respiratory illness such as COVID-19: A rapid

systematic review', MEDRXIV, 6 April, online: https://www.medrxiv.org/content/10.1101/2020.04.01.20049528v1.full.pdf

Brewster, Jack (2020) 'Fauci Says It's 'False' To Say The Coronavirus Outbreak Is Under Control; Here Are All The Times Trump Said It Was', Forbes, 5 April, online: https://www.forbes.com/sites/jackbrewster/2020/04/05/fauci-says-its-false-to-say-the-coronavirus-outbreak-is-under-control-here-are-all-the-times-trump-said-it-was/

Brosseau, Lisa M and Margaret Sietsema (2020) 'COMMENTARY: Masks-for-all for COVID-19 not based on sound data', CIDRAP, 1 April, online: https://www.cidrap.umn.edu/news-perspective/2020/04/commentary-masks-all-covid-19-not-based-sound-data

Butantan (2020) 'Clinical Trial of Efficacy and Safety of Sinovac's Adsorbed COVID-19 (Inactivated) Vaccine in Healthcare Professionals (PROFISCOV)', Clinical Trials, 2 July, online: https://clinicaltrials.gov/ct2/show/NCT04456595?term=vaccine&cond=covid-19&draw=2&rank=1

Cassella (2019) 'Robert F Kennedy Invents a New Vaccine Conspiracy Theory, And It Could Kill Someone', Science Daily, 27 March, online: https://www.sciencealert.com/robert-f-kennedy-tweets-a-ridiculous-conspiracy-theory-about-vaccinations

CDC (2013) 'Understanding Thimerosal, Mercury, and Vaccine Safety', February, online: https://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-thimerosal-color-office.pdf

CDC (2020a) 'COVID-19 Pandemic Planning Scenarios', US Centre for Disease Control and Prevention, 20 May, online: https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html

CDC (2020b) 'There is no link between vaccines and autism & Vaccine ingredients do not cause autism', Centers for Disease Control and Prevention, online: https://www.cdc.gov/vaccinesafety/concerns/autism.html

Chalmers, Vanessa (2020) '150,000 Brits will die an 'avoidable death' during coronavirus pandemic through depression, domestic violence and suicides', Daily Mail, 10 April, online https://www.dailymail.co.uk/news/article-8207783/150-000-Brits-die-coronavirus-pandemic-domestic-violence-suicides.html

Chappell, Bill (2020) 'Trump Says Funding Cuts Will Be Permanent If WHO Doesn't Commit To 'Major' Changes', NPR, 19 May, online: https://www.npr.org/

sections/coronavirus-live-updates/2020/05/19/858579903/trump-says-cuts-to-who-funding-will-be-final-if-it-doesnt-commit-to-major-change

Chen, Wei (2020) 'A Phase III clinical trial for inactivated novel coronavirus pneumonia (COVID-19) vaccine (Vero cells)', Wuhan Institute of Biological Products, Chinese Clinical Trials Registry, 19 July, online: http://www.chictr.org.cn/showprojen.aspx?proj=56651

Cheng, Kar Keung; Tai Hing Lam and Chi Chiu Leung (2020) 'Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity', The Lancet, 16 April, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30918-1/fulltext

Cohen, Jon (2020) 'Chinese researchers reveal draft genome of virus implicated in Wuhan pneumonia outbreak', Science Mag, 11 January, online: https://www.sciencemag.org/news/2020/01/chinese-researchers-reveal-draft-genome-virus-implicated-wuhan-pneumonia-outbreak

Criado, Miguel Ángel (2020) 'Over half of coronavirus patients in Spain have developed neurological problems, studies show, El Pais, 17 July, online: https://english.elpais.com/science_tech/2020-07-17/over-half-of-coronavirus-hospital-patients-in-spain-have-developed-neurological-problems-studies-show.html

Dabo Guan, Daoping Wang, Stephane Hallegatte, Steven J. Davis, Jingwen Huo, Shuping Li, Yangchun Bai, Tianyang Lei, Qianyu Xue, D'Maris Coffman, Danyang Cheng, Peipei Chen, Xi Liang, Bing Xu, Xiaosheng Lu, Shouyang Wang, Klaus Hubacek, Peng Gong (2020) 'Global supply-chain effects of COVID-19 control measures', Nature Human Behaviour, DOI: 10.1038/s41562-020-0896-8

Damania, Zubin (2020) 'Why Don't We Know Exactly How Fatal COVID Is? A Doctor Explains', ZDoggMD, YouTube, 7 July, online: https://www.youtube.com/watch?v=5QjDOeaAZyw

Davis, Iain (2020) 'Face Masks Have Put Us In A State', OffGuardian, 22 June, online: https://off-guardian.org/2020/06/22/face-masks-have-put-us-in-a-state/

Definitive Healthcare (2020) 'Effects of Postponing Essential Care Due to COVID-19, 24 June, online: https://blog.definitivehc.com/effects-of-postponing-essential-care-due-to-covid-19

DeStefano, Frank; Cristofer S. Price and Eric S. Weintraub (2013) 'Increasing Exposure to Antibody-Stimulating Proteins and Polysaccharides in Vaccines Is Not Associated with Risk of Autism', Journal of Paediatrics, pp. 561-567, online: https://www.jpeds.com/article/S0022-3476(13)00144-3/pdf?ext=.pdf

Donaldson, Liam J; Paul D Rutter, Benjamin M Ellis, Felix E C Greaves, Oliver T Mytton, Richard G Pebody, Iain E Yardley (2009) 'Mortality from pandemic A/H1N1 2009 influenza in England: public health surveillance study', BMJ; 339, 10 December, online: https://doi.org/10.1136/bmj.b5213

Elaheh, Abdollah; David Champredon, Joanne M. Langley, Alison P. Galvani and Seyed M. Moghadas (2020) 'Temporal estimates of case-fatality rate for COVID-19 outbreaks in Canada and the United States', CMAJ Canada, 22 June, online: https://www.cmaj.ca/content/192/25/E666

EvaluatePharma (2017) 'World Preview 2017, Outlook to 2022', 10th edition, online: https://info.evaluategroup.com/WP2017-ENDP-FT.html Also available here: https://www.skepticalraptor.com/blog/wp-content/uploads/2017/11/EvaluatePharma-Pharma-Preview-2017.pdf

Finnegan, Conor and Josh Margolin (2020) 'Pompeo changes tune on Chinese lab's role in virus outbreak, as intel officials cast doubt: After telling ABC News there was "enormous evidence," he now says maybe not', ABC News, 8 May, online: https://abcnews.go.com/Politics/pompeo-tune-chinese-labs-role-virus-outbreak-intel/story?id=70559769

Fore, Henrietta H; Qu Dongyu; David M Beasley and Tedros A Ghebreyesus (2020) 'Child malnutrition and COVID-19: the time to act is now', The Lancet, 27 July, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31648-2/fulltext

Foster, Gigi (2020) 'Correctly counting the cost shows Australia's lockdown was a mistake', Financial Review, 25 May, online: https://www.afr.com/policy/economy/correctly-counting-the-cost-shows-australia-s-lockdown-was-a-mistake-20200525-p54w1o

Frost, W. H. (2020) 'Statistics of Influenza Morbidity: With Special Reference to Certain Factors in Case Incidence and Case Fatality', Public Health Reports (1896-1970), Vol. 35, No. 11 (Mar. 12, 1920), pp. 584-597, online: https://www.jstor.org/stable/4575511

Gerber, Jeffrey S. and Paul A. Offit (2009) 'Vaccines and Autism: A Tale of Shifting Hypotheses', online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2908388/

Gibney, Katherine (2019) 'Measles in Samoa: how a small island nation found itself in the grips of an outbreak disaster', The Conversation, 12 December, online: https://theconversation.com/measles-in-samoa-how-a-small-island-nation-found-itself-in-the-grips-of-an-outbreak-disaster-128467

Glanz, James and Campbell Robinson (2020) 'Lockdown delays cost at least 36,000 lives, data show', New York Times, 22 May, online: https://www.nytimes.com/2020/05/20/us/coronavirus-distancing-deaths.html

Gros, Daniel (2020) 'The great lockdown: was it worth it?', CEPS Policy Insights, May, online: https://www.ceps.eu/wp-content/uploads/2020/05/PI2020-11_DG_The-great-lockdown.pdf

Hadler JL, Konty K, McVeigh KH, Fine A, Eisenhower D, Kerker B, et al. (2010) Case Fatality Rates Based on Population Estimates of Influenza-Like Illness Due to Novel H1N1 Influenza: New York City, May–June 2009. PLoS ONE 5(7), online: https://doi.org/10.1371/journal.pone.0011677

Henderson, D.A. and Patra Klepac (2013) 'Lessons from the eradication of smallpox: an interview with D. A. Henderson', NCBI, Philos Trans R Soc Lond B Biol Sci, Aug 5; 368(1623), online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3720050/

Hendrie, Doug (2020) 'Why does the coronavirus fatality rate differ so much around the world?', RACGP, 30 April, online: https://www1.racgp.org.au/newsgp/clinical/why-does-the-coronavirus-fatality-rate-differ-so-m

HHS (2020) 'Vaccine Side Effects', US Department of Health and Human Services, online: https://www.vaccines.gov/basics/safety/side_effects

Hitchens, Peter (2020) 'Quite right @fraiseadam...', Twitter, 23 June, online: https://twitter.com/ClarkeMicah/status/1275342496848121856

Holden, Emily (2020) 'Climate science deniers at forefront of downplaying coronavirus pandemic', The Guardian, 25 April, online: https://www.theguardian.com/world/2020/apr/25/climate-science-deniers-downplaying-coronavirus-pandemic

Holden, Richard and Bruce Preston (2020) 'The costs of the shutdown are overestimated – they're outweighed by its $1 trillion benefit', The Conversation, 16 May, online: https://theconversation.com/the-costs-of-the-shutdown-are-overestimated-theyre-outweighed-by-its-1-trillion-benefit-138303

Howard, J.; Huang, A.; Li, Z.; Tufekci, Z.; Zdimal, V.; van der Westhuizen, H.; von Delft, A.; Price, A.; Fridman, L.; Tang, L.; Tang, V.; Watson, G.L.; Bax, C.E.; Shaikh, R.; Questier, F.; Hernandez, D.; Chu, L.F.; Ramirez, C.M.; Rimoin, A.W. (2020) 'Face Masks Against COVID-19: An Evidence Review', Preprints 2020, 2020040203 doi: 10.20944/preprints202004.0203.v1, online: https://www.preprints.org/manuscript/202004.0203/v1

HRC (1999) 'Human Rights Committee, General Comment 27, Freedom of Movement (Art.12), U.N. Doc CCPR/C/21/Rev.1/Add.9, online: http://hrlibrary.umn.edu/gencomm/hrcom27.htm

Hviid, Anders; Jørgen Vinsløv Hansen; Morten Frisch and Mads Melbye (2019) 'Measles, Mumps, Rubella Vaccination and Autism: A Nationwide Cohort Study', Ann Intern Med, Apr 16;170(8):513-520. doi: 10.7326/M18-2101, online: https://pubmed.ncbi.nlm.nih.gov/30831578/

IMF (2020) 'The IMF's Response to COVID-19', 25 June, online: https://www.imf.org/en/About/FAQ/imf-response-to-covid-19#Q4

Isaacs, David (2020) 'Lessons from the tragic measles outbreak in Samoa', Journal of Paediatrics and Child health, Volume56, Issue1[1], January, pp. 175, online: https://onlinelibrary.wiley.com/doi/full/10.1111/jpc.14752

John, Tara (2020) 'Critics say lockdowns will be more damaging than the virus. Experts say it's a false choice', CNN, 29 May 29, online: https://edition.cnn.com/2020/05/29/europe/lockdown-skeptics-coronavirus-intl/index.html

Joseph, Andrew (2020) 'CDC director distances himself from Trump's WHO criticism, saying the agencies 'continue to have' strong relationship', STAT, 15 April, online: https://www.statnews.com/2020/04/15/cdc-director-who-strong-relationship/

Klompas, Michael; Charles A. Morris, Julia Sinclair, Madelyn Pearson, and Erica S. Shenoy (2020) 'Universal Masking in Hospitals in the Covid-19 Era', New England Journal of Medicine, 1 April, N Engl J Med 2020; 382:e63, online: https://www.nejm.org/doi/full/10.1056/NEJMp2006372

Knapton, Sarah (2020) 'Lockdown may cost 200,000 lives, government report shows', The Telegraph (UK), 19 July, online: https://www.telegraph.co.uk/news/2020/07/19/lockdown-may-cost-200k-lives-government-report-shows/

Knightly, Kit (2020) 'Opposing lockdown is NOT "profits before people"', Off Guardian, 12 May, online: https://off-guardian.org/2020/05/12/opposing-lockdown-is-not-profits-before-people/

Lea, Ruth (2020) 'The coronavirus crisis: economic costs mount up as the lockdown continues', Perspectives, Arbuthnot Banking, online: https://www.arbuthnotlatham.co.uk/wp-content/uploads/2020/04/27-April-2020.pdf

1. https://onlinelibrary.wiley.com/toc/14401754/2020/56/1

Ledley, Fred D; Sarah Shonka McCoy; and Gregory Vaughan (2020) 'Profitability of Large Pharmaceutical Companies Compared With Other Large Public Companies', JAMA, online: https://jamanetwork.com/journals/jama/article-abstract/2762308

Leffler, Christopher, Edsel Ing, Joseph Lykins and Matthew C. Hogan (2020) 'Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks', Research Gate, 20 June, online: https://www.researchgate.net/publication/342198360_Association_of_country-wide_coronavirus_mortality_with_demographics_testing_lockdowns_and_public_wearing_of_masks_Update_June_15_2020

Leng, Shumei (2020) 'US urged to explain military lab shutdown', Global Times, 15 March, online: https://www.globaltimes.cn/content/1182694.shtml

Lerner, Sharon (2020) 'Big Pharma prepares to profit from the Coronavirus', The Intercept, 14 March, online: https://theintercept.com/2020/03/13/big-pharma-drug-pricing-coronavirus-profits/

Levin, Bess (2020) 'Trump claims coronavirus will "miraculously" go away by April', Vanity Fair, 11 March, online: https://www.vanityfair.com/news/2020/02/donald-trump-coronavirus-warm-weather

Lutz, Eric (2020) 'Coronavirus: Trump's mixed messages 'undermines public trust', experts say', The Guardian, 1 March, online: https://www.theguardian.com/us-news/2020/mar/01/trump-science-coronavirus-public-trust

Makowski, Emily (2020) 'Theory that Coronavirus Escaped from a Lab Lacks Evidence', The Scientist, 5 March, online: https://www.the-scientist.com/news-opinion/theory-that-coronavirus-escaped-from-a-lab-lacks-evidence-67229

Mallapaty, Smriti (2020) 'How deadly is the coronavirus? Scientists are close to an answer, Nature, 16 June, online: https://www.nature.com/articles/d41586-020-01738-2

Marsh, Callum (2020) 'Conspiracy theorists have a new global supervillain — Dr. Anthony Fauci', National Post, 10 June, online: https://nationalpost.com/news/conspiracy-theorists-have-a-new-global-supervillain-dr-anthony-fauci

McMillan, Nigel (2020) 'Immunity to COVID-19 may not last. This threats a vaccine and herd immunity', The Conversation, 16 July, online: https://theconversation.com/immunity-to-covid-19-may-not-last-this-threatens-a-vaccine-and-herd-immunity-142556

Media Lens (2020) 'Conspiracy Theories Malign And Benign – Face Masks And Israeli Training Of US Police', 3 July, online: https://www.medialens.org/2020/conspiracy-theories-malign-and-benign-face-masks-and-israeli-training-of-us-police/

Mikulic, Matej (2019) 'Global vaccine market revenues 2014-2020', Statista, 9 August, online: https://www.statista.com/statistics/265102/revenues-in-the-global-vaccine-market/

Miller, Andrew Mark (2020) 'Study: Coronavirus restrictions killing 10,000 children per month and 'wasting' and 'stunting' millions more', Washington Examiner, 29 July, online: https://www.washingtonexaminer.com/news/study-coronavirus-restrictions-killing-10-000-children-per-month-and-wasting-and-stunting-millions-more

Miles, David (2020) 'The UK Lockdown: balancing costs against benefits', VOXEU/CEPR, 13 July, online: https://voxeu.org/article/uk-lockdown-balancing-costs-against-benefits

Moser, Dominik A; Jennifer Glaus; Sophia Frangou; and Daniel S. Schechter (2020) 'Years of life lost due to the psychosocial consequences of COVID19 mitigation strategies based on Swiss data', MEDRXIV, online: https://www.medrxiv.org/content/10.1101/2020.04.17.20069716v3.full.pdf

Murphy, Brett and Letitia Stein (2020) 'Trump attacks his own CDC scientists over how to reopen schools safely', USA TODAY, 9 July, online: https://www.usatoday.com/story/news/investigations/2020/07/09/trump-attacks-cdc-scientists-over-covid-19-school-reopening-guidelines/5405407002/

Nasrallah, Hassan (2020) 'Hezbollah chief Hassan Nasrallah damns Western countries COVID?19 response', VK, 19 June, online: https://vk.com/video404210594_456239520

NCHS (2020) 'Excess Deaths Associated with COVID-19' National Center for Health Statistics', 15 July, online: https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm

NHS (2020) 'Why vaccination is safe and important', online: https://www.nhs.uk/conditions/vaccinations/why-vaccination-is-safe-and-important/

Niforatos, Joshua D; Edward R Melnick, and Jeremy S Faust (2020) 'Covid-19 fatality is likely overestimated', BMJ, 368, 20 March, doi: https://doi.org/10.1136/bmj.m1113

NIH (2020) 'Phase 3 clinical trial of investigational vaccine for COVID-19 begins', National Institutes of Health, 27 July, online: https://www.nih.gov/news-events/news-releases/phase-3-clinical-trial-investigational-vaccine-covid-19-begins

Offit, Paul (2010) 'The Lancet retracts 1998 study linking autism to MMR vaccine', Healio, 2 February, online: https://www.healio.com/news/pediatrics/20120331/the-lancet-retracts-1998-study-linking-autism-to-mmr-vaccine

Oke, Jason and Carl Heneghan (2020) 'Global Covid-19 Case Fatality Rates', Centre for Evidence-Based Medicine, UPDATED 9th June 2020, online: https://www.cebm.net/covid-19/global-covid-19-case-fatality-rates/

ONS (2020) 'Coronavirus and the social impacts on Great Britain: 17 July 2020', Office of National Statistics, 17 July, online: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/coronavirusandthesocialimpactsongreatbritain/17july2020

O'Reilly, Peter (2020) 'A phase III study to investigate a vaccine against COVID-19', BMC, 28 July, online: http://www.isrctn.com/ISRCTN89951424

Ormerod, Paul (2020) 'The costs of lockdown could far outweigh the benefits', City AM, 8 July, online: https://www.cityam.com/the-costs-of-lockdown-could-far-outweigh-the-benefits/

Ostrov, Baraba Feder (2020) 'Cue the debunking: Two Bakersfield doctors go viral with dubious COVID test conclusions', Calmatters, 27 April, online: https://calmatters.org/health/2020/04/debunking-bakersfield-doctors-covid-spread-conclusions/

Paget, James et al (2019) 'Global mortality associated with seasonal influenza epidemics: New burden estimates and predictors from the GLaMOR Project', J Glob Health. 2019 Dec; 9(2): 020421., online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6815659/

Régnier, Stéphane A. and Jasper Huels (2013) 'Drug versus vaccine investment: a modelled comparison of economic incentives', Cost Eff Resour Alloc. 2013; 11: 23, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3846654/

Rigby, Jennifer (2020) 'Is the cure worse than the disease? The hidden harms of the Covid-19 lockdowns'. Telegraph, 5 June, online: https://www.telegraph.co.uk/global-health/science-and-disease/cure-worse-disease-hidden-harms-covid-19-lockdowns/

Roberts, Leslie (2020) 'Why measles deaths are surging — and coronavirus could make it worse', Nature, 7 April, online: https://www.nature.com/articles/d41586-020-01011-6

Roberts, William (2020) 'Trump sidelines CDC in push to reopen the US economy', Al Jazeera, 21 May, online: https://www.aljazeera.com/news/2020/05/trump-sidelines-cdc-push-reopen-economy-200520191135513.html

Russell, Timothy W; Joel Hellewell, Christopher I Jarvis, Kevin Van Zandvoort, Sam Abbott, Ruwan Ratnayake, Stefan Flasche, Rosalind M Eggo, W John Edmunds, Adam J Kucharski (2020) 'Estimating the infection and case fatality ratio for COVID-19 using age-adjusted data from the outbreak on the Diamond Princess cruise ship', MEDRXIV, 9 March, online: https://www.medrxiv.org/content/10.1101/2020.03.05.20031773v2.full.pdf

Samuels, Brett and Rebecca Klar (2020) 'Trump: 'We can't let the cure be worse than the problem itself'', The Hill, 23 March, online: https://thehill.com/homenews/administration/488965-trump-hints-at-changes-to-restrictions-we-cant-let-the-cure-be-worse

Sandefur; Justin; Selene Ghisolfi, Ingvild Almås, Tillmann von Carnap, Jesse Heitner and Tessa Bold (2020) 'Predicting COVID-19 Infection Fatality Rates Around the World', Center for Global Development, 12 June, online: https://www.cgdev.org/blog/predicting-covid-19-infection-fatality-rates-around-world

Sathyanarayana Rao, T. S. and Chittaranjan Andrade (2011) 'The MMR vaccine and autism: Sensation, refutation, retraction, and fraud', Indian Journal of Psychiatry, April-June, online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136032/

Seidel, Jamie (2020) 'Coronavirus: Alan Jones' 'dangerous' virus theory', News.Com, 18 March, online: https://www.news.com.au/lifestyle/health/health-problems/coronavirus-alan-jones-dangerous-virus-theory/news-story/b7e43fa26ca43ce4b3c858a91fe818ff

Shabir, Osman (2020) 'What is Case Fatality Rate (CFR)?', News Medical, 8 June, online: https://www.news-medical.net/health/What-is-Case-Fatality-Rate-(CFR).aspx

Shear, Michael D. (2020) 'Inside Trump Administration, Debate Raged Over What to Tell Public', New York Times, 7 March, online: https://www.nytimes.com/2020/03/07/us/politics/trump-coronavirus.html

Shepard, Stacey (2020) 'Two Bakersfield doctors cite their testing data to urge reopening', Bakersfield, 23 April, online: https://www.bakersfield.com/news/two-bakersfield-doctors-cite-their-testing-data-to-urge-reopening/article_eb1959e0-84fa-11ea-9a07-2f2bea880bf9.html

Skeptical Raptor (2018) Why do I call it the "anti-vaccine religion"? Let me explain', 5 may, online: https://www.skepticalraptor.com/skepticalraptorblog.php/anti-vaccine-religion-explain/

Skeptical Raptor (2019) 'Big Pharma vaccine profits – let's take a closer look at this trope', 24 December, online: https://www.skepticalraptor.com/skepticalraptorblog.php/the-myth-of-big-pharma-vaccine-profits-updated/

Slovak, Julianne (2018) 'The Average Profit Margin of Pharmaceuticals', AZ Central, 14 May, online: https://yourbusiness.azcentral.com/average-profit-margin-pharmaceuticals-20671.html

SkyNews (2020) 'How is that a pandemic': Alan Jones compares Swine Flu stats with COVID-19', 16 July, online: https://www.skynews.com.au/details/_6172060848001

Stolberg, Sheryl Gay (2020) 'Trump Administration Strips C.D.C. of Control of Coronavirus Data', New York Times, 14 July, online: https://www.nytimes.com/2020/07/14/us/politics/trump-cdc-coronavirus.html

Stutt, Richard O. J. H. ; Renata Retkute, Michael Bradley, Christopher A. Gilligan and John Colvin (2020) 'A modelling framework to assess the likely effectiveness of facemasks in combination with 'lock-down' in managing the COVID-19 pandemic', Proceedings of the Royal Society, 10 June, online: https://royalsocietypublishing.org/doi/10.1098/rspa.2020.0376

Thronson, Renata (2020) 'Lost Space', JAMA. 323(20), 27 January, online doi:10.1001/jama.2020.7237

University of Oxford (2020) 'AstraZeneca to supply Europe with up to 400 million doses of Oxford University's vaccine at no profit', 14 June, online: https://www.ox.ac.uk/news/2020-06-14-astrazeneca-supply-europe-400-million-doses-oxford-university-s-vaccine-no-profit

Verity, Robert; Lucy C Okell, Ilaria Dorigatti, Peter Winskill, Charles Whittaker, Natsuko Imai, Gina Cuomo-Dannenburg, Hayley Thompson, Patrick G T Walker, Han Fu, Amy Dighe, Jamie T Griffin, Marc Baguelin, Sangeeta Bhatia, Adhiratha Boonyasiri, Anne Cori, Zulma Cucunubá, Rich FitzJohn, Katy Gaythorpe, Will Green, Arran Hamlet, Wes Hinsley, Daniel Laydon, Gemma Nedjati-Gilani, Steven

Riley, Sabine van Elsland, Erik Volz, Haowei Wang, Yuanrong Wang, Xiaoyue Xi, Christl A Donnelly, Azra C Ghani, Neil M Ferguson (2020) 'Estimates of the severity of coronavirus disease 2019: a model-based analysis', Lancet, 30 March, online: https://www.thelancet.com/action/showPdf?pii=S1473-3099(20)30243-7&fbclid=IwAR3Ly0mFOWWh3E74id0uHphEcKK0R0gp0-uXOP-D5Euj0jvKzqbdGIeKCF0

Wheaton, Sarah (2020) 'Chinese vaccine would be 'global public good,' Xi says', Politico, 18 May, online: https://www.politico.eu/article/chinese-vaccine-would-be-global-public-good-xi-says/

WHO (2017) 'The power of vaccines: still not fully utilized', World Health Organization, online: https://www.who.int/publications/10-year-review/vaccines/en/

WHO (2019) 'More than 140,000 die from measles as cases surge worldwide', World Health Organization, 5 December, online: https://www.who.int/news-room/detail/05-12-2019-more-than-140-000-die-from-measles-as-cases-surge-worldwide

WHO (2020) 'Draft landscape of COVID-19 candidate vaccines', 28 July, online: https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines

WHO-UNICEF (2002) 'WHO-UNICEF joint statement on strategies to reduce measles mortality worldwide', Weekly Epidemiological Record, No 25, 5 July, online: https://apps.who.int/iris/bitstream/handle/10665/231907/WER7727_224-228.PDF

Winter, Lisa (2020) 'Chinese Officials Blame US Army for Coronavirus: There is no evidence backing the idea that SARS-CoV-2 originated from US service members visiting Wuhan', The Scientist, 13 March, online: https://www.the-scientist.com/news-opinion/chinese-officials-blame-us-army-for-coronavirus-67267

Wong, Sunny H; Jeremy Y. C. Teoh, Chi-Ho Leung, William K. K. Wu, Benjamin H. K. Yip, Martin C. S. Wong, David S. C. Hui (2020) 'COVID-19 and Public Interest in Face Mask Use', American Thoracic Society, 15 June, online: https://www.atsjournals.org/doi/pdf/10.1164/rccm.202004-1188LE

World Bank (2020) 'GDP (current US$)', online: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

Wortham, Jonathan et al (2020) 'Characteristics of Persons Who Died with COVID-19 — United States, February 12–May 18, 2020', Center for Disease Con-

trol and prevention, online: https://www.cdc.gov/mmwr/volumes/69/wr/mm6928e1.htm

Yong, Ed (2020) 'The U.K.'s Coronavirus 'Herd Immunity' Debacle', The Atlantic, 16 March, online: https://www.theatlantic.com/health/archive/2020/03/coronavirus-pandemic-herd-immunity-uk-boris-johnson/608065/

Zhang, Renyi ; Yixin Li; Annie L. Zhang; Yuan Wang; and Mario J. Molinae (2020) 'Identifying airborne transmission as the dominant route for the spread of COVID-19', Proceedings of the National Academy of Sciences, 16 May, online: https://www.pnas.org/content/pnas/early/2020/06/10/2009637117.full.pdf

10. Vaccines and the second wave

Image: Cubadebate

A TREMENDOUS PROPAGANDA war is raging over which country can best and soonest deliver a safe and effective vaccine for COVID-19. There are more than 300 candidates but most would not know this, as their local media generally has a focus on their favourites. The race has assumed cold war proportions because, above and beyond the pandemic, Washington has created economic, technological and propaganda wars, particularly against China, the country it sees as its main global rival. The idea of Chinese leadership has created a great fear in the minds of those supporting the Old World Order: what if China emerges, not only as the leading country to protect its own citizens at home, but also the technological leader in vaccines, to help resolve the pandemic crisis?

This fear was well expressed by David Fidler, a member of the Council on Foreign Relations (a leading US foreign policy think tank) when he said:

"If China wins the race, exploits that advantage and we don't have anything equivalent yet, what do we do?" (Ralph 2020). The implications are substantial. With the virus demonstrating great US incapacity at home, for China to show technological and moral leadership on this issue would directly confront hegemonic US culture.

US cultural organs rallied to defend the old order. Public health Professor Larry Gostin, from Georgetown University, anticipates that China will use its new vaccines "for political influence or political payback or part of the trade negotiations with the United States ... Congress [may have] to appropriate money to buy the vaccine from China when we won't let people in the United States use TikTok?" (Ralph 2020). Humiliation of the USA in the middle of its trade war, and during the campaigns to demonise China (over Uyghurs, human rights, etc.), would certainly carry wider implications.

Safe and effective vaccines are needed because there is little certainty that any sort of adequate natural immunity will be developed. 'Natural' antibody levels in high infection areas remain quite low and have been shown to degrade. With a million already dead, worldwide, and many more at risk (the median IFR estimates of 0.5% to 1% suggest 39 to 78 million people at risk of death), there must be some sustainable substitute for the imposed 'Non Pharmaceutical Interventions' such as quarantine measures, physical distancing and travel bans.

But which vaccine? Bias is evident in many western reports of the candidates. For example, Phase 1 and 2 trials of the German Pfizer/BioNTech and British AstraZeneca candidates have been reported as "demonstrating" their results, while China's Sinovac Biotech candidate was "claiming" theirs (Fusaro 2020: 5). The New York Times updates on vaccine candidates gave details for the US and European candidates but not for those from China and Russia (Corum, Wee and Zimme 2020). So who and what is in the field?

By September 2020 there were 321 recognised vaccine candidates. Many multinational companies are involved, but the two biggest groups are the eleven Chinese candidates and seven backed by the US Government program 'Operation Warp Speed' (Le, Kramer, Chen and Mayhew 2020).

There are broadly four types of vaccine: (1) virus vaccines (which use a weakened or inactivated pathogen), (2) viral-vector vaccines (genetically engineered viruses which are weakened so they cannot cause disease), (3) protein based vaccines (engineered empty virus shells which lack genetic material and

cannot cause infection, but trigger immune response) and (4) nucleic acid vaccines (using viral DNA or RNA but not the full virus, to trigger an immune response but not cause infection) (Avertim 2020). There are as yet no licensed versions of DNA / RNA vaccines.

Most anti-viral vaccines are based on "attenuated or inactivated viruses", while three of the leading candidates use "weakened human adenoviruses" (King 2020). The German and US candidates – Pfizer / BionTech and Moderna / NIAID – are using RNA vaccines, a fairly new technology where a biomolecule "instructs body cells to make copies of the S protein of the virus, recognize it and build antibodies to fight it once it attacks the body". This type of vaccine can be made and mass produced rapidly (Hardy 2020). The Russian Sputnik V vaccine, on the other hand, uses adenoviral vector technology and "starts with a shot of Ad26 vector followed by a booster with Ad5" (King 2020).

By mid-September, the WHO listed nine candidates in stage three trials, four from China and one each from the USA, the UK, Russia, Germany and Belgium (WHO 2020b). Table 1 below summarises these potential vaccines and their associated technologies. Most require two shots except for the Oxford /AstraZeneca and Cansino candidates which require one.

Table 1: Leading COVID-19 vaccine candidates, all in third state trials, at 17 September 2020

Developer	Base country	Technology
University of Oxford/AstraZeneca	UK	Non-replicating viral vector
Cansino Bio. Inc / Beijing Inst.	China	Non-replicating viral vector
Gamaleya Research Inst.	Russia	Non-replicating viral vector
Janssen Pharm. Co.	Belgium	Non-replicating viral vector
Sinovac	China	Inactivated
Wuhan Inst Bio / Sinopharm	China	Inactivated
Beijing Inst. / Sinopharm	China	Inactivated
Moderna / NIAID	USA	RNA
BioNTech /Fosun / Pfizer	Germany	RNA

Source: WHO 2020b

IT SEEMS LIKELY THAT COVID-19 vaccines will become available "somewhere between the fourth quarter of 2020 and the first quarter of 2021" (Fusaro 2020: 4); that is, after they have cleared their third stage tests. All vaccines are subject to three phases of human trials, to ensure safety, effectiveness and efficiency. The third trial is the longest and largest, as it also aims to detect and eliminate side effects. However many national authorities allow the preliminary use of unapproved (usually stage three candidates) medical products for emergency diagnosis, treatment or prevention (Fusaro 2020). This is what happened with the Russian / Gamelaya candidate Sputnik V, which leapfrogged the others to become the first COVID-19 registered vaccine, on 11 August, before it had completed stage three trials. That vaccine is already being sold into the Russian regions (TASS 2020), and 100 million doses have been purchased by India (NDTV 2020).

The second stage trial of Russia's Gamaleya candidate vaccine ('Sputnik V'), with 76 participants, was said to show "safe and well tolerated" results. Common "mild" side effects were observed (pain at injection site 58%, hyperthermia 50%, headache 42%, weakness 28%, muscle and joint pain, 24%) but these were said to be "mild" (Logunov et al 2020). The Lancet review article concluded that "the heterologous rAd26 and rAd5 vector-based COVID-19 vaccine has a good safety profile and induced strong humoral and cellular immune responses in participants. Further investigation is needed of the effectiveness of this vaccine for prevention of COVID-19" (Logunov et al 2020; Sputnik Vaccine 2020). Nevertheless, Sputnik V is already in widespread use.

Cuba, which has its own vaccine candidate Soberana in third stage trials, says it may use the Russian Sputnik V vaccine until its own is finalised; but not until Sputnik V has completed stage three trials. Cuba is known for "strictly adhering to WHO regulations" (DW 2020). The Soberana technology appears to use inactivated protein from the virus (Presidencia Cuba 2020). Soberana is the leading vaccine candidate in Latin America and its final Stage Three results are due in February 2021 (Szalkowicz 2020).

Meanwhile China's four candidates are proceeding through stage three trials, with initial results due in late 2020 or early 2021. While western leaders try to look in other directions, for example to the British Oxford /AstraZeneca

candidate, the SinoPharm candidate is already used in massive internal trials (Pike 2020), and has been sent for trials and emergency use in the UAE (SP-Global 2020) Morocco, Peru and Brazil (Pike 2020). Western media, when they refer to the Chinese candidates at all, often call them "risky" and "controversial" (McGregor 2020; Pike 2020).

Nevertheless, in mid-May the Chinese Premier Xi Jinping said he would give Chinese vaccines to the world (presumably free or at very low cost) as a "global public good ... this will be China's contribution to ensuring vaccine accessibility and affordability in developing countries" (Wheaton 2020). That offer is yet to be matched by the western candidates. In contrast, there were reports that "wealthy nations ... have already cornered more than half (51 percent) of the promised doses of leading COVID-19 vaccine candidates", that is to say at the expense of developing countries (Oxfam 2020). This zero sum game seems likely to aggravate the propaganda war.

In the post-pandemic world, with great divisions over which vaccine technology has been adopted, there are likely to be a wide range of national regulatory regimes. There is a long tradition of consent being required for receiving a vaccine (which is, after all, a medical procedure), but there have been some mandates in the past, for example Britain's 1853 law to require smallpox vaccination (Science Museum 2019). The rationale for a mandate would be basically that a failure to achieve sufficient levels of vaccination could pose a threat to overall public health. However any such demand must be justified. Addressing such arguments some US legal and public health scholars have suggested several "substantive criteria [which] should be met before a state imposes a SARS-CoV-2 vaccine mandate". These are that: the virus "is not adequately controlled in the state", an advisory committee recommends vaccination for certain groups, there is a supply of safe and efficient vaccine and information about the vaccine has been "transparently communicated"; that the state is able to provide vaccine to all without barriers and to monitor any side effects; and the mandate follows a failure of sufficient voluntary uptake "required to prevent epidemic spread" (Mello, Silverman and Omer 2020). This provides provide some useful elements for argument, regarding proportionality and arbitrariness, in particular national contexts.

We can expect a variety of national outcomes, not least because public scepticism and resistance to vaccination varies quite a lot between countries.

An Ipsos study on attitudes towards a COVID-19 vaccine showed that difference with, for example, 3% resistance in China and 47% resistance in Russia. Amongst those resisting a vaccine, the majority were concerned with possible side effects (Jibilian 2020). Table 1 below shows the results for 11 of the 27 countries polled.

Table 2: Poll on interest in a COVID-19 vaccine, if available

	Strongly agree %	Somewhat agree %	Somewhat disagree %	Strongly disagree %	Total disagree %
China	38	59	2	1	3
Australia	59	28	8	5	12
India	44	44	9	4	13
Malaysia	35	51	11	4	15
Great Britain	52	33	9	7	15
Japan	24	51	20	5	25
Sweden	34	33	20	13	33
USA	35	32	17	16	33
Germany	36	31	20	13	33
France	22	37	21	20	41
Russia	19	34	22	24	47
Global average*	37	37	15	12	26

Source: Ipsos poll in Jibilian 2020; * 'global average' is from 27 countries

AT THE INTERNATIONAL level the mandate question is different, because visitors have always been subject to conditions and mandates. Further, there will have to be some recognition of the many vaccines. This is because the regulation of international travel and commerce will insist on some sort of equivalence. Already a number of countries demand that travellers complete COVID-19 tests, temperature checks and / or periods in quarantine. Most

countries are likely to insist on vaccination certificates in the future, as they did for smallpox, prior to 1979.

At the time of completing this book (early October 2020) a second wave of infections was underway in many countries, as shown by the various sites which compile official data (John Hopkins University, Worldometers, OurWorldinData). Globally the numbers of infections detected were still rising, at more than 200,000 per day, with four or five thousand COVID19 deaths per day. In some countries the second wave was small (China, Singapore, Norway), in others large and sometimes larger than the first wave (USA, Australia, Iran). Yet in many cases the death rate amongst those infected was lower (Spain, Italy, France, Germany, UK, Sweden). Why was this?

The common medical opinion for a lower second wave death rate seems to be that the number of cases has been rising due to greater testing and that this has detected a larger number of infected younger people, who are less at risk of death (Dorling 2020; Hendrie 2020; Oke, Howdon and Heneghan 2020). However there are also lower death rates amongst older age groups (Oke, Howdon and Heneghan 2020). Since more is known about the disease there are also better approaches to treatment, still mainly focused on the symptoms (Hendrie 2020), particularly vascular illness. Those countries with greater health capacity are clearly in a better position to help survival (Hendrie 2020). A role has also been suggested for measurably lower viral loads, as a result of lower exposure, in part due to physical distancing measures (Van Beusekom 2020).

But there is little evidence that the virus is mutating to a less virulent form (Hendrie 2020), or rather the observed mutation has been said to be "tiny" (Kupferschmidt 2020; Van Dorp 2020). Further, antibody levels remain fairly low, often less than 10% in areas where there were strong outbreaks (Ananda et al 2020; Croll 2020), while several studies (Heidt 2020; Ibarrondo et al 2020; Stephens and McElrath 2020) have suggested that antibody protection may not be long lasting. One group of scientists wrote that:

> "The protective role of antibodies against SARS-CoV-2 is unknown, but these antibodies are usually a reasonable correlate of antiviral immunity ... [however] our findings raise concern that humoral immunity against SARS-CoV-2 may not be long lasting in persons with

mild illness, who compose the majority of persons with Covid-19" (Ibarrondo et al 2020).

There are reports of 'silent reinfections' in asymptomatic hospital workers (Nature 2020; Stephens and McElrath 2020). This uncertainty about natural immune responses highlights the hope that a carefully fashioned vaccine might do better.

REFERENCES

Anand, Shuchi, et al (2020) 'Prevalence of SARS-CoV-2 antibodies in a large nationwide sample of patients on dialysis in the USA: a cross-sectional study', The Lancet, 25 September, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32009-2/fulltext

Avertim (2020) 'Vaccine technologies for the battle against COVID-19 pandemic', July, online: https://www.avertim.com/en/news/vaccine-technologies-battle-against-covid-19-pandemic

Business Insider (2020) '

CECMED (2020) 'Iniciaran los ensayos clinicos de la vacuna contra la COVID-19, identificada por la siglas FINLAY-FR-1', 18 August, online: https://www.cecmed.cu/noticias/iniciaran-ensayos-clinicos-vacuna-covid-19-identificada-siglas-finlay-fr-1

Corum, Jonathan ; Sui-Lee Wee and Carl Zimme (2020) 'Coronavirus Vaccine Tracker', New York Times. 17 September, online: https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html

Croll, Leah (2020) 'Only 10% of US adults may have COVID-19 antibodies: Study', ABC News, online: https://abcnews.go.com/Health/10-us-adults-covid-19-antibodies-study/story?id=73251600

CubaDebate (2020) 'Interioridades de cómo a la vacuna cubana contra la COVID-19 se le llamó Soberana 01', 25 August, online: http://www.cubadebate.cu/especiales/2020/08/25/interioridades-de-como-a-la-vacuna-cubana-contra-la-covid-19-se-le-llamo-soberana-01/#.X1wn6LHVJhE

Dorling, Danny (2020) 'Coronavirus: why aren't death rates rising with case numbers?'. The Conversation, 10 September, online: https://theconversation.com/coronavirus-why-arent-death-rates-rising-with-case-numbers-145865

DW (2020) 'Cuba joins the race for vaccine against the coronavirus', Deutsche Welle, 19 August, online: https://www.dw.com/en/cuba-joins-the-race-for-vaccine-against-the-coronavirus/a-54615364

Fusaro, Roberta (2020) 'On pins and needles: Will COVID-19 vaccines 'save the world'?', McKinsey and Company, 29 July, online: https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/on-pins-and-needles-will-covid-19-vaccines-save-the-world

Hardy, Sel (2020) '9 Pharmaceutical Companies Racing For A COVID-19 Vaccine', Forbes, 16 June, online: https://www.forbes.com/sites/moneyshow/2020/06/16/9-pharmaceutical-companies-racing-for-a-covid-19-vaccine/#4feeca1576ad[1]

Heidt, Amanda (2020) 'COVID-19 Antibodies Last for at Least Four Months After Recovery', The Scientist, 2 September, online: https://www.the-scientist.com/news-opinion/covid-19-antibodies-last-for-at-least-four-months-after-recovery-67907

Hendrie, Doug (2020) 'Are COVID death rates really falling globally?', NewsGP, 11 September, online: https://www1.racgp.org.au/newsgp/clinical/are-covid-death-rates-really-falling-globally

Ibarrondo, F. Javier et al (2020) 'Rapid Decay of Anti–SARS-CoV-2 Antibodies in Persons with Mild Covid-19', NEJM, 10 September, online: https://www.nejm.org/doi/full/10.1056/nejmc2025179

Jibilian, Isabella (2020) '3 charts show what people around world think about COVID-19 vaccines — and reveal stark differences among countries', Business Insider, 3 September, online: https://www.businessinsider.com.au/covid-19-coronavirus-vaccine-survey-will-people-get-vaccinated-concerns-2020-9

King, Anthony (2020) 'Vector-Based Vaccines Come to the Fore in the COVID-19 Pandemic', The Scientist, 8 September, online: https://www.the-scientist.com/news-opinion/vector-based-vaccines-come-to-the-fore-in-the-covid-19-pandemic-67915

Kupferschmidt, Kai (2020) 'The pandemic virus is slowly mutating. But is it getting more dangerous?', Science, 14 July, online: https://www.sciencemag.org/news/2020/07/pandemic-virus-slowly-mutating-it-getting-more-dangerous

1. https://www.forbes.com/sites/moneyshow/2020/06/16/9-pharmaceutical-companies-racing-for-a-covid-19-vaccine/#a5c02393e59c943d6a75a9241140faca34feeca1576ad

Le, Tung Thanh; Jakob B. Kramer; Robert Chen and Stephen Mayhew (2020) 'Evolution of the COVID-19 vaccine development landscape', Nature, 4 September, online: https://www.nature.com/articles/d41573-020-00151-8

Logunov, Denis Y et al (2020) 'Safety and immunogenicity of an rAd26 and rAd5 vector-based heterologous prime-boost COVID-19 vaccine in two formulations: two open, non-randomised phase 1/2 studies from Russia, The Lancet, 4 September, online: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31866-3/fulltext

McGregor, Grady (2020) 'China's risky emergency-use COVID vaccine program is going global', Fortune, 16 September, online: https://fortune.com/2020/09/16/china-covid-vaccine-emergency-use-approval-uae-global-sinopharm/

Mello, Michelle M.; Ross D. Silverman; and Saad B. Omer (2020) 'Ensuring Uptake of Vaccines against SARS-CoV-2', NEJM, 1 October, online: https://www.nejm.org/doi/full/10.1056/NEJMp2020926

Nature (2020) 'COVID research updates: Tests reveal silent reinfections in hospital workers', 28 September, online: https://www.nature.com/articles/d41586-020-00502-w

NDTV (2020) 'Russia To Sell 100 Million Doses Of Sputnik-V Vaccine To Dr Reddy's Lab', 16 September, online: https://www.ndtv.com/india-news/russia-to-sell-100-million-doses-of-sputnik-v-coronavirus-vaccine-to-indias-dr-reddys-laboratories-report-2296313[2]

Oke, Jason; Daniel Howdon and Carl Heneghan (2020) 'Declining COVID-19 Case Fatality Rates across all ages: analysis of German data', CEBM, 9 September, online: https://www.cebm.net/covid-19/declining-covid-19-case-fatality-rates-across-all-ages-analysis-of-german-data/

Oldstone, Michael (1998) Viruses, Plagues and History, Oxford University Press, New York

2. https://www.ndtv.com/india-news/russia-to-sell-100-million-doses-of-sputnik-v-coronavirus-vaccine-to-indias-dr-reddys-laboratories-report-2296313#_853ae90f0351324bd73ea615e6487517__4c761f170e016836ff84498202b99827__853ae90f0351324bd73ea615e6487517_text_43ec3e5dee6e706af7766fffea512721_Russia_0bcef9c45bd8a48eda1b26eb0c61c869_27s_0bcef9c45bd8a48eda1b26eb0c61c869_20sovereign_0bcef9c45bd8a48eda1b26eb0c61c869_20wealth_0bcef9c45bd8a48eda1b26eb0c61c869_20fund_0bcef9c45bd8a48eda1b26eb0c61c869_20has_c0cb5f0fcf239ab3d9c1fcd31fff1efc_to_0bcef9c45bd8a48eda1b26eb0c61c869_20distribute_0bcef9c45bd8a48eda1b26eb0c61c869_20its_0bcef9c45bd8a48eda1b26eb0c61c869_20shot_0bcef9c45bd8a48eda1b26eb0c61c869_20abroad

Oxfam (2020) 'Small group of rich nations have bought up more than half the future supply of leading COVID-19 vaccine contenders', 17 September, online: https://www.oxfam.org/en/press-releases/small-group-rich-nations-have-bought-more-half-future-supply-leading-covid-19

Pike, Lili (2020) 'China has quietly vaccinated more than 100,000 people for Covid-19 before completing safety trials', VOX, 11 September, online: https://www.vox.com/2020/9/11/21431416/coronavirus-vaccine-china-sinopharm-sinovac-emergency-authorization

Presidencia Cuba (2020) 'Mesa Redonda - El candidato vacunal cubano "Soberana 01" - 20/08/2020', YouTube, 20 August, online: https://www.youtube.com/watch?v=O0l8Ofvo6aw

Ralph, Elizabeth (2020) 'What Happens If China Gets the Covid-19 Vaccine First?', Politico, 31 August, online: https://www.politico.com/news/magazine/2020/08/31/china-covid-19-vaccine-first-401636

Science Museum (2019) 'Smallpox and the story of vaccination', 25 April, online: https://www.sciencemuseum.org.uk/objects-and-stories/medicine/smallpox-and-story-vaccination

SPGlobal (2020) 'Sinopharm COVID-19 shot cleared for UAE health staff; India-Russia vaccine deal', 16 September, online: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/sinopharm-covid-19-shot-cleared-for-uae-health-staff-india-russia-vaccine-deal-60361282

Sputnik Vaccine (2020) 'About vaccine', 13 September, online: https://sputnikvaccine.com/about-vaccine/

Stephens, David S. and M. Juliana McElrath (2020) 'COVID-19 and the Path to Immunity', JAMA Network, 11 September, online: https://jamanetwork.com/journals/jama/fullarticle/2770758

Szalkowicz, Gerardo (2020) 'Made in Cuba: the Most Advanced Coronavirus Vaccine in Latin America', Resumen LatinoAmericano and the Third World, 5 September, online: https://www.resumen-english.org/2020/09/made-in-cuba-the-most-advanced-coronavirus-vaccine-in-latin-america/[3]

TASS (2020) 'First batch of Sputnik V vaccine has been shipped to Russian regions - Health Ministry', 12 September, online: https://tass.com/russia/1200043

3. https://www.resumen-english.org/2020/09/made-in-cuba-the-most-advanced-coronavirus-vaccine-in-latin-america/?fbclid=IwAR01Tvna-IUl6NVzh_9U2d2Ves7460cFgy7xD1pr0D7ifJaYoP-EZDrP_jA

Van Beusekom, Mary (2020) 'Falling COVID-19 viral loads may explain lower rates of ICU use, deaths', CIDRAP, 24 September, online: https://www.cidrap.umn.edu/news-perspective/2020/09/falling-covid-19-viral-loads-may-explain-lower-rates-icu-use-deaths

Van Dorp, Lucy (2020) 'Coronavirus mutations: what we've learned so far', The Conversation, 22 September, online: https://theconversation.com/coronavirus-mutations-what-weve-learned-so-far-145864

Wheaton, Sarah (2020) 'Chinese vaccine would be 'global public good,' Xi says', Politico, 18 May, online: https://www.politico.com/news/2020/05/18/chinese-vaccine-would-be-global-public-good-xi-says-265039

WHO (2020a) 'Draft landscape of COVID-19 candidate vaccines' 20 April, online: https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus-landscape-ncov.pdf

WHO (2020b) 'Draft landscape of COVID-19 candidate vaccines' 17 September, online: https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines