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RESEARCH REPORTS

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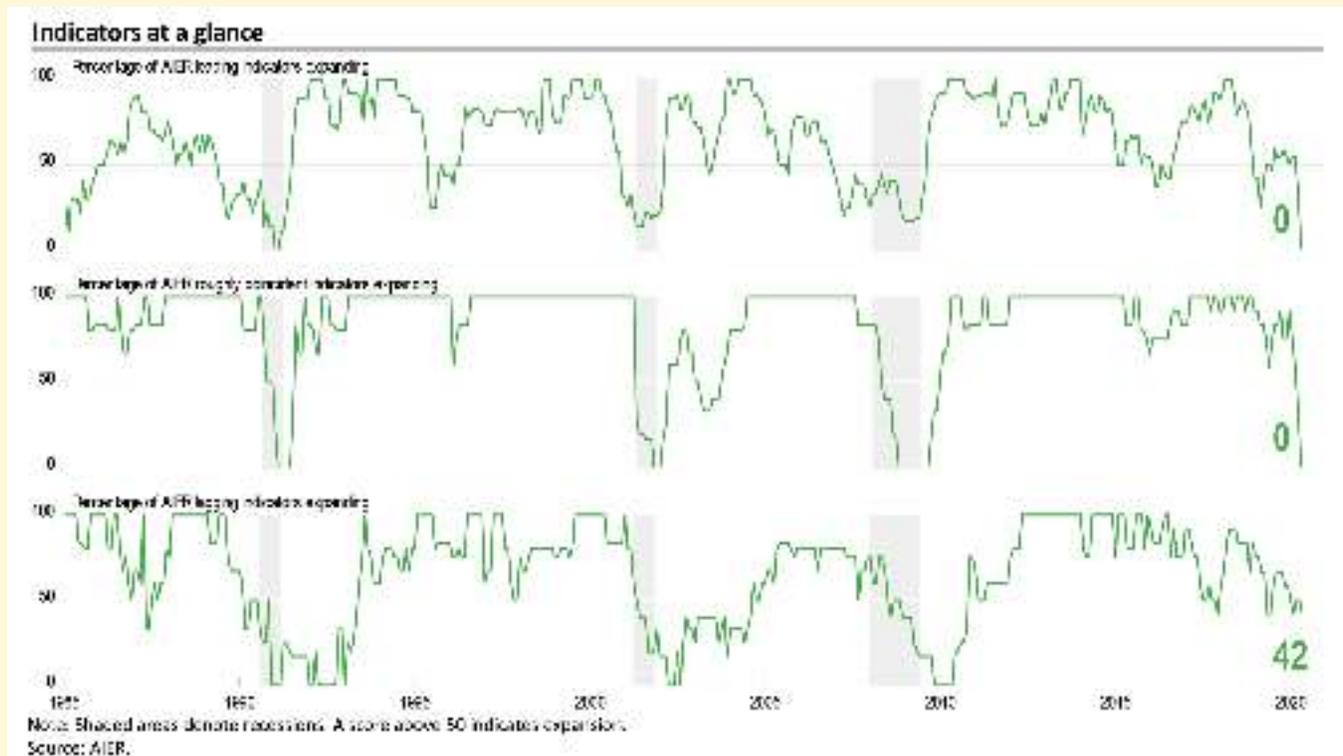
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BUSINESS
CONDITIONS
MONTHLY

Robert Hughes

SENIOR RESEARCH FELLOW

Hitting Bottom: AIER's Leading and Roughly Coincident Indicators Indexes Drop to 0.



The speed, breadth, and magnitudes of the declines in nearly every aspect of economic conditions are evident in the latest update of AIER's Business Cycle Conditions indexes. The Leading Indicators index dropped to a reading of 0 in May, the first time since 1991 that all 12 leading indicators are showing negative trends. The Roughly Coincident Indicators index also fell to 0 while the Lagging Indicators index pulled back to 42, matching the lowest result since 2010 (see chart). The latest results leave little doubt that the U.S. economy has entered a recession, ending the longest U.S. economic expansion on record.

Despite the widespread devastation to the economy, there are reasons to be optimistic. While many economic statistics are just now reflecting the severity of the declines in activity and economic conditions, there are a few more-timely statistics that are showing signs of bottoming and modest rebounds. Those early signs are supported and encouraged by the easing of restrictions placed on people and businesses around the country.

While significant damage has been done to many industries, some parts of the economy, some measures of economic activity, may rebound relatively quickly as restrictions are lifted. The focus going forward will be to monitor progress on recovery, identifying areas that can and do rebound versus those that may be burdened with longer-lasting damage or facing new or accelerating pressures for structural change.

AIER Leading Indicators index falls to zero in May

The AIER Leading Indicators index fell to 0 in May, down from 33 in the prior month. May was the

first month since February 1991 that all 12 leading indicators were in unfavorable trends. Last month, 3 of the 12 leading indicators maintained a positive trend while 7 were unfavorable and 2 were in neutral trends.

Among the five leading indicators that changed trends in May, the three that went from favorable trends to unfavorable trends were the real manufacturing and trade sales to inventories ratio, housing permits, and real stock prices. The two leading indicators that went from neutral trends to unfavorable trends were the average workweek in manufacturing and real new orders for consumer goods. Initial claims for unemployment insurance, real retail sales and food services, the University of Michigan index of consumer expectations, real new orders for core capital goods (nondefense capital goods excluding aircraft), the 10-year – one-year Treasury spread, and debit balances in margin accounts all maintained unfavorable trends in May.

The Roughly Coincident Indicators index also fell to 0 from 33 in April. Two indicators changed direction in May. Nonfarm payrolls and real manufacturing and trade sales weakened from favorable trends to unfavorable trends. Overall, all six Roughly Coincident Indicators were trending lower in May.

Overall, the extremely weak results for both the Leading Indicators index and the Roughly Coincident Indicators index suggest the economy is in recession. However, with government mandates for shuttering of nonessential businesses and sheltering-in-place for workers and consumers already in the process of being eased, there is a rising likelihood that the rapid and severe contraction in economic activity may have hit bottom.

AIER's Lagging Indicators index retreated to a 42 in May from 50 in April. One indicator, the 12-month change in the core consumer price index, changed trend in May, weakening from a neutral trend to a negative trend. Overall, two indicators were trending higher, three had unfavorable trends

and one was neutral.

Careful monitoring of the progression of the lifting of restrictive policies (normalization), the extent of the destructive impacts across the economy and financial system, and emergence of early signs of rebound will be the key elements of useful economic analysis. Ultimately, it will be progress in understanding, treating, and preventing COVID-19 as well as policy responses to any future outbreaks that could have a significant impact on long-term prosperity.

Financial and Commodity Markets

U.S. equity markets suffered deep setbacks at the outset of the COVID-19 pandemic with the Standard and Poor's 500 index falling from a peak of 3,386 on February 19 to a low of 2,237 on March 23. That 34 percent drop, covering just 23 trading days, is one of the sharpest declines in history.

Since the low in March, the index has recovered to 3,123 as of the close on June 3, a gain of 39 percent, leaving the index just 9 percent below the all-time peak. While it may seem like a disconnect to have the U.S. equity market nearing an all-time high as many economic statistics suggest the economy may be in the midst of the worst downturn since the Great Depression, equity indexes presumably reflect investors' expectations about the future, not necessarily current conditions or the recent past. It should also be remembered that equity indexes are not perfect predictors of the future performance of the economy and are subject to emotional and behavioral biases. Nevertheless, the strong rebound by the S&P 500 is a positive sign about the potential for economic recovery.

The VIX index, a measure of equity market volatility (often referred to as the Fear Gauge), was just under 25 on June 4, down sharply from a record high 82.69 on March 16. Though the current level is still somewhat elevated (the VIX has generally

been in the 10-20 range over the last 8 years), the sharp pullback from the peak in March has a positive connotation.

While equities have recovered, Treasury yields remain near all-time lows. The yield on the benchmark 10-year Treasury note was about 0.8 percent on Thursday, June 4, just slightly above the low of 0.5 percent in early March. The extremely low yields largely represent a combination of aggressive Fed policy (0 percent fed funds target and renewed bond-buying programs), expectations of low rates of price increase, and some degree of risk aversion.

Corporate bond yields have remained relatively stable with the Moody's BAA composite yield holding at just below 4 percent, about where it was for most of the second half of 2019. The relatively stable performance suggests corporate bond investors are not anticipating a wave of defaults among investment-grade issues.

Commodities markets have experienced a wide range of performances over recent months. Commodities tend to be more global than equities or bonds issued by any one issuer. Crude oil experienced an extremely unusual period in mid-April as spot prices and near-term futures went negative. A combination of excess supply and geopolitical tensions sent prices deeply into negative territory as the front-month contract expired. Prices have since rebounded to about \$37 per barrel for West Texas Intermediate. The rebound reflects an easing of geopolitical tensions, especially between Russia and Saudi Arabia, as well as expectations for improving global demand as prospects for global economic growth recover.

Gold prices are heading back towards an all-time high, trading just over \$1,712 an ounce, about 10 percent below the peak around \$1,900 in September 2011. Gold often acts as a safe haven as well as a hedge against loss of purchasing power.

Banking

Financial intermediation may be at risk during crises. The health and stability of the financial institutions providing banking services as well as the willingness of those institutions to provide funding to consumers and businesses can be major factors in the depth and duration of economic downturns.

The most recent data on commercial bank lending shows total loans and leases to borrowers rose rapidly in recent weeks, posting a 12-month growth rate of 11.1 percent in April versus growth generally in the 4 – 6 percent range for most of the past 3 years. However, the increase is almost entirely from commercial and industrial loans, likely reflecting the government loans programs. Commercial real estate and residential real estate both have modest increases over the past two months while consumer loan growth has slowed sharply, posting a 12-month gain of just 1.5 percent.

Labor

The labor market remains among the most crucial components of a potential economic rebound. The national Employment Situation report for May showed U.S. nonfarm payrolls staged a modest rebound in May, adding 2.5 million jobs, with gains spread across most private-sector industries. Like the April report, there were a number of technical issues with the May report including an unusually low response rate from the household survey portion and improper coding of some classifications.

Overall, private payrolls added 3.1 million jobs in May with private services adding 2.4 million and goods-producing industries rising by 669,000. For private service-producing industries, the gains were led by a 1.2 million increase in leisure and hospitality followed by health care and social-assistance industries with a 391,000 increase and retail which added 368,000. Within the 669,000 gain in good-producing industries, construction

added 464,000 jobs, durable-goods manufacturing increased by 119,000, and nondurable-goods manufacturing rose by 106,000. Mining and logging industries lost 20,000 jobs.

The unemployment rate eased down to 13.3 percent while the participation rate ticked up to 60.8 percent. Despite the improvement, the 13.3 percent rate is still higher than the two next highest cycle peaks, the 10.7 percent peak in November 1982 and the 10.0 percent peak in 2009. Though data collection was much less reliable, the unemployment rate following the Great Depression was estimated to have peaked at about 25 percent in 1933. The Bureau of Labor Statistics also noted that the technical issues with this report likely underestimated the unemployment rate by about 3 percentage points in May, meaning the actual rate was closer to 16 percent versus about 20 percent in April (if adjustments were made). The officially reported underemployed and unemployed rate, referred to as the U-6 rate, fell from 22.8 percent in April to 21.2 in May.

Initial claims for unemployment insurance totaled 1.88 million for the week ending May 30, marking the eleventh consecutive week of massive layoffs. However, claims have slowed for the ninth straight week after registering 6.87 million for the week ending March 28.

The 11-week total of 42.65 million initial claims through May 30 is almost 5 times the total 8.7 million job losses that occurred over 25 months versus during the Great Recession and nearly triple the 15.4 million peak number of unemployed people for the Great Recession of 2008-09, as measured in the household survey portion of the monthly Employment Situation report.

Consumer Spending

For the second month in a row, retail sales and food-services spending posted a record drop,

plunging 16.4 percent in April following a revised 8.3 percent drop in March. Excluding the volatile motor vehicle and gas categories, core retail sales and food services were down 16.2 percent in April after a revised fall of 2.6 percent in March. Over the past year, total retail sales and food services were down 21.6 percent in April, the worst performance on record since data on retail sales began in 1992, while core retail sales and food services have fallen 16.0 percent, also a record drop.

Declines were broad-based across industries with the one exception being nonstore retailers, primarily online shopping. Nonstore retail sales rose 8.4 percent following a 4.9 percent rise in March. Over the past year, nonstore retail sales are up 21.6 percent.

There were declines in twelve retail-spending categories, with eleven posting double-digit declines. Declines were led by a 78.8 percent drop for clothing and accessory stores, followed by a 60.6 percent fall for electronics and appliance stores, a 58.7 percent fall in furniture and home furnishings, a 38.0 percent drop in sporting-goods, hobby, musical-instrument, and bookstores, a 29.5 percent decline for food services, a 28.8 percent decline for gas station sales, a 24.7 percent decrease for miscellaneous store sales, a 20.8 percent fall for general merchandise, a decrease of 15.2 percent for health and personal care store sales, a drop of 13.1 percent for food and beverage stores, a 12.4 percent decline for motor vehicle and motor vehicle–parts dealers, and a 3.5 percent pullback for building-material, garden-equipment, and garden-supplies dealers.

Sales of light vehicles totaled 12.2 million at an annual rate in May, partially rebounding from the 8.7 million pace in April (reflected in the retail sales spending above). The pace of sales in April was the lowest on record since this data series began in 1976 and follows a run of 72 months in the 16 to 18 million range from March 2014 through February 2020.

For the month of May, light-truck sales totaled 9.6 million at an annual rate, a sharp increase from the 6.7 million rate in April. Car sales had a more modest gain, rising to a 2.7 annual rate versus 2.0 in April. On a percentage basis, light trucks posted a 43 percent gain while cars had a 35 percent rise.

Manufacturing

The Institute for Supply Management's Manufacturing Purchasing Managers' Index improved slightly, registering a 43.1 percent reading in May, up from 41.5 percent in April. The May result is the third month in a row below the neutral 50 threshold but the first improvement following three consecutive declines and 11 declines in the last 14 months. Overall, the ISM report notes, "Three months into the manufacturing disruption caused by the coronavirus (COVID-19) pandemic, comments from the panel were cautious (two cautious comments for every one optimistic comment) regarding the near-term outlook. As was the case in April, the PMI indicates a level of manufacturing-sector contraction not seen since April 2009; however, the trajectory improved...May appears to be a transition month, as many panelists and their suppliers returned to work late in the month. However, demand remains uncertain, likely impacting inventories, customer inventories, employment, imports and backlog of orders."

Many of the key components of the Purchasing Managers' Index remained near levels not seen since the lows of the Great Recession in 2008-09. The New Orders Index came in at 31.8 percent, up from 27.1 percent in April. The results suggest production as measured by the Federal Reserve's industrial production for manufacturing index may show steep declines in the coming months. The New Export Orders Index came in at 39.5 percent in May, up 4.2 percentage points from a 35.3 percent result in April.

The Industrial production report from the Federal

Reserve shows output sank 11.2 percent in April, following a 4.5 percent drop in March. The April fall is the fourth drop in five months and the largest monthly decline on record. Over the past year, industrial production is down 15.0 percent and is at the lowest level since March 2010. Total capacity utilization decreased 8.3 percentage points to 64.9 percent, the lowest on record since 1950.

Manufacturing output, which accounts for about 75 percent of total industrial production, fell 13.7 percent after sinking 5.5 in March. Manufacturing output has been flat or down for four consecutive months, resulting in an 18.0 percent drop over the past year. Manufacturing utilization fell 9.7 percentage points to 61.1, also the lowest on record since 1950. Manufacturing-sector weakness was widespread with every category showing a decline.

Mining output posted a 6.1 percent decline for the month while utilities output dropped 0.9 percent in April. Over the past year, mining output is down 7.5 percent while utilities output is down 3.8 percent.

Measured by market segment, consumer-goods production was down 11.7 percent in April, with consumer durables off 36.0 percent and consumer nondurables down 5.5 percent. Business-equipment production fell 17.3 percent in April while construction supplies decreased 12.6 percent for the month. Materials production (about 46 percent of output) decreased 9.9 percent for the month and is down 12.8 percent from a year ago.

Nonmanufacturing

Like its manufacturing-sector counterpart, the Institute for Supply Management's nonmanufacturing index showed improvement in May, rising to a reading of 45.4 from 41.8 in the prior month. The May result is the second consecutive month below the neutral 50 threshold but is also the first gain following two sharp declines in March and April. The results do suggest contraction for the services

sector but at a slowing pace. They are consistent with other signs of an emerging modest rebound, coming amid efforts to ease government-imposed restrictions on people and businesses implemented to slow the spread of COVID-19.

Among the key components of the nonmanufacturing index, the business-activity index (comparable to the production index in the ISM manufacturing report) was 41.0 in May, up from 26.0 in April (the lowest reading since the survey began in 1997. For May, 13 industries in the nonmanufacturing survey reported contraction versus 17 in April.

The nonmanufacturing new-orders index rose to 41.9 from 32.9 in April. Just one industry reported growth in new orders, Agriculture, Forestry, Fishing & Hunting, while 14 reported contraction (versus 16 in April). The new-export-orders index, a separate index that measures only orders for export, was 41.5 in May, versus 36.3 in April (the lowest since November 2008.) Five industries reported growth in export orders versus three in April. Eleven industries reported declines in new-export orders compared to 14 reporting declines in April.

Housing

Housing construction activity sank in April as starts fell by 30.2 percent while new permits dropped 20.8 percent. Total housing starts dropped to 891,000 at an annual rate from a 1.276 million pace in March, the slowest pace since February 2015. The dominant single-family segment, which accounts for about three-fourths of new home construction, decreased 25.4 percent for the month to a rate of 650,000 units, also the slowest since 2015. Starts of multifamily structures with five or more units slumped 40.3 percent to 234,000, the worst since June 2013. From a year ago, total starts are off 29.7 percent with single-family starts down 24.8 percent and multi-family starts posting a 38.6 percent decline.

Total and single-family starts fell across all four

regions in the report. Total starts fell 43.6 percent in the Northeast, 43.4 percent in the West, 26.0 percent in the South, and 14.9 percent in the West. For the single-family segment, starts were down 66.0 percent in the Northeast, 41.6 percent in the West, 15.0 percent in the South and 13.3 percent in the Midwest.

For housing permits, total permits fell 20.8 percent to 1.074 million from 1.356 million in March. Total permits are 19.2 percent below the April 2019 level. Single-family permits were down 24.3 percent to 669,000 in April while permits for two- to four-family units were down 30.4 percent to 32,000 and permits for five or more units were down 12.4 percent to 373,000. Combined, multifamily permits were 405,000, the slowest pace since March 2016. Permits for single-family structures are down 16.4 percent from a year ago while permits for two- to four-family structures are down 33.3 percent and permits for structures with five or more units are down 22.6 percent over the past year.

Mortgage rates have been falling since late 2018. The market reaction to the COVID-19 outbreak as well as Fed rate cuts have driven rates even lower in recent weeks. The rate on the 30-year fixed rate conventional mortgage is back below 3.5 percent, near all-time lows.

The decline in mortgage rates has helped give a small boost to the National Association of Home Builders Housing Market Index, rising 7 points to 37 in May. The 7-point gain follows a plunge of 42 points, from 72 in March to 30 in April. Lower mortgage rates and an easing of shelter-in-place restrictions should provide support for housing activity. There has been some speculation and anecdotal stories of rising demand for the lower density housing of suburbs and rural areas given the more devastating impact of the COVID-19 outbreak on high-density urban areas. Whether this turns out to be a sustained trend or a temporary

reaction is likely dependent on whether an effective vaccine is developed, new, permanent regulations are imposed on urban dwellers and businesses, and whether remote work becomes a widely-available permanent option.

CAPITAL MARKET PERFORMANCE

(Percent change)

	May	Latest 3M	Latest 12M	Calendar Year			Annualized		
				2019	2018	2017	3-year	5-year	10-year
Equity Markets									
S&P 1500	4.7	2.4	9.2	28.3	-6.8	18.8	7.4	7.2	10.7
S&P 500 - total return	4.8	3.6	12.8	31.5	-4.4	21.8	10.2	9.9	13.2
S&P 500 - price only	4.5	3.1	10.6	28.9	-6.2	19.4	8.1	7.6	10.8
S&P 400	7.1	-2.8	-2.6	24.1	-12.5	14.5	0.8	3.0	8.8
Russell 2000	6.4	-5.6	-4.9	23.7	-12.2	13.1	0.6	2.3	7.7
Dow Jones Global Large-Cap Index	3.7	-0.1	4.7	23.8	-10.4	42.9	3.8	3.6	6.3
Dow Jones Global Large-Cap ex-U.S. Index	2.9	-5.4	-5.0	18.2	-15.7	41.0	-2.3	-1.5	1.8
STOXX Europe 600 Index	3.0	-6.7	-5.1	23.2	-13.2	7.7	-3.5	-2.6	3.6
Bond Markets									
iShares 20-plus Year Treasury Bond ETF	-1.9	5.3	24.1	11.5	-4.2	6.5	9.6	5.9	5.4
iShares AAA - A Corporate Bond Fund	1.1	1.3	8.5	9.1	-5.2	2.9	3.0	2.1	NA
Commodity Markets									
Gold	1.6	9.1	33.2	18.7	-1.7	12.6	11.0	7.8	3.7
Silver	14.7	4.0	23.5	16.7	-8.3	3.8	0.5	1.1	-0.5
CRB all commodities	3.9	-7.1	-11.7	-1.9	-5.4	2.2	-5.4	-2.9	-1.5

Sources: Barrons, Commodity Research Bureau, Dow Jones, Frank Russell, iShares, Standard & Poor's, STOXX Europe 600, Refinitiv.

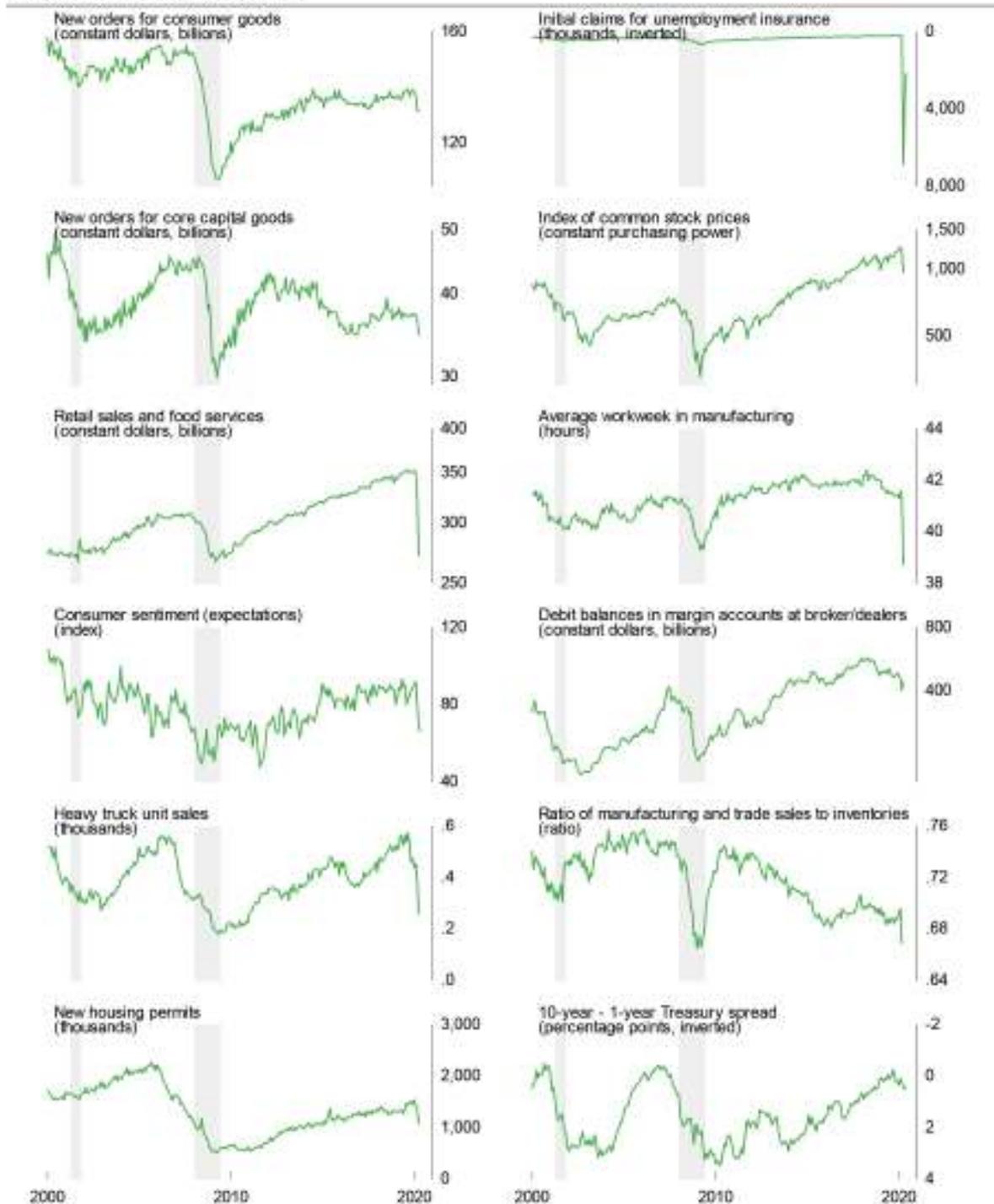
CONSUMER FINANCE RATES

(Percent)

	May	Latest 3M	Latest 12M	Average for Year			Average over Period		
				2019	2018	2017	3-year	5-year	10-year
30-yr. fixed mortgage	3.5	3.4	3.7	3.9	3.7	3.9	4.1	4.0	4.0
15-yr. fixed mortgage	2.9	2.9	3.1	3.4	2.9	3.1	3.5	3.3	3.3
5-yr. adjustable mortgage	3.2	3.2	3.4	3.6	2.9	2.9	3.5	3.3	3.2
48-month new car loan	5.3	5.3	5.3	5.4	4.3	4.2	5.1	4.7	4.9

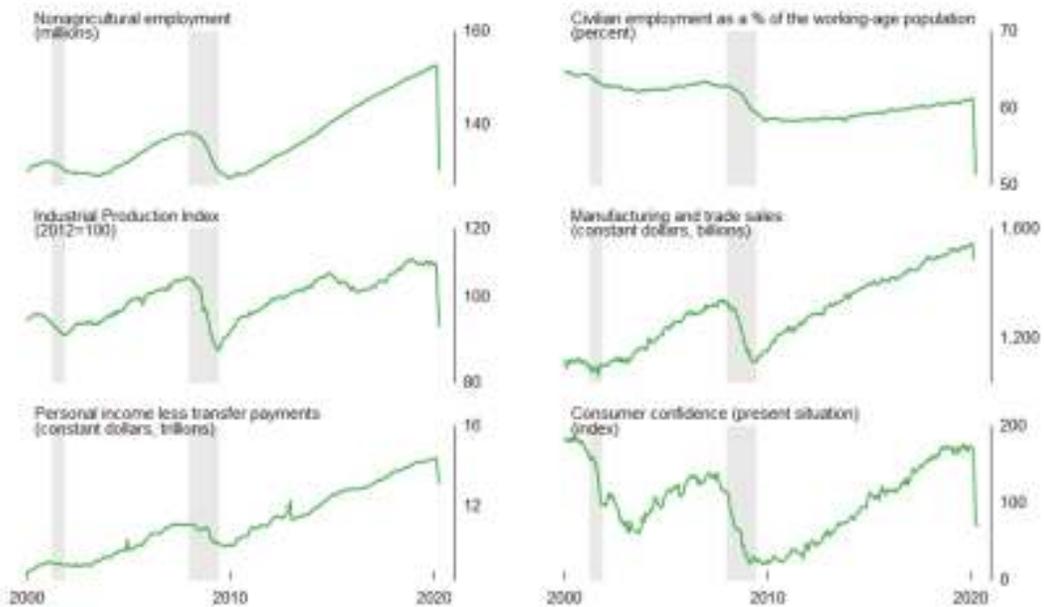
Sources: Bankrate, Federal Reserve.

LEADING INDICATORS (2000-2020)



Note: Shaded areas denote recessions.
 Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

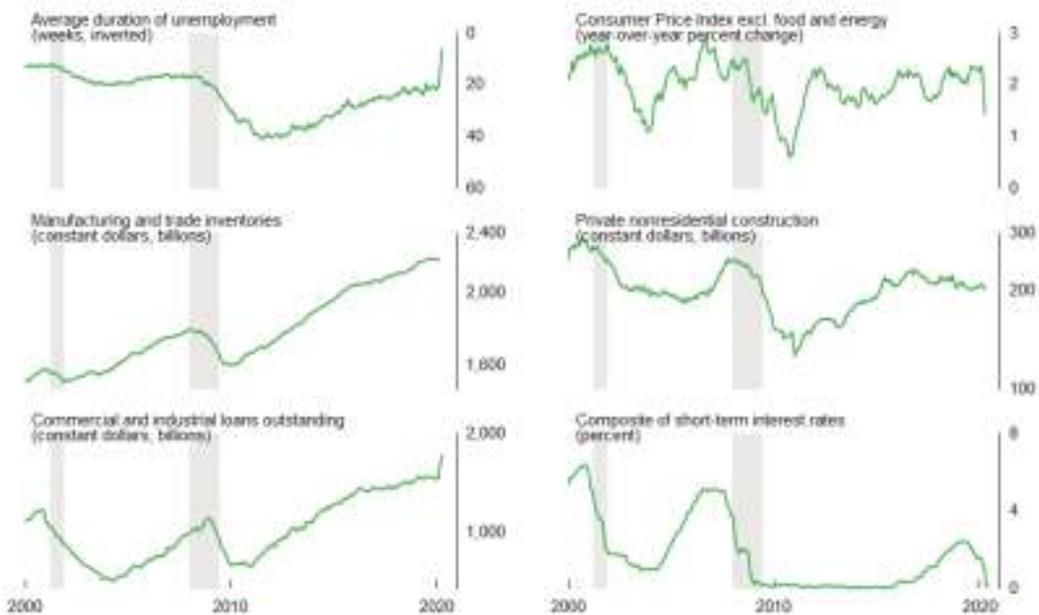
ROUGHLY COINCIDENT INDICATORS (2000-2020)



Note: Shaded areas denote recessions.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

LAGGING INDICATORS (2000-2020)



Note: Shaded areas denote recessions.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

Woodstock Occurred in the Middle of a Pandemic

JEFFREY A. TUCKER

Editorial Director

In my lifetime, there was another deadly flu epidemic in the United States. The flu spread from Hong Kong to the United States, arriving December 1968 and peaking a year later. It ultimately killed 100,000 people in the U.S., mostly over the age of 65, and one million worldwide.

Lifespan in the US in those days was 70 whereas it is 78 today. Population was 200 million as compared with 328 million today. It was also a healthier population with low obesity. If it would be possible to extrapolate the death data based on population and demographics, we might be looking at a quarter million deaths today from this virus. So in terms of lethality, it was as deadly and scary as COVID-19 if not more so, though we shall have to wait to see.

“In 1968/69,” says Nathaniel L. Moir in *National Interest*, “the H3N2 pandemic killed more individuals in the U.S. than the combined total number of American fatalities during both the Vietnam and Korean Wars.”

And this happened in the lifetimes of every American over 52 years of age.

I was 5 years old and have no memory of this at all. My mother vaguely remembers being careful and washing surfaces, and encouraging her mom and dad to be careful. Otherwise, it’s mostly forgotten today. Why is that?

Nothing was closed by force. Schools mostly stayed open. Businesses did too. You could go to the movies. You could go to bars and restaurants. John Fund has a friend who reports having attended a Grateful Dead concert. In fact, people have no memory or awareness that the famous Woodstock concert of August 1969 – planned in January during

the worse period of death – actually occurred during a deadly American flu pandemic that only peaked globally six months later. There was no thought given to the virus which, like ours today, was dangerous mainly for a non-concert-going demographic.

[*Note: an earlier version said no schools closed. But a reader pointed me to an academic article that says “23 [states] faced school and college closures” but implies that this was due to absenteeism. This further underscores how aware people were at the time of the disease; the stay-open practice was a deliberate choice.]

Stock markets didn’t crash because of the flu. Congress passed no legislation. The Federal Reserve did nothing. Not a single governor acted to enforce social distancing, curve flattening (even though hundreds of thousands of people were hospitalized), or banning of crowds. No mothers were arrested for taking their kids to other homes. No surfers were arrested. No daycares were shut even though there were more infant deaths with this virus than the one we are experiencing now. There were no suicides, no unemployment, no drug overdoses attributable to flu.

Media covered the pandemic but it never became a big issue.

As Bojan Pancevski in the *Wall Street Journal* points out, “In 1968-70, news outlets devoted cursory attention to the virus while training their lenses on other events such as the moon landing and the Vietnam War, and the cultural upheaval of the civil-rights movements, student protests and the sexual revolution.”

The only actions governments took was to collect data, watch and wait, encourage testing and

vaccines, and so on. The medical community took the primary responsibility for disease mitigation, as one might expect. It was widely assumed that diseases require medical not political responses.



It's not as if we had governments unwilling to intervene in other matters. We had the Vietnam War, social welfare, public housing, urban renewal, and the rise of Medicare and Medicaid. We had a president swearing to cure all poverty, illiteracy, and disease. Government was as intrusive as it had ever been in history. But for some reason, there was no thought given to shutdowns.

Which raises the question: why was this different? We will be trying to figure this one out for decades.

Was the difference that we have mass media invading our lives with endless notifications blowing up in our pockets? Was there some change in philosophy such that we now think politics is responsible for all existing aspects of life? Was there a political element here in that the media blew this wildly out of proportion as revenge against Trump and his deplorables? Or did our excessive adoration of predictive modelling get out of control to the

point that we let a physicist with ridiculous models frighten the world's governments into violating the human rights of billions of people?

Maybe all of these were factors. Or maybe there is something darker and nefarious at work, as the conspiracy theorists would have it.

Regardless, they all have some explaining to do.

By way of personal recollection, my own mother and father were part of a generation that believed they had developed sophisticated views of viruses. They understood that less vulnerable people getting them not only strengthened immune systems but contributed to disease mitigation by reaching "herd immunity." They had a whole protocol to make a child feel better about being sick. I got a "sick toy," unlimited ice cream, Vicks rub on my chest, a humidifier in my room, and so on.

They would constantly congratulate me on building immunity. They did their very best to be happy about my viruses, while doing their best to get me through them.

If we used government lockdowns then like we use them now, Woodstock (which changed music forever and still resonates today) would never have occurred. How much prosperity, culture, tech, etc. are losing in this calamity?

What happened between then and now? Was there some kind of lost knowledge, as happened with scurvy, when we once had sophistication and then the knowledge was lost and had to be re-found? For COVID-19, we reverted to medieval-style understandings and policies, even in the 21st century. It's all very strange.

The contrast between 1968 and 2020 couldn't be more striking. They were smart. We are idiots. Or at least our governments are.

May 1, 2020

Focus on the Covid-19 Death Rate

GREGORY VAN KIPNIS

Chairman of the Board

In the saga of the virus and the lockdown, the wisdom of the crowds, that is the wisdom of each of us, was thwarted by bad data, perhaps intentionally bad. On the other hand, the ersatz wisdom of the collective bureaucracy in federal, state and local health agencies was based on crafted data. In the end data didn't matter, as the bureaucracies were more concerned with their natural territorial imperative, which is to rule and control.

The most frightening aspect of the coronavirus-19 (COVID-19) epidemic in the US is that it brought about exaggeratedly heightened fear of death. That fear, once magnified to proportions which become palpable to the individual, became the basis for dreadful economic and medical policies from governments and crushed the natural optimism of the public.

In early days, we were caught in a squeeze of conflicting information. Was COVID-19 a bioweapon gone rogue and destined to indiscriminately wipe out young and old? Or, was it another bad flu or perhaps an extremely bad flu? After all, initial information showed the victims were concentrated in a nursing home in Kirkland, Washington.

No cases were reported amongst the homeless on West Coast streets. No deaths among children were reported. And in the closed world of cruise liners and later a military ship, there were lots of early cases and some deaths. As time passed, there was little more bad news. We should have been suspicious of the data.

We were mainly focused on the case fatality rate (CFR: deaths as a percent of diagnosed cases) which were frighteningly high. We worried about the infection fatality rate (IFR), but there was too little data and testing available to have any idea how many people were or ultimately would be infected.

But those concepts – CFR and IFR – are not the most important strategic measures of the severity of the disease. It is the death rate, properly defined and understood, that should matter for long-term policy makers, our erstwhile more level-headed thinkers, in determining policy.

In the past few weeks, we have obtained more useful data in the US. There were secrets lurking in the data, waiting to be uncovered, that could help ascertain what was really happening. The purpose of this report is to do just that – to ascertain what the data are telling us. It also gives us the basis for judging the appropriateness of past and present policies.

So, let's begin with a simple question: what is the relevant death rate due to COVID-19? There are many definitions in the epidemiological world such as the CFR and IFR mentioned above. My focus is on the overall death rate – actual and projected. Until we have more widespread testing for COVID-19, we cannot know with any accuracy how many people were infected by the virus. We cannot know what proportion of the population has some sort of natural or acquired immunity.

We do not even have accurate data on how many people have died from COVID-19 alone versus COVID-19 plus some other complications that were already present such as diabetes, morbid obesity and prior respiratory complications, any one of which might equally have been the proximate cause of death. There is ample evidence, especially in the Northeast region that there has been “over classification” (a euphemism for data bias). We do not have the demographic details for those infected and those who died. But we do have death data, and it is more accurate than the number of cases and the

number of infections.

To understand how our minds have been mis-directed in understanding the real risks associated with COVID-19, let's begin with a brain teaser. It will awaken our numerate minds in preparation for understanding the data deception and misunderstandings that prevail.

When is 1.7% greater than 98.3%?

In the bizarro world of COVID-19 reporting that is the case – 1.7% is greater than 98.3%. Specifically, deaths among a narrow 1.7% group of the population are greater than deaths from the other 98.3%. Numerically a death may be a death, but from a policy point of view, to be blunt about it, not all deaths are the same.

Fact #1: 1.7% of the population in the US resides in long-term medical care facilities (LTMCFs) and total 5.7 million.

Fact #2: The residents of LTMCFs accounted for 38,800 or 53% of all COVID-19 deaths (based on recent data). The rest of the country, the 98.3%, have experienced approximately 34,600 deaths, or 47% of the nation's total COVID-19 deaths.

The Death Rate at LTMCFs Is Stunning

That means the death rate, deaths expressed as a percent of those living in medical care institutions, is 0.682%, more than 50 times the death rate of the rest of the population at 0.012%. The death rate for the overall populations is 0.022%.

That should leave you speechless.

We have a COVID-19 problem, but we have an even greater and more serious LTMCF problem that is clouding our understanding of the contagion and therefore what our best public health policies should be. Shutting down the economy, the world wherein the 98.3% live and prosper was too draconian. The feared overloading of the hospital system with emergency patients, which was short-lived, was

disproportionately coming from the residents of LTMCFs, not the general public.

The data have been there all along, but they were not properly collected, catalogued and analyzed.

Much of the data in this report came from a landmark study by Gregg Girvan and Avik Roy of the Foundation for Research of Equal Opportunity. Their work was based on data collected through May 10th, 2020 for most states. Since their publication, revisions have been incorporated as states have corrected or updated their data since the original report. The calculations given above are imputations from the updated data.

At this point, we do not know what the ultimate count of deaths and the death rate will be, but what we have in hand are statistics that are very indicative and telling of the gross misunderstanding that the public and federal, state and local decision-makers have been working with on which to base their decisions.

Long-term medical care providers to the aged and medically infirm (per the Girvan-Roy study) consist of: Nursing homes and skilled nursing facilities; Assisted living facilities, i.e., residential care communities or personal care homes; Adult day service centers; Home health Agencies; and Hospices.

The first two medical care providers for seniors are referred to as long-term medical care facilities (LTMCF) and are the source of the data. Data for the other three elder care facilities are not collected or were not available for the Girvan-Roy study. In fact, it has been acknowledged that there continues to be underreporting of deaths related to LTMCFs. Some providers are just not reporting. In other cases, the residents die in hospitals and they are not categorized as LTMCF deaths. Nonetheless, the data are sufficient to draw some useful if not stark observations.

What about the Flu and Pneumonia Death Rates in Earlier Years?

To even better understand these death rate figures,

it is useful to put them into the context of what we know about death rates from the flu before the arrival of COVID-19. Is the COVID-19 death rate worse, better or about the same as prior flu seasons? We should expect the rates to be worse because there is no vaccine whereas most people get a vaccine shot for the routine flus that are expected each year.

In 2017 the Centers for Disease Control (CDC) reported that annual deaths from all causes were 2.8 million or 0.866% of the population. The leading causes of death, in order of magnitude, were heart disease, cancer, accidents, respiratory disease, stroke, Alzheimer’s disease, diabetes, flu & pneumonia and suicide.

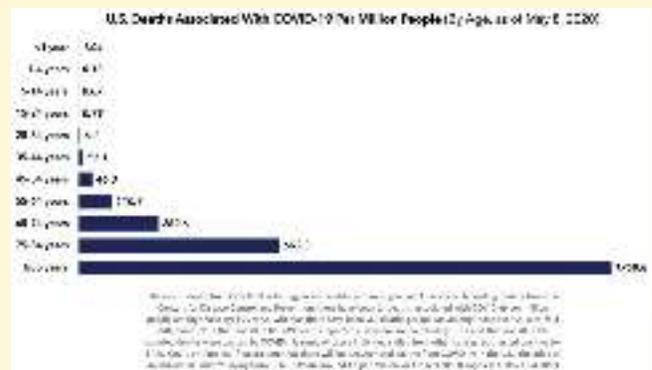
Just looking at the Flu & Pneumonia (FP) cause, in 2017 it accounted for 55,672 deaths or 0.017% for the population as a whole. Death from FP, as you would expect, fell hardest on people over 75 totaling 38,078 deaths. That translates into a FP death rate of 0.180% for those over-75 group, which is a little more than 10 times the death rate for the overall population. For the rest of the population under 75 the death rate was only 0.006%, or 1/30th of those over 75 (0.006% vs 0.180%).

DEATH RATE FOR COVID-19 AND THE FLU FOR SELECTED DEMOGRAPHICS

	2020 COVID-19	201 Flu & Pneumonia
Overall Death Rate	0.022%	0.017%
Over 75 DR	0.161%	0.180%
LTMCFs DR	0.682%	
Non-LTMCFs DR	0.011%	
Under 75 DR	0.010%	0.006%

What this means at this point is that in the aggregate the overall COVID-19 death rate is slightly worse than the flu death rate in a prior year (0.022% vs 0.017%). However, for seniors in LTMCFs, the COVID-19 death rate is 100 times greater than the flu and pneumonia DR was for those under 75 in 2017 (0.682% vs 0.006%) and nearly 4 times greater than those over 75.

In summary the COVID-19 death rate is far more skewed to those older than 75 and those residents in medical care facilities for the aged.



What Does the Future Hold?

Looking ahead we obtained the most recent forecast from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. They are considered by many medical professionals as the most thorough modelers. On May 18, 2020 the IHME released the results of the third run of its new model. They predict that by August 4, 2020 a total of 143,357 Americans will die of COVID-19. That forecast nearly doubles the number of COVID-19 deaths. It is worth noting that each run of the model has produced lower forecasts for future deaths. There are detractors of their modeling procedures, but it is the best we have at the moment.

One interesting medical research report suggests that a significant portion of the population has natural immunity to COVID-19. In the May 14 edition of Cell, published by Elsevier, the researchers found:

T cell responses were detected in 40-60% of unexposed individuals. This may be reflective of some degree of cross-reactive, preexisting immunity to SARSCoV-2 in some, but not all, individuals... suggesting cross-reactive T cell recognition between circulating ‘common cold’ coronaviruses and SARS-CoV-2.

This might be why there are so many reports of asymptomatic cases of COVID-19. That also may mean the IHME forecast will be revised down even more.

However, COVID-19 has brutal consequences for people over 75. That detail cannot be minimized. But what policies would that suggest?

Did We Adopt the Right Policies?

What do these data suggest about the medical and economic policies that have been adopted by the federal, states and local governments?

The carnage of COVID-19 is concentrated in elder care facilities not in the population at large. The policies and procedures, including lockdowns and state-of-the-art personal protection practices for those facilities, should have been more thoroughly thought out based on useful data.

Keep in mind, about 70% of the elder care facilities are for-profit. Yet they are not free-market enterprises; enterprises free to do what they think is best. These for-profit facilities are licensed and regulated by the several Departments of Health of the states. They do what the state tells them to do.

The governors and mayors, and their medical and science advisers, made the decision to pack them in, force them to house and retain infected and returning infected patients. They chose to divert PPE supplies to hospitals, not the elder care facilities. This characterization is based on reports in the press. One certainly hopes there were some communities that

did a better job. There is reason to believe that is the case because some assisted living facilities have reported no deaths.

As COVID-19 deaths mounted, not a word was officially spoken about where they were occurring. Fear was stoked that it was a population-wide epidemic. We should ALL lock down.

What a costly mistake, a mistake that continues to this day. Governors and mayors with fresh data insights into the truth still want to be central planners and determine which businesses can re-open and to what degree, who should still shelter or socially distance. They send out teams to draw circles in the grass defining where groups can camp out and place police monitors in all the parks to warn people to stay within the circles. At this point they are just imaginary prisons, but they are prisons.

Madness, sheer madness.

Though that is an easy and superficial observation to make, what is really unsaid, and not easy to admit, is that large numbers of politicians and bureaucrats have revealed their true nature. Speeches decorated with declarations of “better safe than sorry” and “planning is better than no planning” reveal they are authoritarians by nature; central planners of the worst kind.

In conclusion, the relevant death rate for policy purposes has been obscured. The consequence has been inappropriate policies. They have resulted in a bizarro world of highly restricted commercial functioning and immense economic destruction, alongside no evidence that lives were saved and growing evidence of second-tier loss of life resulting from lockdown.

May 24, 2020

How a Free Society Deals with Pandemics, According to Legendary Epidemiologist and Smallpox Eradicator Donald Henderson

EDWARD PETER STRINGHAM

President

Economists have been writing for hundreds of years on the role of government in solving economic and social problems. A theme has emerged throughout: policy officials are quite often ill informed or have bad incentives compared with what individuals, markets, institutions, and society can achieve on their own. Economists have documented how government intervention leads to various unintended economic consequences and even human rights abuses.

We prefer private governance to public governance. We have applied this logic against socialism, fascism, war, macroeconomic planning, public goods, monetary policy, countercyclical fiscal policy, environmental regulation, and a hundred other issues. We've made a solid case for pure freedom.

And yet here we are living in times when the state is controlling our movements, shuttering businesses, defining who and what is essential, dangerously disrupting supply chains, forcibly closing schools and churches, and restricting travel. A shelter-in-place order is something of a liberal nightmare, the worst-possible use of coercive power against individual rights, and the results have been catastrophic.

It's my view that we have been ill-prepared to deal with this onslaught. We have a very thin record of writings that make the case that freedom, market forces, and private governance are better than government quarantines and closures in dealing with pandemics. So where do we turn for better arguments and a better case?

Part of the problem is that as economists, historians, and political philosophers people are

telling us to stay in our lane and not comment on medical matters. In general that is good advice. But there is a problem. The computer scientists and theoretical physicists who dreamed up this lock down haven't really had serious medical training either and they sure haven't stayed in their lane. They certainly have cared very little for the economic implications of their plans.

Where do we turn for competent commentary on the medical aspects of quarantine and lockdowns? Where is our credentialled and experienced expert who can provide weighty evidence that this is the wrong course?

Let me introduce you to Donald A. Henderson (1928-2016). He was the twentieth-century's most acclaimed disease eradicator. In particular, he is credited with ridding the world of smallpox. He was born in Lakewood, Ohio, son of a nurse and an engineer. He went to Oberlin College for undergraduate and graduated in medicine from the University of Rochester. He trained two more years at the Epidemic Intelligence Service of the Communicable Disease Center, and moved to Geneva to head the World Health Organization's division focussed on smallpox.

I encourage you to read his entire biography posted at Johns Hopkins, where he headed a brilliant epidemiological team.

In 2006, at the order of the Bush administration, some computer science programmers with a small group of public health officials began to resurrect a premodern idea of quarantines, closures, and measured lockdowns. This way of thinking is

not just premodern; it turned the logic of modern medicine on its head. It was based on a theory that we should just run away from viruses, whereas Dr. Henderson's whole life had been devoted to implementing the great discovery of modern virus theory that we need not flee but rather build immunity through science, either natural immunities or via vaccines.

At the age of 78, Dr. Henderson swung into action and composed a masterful response to the new fashion for quarantines and lockdowns. The result was Disease Mitigation Measures in the Control of Pandemic Influenza. Henderson, though listed last, was the primary author along with co-authors Thomas V. Inglesby, epidemiologist Jennifer B. Nuzzo, and physician Tara O'Toole.

Here is the riveting conclusion:

Experience has shown that communities faced with epidemics or other adverse events respond best and with the least anxiety when the **normal social functioning of the community is least disrupted**. Strong political and public health leadership to provide reassurance and to ensure that needed medical care services are provided are critical elements. If either is seen to be less than optimal, **a manageable epidemic could move toward catastrophe**.

Below we provide a full version of the article. It should help us all to better manage epidemics in the future.

May 21, 2020

Disease Mitigation Measures in the Control of Pandemic Influenza

Biosecurity and Bioterrorism:
Biodefense Strategy, Practice, and Science; Volume 4, Number 4, 2006

By Thomas V. Inglesby, Jennifer B. Nuzzo, Tara O'Toole, and D.A. Henderson

ABSTRACT: The threat of an influenza pandemic has alarmed countries around the globe and given rise to an intense interest in disease mitigation measures. This article reviews what is known about the effectiveness and practical feasibility of a range of actions that might be taken in attempts to lessen the number of cases and deaths resulting from an influenza pandemic. The article also discusses potential adverse second and third order effects of mitigation actions that decision makers must take into account. Finally, the article summarizes the authors' judgments of the likely effectiveness and likely adverse consequences of the range of disease mitigation measures and suggests priorities and practical actions to be taken.

The threat of an influenza pandemic, especially one caused by some variant of the highly pathogenic H5N1 avian strains, has alarmed countries around the world. There is universal agreement that the key to influenza prevention is vaccination, and both funds and research are now being expended in pursuit of an effective vaccine. However, producing a satisfactory vaccine will take at least 6 months after a new strain emerges that is demonstrably capable of causing a pandemic. Antiviral drugs offer hope of preventing some cases and possibly diminishing the severity of the disease if they are given within 24–48 hours after onset of symptoms. But supplies of these drugs are limited, the rapid development of virus resistance to the drugs is feared, and they are costly. Accordingly, there has been interest in a range of disease mitigation measures. Possible measures that have been proposed include: isolation of sick people in hospital or at home, use of antiviral medications, hand-washing and respiratory etiquette, large-scale or home quarantine of people believed to have been exposed, travel restrictions, prohibition of social gatherings, school closures, maintaining personal

distance, and the use of masks. Thus, we must ask whether any or all of the proposed measures are epidemiologically sound, logistically feasible, and politically viable. It is also critically important to consider possible secondary social and economic impacts of various mitigation measures.

Over the years, various combinations of these measures have been used under epidemic and pandemic circumstances in attempts to control the spread of influenza. However, there are few studies that shed light on the relative effectiveness of these measures. A historical review of communities in the U.S. during the 1918 influenza pandemic identified only two that escaped serious mortality and morbidity. Both communities had completely cut themselves off for months from the outside world. One was a remote town in the Colorado mountains, and the other was a naval training station on an island in San Francisco Bay.¹ Obviously, this is not a strategy of general utility. Other studies have suggested that, except in the most extreme applications, disease mitigation measures have not had a significant impact on altering the course of an influenza pandemic.^{2,3}

A number of mitigation measures that are now being considered could have a serious impact on the ability of the health system to deliver adequate care and could have potentially adverse consequences for the provision of essential services. Many could result in significant disruption of the social functioning of communities and result in possibly serious economic problems. Such negative consequences might be worth chancing if there were compelling evidence or reason to believe they would seriously diminish the consequences or spread of a pandemic. However, few analyses have been produced that weigh the hoped-for efficacy of such measures against the potential impacts of large-scale or long-term implementation of these measures.

EPIDEMIOLOGIC EXPECTATIONS

Historically, it has been all but impossible to prevent influenza from being imported into a country or political jurisdiction, and there has been little evidence that any particular disease mitigation measure has significantly slowed the spread of flu. The clinical and epidemiologic characteristics of influenza explain why:

The influenza virus is known to spread rapidly from one person to the next, with a second

1 Markel H, Stern A, Navarro JA, Michalsen JR. *A Historical Assessment of Nonpharmaceutical Disease Mitigation Measures Employed by Selected Communities During the Second Wave of the 1918–1920 Influenza Pandemic*. Fort Belvoir, Va: Defense Threat Reduction Agency; 2006. Available at: http://www.med.umich.edu/medschool/chm/influenza/assets/dtra_final_influenza_report.pdf. Accessed September 10, 2006.

2 World Health Organization Writing Group. Nonpharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

3 Oshitani H. Potential benefits and limitations of various strategies to mitigate the impact of an influenza pandemic. *J Infect Chemother* 2006 Aug;12(4):167–171.

generation of patients occurring within 2–4 days following exposure.⁴

People infected with influenza may shed virus for 1–2 days before becoming symptomatic.⁵

Some flu-infected individuals may be asymptomatic and so would not be recognized as being infected. In seasonal flu outbreaks, this group may represent a significant proportion of infected people.^{6,7} Asymptomatic individuals infected with flu have been shown to shed virus, although the extent to which these individuals transmit infection to others is not known.⁸

Many patients who are symptomatic are not readily diagnosed because their symptoms differ little from individuals with other respiratory illnesses or allergies.

PANDEMIC PLANNING PREMISES

A new pandemic strain can be expected to spread rapidly and widely, but it is not likely to be constantly present in any given area. In both 1918 and 1957, there were some outbreaks in the U.S. of disease in the late spring, but the outbreaks were geographically limited. This has been referred to as the “first wave” of the pandemic. There were very few cases in the summer, but in the autumn a major pandemic wave of disease swept across the country during a 3–4-month period—the so-called “second wave.” This was followed by a comparatively quiescent period, and then a “third wave” occurred the following spring. Subsequently, the new strain in each of these pandemics displaced the then-currently circulating strains and continued to recur every 2–3 years as seasonal flu, although it caused fewer serious illnesses.⁹ For planning purposes, the U.S. Department of Health and Human Services (HHS) and the White House Homeland Security Council (HSC) make the assumption that the expected attack rate in the next influenza pandemic would be comparable to the other 20th century pandemics—that is, about 25–30% of the population

4 Toner E. Do public health and infection control measures prevent the spread of flu? *Biosecur Bioterror* 2006;4(1):84–86.

5 Davis DJ, Philip RN, Bell JA, Vogel JE, Jensen DV. Epidemiologic studies on influenza in familial and general population groups. 1951–1956. III. Laboratory observations. *Am J Hyg* 1961;73:138–147.

6 Bridges CB, Kuehnert MJ, Hall CB. Transmission of influenza: implications for control in health care settings. *Clin Infect Dis* 2003 Oct 15;37(8):1094–1101.

7 Foy HM, Cooney MK, Allan ID, Albrecht JK. Influenza B in households: virus shedding without symptoms or antibody response. *Am J Epidemiol* 1987;126:506–515.

8 Hayden FG, Fritz R, Lobo MC, Alvord W, Strober W, Straus SE. Local and systemic cytokine responses during experimental human influenza A virus infection. Relation to symptom formation and host defense. *J Clin Invest* 1998;101:643–649.

9 Institute of Medicine. *The Threat of Pandemic Influenza: Are We Ready?* Washington, DC: Institute of Medicine of the National Academies; 2004. Available at: <http://www.iom.edu/CMS/3783/3924/23639.aspx>. Accessed September 10, 2006.

would become ill.^{10 11} It is also assumed that the virus's ability to spread rapidly and widely would be comparable to past pandemics and that the duration of the outbreak in any given community would be about 8 weeks,¹² While government planners estimate that as much as 30% of the U.S. population would fall sick from the next pandemic, any given community would see those illnesses spaced over a period of at least 8 weeks, not all occurring at one time. Since the average duration of illness would be expected to be about 10 days, only a subset of flu victims in any community would be ill at once. Given this, even in the peak weeks of a pandemic it would seem reasonable to expect that no more than 10% of a community's population would be ill at any time.

The HHS and HSC documents assume that, in the worst case, the case-fatality ratio would be equal to that of 1918 (about 2.5%).¹³ Such data as are available from the past 300 years show the 1918 influenza pandemic was, by far, the most lethal.

To date, the current H5N1 influenza case-fatality ratios have been 50% or more. H5N1 infection has been clinically more severe, and many patients have exhibited symptoms that differ from those caused by other in-fluenza strains.^{14 15} So far, the virus has exhibited little ability to spread from human to human. It has been widely assumed that if the current avian strain of virus did transform into one that is more readily transmissible, the virus would assume characteristics and case-fatality rates more closely resembling previous pandemic strains. A range of possible measures for containing the spread of influenza during a pandemic are set forth in *HHS's Pandemic Influenza Plan*¹⁶ and

10 U.S. Department of Health and Human Services. HHS Pandemic Influenza Plan. Washington, DC: U.S. Department of Health and Human Services; November 2005. Available at: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>. Accessed June 29, 2006.

11 White House Homeland Security Council. National Strategy for Pandemic Influenza: Implementation Plan. Washington, DC: White House Homeland Security Council; 2006. Available at: http://www.whitehouse.gov/homeland/nspi_implementation.pdf. Accessed June 29, 2006.

12 *ibid*

13 White House Homeland Security Council. *National Strategy for Pandemic Influenza: Implementation Plan*. Washington, DC: White House Homeland Security Council; 2006. Available at: http://www.whitehouse.gov/homeland/nspi_implementation.pdf. Accessed June 29, 2006.

14 World Health Organization. Epidemiology of WHO-confirmed human cases of avian A(H5N1) infection. *Wkly Epidemiol Rec* 30 June 2006;81(26):249–260. Available at: <http://www.who.int/wer/wer8126.pdf>. Accessed June 30, 2006.

15 Tran TH, Nguyen TL, Nguyen TD, et al.; World Health Organization International Avian Influenza Investigative Team. Avian influenza A (H5N1) in 10 patients in Vietnam. *N Engl J Med* 2004 Mar 18;350(12):1179–1188.

16 U.S. Department of Health and Human Services. HHS Pandemic Influenza Plan. Washington, DC: U.S. Department of Health and Human Services; November 2005. Available at: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>. Accessed June 29, 2006.

HSC's *National Strategy for Pandemic Influenza: Implementation Plan*.¹⁷ Both documents outline possible actions that might be taken during a pandemic to minimize transmission and control the spread of infection. Disease mitigation measures are presented as a series of options, but the criteria for pursuing any particular measure are not articulated nor are operational details provided regarding how these measures should be implemented.

It has been recognized that most actions taken to counter pandemic influenza will have to be undertaken by local governments, given that the epidemic response capacity of the federal government is limited.¹⁸ This is reflected in HHS Secretary Michael Leavitt's statement at a February 2006 State and Local Pandemic Preparedness Meeting: "Any community that fails to prepare [for an influenza pandemic] with the idea that somehow, in the end, the federal government will be able to rescue them will be tragically wrong."¹⁹ But a recent review of the current pandemic influenza plans of 49 states reveals that few explicitly discuss implementing community mitigation strategies.²⁰ The authors of the review attribute this lack of planning for influenza in part to "weak central (federal) direction and the lack of key epidemiological data."²¹ One of the better developed plans is that of the New York City Department of Health and Mental Hygiene,²² whose staff considered the use of disease mitigation measures but decided to incorporate few of the measures now described in federal plans.

A fundamental premise of disease mitigation that has been advanced by some in the policymaking community is that a less intense but more prolonged pandemic may be easier for society to bear,²³ but this is speculative.

17 White House Homeland Security Council. *National Strategy for Pandemic Influenza: Implementation Plan*. Washington, DC: White House Homeland Security Council; 2006. Available at: http://www.whitehouse.gov/homeland/nspi_implementation.pdf. Accessed June 29, 2006.

18 Barbera J, Macintyre A, Gostin L, et al. Large-scale quarantine following biological terrorism in the United States: scientific examination, logistic and legal limits, and possible consequences. *JAMA* 2001 Dec 5;286(21): 2711–2717.

19 U.S. Department of Health and Human Services/State of Maryland Summit on Influenza Pandemic; February 26, 2006; Baltimore, Md.

20 Holmberg SD, Layton CM, Ghneim GS, Wagener DK. State plans for containment of pandemic influenza. *Emerg Infect Dis* 2006;12(9):1414–1417. Available at: <http://www.cdc.gov/ncidod/EID/vol12no09/pdfs/06-0369.pdf>. Accessed August 25, 2006.

21 *ibid*

22 New York City Department of Health and Mental Hygiene. *NYC DOHMH pandemic influenza preparedness and response plan*. New York: New York City Department of Health and Mental Hygiene; July 2006. Available at: <http://www.nyc.gov/html/doh/downloads/pdf/cd/cd-panflu-plan.pdf>. Accessed July 21, 2006.

23 Cetron M. Presentation at CDC Meeting on Community Mitigation Strategies for Pandemic Influenza Consultants Meeting; Atlanta, Georgia; June 14, 2006.

CLARIFICATION OF TERMS

There is widespread confusion about the terms used to describe measures for controlling disease spread. The principal confusion is between use of the words quarantine and isolation. Isolation properly refers only to the confinement of symptomatic patients in the hospital (or at home) so that they will not infect others. Quarantine has traditionally been defined as the separation from circulation in the community of asymptomatic people who may have been exposed to infection and might—or might not—become ill. Home quarantine refers to voluntary confinement of known contacts of influenza cases in their own homes. Large-scale quarantine typically refers to confinement of large groups of possibly infected people—for example, all passengers on an airplane, or the residents of an apartment building or an entire city—for periods of days to weeks.

In recent years the term social distancing has come into use. Social distancing has been used to refer to a range of measures that might serve to reduce contact between people. These may include closing schools or prohibiting large gatherings, such as church services and sporting events. Others have used the term to refer to actions taken to increase the distance of individuals from each other at the work site or in other locations—for example, substituting phone calls for face-to-face meetings or avoiding hand-shaking. The term has come to describe fundamentally different approaches to disease mitigation. This document will refer only to specific interventions rather than to the catch-all term social distancing.

EVALUATION OF DISEASE MITIGATION MEASURES

Epidemiologic Assessment: Do available data or experience suggest the measure will work?

It is difficult to evaluate the effectiveness of specific measures to control disease spread in epidemiologic terms because of the complex interrelationships between individuals and groups and the individual biological differences in response to influenza. Some historical studies have tried to evaluate the efficacy of specific influenza containment efforts,²⁴ and, although they are informative, the relative paucity of such studies and the differences between past historical moments and the present limit the conclusions that can be drawn.

Recently, a number of mathematical models have examined various combinations of disease

²⁴ World Health Organization Writing Group. Non pharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

mitigation measures for pandemic influenza.^{25 26 27} Such models consist of computer simulations of disease outbreaks that are developed from very limited data regarding the epidemiological and biological characteristics of influenza and a series of assumptions about the likely compliance of the population, the feasibility of applying various interventions, and so on. The predictions provided by such models can vary widely depending on the assumptions that are made in their construction.

What the computer models cannot incorporate is the effects that various mitigation strategies might have on the behavior of the population and the consequent course of the epidemic. There is simply too little experience to predict how a 21st century population would respond, for example, to the closure of all schools for periods of many weeks to months, or to the cancellation of all gatherings of more than 1,000 persons. Would these closures serve to decrease contacts between people and so retard the spread of the epidemic? Or would those affected spend more time in malls, in fast-food restaurants, and in other social settings that might result in more contacts and more rapid spread of influenza?

No model, no matter how accurate its epidemiologic assumptions, can illuminate or predict the secondary and tertiary effects of particular disease mitigation measures. Nor, for example, can it assess the potential effects of high absentee rates resulting from home or regional quarantine on the functioning integrity of essential services, such as hospital care or provision of food and electrical service to the community. If particular measures are applied for many weeks or months, the long-term or cumulative second and third order effects could be devastating socially and economically. In brief, models can play a contributory role in thinking through possible mitigation measures, but they cannot be more than an ancillary aid in deciding policy.

Logistical Assessment: Is the disease mitigation measure feasible?

Many communitywide disease mitigation measures would be intrinsically difficult to implement. Consideration must be given to the resources required for implementation, to the mechanisms needed to persuade the public to comply (or to compel the public, if the measures are mandatory), and to the length of time that they would need to be applied. Potential disease mitigation measures presumably would have to be maintained for the duration of the epidemic in a community—a

25 Germann TC, Kadau K, Longini IM Jr, Macken CA. Mitigation measures for pandemic influenza in the United States. *Proc Natl Acad Sci U S A* 2006 Apr 11;103(15):5935–5940.

26 Hollingsworth TD, Ferguson NM, Anderson RM. Will travel restrictions control the international spread of pandemic influenza? *Nat Med* 2006;12(5):497–499.

27 Ferguson NM, Cummings DA, Fraser C, Cajka JC, Cooley PC, Burke DS. Measures for mitigating an influenza pandemic. *Nature* 2006 Jul 27;442(7101):448–452.

predicted period of 8 or more weeks—or, perhaps, in the country as a whole—as long as 8 months.²⁸

Recent experiences in endeavoring to quarantine large numbers of people during the 2003 SARS outbreaks illustrate why feasibility must be a central consideration. Canadian health officials implemented a voluntary home quarantine in Toronto, where an estimated 30,000 people who came in contact with SARS cases (fewer than 500 actual cases in all) were asked to stay home until it became clear that they were not infected.²⁹ Although the efficacy of the home quarantine in Toronto is not clear, the public health resources needed to implement this policy were prodigious, as it was necessary not only to persuade each family of the rationale of the measures and inform them how to comply but also to arrange to provide food and other support services. As a result of this and other experiences, medical authorities have expressed doubts about the efficacy and feasibility of large-scale and home quarantines.^{30 31 32}

Social, Economic, and Political Assessment: What are the possible unintended adverse societal consequences?

Disease mitigation measures, however well intentioned, have potential social, economic, and political consequences that need to be fully considered by political leaders as well as health officials. Closing schools is an example. Some have suggested closure might be recommended for as long as a pandemic persists in a single community (perhaps 8 weeks) or for as long as a pandemic persists in the country (as long as 8 months).³³ The rationale for the strategy is to diminish contacts between students and so retard epidemic spread. However, if this strategy were to be successful, other sites where school children gather would also have to be closed: daycare centers, cinemas, churches, fast-food stores, malls, and athletic arenas. Many parents would need to stay home from work to care for children, which could result in high rates of absenteeism that could stress critical services,

28 Cetron M. Presentation at CDC Meeting on Community Mitigation Strategies for Pandemic Influenza Consultants Meeting; Atlanta, Georgia; June 14, 2006.

29 DiGiovanni C, Conley J, Chiu D, Zaborski J. Factors influencing compliance with quarantine in Toronto during the 2003 SARS outbreak. *Biosecur Bioterror* 2004;2(4): 265–272.

30 Barbera J, Macintyre A, Gostin L, et al. Large-scale quarantine following biological terrorism in the United States: scientific examination, logistic and legal limits, and possible consequences. *JAMA* 2001 Dec 5;286(21): 2711–2717.

31 U.S. Centers for Disease Control and Prevention. Efficiency of quarantine during an epidemic of Severe Acute Respiratory Syndrome—Beijing, China, 2003. *MMWR Morb Mortal Wkly Rep* 2003 Oct 31;52(43):1037–1040.

32 Schabas R. SARS: Prudence, not panic. *CMAJ* 2003;168: 1432.

33 Cetron M. Presentation at CDC Meeting on Community Mitigation Strategies for Pandemic Influenza Consultants Meeting; Atlanta, Georgia; June 14, 2006.

including health care. School closures also raise the question of whether certain segments of society would be forced to bear an unfair share of the disease control burden. A significant proportion of children in lower-income families rely on school feeding programs for basic nutrition.

Political leaders need to understand the likely benefits and the potential consequences of disease mitigation measures, including the possible loss of critical civic services and the possible loss of confidence in government to manage the crisis.

POTENTIAL DISEASE CONTROL MEASURES: BENEFITS AND CONSEQUENCES

Large-Scale Community Vaccination

Vaccines are the best mechanism for preventing influenza infection and spread in the community and for protecting healthcare workers caring for those who do become ill. Once an influenza strain capable of sustained human-to-human transmission emerges, a vaccine specific to the pandemic strain will need to be made. It is expected that it will be at least 6 months after the emergence of the pandemic strain before the initial supplies of vaccine can be produced. Current vaccine manufacturing techniques and limitations on vaccine production constrain the total amount of vaccine that can be manufactured. Special efforts are being made to increase this capacity,³⁴ but under current conditions, according to the National Strategy for Pandemic Influenza, it will be as much as 5 years (i.e., 2011) before domestic vaccine production capacity is in place to create enough vaccine for the entire U.S. population within 6 months of the start of a pandemic.³⁵

Isolation of Sick People in Hospitals

Beyond widespread vaccination, isolating symptomatic influenza patients, either at home or in the hospital, is probably the most important measure that could be taken to reduce the transmission and slow the spread of illness within a community. The sickest (and presumably most contagious) patients are most likely to seek hospital care. The critical importance of hospitals in providing health care

34 Roos R. Glaxo says its H5N1 vaccine works at low dose. *CIDRAP News* July 26, 2006. Available at: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jul2606glaxo.html>. Accessed August 1, 2006.

35 White House Homeland Security Council. *National Strategy for Pandemic Influenza: Implementation Plan*. Washington, DC: White House Homeland Security Council; 2006. Available at: http://www.whitehouse.gov/homeland/nspi_implementation.pdf. Accessed June 29, 2006.

during a pandemic cannot be overstated and has been addressed by a number of sources.^{36 37 38 39 40}

In an influenza epidemic, hospitals will face several key challenges. First, hospitals must protect their own staffs from infection and avoid becoming “amplifiers” of disease. Historically, hospitals have often accelerated the spread of contagious disease because of the presence of highly contagious patients and their close proximity to the medical staff who care for them and to other patients who are ill and vulnerable to infection.⁴¹ Modern hospitals are not designed to accommodate large numbers of highly contagious patients, and special measures, including cohorting of patients, adjustments to HVAC systems, and use of personal protective gear, will need to be made to protect healthcare workers and patients from infection. Second, hospitals must establish strategies for coping with what will presumably be a large and relatively sustained surge in demand for medical care. At present, hospitals have little capacity to meet such demands.^{42 43 44} Hospital care will be needed not only for those who are ill with influenza itself but also for patients with chronic conditions made critical by acute influenza infection. Accommodating the increased demand for hospital care will require coordination and collaboration between hospitals in a given region and among hospital leaders, public health authorities, and elected officials. Some jurisdictions have taken steps to establish the organizational framework, communication networks, and operational principles needed to do this,⁴⁵ but most have not. It is noteworthy that, in spite of the predominant role that hospitals must

36 Franco C, Toner E, Waldhorn R, Maldin B, O’Toole T, Inglesby TV. Systemic collapse: medical care in the aftermath of hurricane Katrina. *Biosecur Bioterror* 2006; 4(2):135–146.

37 Toner E, Waldhorn R, Maldin B, et al. Hospital preparedness for pandemic influenza. *Biosecur Bioterror* 2006;4(2): 207–217.

38 American College of Physicians. The health care response to pandemic influenza. *Ann Intern Med* 2006;145(2):135–137. Available at: <http://www.annals.org/cgi/content/full/0000605-200607180-00131v1> Accessed June 29, 2006.

39 Hick JL, Hanfling D, Burstein JL, et al. Health care facility and community measures for patient care surge capacity. *Ann Emerg Med* 2004 Sep;44(3):253–261.

40 Rubinson L, Nuzzo JB, Talmor DS, O’Toole T, Kramer BR, Inglesby TV. Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: recommendations of the Working Group on Emergency Mass Critical Care. *Crit Care Med* 2005;33(10):2393–2403.

41 Chiarello LA, Tapper ML. Healthcare settings as amplifiers of infectious disease. *Emerg Infect Dis* 2004 Nov; 10(11):2048–2049.

42 Toner E, Waldhorn R, Maldin B, et al. Hospital preparedness for pandemic influenza. *Biosecur Bioterror* 2006;4(2): 207–217.

43 Rubinson L, Nuzzo JB, Talmor DS, O’Toole T, Kramer BR, Inglesby TV. Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: recommendations of the Working Group on Emergency Mass Critical Care. *Crit Care Med* 2005;33(10):2393–2403.

44 Bartlett JG. Planning for avian influenza. *Ann Intern Med* 2006 Jul 18;145(2):141–144.

45 Hick JL, Hanfling D, Burstein JL, et al. Health care facility and community measures for patient care surge capacity. *Ann Emerg Med* 2004 Sep;44(3):253–261.

play in pandemic response, the federal allocations for pandemic flu preparedness have included little financial support either for regional medical care planning or for the hospitals themselves.⁴⁶

In 1918–19, even the best-equipped hospitals had little to offer flu victims. Today, however, although modern medicine offers limited remedies for influenza, the availability of oxygen, ventilators, antibiotics, and parenteral fluids could make a critical difference in surviving flu, especially among those with underlying chronic disease.

It has been suggested that alternative care sites, such as gymnasiums and armories, could lessen the demand on hospitals.^{47,48} In 1918, such alternative care facilities were set up in many cities. However, patients housed in alternative sites received little more than food and water. Such sites realistically would represent alternatives to home care, not hospital care, given the practical problems of safely managing services such as respiratory support, intravenous medication, oxygen, and the like outside of a hospital setting. A major challenge for all authorities charged with managing a pandemic will be how to allot scarce, possibly life-saving medical resources and how to maintain hospitals' capacity to care for critically ill flu victims while continuing to provide other essential medical services.

Home Isolation of Sick People

In light of the expected shortages of medical beds and personnel, home isolation of non–critically ill influenza patients would be necessary in a major pandemic. A policy that persuades sick individuals to voluntarily stay at home unless they are critically ill would allow hospitals to focus efforts on those most seriously threatened.

There are a number of logistical considerations that could prevent people from being able to remain isolated in their homes. Special measures would be needed to provide basic medical and food supplies, perhaps through the use of neighborhood volunteers and supplemented by communication by phone or internet. It may not be easy to persuade those without paid sick leave (some 59 million persons⁴⁹) to absent themselves from work, unless employers address this problem

46 Levi J, Inglesby T. Working Group on Pandemic Influenza Preparedness: joint statement in response to Department of Health and Human Services Pandemic Influenza Plan. *Clin Infect Dis* 2006 Jan 1;42(1):92–94.

47 U.S. Department of Health and Human Services. *HHS Pandemic Influenza Plan*. Washington, DC: U.S. Department of Health and Human Services; November 2005. Available at: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>. Accessed June 29, 2006

48 National Association of County and City Health Officials. Local Health Department Guide to Pandemic Influenza Planning. Washington, DC: NACCHO; 2006. Available at: <http://www.naccho.org/topics/infectious/influenza/documents/NACCHOPanFluGuideforLHDsII.pdf>. Accessed September 10, 2006.

49 Lovell V. *No Time to Be Sick: Why Everyone Suffers When Workers Don't Have Paid Sick Leave*. Washington, DC: Institute for Women's Policy Research; May 2004. Available at: <http://www.iwpr.org/pdf/B242.pdf>. Accessed April 25, 2006.

directly. A recent review of state pandemic influenza plans found that only one-third of the 49 states examined have explicit plans to encourage voluntary home isolation.⁵⁰

Use of Antiviral Medications

Antiviral drugs for influenza are available in limited quantities. Data on how antivirals might perform in the prevention or treatment of the H5N1 strain are scant. Prominent authorities think the likelihood of “quenching” an emergent pandemic strain through the rapid, regionwide use of antivirals is low because of technical and logistical difficulties, even if the pandemic strain proves to be sensitive to such drugs.⁵¹ Several countries have recommended that the top priority for antivirals is to treat the ill.^{52 53} If antivirals were to be used for prevention, it would imply the need for much longer administration of the drug to cover the period of a community epidemic. Specifically, using oseltamivir as the most available example, the quantity of antivirals used to prevent infection in a single healthcare worker during an 8–10-week epidemic period would serve to treat an estimated 5 to 7 patients (assumes prophylaxis with 75 mg, twice daily, for 8–10 weeks versus treatment with 150 mg, twice daily, for 5 days).⁵⁴

Moreover, available data indicate that antiviral treatment is effective only if antivirals are given within 24–48 hours after onset of initial symptoms.⁵⁵ Some authorities doubt the feasibility of administering the drugs soon enough to make a difference during a pandemic.^{56 57 58} Because of this concern, at least one Canadian teaching hospital is planning to use all its antiviral stocks

50 Holmberg SD, Layton CM, Ghneim GS, Wagener DK. State plans for containment of pandemic influenza. *Emerg Infect Dis* 2006;12(9):1414–1417. Available at: <http://www.cdc.gov/ncidod/EID/vol12no09/pdfs/06-0369.pdf>. Accessed August 25, 2006.

51 A reappraisal of H5N1 avian influenza [editorial]. *Lancet* 2006 May 13;367(9522):1550.

52 United Kingdom Health Departments. *Pandemic Flu: Influenza Pandemic Contingency Plan*. London: UK Health Departments; October 2005. Available at: <http://www.dh.gov.uk/assetRoot/04/12/17/44/04121744.pdf>. Accessed August 25, 2006.

53 *Canadian Pandemic Influenza Plan*. Ottawa: Public Health Agency of Canada [formerly Health Canada]; February 2004. Available at: <http://www.phac-aspc.gc.ca/cpip-pclpci/pdf-cpip-03/cpip-appendix-e.pdf>. Accessed August 25, 2006.

54 Ward P, Small I, Smith J, Suter P, Dutkowski R. Oseltamivir (Tamiflu) and its potential for use in the event of an influenza pandemic. *J Antimicrob Chemother* 2005 Feb;55(Suppl 1):i5–i21.

55 Roche Pharmaceuticals. Product Information: Tamiflu® capsules and for oral suspension, oseltamivir phosphate. Available at: <http://www.rocheusa.com/products/tamiflu/pi.pdf>. Accessed August 25, 2006.

56 Holmberg SD, Layton CM, Ghneim GS, Wagener DK. State plans for containment of pandemic influenza. *Emerg Infect Dis* 2006;12(9):1414–1417. Available at: <http://www.cdc.gov/ncidod/EID/vol12no09/pdfs/06-0369.pdf>. Accessed August 25, 2006.

57 Bartlett JG. Planning for avian influenza. *Ann Intern Med* 2006 Jul 18;145(2):141–144.

58 Hayden FG. Pandemic influenza: is an antiviral response realistic? *Pediatr Infect Dis J* 2004 Nov;23(11 Suppl):S262–S269.

for prophylaxis of healthcare workers.⁵⁹ The European Union, on the other hand, decided not to stockpile any antiviral medicines, although some European countries have done so.⁶⁰ The effectiveness and optimal use of antivirals remain uncertain because of several factors: the propensity of the influenza virus to mutate, thus increasing the possibility that resistance could develop; the quantities of antivirals required for prophylaxis; and the logistical challenges involved in providing sufficiently rapid treatment. Contextual variables that cannot be predicted ahead of time—such as the quantity of medicines available and the development of resistance—will probably determine antiviral strategy.

Hand-Washing and Respiratory Etiquette

The influenza virus actually survives on the hands for less than 5 minutes,⁶¹ but regular hand-washing is a commonsense action that should be widely followed. It has been shown to reduce the transmission of respiratory illness in a military trainee setting,⁶² although there are no data to demonstrate that hand-washing deters the spread of influenza within a community.

General respiratory hygiene, such as covering one's mouth when coughing and using disposable paper tissues, is widely believed to be of some value in diminishing spread, even though there is no hard evidence that this is so.

Large-Scale Quarantine Measures

There are no historical observations or scientific studies that support the confinement by quarantine of groups of possibly infected people for extended periods in order to slow the spread of influenza. A World Health Organization (WHO) Writing Group, after reviewing the literature and considering contemporary international experience, concluded that “forced isolation and quarantine are ineffective and impractical.”⁶³ Despite this recommendation by experts, mandatory large-scale quarantine

59 Branswell H. T.O. hospitals to stockpile drug. *Canadian Press News Service* May 31, 2006. Available at:<http://cnews.canoe.ca/CNEWS/Canada/2006/05/31/1608183-cp.html>. Accessed August 25, 2006.

60 Mounier-Jack S, Coker RJ. How prepared is Europe for pandemic influenza? Analysis of national plans. *Lancet* 2006 Apr 29;367(9520):1405–1411.

61 Toner E. Do public health and infection control measures prevent the spread of flu? *Biosecure Bioterror* 2006;4(1):84–86.

62 Ryan MAK, Christian RS, Wohlrabe J. Handwashing and respiratory illness among young adults in military training. *Am J Prev Med* 2001;21(2):79–83.

63 World Health Organization Writing Group. Non pharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

continues to be considered as an option by some authorities and government officials.^{64 65}

The interest in quarantine reflects the views and conditions prevalent more than 50 years ago, when much less was known about the epidemiology of infectious diseases and when there was far less international and domestic travel in a less densely populated world. It is difficult to identify circumstances in the past half-century when large-scale quarantine has been effectively used in the control of any disease. The negative consequences of large-scale quarantine are so extreme (forced confinement of sick people with the well; complete restriction of movement of large populations; difficulty in getting critical supplies, medicines, and food to people inside the quarantine zone) that this mitigation measure should be eliminated from serious consideration.

Home Quarantine

Voluntary home quarantine would be requested of individuals who are asymptomatic but who have had substantial contact with a person who has influenza—primarily household members. The aim of voluntary home quarantine is to keep possibly contagious, but still asymptomatic, people out of circulation. This sounds logical, but this measure raises significant practical and ethical issues.

If implemented on a communitywide scale, logistical requirements related to ensuring that quarantined households across a community had appropriate care and support would be necessary. How compliant the public might be is uncertain. Parents would presumably be willing to stay home and care for sick children, but it is not known, for example, whether college students would agree to be interned with infected dorm-mates.

Even if home quarantine were generally acceptable to the community, individuals may not have the economic resources to stay at home. Few employers currently have provisions for paid absence unless the workers themselves are ill. For those who are hourly workers or who are self-employed, the potential loss of wages as a result of having to stay home simply because an individual had had contact with sick people might not be acceptable or feasible.

Home quarantine also raises ethical questions. Implementation of home quarantine could result in healthy, uninfected people being placed at risk of infection from sick household members. Practices to reduce the chance of transmission (hand-washing, maintaining a distance of 3 feet from infected people, etc.) could be recommended, but a policy imposing home quarantine would preclude, for example, sending healthy children to stay with relatives when a family member becomes ill. Such

64 Lovell V. *No Time to Be Sick: Why Everyone Suffers When Workers Don't Have Paid Sick Leave*. Washington, DC: Institute for Women's Policy Research; May 2004. Available at: <http://www.iwpr.org/pdf/B242.pdf>. Accessed April 25, 2006.

65 Mounier-Jack S, Coker RJ. How prepared is Europe for pandemic influenza? Analysis of national plans. *Lancet* 2006 Apr 29;367(9520):1405–1411.

a policy would also be particularly hard on and dangerous to people living in close quarters, where the risk of infection would be heightened.

Travel Restrictions

Travel restrictions, such as closing airports and screening travelers at borders, have historically been ineffective. The World Health Organization Writing Group concluded that “screening and quarantining entering travelers at international borders did not substantially delay virus introduction in past pandemics . . . and will likely be even less effective in the modern era.”⁶⁶ Similar conclusions were reached by public health authorities involved in the international efforts to control SARS. Canadian health authorities report that “available screening measures for SARS were limited in their effectiveness in detecting SARS among inbound or outbound passengers from SARS-affected areas.”⁶⁷ A review by a WHO Working Group on SARS also concluded that “entry screening of travelers through health declarations or thermal scanning at international borders had little documented effect on detecting SARS cases.”⁶⁸

The authors have concluded in a previous analysis⁶⁹ that screening individuals on domestic interstate flights for symptoms of flu, as has been proposed in revisions to the Federal Quarantine Rule (42 CFR Parts 70 and 71),⁷⁰ would not be effective and would have serious adverse consequences.

It is reasonable to assume that the economic costs of shutting down air or train travel would be very high, and the societal costs involved in interrupting all air or train travel would be extreme. Shutting down public transportation for an extended period is not an option in many cities. In New York City, an average of 4.7 million people ride the subway each weekday;⁷¹ the Los Angeles

66 World Health Organization Writing Group. Non pharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

67 St. John RK, King A, de Jong D, Bodie-Collins M, Squires SG, Tam TWS. Border screening for SARS. *Emerg Infect Dis* 2005;11(1):6–10. Available at: <http://www.cdc.gov/ncidod/EID/vol11no01/04-0835.htm>. Accessed January 24, 2006.

68 Bell DM, World Health Organization Working Group on Prevention of International and Community Transmission of SARS. Public health interventions and SARS spread, 2003. *Emerg Infect Dis*. 2004;10(11):1900–1906. Available at: <http://www.cdc.gov/ncidod/EID/vol10no11/04-0729.htm>. Accessed August 1, 2006.

69 Nuzzo JB, Henderson DA, O’Toole T, Inglesby TV. Comments from the Center for Biosecurity of UPMC on proposed revisions to federal quarantine rules. *Biosecur Bioterror* 2006;4(2):204–206.

70 Control of Communicable Disease, *Federal Register* 229 (proposed November 30, 2005) (to be codified at 42 C.F.R. pts. 70, 71). Available at: http://www.cdc.gov/ncidod/dq/nprm/docs/42CFR70_71.pdf. Accessed July 31, 2006.

71 New York City Metropolitan Transit Authority. *Subway Facts*. Available at: <http://www.mta.nyc.ny.us/nyct/facts/ffsubway.htm>. Accessed August 25, 2006.

Metro averages 1.3 million riders daily.⁷²

Prohibition of Social Gatherings

During seasonal influenza epidemics, public events with an expected large attendance have sometimes been cancelled or postponed, the rationale being to decrease the number of contacts with those who might be contagious. There are, however, no certain indications that these actions have had any definitive effect on the severity or duration of an epidemic. Were consideration to be given to doing this on a more extensive scale and for an extended period, questions immediately arise as to how many such events would be affected. There are many social gatherings that involve close contacts among people, and this prohibition might include church services, athletic events, perhaps all meetings of more than 100 people. It might mean closing theaters, restaurants, malls, large stores, and bars. Implementing such measures would have seriously disruptive consequences for a community if extended through the 8-week period of an epidemic in a municipal area, let alone if it were to be extended through the nation's experience with a pandemic (perhaps 8 months).⁷³ In the event of a pandemic, attendance at public events or social gatherings could well decrease because people were fearful of becoming infected, and some events might be cancelled because of local concerns. But a policy calling for community wide cancellation of public events seems inadvisable.

School Closures

In previous influenza epidemics, the impact of school closings on illness rates has been mixed.⁷⁴ A study from Israel reported a decrease in respiratory infections after a 2-week teacher strike, but the decrease was only evident for a single day.⁷⁵ On the other hand, when schools closed for a winter holiday during the 1918 pandemic in Chicago, "more influenza cases developed among pupils. . .

72 Los Angeles County Metropolitan Transportation Authority. *Bus Ridership Estimates*. Available at: http://www.metro.net/news_info/ridership_avg.htm. Accessed September 8, 2006.

73 DiGiovanni C, Conley J, Chiu D, Zaborski J. Factors influencing compliance with quarantine in Toronto during the 2003 SARS outbreak. *Biosecur Bioterror* 2004;2(4): 265–272.

74 World Health Organization Writing Group. Non pharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

75 Heymann A, Chodick G, Reichman B, Kokia E, Laufer J. Influence of school closure on the incidence of viral respiratory diseases among children and on health care utilization. *Pediatr Infect Dis J* 2004;23(7):675–677.

than when schools were in session.”^{76 77}

Schools are often closed for 1–2 weeks early in the development of seasonal community outbreaks of influenza primarily because of high absentee rates, especially in elementary schools, and because of illness among teachers. This would seem reasonable on practical grounds. However, to close schools for longer periods is not only impracticable but carries the possibility of a serious adverse outcome. For example, for working parents, school serves as a form of day care and, in some areas, a source of nutritional meals for children from lower-income families. In 2005, some 29.5 million children were fed through the National School Lunch Program; 9.3 million children received meals as part of the School Breakfast Program.⁷⁸ A portion of America’s workforce would be unable to go to work as long as children were out of schools. Heightened absentee rates could cripple essential service industries. Teachers might not be paid and a great many hourly workers (mall and fast-food employees; school janitorial, security, and kitchen staff; bus drivers) would face particular financial hardship.

Maintaining Personal Distance

It has been recommended that individuals maintain a distance of 3 feet or more during a pandemic so as to diminish the number of contacts with people who may be infected.^{79 80} The efficacy of this measure is unknown. It is typically assumed that transmission of droplet-spread diseases, such as influenza, is limited to “close contacts”—that is, being within 3–6 feet of an infected person.⁸¹ Keeping a space of 3 feet between individuals might be possible in some work environments, but it is difficult to imagine how bus, rail, or air travelers could stay 3 feet apart from each other throughout an epidemic. And such a recommendation would greatly complicate normal daily tasks like grocery shopping, banking, and the like.

76 World Health Organization Writing Group. Non pharmaceutical public health interventions for pandemic influenza, national and community measures. *Emerg Infect Dis* 2006;12:88–94.

77 Jordan EO. Influenza in three Chicago groups. *J Infect Dis* 1919;25:74–95.

78 U.S. Department of Agriculture. *Food and Nutrition Service Data*. Available at: <http://www.fns.usda.gov/pd/cnpmain.htm>. Accessed June 27, 2006.

79 U.S. Department of Health and Human Services. *HHS Pandemic Influenza Plan*. Washington, DC: U.S. Department of Health and Human Services; November 2005. Available at: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>. Accessed June 29, 2006.

80 U.S. Department of Health and Human Services, Federal Occupational Health. Top 10 Tips for Pandemic Preparedness and Prevention. Available at: <http://www.foh.dhhs.gov/public/pandemicinfo/top10tips.pdf#search%22maintain%20distance%203%20feet%20influenza%20social%20> Accessed September 10, 2006.

81 Toner E. Do public health and infection control measures prevent the spread of flu? *Biosecur Bioterror* 2006;4(1):84–86.

Use of Masks and Personal Protective Equipment

Masks and other personal protective equipment (PPE) are essential for controlling transmission of influenza in hospitals. For people who work in hospitals, current CDC guidelines for influenza infection control recommend droplet precautions, including the use of surgical masks. But HHS planning guidelines also rightly acknowledge that the uncertainties regarding the potential of virus transmission at the start of a new pandemic would recommend that airborne precautions be used in hospitals—that is, N95 masks (already in short supply)⁸² or powered air purifying respirators (PAPRs).⁸³ Patients would be advised to wear surgical masks to diminish the number of infectious respiratory particles being dispersed into the air, thereby diminishing the likelihood of further spread.⁸⁴

In Asia during the SARS period, many people in the affected communities wore surgical masks when in public. But studies have shown that the ordinary surgical mask does little to prevent inhalation of small droplets bearing influenza virus.⁸⁵ The pores in the mask become blocked by moisture from breathing, and the airstream simply diverts around the mask. There are few data available to support the efficacy of N95 or surgical masks outside a healthcare setting. N95 masks need to be fit-tested to be efficacious and are uncomfortable to wear for more than an hour or two.^{86 87} More important, the supplies of such masks are too limited to even ensure that hospitals will have necessary reserves.⁸⁸

82 Foy HM, Cooney MK, Allan ID, Albrecht JK. Influenza B in households: virus shedding without symptoms or antibody response. *Am J Epidemiol* 1987;126:506–515.

83 U.S. Department of Health and Human Services. *HHS Pandemic Influenza Plan*. Washington, DC: U.S. Department of Health and Human Services; November 2005. Available at: <http://www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf>. Accessed June 29, 2006.

84 Grow RW, Rubinson L. The challenge of hospital infection control during a response to bioterrorist attacks. *Biosecur Bioterror* 2003;1(3):215–220.

85 Balazy A, Toivola M, Adhikari A, Sivasubramani SK, Reponen T, Grinshpun SA. Do N95 respirators provide 95% protection level against airborne viruses, and how adequate are surgical masks? *Am J Infect Control* 2006;34(2):51–57.

86 Grow RW, Rubinson L. The challenge of hospital infection control during a response to bioterrorist attacks. *Biosecur Bioterror* 2003;1(3):215–220.

87 U.S. Centers for Disease Control and Prevention. *Interim Recommendations for Infection Control in Health-Care Facilities Caring for Patients with Known or Suspected Avian Influenza*. Available at: <http://www.cdc.gov/flu/avian/professional/infect-control.htm>. Accessed September 6, 2006.

88 Six respirator manufacturers warn President Bush of imminent shortage of masks necessary for avian flu pandemic response. *Medical News Today* June 24, 2006. Available at: <http://www.medicalnewstoday.com/medicalnews.php?newsid45879>. Accessed June 27, 2006.

COMMUNITY RESPONSE TO A PANDEMIC: A SUMMARY OF POSSIBLE ACTIONS

There is no question but that another influenza pandemic will occur and that every community needs to be prepared for that eventuality. Influenza is unlike any other disease epidemic in the rapidity with which it spreads and, as it emerges, the number of illnesses that it can cause over a period of a few months. It is unpredictable as to when a pandemic might begin. It could be next autumn or it may not be for a number of years. The world has weathered three pandemics during the past century and will certainly surmount the next one. How much damage the pandemic will cause depends to a large extent on the state of readiness of each community and each metropolitan region and the efficacy and reasonableness of its response. The following is a synopsis of the authors' judgments regarding possible disease mitigation measures.

Vaccination. Vaccination is, by far, the most important preventive measure, but pandemic strain vaccine will not be available for at least the next season. Meanwhile, communitywide use of the seasonal influenza vaccine is desirable, as it is likely that outbreaks of seasonal flu will occur even if there is pandemic influenza.

Provision for isolation and medical care of influenza patients. A Regional Health Care Operations Committee⁸⁹ is a priority need to assure collaboration and cooperation across the community (hospitals, medical care providers, Red Cross, law enforcement, media, and others), both for advanced planning and during the epidemic to assure that the large numbers of flu-infected patients can be cared for in hospital, at home, or in special facilities. Special arrangements are needed for expanding surge capacity in hospitals, for support to permit home care of patients, and for the provision of additional volunteer healthcare staff.

A communication strategy and plans. Open and frequent communications with the public are essential. This involves regular press conferences, hot lines, and provision of information through civic leaders, churches, schools, and businesses. An important message is to request that all who are ill remain isolated at home or in the hospital but to encourage others to continue to come to work so that essential services can be sustained.

Closure of schools. It has been the practice in many communities to close the schools for 10–14 days at the beginning of an epidemic of seasonal flu, primarily because of the number of both

⁸⁹ Toner E, Waldhorn R, Maldin B, et al. Hospital preparedness for pandemic influenza. *Biosecur Bioterror* 2006;4(2): 207–217.

teachers and pupils who are absent. This is a reasonable initiative, often expected in many communities, that also serves to demonstrate action on the part of officials. Closing schools for longer periods in hopes of mitigating the epidemic by decreasing contacts among students is not warranted unless all other likely points of assembly are closed (e.g., malls, fast-food restaurants, churches, recreation centers, etc.). Such widespread closures, sustained throughout the pandemic, would almost certainly have serious adverse social and economic effects.

Hand-washing and respiratory hygiene. Everyone should be encouraged to wash their hands after coming in contact with people who are ill and to cover their mouths when coughing or sneezing.

Cancelling or postponing meetings or events involving large numbers of people. Intuitively, this would appear to be a helpful adjunct to reduce contacts among people and so mitigate the effects of the epidemic. However, individuals normally have a great many contacts throughout the community on a daily basis: shopping in stores, attending church, traveling on public transport, and so on. Recognizing that the spread of influenza is primarily by person-to-person contact, any one individual, even in a large gathering, would have only a limited number of such close encounters with infected people. Thus, cancelling or postponing large meetings would not be likely to have any significant effect on the development of the epidemic. While local concerns may result in the closure of particular events for logical reasons, a policy directing communitywide closure of public events seems inadvisable.

Quarantine. As experience shows, there is no basis for recommending quarantine either of groups or individuals. The problems in implementing such measures are formidable, and secondary effects of absenteeism and community disruption as well as possible adverse consequences, such as loss of public trust in government and stigmatization of quarantined people and groups, are likely to be considerable.

Screening passengers at borders or closing air or rail hubs. Experience has shown that these actions are not effective and could have serious adverse consequences; thus, they are not recommended.

An overriding principle. Experience has shown that communities faced with epidemics or other adverse events respond best and with the least anxiety when the normal social functioning of the community is least disrupted. Strong political and public health leadership to provide reassurance

and to ensure that needed medical care services are provided are critical elements. If either is seen to be less than optimal, a manageable epidemic could move toward catastrophe.

Pandemic Policy in One Page

DAVID HART

Literary Consultant

Anybody who wishes to argue for a government monopoly which will “centrally plan” any industry or service (in this case public health during a pandemic) needs to come up with some very good reasons. So far, looking at both the theory and reality, I’ve seen no strong case for government to exercise monopoly controls during a pandemic, to say nothing for lockdowns, closures, travel bans, and controls on the population generally. Nothing about the presence about a virus, whether mild or severe, negates the problems with coercive central planning.

In fact, all the sound reasons why central planning does not and cannot work in the case of the general economy apply equally in this case, along with a few other reasons which are specific to epidemics.

Here are some of those reasons.

1. The Knowledge Problem. Central Planners need to know an almost infinite amount of knowledge concerning consumer demand, the resources controlled by producers, the level of prices, production processes, and the infinite variables of time and place. This they can never and will never have for good Hayekian reasons.

Central Planners of Public Health need to know who is sick, where they are, how sick they are, what strain of the virus they are suffering from, what are their other physical conditions, what medical facilities they have access to, how they will change their behaviour once they know they are sick, how they got sick, how to stop the spread, and what happens to the virus if it is stopped (since viruses don’t just disappear).

The nightmare we have been watching unfold about the inadequate and often contradictory, and certainly partial information available to Central

Planners of Public Health all over the world should be a warning to us that the knowledge problem here is as insurmountable as anything faced by the Stalinists and Maoists in the past.

2. The Weakness of Mathematical Models. It was a pipedream of the original Central Planners that computers would solve the knowledge problem, or at least make a good fist of processing the huge amount of data that governments and state managers had collected. This was never able to be put into practice because the amount of knowledge was too great (even for computers) and it kept changing faster than they could process it, and because the models they drew up were flawed and did not (could not) adequately describe how the economy worked.

The same is clearly the case with the mathematical models which have guided the decisions made by the Central Planners of Public Health. The Imperial College London models have had an abysmal track record going back nearly 20 years; their predictions have been astronomically wrong, and it is astonishing that they would have been used today to make such important decisions. The incompetence of the data gatherers in the US and Europe is breathtaking, not to mention the dodgy data being given out by the Chinese government. How do we (could we) know that any future Central Planners would do any better? Would they (could they) come up with a better model? I would say never in a million years.

3. The One-Size-Fits-All Problem. Given the national, regional, ethnic, behavioural, and climatic differences which exist (Hello! it was summer in Australia and not the winter flu season when all this began!) it is again not surprising that the “one

size fits all” solution hasn’t worked. It is always the first choice of the Central Planners because it is the most manageable one. If one wants to argue that the future Central Planners would allow more local solutions to be tried and implemented then it would no longer be a “central” plan or a (central) government monopoly, depending on how granular you wanted it to be.

For a “government” solution to the problem to work, what is the optimum geographical area for this to work: the “empire” (the US or the EU), the nation, the state, the region, the city (the big city or the small city?), the county, the street, the household? What the bumbling of the past couple of months has clearly revealed is that the solution which might suit Brooklyn in NYC is not suitable for the lakeshore town of Dunkirk in upstate NY.

4. The Problem of Cost and Expenditure. Like any Central Planner, Public Health Planners would not know what to spend what amount of money on what district to do what things or on/for whom, not to mention when to start and when to stop. They might say something as general as a “lockdown” or quarantining only the sick would not cost much, but anything beyond that becomes so complex and politicized as to be almost impossible to carry out. All sorts of public choice issues will (and have) occurred, such as Cuomo’s political ambitions, Trump’s hubris, Fauci’s reputation, pharmaceutical manufacturers, the high voting turnout of the elderly, Neil Ferguson’s sex life, etc. Not to mention the irrational panic among the general public fanned into flames by an irresponsible and ignorant mainstream media.

5. The Problem of Unintended Consequences. How do the Central Planners of Public Health calculate the cost-benefit analysis of their proposed measures? At present it seems they were too panicked to give this a second thought, or even if

they had the thought to begin with (which I doubt). The all-seeing, all-knowing Planners would have to show how they could do this in a just and reasonable way, which I believe would be impossible to do. They would have to make calculations on how to spend scarce resources which might mean some officials (elected or appointed?) making some Benthamite calculation about who or what constitutes “the greatest number” and what their “greatest happiness” would look like.

As part of this calculation, you have to consider missed surgeries and medical appointments, deaths from suicide and drug overdoses, depression and famine in other parts of the world, far-reaching economic costs of shutting down businesses, layoffs, enforced isolation, ending freedom of movement, explosion in the debt, monetary expansion and resulting distortion, the “ratchet effect” of the increase in government power, and other effects of the plan.

6. The Problem of Political Responsibility. If there is one day a government monopoly in the provision of public health, will the Central Planners of Public Health be held legally liable for the mistakes they are bound to make? If their mathematical model of the epidemic is wrong, if the unintended consequences (the costs in money and lives lost) is worse than the disease, can they be sued in court for damages, or at least voted out of office if they are elected officials)? Governments are not good at admitting error much less arranging compensation for the victims of their policies.

7. The Problem of Individual Liberty. I won’t say more on this than state it. To me it seems rather obvious.

May 29, 2020

The 2006 Origins of the Lockdown Idea

JEFFREY A. TUCKER

Editorial Director

Now begins the grand effort, on display in thousands of articles and news broadcasts daily, somehow to normalize the lockdown and all its destruction of the last two months. We didn't lock down almost the entire country in 1968/69, 1957, or 1949-1952, or even during 1918. But in a terrifying few days in March 2020, it happened to all of us, causing an avalanche of social, cultural, and economic destruction that will ring through the ages.

There was nothing normal about it all. We'll be trying to figure out what happened to us for decades hence.

How did a temporary plan to preserve hospital capacity turn into two-to-three months of near-universal house arrest that ended up causing worker furloughs at 256 hospitals, a stoppage of international travel, a 40% job loss among people earning less than \$40K per year, devastation of every economic sector, mass confusion and demoralization, a complete ignoring of all fundamental rights and liberties, not to mention the mass confiscation of private property with forced closures of millions of businesses?

Whatever the answer, it's got to be a bizarre tale. What's truly surprising is just how recent the theory behind lockdown and forced distancing actually is. So far as anyone can tell, the intellectual machinery that made this mess was invented 14 years ago, and not by epidemiologists but by computer-simulation modelers. It was adopted not by experienced doctors – they warned ferociously against it – but by politicians.

Let's start with the phrase social distancing, which has mutated into forced human separation. The first I had heard it was in the 2011 movie *Contagion*. The

first time it appeared in the *New York Times* was February 12, 2006:

If the avian flu goes pandemic while Tamiflu and vaccines are still in short supply, experts say, the only protection most Americans will have is “social distancing,” which is the **new politically correct way of saying “quarantine.”**

But distancing also encompasses less drastic measures, like wearing face masks, staying out of elevators — and the [elbow] bump. Such stratagems, those experts say, will rewrite the ways we interact, at least during the weeks when the waves of influenza are washing over us.

Maybe you don't remember that the avian flu of 2006 didn't amount to much. It's true, despite all the extreme warnings about its lethality, H5N1 didn't turn into much at all. What it did do, however, was send the existing president, George W. Bush, to the library to read about the 1918 flu and its catastrophic results. He asked for some experts to submit some plans to him about what to do when the real thing comes along.

The *New York Times* (April 22, 2020) tells the story from there:

Fourteen years ago, two federal government doctors, Richard Hatchett and Carter Mecher, met with a colleague at a burger joint in suburban Washington for a final review of a proposal they knew would be treated like a piñata: telling Americans to stay home from work and school the next time the country was

hit by a deadly pandemic.

When they presented their plan not long after, it was met with skepticism and a degree of ridicule by senior officials, who like others in the United States had grown accustomed to relying on the pharmaceutical industry, with its ever-growing array of new treatments, to confront evolving health challenges.

Drs. Hatchett and Mecher were proposing instead that Americans in some places might have to turn back to an approach, self-isolation, first widely employed in the Middle Ages.

How that idea — born out of a request by President George W. Bush to ensure the nation was better prepared for the next contagious disease outbreak — became **the heart of the national playbook for responding to a pandemic** is one of the untold stories of the coronavirus crisis.

It required the key proponents — Dr. Mecher, a Department of Veterans Affairs physician, and Dr. Hatchett, an oncologist turned White House adviser — to overcome intense initial opposition.

It brought their work together with that of a Defense Department team assigned to a similar task.

And it had some unexpected detours, including a deep dive into the history of the 1918 Spanish flu and an important discovery **kicked off by a high school research project pursued by the daughter of a scientist** at the Sandia National Laboratories.

The concept of social distancing is now intimately familiar to almost everyone. But as it first made its way through the federal bureaucracy in 2006 and 2007, it was viewed as impractical, unnecessary and politically infeasible.

Notice that in the course of this planning, neither legal nor economic experts were brought in to consult and advise. Instead it fell to Mecher (formerly of Chicago and an intensive care doctor with no previous expertise in pandemics) and the oncologist Hatchett.

But what is this mention of the high-school daughter of 14? Her name is Laura M. Glass, and she recently declined to be interviewed when the Albuquerque Journal did a deep dive of this history.

Laura, with some guidance from her dad, devised a computer simulation that showed how people — family members, co-workers, students in schools, people in social situations — interact. What she discovered was that school kids come in contact with about 140 people a day, more than any other group. Based on that finding, her program showed that in a hypothetical town of 10,000 people, 5,000 would be infected during a pandemic if no measures were taken, but only 500 would be infected if the schools were closed.

Laura's name appears on the foundational paper arguing for lockdowns and forced human separation. That paper is Targeted Social Distancing Designs for Pandemic Influenza (2006). It set out a model for forced separation and applied it with good results backwards in time to 1957. They conclude with a chilling call for what amounts to a totalitarian lockdown, all stated very matter-of-factly.

Implementation of social distancing strategies is challenging. They likely must be imposed for the duration of the local epidemic and possibly until a strain-specific vaccine is developed and distributed. If **compliance with the strategy is high** over this period, an epidemic within a community can be averted. However, if

neighboring communities do not also use these interventions, infected neighbors will continue to introduce influenza and prolong the local epidemic, albeit at a depressed level more easily accommodated by healthcare systems.

In other words, it was a high-school science experiment that eventually became law of the land, and through a circuitous route propelled not by science but politics.

The primary author of this paper was Robert J. Glass, a complex-systems analyst with Sandia National Laboratories. He had no medical training, much less an expertise in immunology or epidemiology.

That explains why Dr. D.A. Henderson, “who had been the leader of the international effort to eradicate smallpox,” completely rejected the whole scheme.

Says the NYT:

Dr. Henderson was convinced that it made no sense to force schools to close or public gatherings to stop. Teenagers would escape their homes to hang out at the mall. School lunch programs would close, and impoverished children would not have enough to eat. Hospital staffs would have a hard time going to work if their children were at home.

The measures embraced by Drs. Mecher and Hatchett would “result in significant disruption of the social functioning of communities and result in possibly serious economic problems,” Dr. Henderson wrote in his own academic paper responding to their ideas.

The answer, he insisted, was to tough it out: **Let the pandemic spread, treat people who get sick and work quickly to develop a vaccine to prevent it from coming back.**

AIER’s Phil Magness got to work to find the literature responding to the 2006 paper by Robert and Sarah Glass and discovered the following manifesto: Disease Mitigation Measures in the Control of Pandemic Influenza. The authors included D.A. Henderson, along with three professors from Johns Hopkins: infectious disease specialist Thomas V. Inglesby, epidemiologist Jennifer B. Nuzzo, and physician Tara O’Toole.

Their paper is a remarkably readable refutation of the entire lock-down model.

There are no historical observations or scientific studies that support the confinement by quarantine of groups of possibly infected people for extended periods in order to slow the spread of influenza. ... It is difficult to identify circumstances in the past half-century when large-scale quarantine has been effectively used in the control of any disease. The negative consequences of large-scale quarantine are so extreme (forced confinement of sick people with the well; complete restriction of movement of large populations; difficulty in getting critical supplies, medicines, and food to people inside the quarantine zone) that **this mitigation measure should be eliminated from serious consideration...**

Home quarantine also raises ethical questions. Implementation of home quarantine could result in healthy, uninfected people being placed at risk of infection from sick household members. Practices to reduce the chance of transmission (hand-washing, maintaining a distance of 3 feet from infected people, etc.) could be recommended, but a policy imposing home quarantine would preclude, for example, sending healthy children to stay with relatives when a family member becomes ill. Such a policy would also be particularly

hard on and dangerous to people living in close quarters, where the **risk of infection would be heightened....**

Travel restrictions, such as closing airports and screening travelers at borders, have historically been ineffective. The World Health Organization Writing Group concluded that “screening and quarantining entering travelers at international borders did not substantially delay virus introduction in past pandemics . . . and will likely be even less effective in the modern era.” . . . It is reasonable to assume that the economic costs of shutting down air or train travel would be very high, and the **societal costs involved in interrupting all air or train travel would be extreme...**

During seasonal influenza epidemics, public events with an expected large attendance have sometimes been cancelled or postponed, the rationale being to decrease the number of contacts with those who might be contagious. There are, however, no certain indications that these actions have had any definitive effect on the severity or duration of an epidemic. Were consideration to be given to doing this on a more extensive scale and for an extended period, questions immediately arise as to how many such events would be affected. There are many social gatherings that involve close contacts among people, and this prohibition might include church services, athletic events, perhaps all meetings of more than 100 people. It might mean closing theaters, restaurants, malls, large stores, and bars. **Implementing such measures would have seriously disruptive consequences...**

Schools are often closed for 1–2 weeks early in the development of seasonal community outbreaks of influenza primarily because of high absentee rates, especially in elementary

schools, and because of illness among teachers. This would seem reasonable on practical grounds. However, to close schools for longer periods is not only impracticable but **carries the possibility of a serious adverse outcome....**

Thus, cancelling or postponing large meetings would not be likely to have any significant effect on the development of the epidemic. While local concerns may result in the closure of particular events for logical reasons, a policy directing communitywide closure of public events seems inadvisable. Quarantine. As experience shows, there is no basis for recommending quarantine either of groups or individuals. **The problems in implementing such measures are formidable, and secondary effects of absenteeism and community disruption as well as possible adverse consequences, such as loss of public trust in government and stigmatization of quarantined people and groups, are likely to be considerable....**

Finally, the remarkable conclusion:

Experience has shown that communities faced with epidemics or other adverse events respond best and with the least anxiety when the **normal social functioning of the community is least disrupted.** Strong political and public health leadership to provide reassurance and to ensure that needed medical care services are provided are critical elements. If either is seen to be less than optimal, **a manageable epidemic could move toward catastrophe.**

Confronting a manageable epidemic and turning it into a catastrophe: that seems like a good description of everything that has happened in the COVID-19

crisis of 2020.

Thus did some of the most highly trained and experienced experts on epidemics warn with biting rhetoric against everything that the advocates of lockdown proposed. It was not even a real-world idea in the first place and showed no actual knowledge of viruses and disease mitigation. Again, the idea was born of a high-school science experiment using agent-based modelling techniques having nothing at all to do with real life, real science, or real medicine.

So the question becomes: how did the extreme view prevail?

The New York Times has the answer:

The [Bush] administration ultimately sided with the proponents of social distancing and shutdowns — though their victory was little noticed outside of public health circles. Their policy would become the basis for government planning and would be used extensively in simulations used to prepare for pandemics, and in a limited way in 2009 during an outbreak of the influenza called H1N1. **Then the coronavirus came, and the plan was put to work across the country for the first time.**

[Post-publication note: You can read the 2007 CDC paper here.: https://www.cdc.gov/flu/pandemic-resources/pdf/community_mitigation-sm.pdf. It is arguable that this paper did not favor full lockdown. I've spoken to Rajeev Venkayya, MD, who regards the 2007 plan as more liberal, and assures me that they never envisioned this level of lockdown: "lockdowns and shelter-in-place were not part of the recommendations." To my mind, fleshing out the full relationship between this 2007 document and current policy requires a separate article.]

The Times called one of the pro-lockdown researchers, Dr. Howard Markel, and asked what he thought of the lockdowns. His answer: he is glad

that his work was used to "save lives" but added, "**It is also horrifying.**" "We always knew this would be applied in worst-case scenarios," he said. "Even when you are working on dystopian concepts, you always hope it will never be used."

Ideas have consequences, as they say. Dream up an idea for a virus-controlling totalitarian society, one without an endgame and eschewing any experienced-based evidence that it would achieve the goal, and you might see it implemented someday. Lockdown might be the new orthodoxy but that doesn't make it medically sound or morally correct. At least now we know that many great doctors and scholars in 2006 did their best to stop this nightmare from unfolding. Their mighty paper should serve as a blueprint for dealing with the next pandemic.

May 15, 2020

Masks in Sweden: A Followup

DANIEL B. KLEIN

Contributor

In response to my piece on Masks in Sweden, I received the following fascinating note, by James Cooper, reproduced with his permission, which compares the attitude in Sweden with that in the United States. I think readers will find this very interesting.

Dr. Klein,

Thank you for your recent article on Sweden's response to COVID-19. I would just like to add my thoughts to the ongoing public discussion. I am an American living in Stockholm. I have been living here for 17 years and am fluent in Swedish. I am from Northern Virginia.

Regarding this article, I will just point out that the American people have been buffalo'd into a very binary way of thinking – there are only two possibilities when dealing with COVID-19 – complete lockdown or nothing at all. This is also referred to as TINA (There Is No Alternative).

For many of my American friends, they find it difficult to understand that there are many possibilities in between the two extremes. In fact, a more nuanced approach not only makes more sense, but is more sustainable. That is precisely what the Swedish approach is all about.

If you look at the numbers, you will see that there is negligible risk to those aged 4-50 years old. This group also happens to represent the most economically productive group in society as well as the group that spends the most money. So why shut them down?

The response I get from friends is that they must be shut down because otherwise people will die. This is an emotion based argument.

The reality is that in Sweden all at-risk people have been asked to self quarantine. If they do that, how will their lives be threatened by allowing the under-50 crowd to go out, with some social distancing guidelines?

Keep in mind that if you live with an at risk person, or you are a primary caregiver for an at risk person, then (in Sweden), you are expected to self quarantine; or at least go to extreme social distancing.

I myself had some concerns about whether I was in the risk group, and I took the precaution of keeping my kids home from school until such time as I could get a more definitive answer from my doctor. My kids' school fully supported me in this approach.

So, I go back to my American friends and ask, how can allowing the under-50 crowd out with social distancing put the at risk population in danger? Yes, it requires people to take personal responsibility and to actively work to protect those at risk. And, assuming this is followed, then those at risk can be expected to be reasonably protected.

Why did they have a complete lockdown in the U.S. in the first place? We were told that it was meant to flatten the curve so that the hospitals have a chance to deal with the patient loads. Mass lockdown simply pushes the problem out in time, to be dealt with later. Yes, over the next 18 months, at risk people will get the virus and there will be many that die. This is in large part unavoidable. I suspect that in the end we will see similar numbers within a range across all Western countries. This will play out over 12+ months.

If we can accept that statement, then we would

need to admire Sweden for taking an approach that does not further burden its economy, does not destroy people's God given right to freedom, while also working to protect those at risk, and augmenting immunity.

Americans have been Buffalo'd into TINA ("There Is No Alternative"). The reality is that there are a wide range of responses and one size does not fit all. There are sophisticated approaches that can be deployed which do not necessitate the destruction of our economy and the financial decimation of people and their families.

What NYC does should not necessarily be followed in Iowa. Iowa might look more like Sweden and NYC more like Helsinki.

All of the criticism and "hate" directed at Sweden is emotional and not following evidence based science. One wonders why people are reacting the way they are.

May 6, 2020

Will the Political Class Be Held Liable For What They've Done?

JAMES BOVARD

Contributor

Politically-dictated lockdowns and prohibitions have recently destroyed tens of millions of American jobs. Politicians have effectively claimed a right to inflict unlimited economic damage in pursuit of zero COVID-19 contagion. The perverse incentives driving the policy have multiplied the harm far beyond the original peril.

Almost 40% of households earning less than \$40,000 per year have someone who lost their job in recent months, according to the Federal Reserve. The Disaster Distress Helpline, a federal crisis hotline, received almost 900% more phone calls in March compared to a year ago. A recent *JAMA Psychiatry* analysis warned that stay-at-home orders and rising unemployment are a “perfect storm” for higher suicide rates. A California health organization recently estimated that up to 75,000 Americans could die from “despair” as a result of the pandemic, unemployment, and government restrictions.

In the name of saving lives, politicians have entitled themselves to destroy an unlimited number of livelihoods. Politicians in many states responded to COVID-19 by dropping the equivalent of a Reverse Neutron Bomb – something which destroys the economy while supposedly leaving human beings unharmed. But the only way to assume people were uninjured is to believe their existence is totally detached from their jobs, bank accounts, and mortgage and rent payments.

Politicians have vaccinated themselves against any blame for the economic carnage by touting experts who said it was all necessary. Over the past 90 days, government bureaucrats have become a new priesthood that can sanctify unlimited sacrifices in the name of the public health.

COVID policymakers have written themselves the same letter that Cardinal Richelieu, the 17th century French statesman, purportedly gave to his agents: “The Bearer of This Letter Has Acted Under My Orders and for the Good of the State.” This *carte blanche* was sufficient to place murders and other crimes above the law and beyond reproach in France. In contemporary America, the same exoneration is achieved by invoking “science” and “data.” Oregon Governor Kate Brown banned residents from leaving their homes except for essential work, buying food, and other narrow exemptions, and also banned all recreational travel. Six Oregon counties have only one confirmed COVID case, and most of the state has minimal infections. But schools, businesses, and other activities were slammed shut by government command.

Michigan Governor Gretchen Whitmer imposed some of the most severe restrictions, prohibiting anyone from leaving their home to visit family or friends. COVID infections were concentrated in the Detroit metropolitan area, but Whitmer shut down the entire state – including northern counties with near-zero infections and zero fatalities, boosting unemployment to 24% statewide. Her repression provoked fierce protests, and Whitmer responded by claiming that her dictates saved 3,500 lives. Whitmer exonerated herself with a statistical formula that was painfully ethereal compared to the stark physical devastation in Michigan.

Kentucky Governor Andy Beshear’s shutdown order resulted in the highest rate of unemployment in the nation – 33%. But according to Sen. Rand Paul, COVID’s impact in Kentucky “has not been worse than an average flu season.” But that did not stop

Beshear from banning people from attending church services and sending Kentucky State Police to attach notices to car windshields ordering church attendees to self-quarantine for 14 days and reporting them to local health departments.

Shutting down entire states, including vast uninfected rural swaths, is the economic equivalent of burning witches or sacrificing virgins to appease angry viral gods. Because politicians have no liability for the economic damage they inflict, they have no incentive to minimize the disruptions they decree. Trillions of dollars of new deficit spending will be vexing American workers for many years.

The state of Missouri has sued the government of China, claiming it is liable for the losses inflicted by the virus that apparently originated in Wuhan, China. Most observers predict that lawsuit will go nowhere. But, thanks to sovereign immunity, it would be even more hopeless for American citizens to sue American politicians for the damage that their shutdown orders have inflicted on their businesses, paychecks, and lives.

Sovereign immunity creates a two-tiered society: those above the law and those below it; those whom the law fails to bind and those whom the law fails to protect. This legal doctrine almost guarantees that no politician will face any personal liability for their shutdown dictates.

Even New York Governor Andrew Cuomo, who callously compelled nursing homes to accept COVID patients, will have no legal culpability for a policy that contributed to more than 5,000 nursing home deaths in his state. Pennsylvania Health Czar Rachel Levine issued a similar order, contributing to thousands of nursing home deaths, and then removed her own 95-year-old mother from a nursing home to keep her safe.

Politicians presume they are blameless for destroying jobs as long as the victims receive temporary unemployment compensation. Actually,

it is worse than that: politicians claim a right to seize a slice of the paychecks of people still working to recompense people whose jobs they destroyed. Would a private corporation be able to escape punishment for breaking people's legs by giving free crutches to its victims?

"Better safe than sorry" is damned risky when politicians have no liability for what they ravage. There is no way that politicians can compensate American citizens for all the damage they have inflicted in this pandemic. This COVID shutdown catastrophe should be a permanent black mark against the political class and the experts who sanctified each and every sacrifice.

May 21, 2020

Wait, So We Now Can't Say 'Human Capital'?

PHILLIP W. MAGNESS

Senior Research Fellow

Referring to the ongoing reopening process, White House economic adviser Kevin Hassett offered an off-the-cuff observation in a television interview with CNN: “Our capital stock hasn’t been destroyed, our human capital stock is ready to get back to work, and so there are lots of reasons to believe that we can get going way faster than we have in previous crises.”

Although “human capital” is a well-established concept from economics, Hassett’s use of it triggered a flood of hectoring fury from journalists and activist academics. A columnist for *Rolling Stone* blasted the phrase as “next-level apathetic,” noting that it “casually lines up with the lack of empathy shown to the victims of the coronavirus.”

A *Vox* commentator who first called attention to the clip blasted Hassett’s remark for allegedly “dehumanizing” workers. Sen. Elizabeth Warren chimed in, saying the phrase revealed a prioritization of “corporate profits” over the health and safety of workers. Congresswoman Alexandria Ocasio-Cortez went a step further, accusing Hassett of “racialized” terminology in a series of tweets. Academic Twitter chimed in to declare the phrase a code word for chattel slavery – a claim they linked to its alleged origins in the antebellum United States.

It would have taken these feverish commentators a quick google search to discover that Hassett was, at worst, guilty of importing economics jargon into his public commentary. Although it may be less than artful as a soundbite, human capital theory is a well-established conceptual framework for understanding the effects of education, training, job-acquired knowledge, creativity, and similar human assets on labor markets (see this short synopsis by Nobel laureate Gary Becker).

The scholarly literature on this subject is vast, and even the specific phrase that Hassett used – “human capital stock” garners over 16,000 citations according to Google Scholar.

It requires an almost intentionally uncharitable reading of Hassett’s remarks on “human capital” to make the leap to his critics’ judgements, let alone slavery. This latter claim appears to derive from academic works that ascribe its genesis to an 1842 usage in reference to the African slave trade, and to the “New History of Capitalism” literature, which has sought to reframe the concept as a slavery-specific reference.

But even this origin story is wrong. The phrase “human capital” saw multiple uses in the early 19th century. Its earliest use dates to at least 1799 in an account by historian William Tooke, who observed that rampant alcoholism was responsible for the “loss sustained by the [Russian empire] in its human capital.” Its economic formulation comes not from the practices of the plantation system, but from the 20th century subfield of development economics. In addition to Becker, the foundational contributions to human capital theory are usually credited to the work of Theodore Schultz and Sir Arthur Lewis. Although the phrase had not yet been adapted to its current academic use, its underlying formalization traces to a seminal 1954 article by Lewis:

“The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 or 5 percent of its national income or less, converts itself into an economy where voluntary saving is running

at about 12 to 15 percent of national income or more. This is the central problem because the central fact of development is rapid capital accumulation (*including knowledge and skills with capital*).” (emphasis added)

Lewis would expand on the complex relationship between knowledge, physical capital, and economic growth over the course of his career. But as Lewis later explained, human capital theory had even earlier conceptual origins in an lightly-elaborated observation by Adam Smith, who in 1776 noted that the “general stock” of capital in a country consists of:

Fourthly, of the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expence, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise of that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expence, repays that expence with a profit.

Lewis, of course, was the first and to date only black economist to win the Nobel Prize. And Smith was an outspoken opponent of slavery. While the economic applications of human capital theory continue to be debated, to depict them as an act of coded pining for the plantation system borders on conspiratorial lunacy.

So what, then, explains the unhinged responses to Hasset’s use of such a common economic concept? Allow me to suggest that it reflects a

barely-concealed undercurrent to the pro-lockdown enthusiasm we have witnessed from journalists and academics in the last few months.

Drawing upon their own ideological priors, many commentators in these two groups have come to view any and all pressures to reopen the economy through a paranoid lens. That lens portrays any effort to ease the lockdowns and allow people to return to their normal lines of employment as inherently “exploitative” on the grounds that doing so exposes them to potentially unsafe conditions at the penalty of losing their jobs.

Often accompanying this belief are unsubstantiated theories that (1) most businesses can afford to pay their workers to stay home through the “excess profits” that they all supposedly have, and that (2) most public manifestations of resentment against the lockdowns are being secretly orchestrated by monied interests who consider their workers “expendable.”

One does not need to look far to discover that these sentiments reflect an echo chamber among professionals who enjoy the luxury and comforts of being able to weather the pandemic while working at home. Meanwhile, an estimated 36 million Americans are currently out of work, with a disproportionate number of them coming from retail and service industries that have been forcibly closed for the last two months or longer.

It takes a bizarre ideological myopia to reach the conclusion that the lockdowns must be maintained in the interest of the very same people they have forcibly displaced from their means of income, let alone that journalists and academics know the prudence of this course better than the people most directly affected by the same decisions.

Yet that is our current political discourse. That is how even a casual reference to a common and widespread conceptual tool from economics can be contorted into a conspiratorial design for malice by persons who present themselves as intellectual

elites but lack even a passing familiarity with the subjects of their frenzied imaginations.

May 27, 2020

Incompetent Experts and Bad Government

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The late Richard Feynman, one of the 20th century's eminent physicists, famously said, "Science is the belief in the ignorance of experts." Unfortunately, the response of experts to the coronavirus pandemic has vindicated Feynman's claim.

Experts in the supposedly scientific fields of public health and economics have made a mess of things. Their failures would be comedic, were the consequences not so tragic. Instead of capable service for the public's welfare, the American people have been made to suffer incompetence and malfeasance. Unless we critically examine the failure of experts, we invite similar blunders in the future.

In terms of incompetence, it would be difficult to top this country's public health officials. Case in point is the Centers for Disease Control and Prevention. The CDC, as it describes itself, "saves lives and protects people from health, safety, and security threats." In truth, it has directly contributed to the opposite.

One glaring failure of the United States in regards to the pandemic is testing. We lag significantly behind other countries. This is largely the CDC's fault. The virus genome was mapped in January, and private tests were available not long after. But the CDC ordered these private labs to halt, coming up with its own test, which proved to be defective.

In fact, many of the testing kits assembled by the CDC were contaminated! Had the CDC not dropped the ball, we could have moved towards mass testing much sooner. This in turn would lessen the economic harm of the several states' stay-at-home orders. In other words, the CDC's incompetence is directly responsible for thousands of lives lost and trillions of dollars in economic damage.

But as bad as the CDC is, they can only be charged with incompetence, not malfeasance. The latter indictment applies to America's economic experts, especially those in charge of monetary policy. The Federal Reserve is charged with managing the country's money supply, in the service of full employment and price stability. Their mandate is strictly monetary policy: making sure markets have adequate liquidity to operate at their full potential. But ever since the 2007-8 crisis, the Fed has flirted with crossing the line between monetary and fiscal policy.

With the coronavirus pandemic, the Fed has brazenly stepped over that line. Ostensibly to support the economy, the Fed is buying corporate bonds, commercial paper, and municipal bonds. The planned size of this largesse (so far) is a cool \$2 trillion. In other words, the Fed is picking winners and losers.

It has definitively switched from referee to player in the game, and since the Fed has a monopoly on money creation, it's the biggest player around. This is malfeasance, because monetary policymakers can and do know better. They are not supposed to promote a particular allocation of resources. Their job is to give the market what it needs to allocate resources for itself. Direct resource allocation—fiscal policy—is the exclusive prerogative of the people's representatives, in Congress assembled. Thus, the Fed is usurping a key feature of Congress's Constitutional authority. Since Fed officials are not even subject to the relatively weak discipline of elections, this is a particularly egregious transgression of the most basic norms of republican democracy. The essence of the Fed's malfeasance is that it is now operating outside of the rule of law.

Ignorance and malfeasance: this is what the American people have been forced to endure from those who govern them. We have no reason to expect things will be different in the future, unless we unequivocally demand it otherwise. Experts have a role to play, but they are properly the servants of the people, not the masters. Americans are entitled to competent governance and their Constitutional rights. Rule by experts threatens both.

May 3, 2020

The Wisconsin Supreme Court's Decision Is Brilliant

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Wisconsin's Supreme Court decided by a 4-3 vote on Wednesday May 13, 2020 to strike down the state's "Safer at Home" order, its COVID-19 economic lockdown in other words. It did so completely, immediately, and unequivocally. You can read the decision and all the concurrences and dissents here.

Many moving pieces regarding constitutional issues like separation of powers and delegation of legislative powers to officers of the executive branch suffuse the decision. The concurring justices, however, cut through all of that and kept their eyes on the key Constitutional issues, many of which have been discussed by AIER here and here.

Below are key excerpts from the decision. "Palm" refers not to a part of a hand but to the surname of the Wisconsin official whose actions the court declared illegal. Although the decision directly frees only Wisconsin, the principles are broadly applicable to the national government and all US states. Yes, even California.

While many states have already loosened their lockdowns enough to avoid a similar judicial smackdown, it is important to declare unconstitutional all measures that crossed the line from legitimate public health order (which again, may include quarantine [the sick], cordon sanitaire [infected districts], or protective sequestration [uninfected districts] depending on circumstances) into tyrannical power grab so, like the unconstitutional internment of Americans during World War II, it never happens again.

* * *

We do not conclude that Palm was without any power to act in the face of this pandemic. However, **Palm must follow the law** that is applicable to state-wide emergencies. We further conclude that Palm's order confining all people to their homes, forbidding travel and closing businesses **exceeded the statutory authority** of Wis. Stat. 252.02 upon which Palm claims to rely.

* * *

Palm points to statutes that she asserts give her broad authority to impose regulation; but it does not follow she can impose regulation without going through a process to give people faith in the justness of the regulation. However, under Palm's theory, she can 'implement all emergency measures necessary to control communicable diseases,' ... even at the expense of fundamental liberties, without rulemaking. **That interpretation is constitutionally suspect.**

* * *

Article I, Section 1 of the Wisconsin Constitution provides that 'All people are born equally free and independent, and have **certain inherent rights**; among these are life, liberty and the pursuit of happiness; to secure these rights, governments are instituted, deriving their just powers from the consent of the governed.'" [If this sounds familiar, see the Declaration of Independence.]

* * *

At times, legislation is enacted that infringes on a person's rights despite these front-end procedures [separation of powers; bicameralism], however, for that we have **judicial review**.

* * *

When a grant of legislative power is made, there must be **procedural safeguards** to prevent the "arbitrary, unreasonable or oppressive conduct of the agency."

* * *

Palm **cannot** point to any procedural safeguards on the power she claims.

* * *

[Palm's argument about being able to fine and imprison those who break her order] is **without legal foundation** and ignores more than 50 years of Wisconsin law.

* * *

Constitutional law has generally permitted the Governor to respond to emergencies without the need for legislative approval. ... **But the Governor's emergency powers are premised on the inability to secure legislative approval** given the nature of the emergency. ... In the case of a pandemic, which lasts month after month, **the Governor cannot rely on emergency powers** indefinitely.

* * *

Crimes created by the Legislature in statutes must have **specificity** in order to be enforceable. ... Because **Palm fails to understand the specificity necessary** to a valid criminal statute, she also fails to understand that no less specificity is required of a rule to which criminal penalties are assigned.

* * *

Order 28 exceeds the [statutory] authority to **quarantine those infected or suspected of being infected**. ... This directive is not based on persons infected or suspected of being infected.

* * *

The cites no authority for this **vast seizure of power**.

* * *

As the United States Department of Justice has recently written in a COVID-19-related case raising constitutional issues, "**There is no pandemic exclusion** ... to the fundamental liberties the Constitution safeguards."

* * *

The concurring opinion of Justice Rebecca Bradley is also a brilliant exposition of what used to be considered Civics 099 (i.e., high school level stuff) but apparently today requires detailed explanation, even to state supreme court justices, the dissent of one

of whom Bradley eviscerates in footnote 3: **“Spurning more than two centuries of fundamental constitutional law as well as the Wisconsin Constitution’s guarantee of liberty,** Justice Brian Hagedorn shockingly proclaims ‘the judiciary itself must never cast aside our laws or the constitution itself in the name of liberty. . . . Setting aside the self-contradictory nature of that statement, **Justice Hagedorn’s 53-page opinion contains no constitutional analysis whatsoever.”** One assumes Hagedorn, like many of us, is suffering from Lockdown Brain.

Look for more court decisions in the weeks to come, hopefully ones where the Bradleys outnumber the Hagedorns.

May 14, 2020

The Struggle for Science in Demented Times

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A few years ago the University of Vienna mathematician Karl Sigmund published a book under the title *Exact Thinking in Demented Times*, and his focus was on the rise of the Vienna Circle and positivism as a response to the ideological delusions of the 1920s and 1930s. The book has much to recommend it, but a critical engagement is not my concern here. In my own book on Hayek, I also invoke this phrase, as I think it captures Hayek's scientific and philosophical quest as well – to strive for exact thinking in demented times. Hayek's answer is different from those of the Vienna Circle, but the desire is the same.

Science is motivated either by a sense of awe and wonder, or by a sense of urgency and necessity. Necessity may be the mother of invention, but it is curiosity that fuels science. Basic scientific knowledge is perhaps the domain of the curious, while applied scientific knowledge and in particular the transformation of scientific knowledge into commercially valuable knowledge may be the domain of the courageous. And, *scientific progress* may, more often than not, follow more naturally from that sense of awe and wonder than urgency and necessity. This is because, I would argue, that science so pursued unleashes human curiosity and encourages creativity and the back and forth of critical engagement.

Awe and wonder imposes on us from the start of our inquiry a deep epistemic humility in the face of the amazing, the beautiful and the complexity of the object of our study. We are humbled by this mysterious phenomena that stimulates our thinking in a quest to understand and bring it into sharp relief. We question and we offer tentative answers, and we question some more as we ponder the mysteries of the universe. We are always willing to ask questions,

which may not have answers, and we never accept answers that cannot be questioned. The scientific quest continues and progresses as we push back frontiers of knowledge, only to realize that the more we know, the more we know we don't know. This is how scientific knowledge grows.

Urgency and necessity, on the other hand, often begin with a confidence that any problem posed has a solution that science can provide. As a result, in response to a sense of urgency and necessity we often organize inquiry as if it is a military mission, with a central command, and a common purpose, and scientific energy is mobilized as opposed to being cultivated and unleashed. Not always, but more often than not, these efforts lead us down a dead end as opposed to what the popular caricatures of the Manhattan Project, or the Space Race, would have us believe.

In fact, one of the great defenders of science and the free society – Michael Polanyi – moved from a practicing physical chemist to a philosopher of science precisely because he witnessed his scientific colleagues and friends working in the communist countries of East and Central Europe and the Soviet Union suffer under the yoke of the command and control approach to scientific inquiry. At the same time, there are moments of urgency and necessity where the scientific discovery of new and vital knowledge will determine questions of life and death of people, nations, and civilization itself.

It would be a huge mistake to think this was just a problem for scientific inquiry found in the former totalitarian regimes of the 20th century. Even in the Western democracies the scientific attitude took hold after the Great Depression and WWII, and

transformed the scientific and intellectual culture.

President Dwight Eisenhower, for example, in his farewell address famously warned about the “military industrial complex,” but he also warned about the dangers that the transformation of science and scholarship had undergone since WWII and its impact on science in a free and democratic society. As he wrote:

Today, the solitary inventor, tinkering in his shop, has been overshadowed by task forces of scientists in laboratories and testing fields. In the same fashion, the free university, historically the fountainhead of free ideas and scientific discovery, has experienced a revolution in the conduct of research. Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. For every old blackboard there are now hundreds of new electronic computers.

The prospect of domination of the nation’s scholars by Federal employment, project allocations, and the power of money is ever present and is gravely to be regarded.

Yet, in holding scientific research and discovery in respect, as we should, *we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.*

It is the task of statesmanship to mold, to balance, and to integrate these and other forces, new and old, within the principles of our democratic system—ever aiming toward the supreme goals of our free society. (emphasis added)

Obviously, awe and wonder do not need to ever be at odds with urgency and necessity, but the epistemic humility encouraged by the first runs into

the epistemic confidence embodied in the second, and the institutions and organizational practices of inquiry balance the tension.

Science can bear fruit in the practical – just look around us at all the amazing accomplishments of applied science from engineering to technology to medical advances. Science is amazing. Human ingenuity is amazing. Remember AWE and WONDER, and the ultimate resource is the human imagination.

The concern that Eisenhower raised in that address is the “capturing” of science by a technocratic elite, and thus insulating themselves from the democratic process of collective decision-making, and maintaining a position of *monopoly experts*. In times of a crisis, when urgency and necessity trump awe and wonder in science, scientific inquiry gets organized and requires leaders like Robert Oppenheimer and General Leslie Groves.

During a crisis, fate appears to hang in the balance, and mental and material resources must be coordinated and that requires a commander who is in control of the process. But that will not work if curiosity is squashed in the effort to courageously command.

In economics, such moments confronted the community of scientists in the wake of the Great Depression, in the wake of the Collapse of Communism, in the wake of the Global Financial Crisis, and it appears today in the wake of COVID-19. Our knowledge learned from our explorations motivated by awe and wonder must be applied to address what must be done due to urgency and necessity. At least, that is what I would argue science in real time should do if we hope to make progress on tackling the issue at hand.

But, in reality, science in real time always operates within the context of the brine of politics. Emotion, mood affiliation, and electoral concerns substitute for sound reason and careful empirical analysis. All of this makes perfectly rational sense. Politicians

are not saintly creatures, nor are their appointed public officials. They may be perfectly scientifically competent, but they – like all of us – face incentives in the context within which they operate. And as analysts it is vital to always remember that *context matters*.

Knowledge is necessarily imperfect. As Einstein repeatedly stressed about research, if we knew the answer, then we wouldn't call it research. And, the scientific process is one grounded in a culture of criticism. As Richard Feynman often stressed, the true scientific attitude is reflected when one understands that it is always preferred to ask questions that cannot be answered to offering answers that cannot be questioned. Science motivated by awe and wonder has this luxury, science motivated by urgency and necessity often does not. A fire is raging, and we must put that fire out.

The idea of mobilizing science to address pressing practical issues of an existential threat due to natural or man-made disaster, or economic crises or global public good, tends to favor command and control “task force” initiatives. The resources go to fund a process that has a single goal in mind – defeat the enemy, end poverty, whip inflation – and talent is focused on that single goal.

To invoke an image from cinema concerning space travel, remember the scene in *Apollo 13*, when it is realized that they have a CO₂ problem with the air filters, and the lead engineer comes into the room and says we have to build a filter that fits into this hole with only these materials. The other engineers work feverishly to solve that problem before the air quality becomes so dangerous that the astronauts succumb to the situation.

That is a classic engineering problem. It is not a problem of scientific discovery, but of puzzle solving. Similarly, once was step back from immediate urgency, one must always remember that the resources involved in mobilizing scientific

energy require resources, and those resources come from the public purse.

To invoke another scene in another space movie, *The Right Stuff*, the test pilots are bantering back and forth and a journalist reminds them that “without bucks, there is no Buck Rogers.” They need to get appropriations, and that requires political gladhanding. Back to *Apollo 13*, remember that James Lovell (played by Tom Hanks) is leading a tour of Congressmen through the NASA command center when he learns that he will be leading the next Apollo mission.

At the present moment our demented times are not defined by ideological delusions of communism or fascism, nor military aggression by a foreign enemy combatant, nor a hurricane or tsunami that has swept away a city, but a virus that has spread throughout the globe. The movie reference perhaps most applicable isn't *Planet of the Apes* or *World War Z*, but *And the Band Played On*, a docudrama about the discovery of HIV/AIDS in the early 1980s. One of the things I loved about this movie is the depictions of both the passion and sense of urgency that the scientists exhibit. The field scientists exist in that borderland between natural and social science. With respect to infectious disease, the natural science is molecular virology, but the social science is in the interaction of the virus with human populations that have choices with regard to how they behave when confronted with knowledge of the virus.

The natural scientists may be confronted with the troubling aspect of human strategy only with respect to their own behavior with regard to jockeying for prestige, position, and funding, but the epidemiologists and social network analysts must try to capture not only the natural science, but the strategic response of the populations impacted by the virus, and their own jockeying for prestige, position, and funding.

In the movie ***And the Band Played On***, the science at the CDC is guided by the mantra of (1) what do I think, (2) what do I know, (3) what can

I prove, but the everyday operation is guided by a concern for responsible communication that does not cause either panic or upset political interests so that funding can be secured. The entire point of the docudrama is to show the audience the role that politics – at a personal, organizational, and local, state and federal government level – played in the *frustrating process of the discovery of scientific knowledge and the dissemination of useful scientific knowledge to address a policy issue of urgency and necessity*.

If you think this is any different this time around with COVID-19, just look around. And, it isn't just at the public bureaucracies at the federal level. The association of Governors issued a joint statement about a month ago saying that COVID-19 funds should not be restricted just to COVID-19 expenses. The CARES Act includes a 20% premium on top of normal Medicare payments to hospitals for patients classified as COVID-19. Mayor Muriel Bowser of DC recently announced that in response to the COVID-19 crisis, the city will allocate more than \$300 million for construction of St Elizabeth's East that will be operated by George Washington University, and also an expansion of 225 beds to Howard University Hospital. These projects are expected to open in 2025 and 2026.

Whatever the need for high quality health care in underserved parts of the city is, the pretext that these construction projects are to address the current COVID-19 situation must be looked upon with some suspicion. On the relevant margin, choices will be biased in one direction rather than another because of the simple economic calculus of marginal costs and marginal benefits of this or that choice. None of this relies on any claim that a conspiracy of corruption is underway. All that is being stressed is that incentives are at work on a multiplicity of margins that will direct attention away from the immediate problem at hand, and focus instead on the ordinary yet peculiar

business of politics. It is just vital to our quest for exact thinking about current affairs to never forget that politics at the local, state and federal level are the one constant in a fluid and dynamic search for some knowledge and wisdom in public policy.

Recognizing the ever-present reality of politics involved does not take away either from the virology, or the epidemiology, but it may impact the theory choice of the decision-makers. The models that best serve the interest of public health officials, or the electoral chances for the politician, are going to be chosen. Again, nothing in that guarantees they will be the wrong choice of theory; it just means that a citizen one should always think critically not only with the information one is being asked to process but through the theoretical lens which information is being conveyed to you and which is guiding public policy decisions that impact your health and well-being.

This does put a burden on citizens, as they are being asked to critically verify information that may be extremely difficult for them to actually do. But that would be true no matter what I say. One of the primary goals of economics teachers is to convey to their students the tools required for them to become informed participants in the democratic process of collective decision-making. If we are failing in our task as educators, that is on us as educators at the high school, college and university level, but it doesn't change the basic truth that epidemiology models must account for changes in human behavior and that another layer in all of this is not only the interaction with politics on human behavior within the populations we study, but that politics is involved in the choice of which models are chosen to guide public policy.

In our quest for exact thinking in these demented times, we are dealing with a situation of essential complexity. It is a dynamic and fluid reality we are trying to capture at multiple levels – the virus itself

(natural science), the interaction of the virus with human populations (epidemiology), the adjustment and adaptations of human actors to the knowledge of the virus (social science), and the ever-present politics of policy response, and the choice of models attempting to capture all of what I just described.

Scientific understanding is always difficult to acquire; it takes training and diligence, but when our awe and wonder excite our imagination our creative powers are unleashed. Science in real time, on the other hand, relies on our sense of urgency and necessity, and in doing so is more prone to emotion, mood affiliation, and the ordinary business of politics.

To address a public health crisis, sound science must be deployed intelligently. What I am warning about is precisely about that. How can reason within democratic action on pressing issues be assured? The answer to that, I would argue turns not on the rejection of sound science, nor doubting the need for science in real time, but in effectively challenging the presumed monopoly status of experts and the command and control notion of mobilizing scientific energy to address a crisis.

It is not ‘Moon Shots’ that are needed, but nimble and diverse experimentation, and lots of it. Epistemic humility, not epistemic confidence in technocratic elites, should be how we enter the process, and diversity of viewpoints and contestation at different decision nodes must be built in. Not the mobilization of resources, but cultivation of curiosity and creativity should be the goal.

The Manhattan Project or NASA should not be the model we desperately turn to in our hour of need, but instead to examples of private and public sector ingenuity and gumption that leads to improved treatments and ultimately, hopefully, to a vaccine. That will require acts of entrepreneurship at each and every node of decision.

May 13, 2020

Micromanaged Business Reopenings Could Cause More Harm

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Senior Research Fellow

Depending on who you ask about the reopening of businesses beginning across the United States this week, we may have finally reached the light at the end of a self-imposed tunnel or be on the brink of a reckless leap into the abyss. Where both visions likely go wrong is their assumption of a climactic moment, where some are proven right and some wrong, and we turn the page on the COVID-19 pandemic that's dominated our lives like few other events in recent memory.

Those seeking closure as America reopens will likely be disappointed. Judging by most states' specific plans, we're in for an arduous, confusing process with enough moving parts to provide the cover necessary for nobody to have to rethink much of anything. How appropriate that while encouraging this bitter cacophony these elaborate attempts at the illusion of control crowd out the one freely cooperative activity that cuts across even the most intractable lines—good old-fashioned commerce.

Make America Hayekian

The forced closures of businesses and “shelter in place” orders issued by almost every U.S. state hit the economy like a freight train in late March and early April. Now, the consensus across levels of government appears to be a meticulous and micro-managed rollback process, akin to the careful investigation that might take place after a literal trainwreck.

A drawn-out reopening process actively managed by state regulators rather than communities or businesses themselves suggests the scope for even more damage to an economy that already saw unemployment climb from 4 percent in March to over 14

percent in April.

During his brief staring contest with the 2020 Presidential elections, Michigan congressman Justin Amash hit the nail on the head of what regulators are getting wrong:

Epidemiologists cannot know the specific actions of each individual in a community. This kind of knowledge is not knowable to any scientist. The top mistake being made by state governments is their imposing uniform rules that limit the use of local knowledge to fight the virus.

Responses in some circles casting Amash as a Luddite bumpkin failing to see the scientific big picture instead showed their own naiveté in the face of a modern complex society. The reality of supply chains, overextended households, the quirks of local communities, and dozens of other factors mean economic activity will likely lag far behind the rates that regulatory hand-pickers intend.

Whether managed step-by-step or allowed to happen all at once, U.S. businesses will be reopening their doors to an entirely new reality. The process of finding a sustainable and prosperous normal will be messy and involve too much suffering even at its best. But regulations meant to ease the country back to work are more likely to prevent businesses from engaging in an informative discovery process through competition and making the small intuitive adjustments impossible to implement from the top down. Most states, including AIER's home of Massachusetts, appear to be heading down this dangerous road.

Bay State Blues

The plan put forward by Massachusetts, with its decades-long history of overcooked regulatory schemes, unsurprisingly reveals an understanding of markets and governments' role directly at odds with at least a few of its residents.

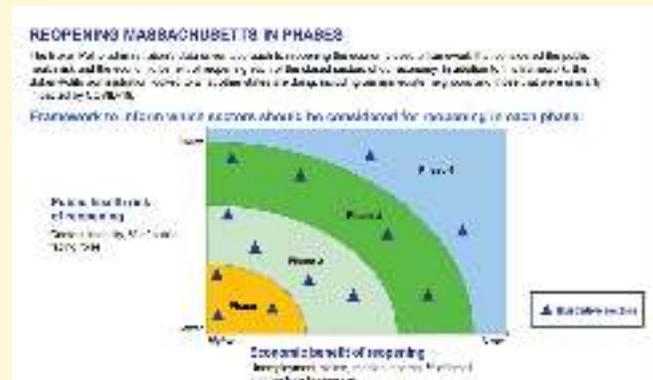
The authors of a May 18, 2020 PowerPoint document entitled "Reopening Massachusetts" clearly wanted to demonstrate to state residents just how careful they intended to be while letting the state get back to business. As the screenshot below shows, the state's plan revolves around a multi-phase timeline, with different kinds of businesses allowed to begin the steps at different times and many opportunities for the state to hit the breaks in the event of increased observed COVID-19 transmission:



State planners betray at least some awareness of how little information they have to work with when they try to jump from the knowledge-problem frying pan into the rent-seeking fire, looking to “partner with industries to draft Sector-Specific Protocols in advance of future phases.” No doubt these future protocols will favor the large and well-connected businesses invited to such “partnering” sessions.

What objective scientific criteria does the state employ when they decide which business will begin the process sooner rather than later? The document falls somewhere short of gravitas when representing the process on a graph in which “public health risk

of reopening” is plotted against “economic benefit of reopening.”



In attempting to convey that the adults in the room have spent a long time thinking about this difficult issue, Massachusetts instead exposes just how little regulators' blunt instruments can possibly add.

Many other states, while piling on details in a manner similar to Massachusetts, vary across several dimensions in approach. Pennsylvania, whose initial stay-at-home orders varied by county (potentially an improvement over statewide scheduling), plans a similar approach when reopening. Other states, such as Wisconsin by court edict and Georgia by regulatory preference, appear to be opening faster and more broadly than average. But as a whole state governments appear poised to do more harm than necessary in ending a work stoppage they created.

Libertarian Half-Measures

This process-oriented way of thinking about markets and competition is second nature to many libertarians, but as reaction to Amash's tweet indicates, it is not how the majority of people nor most regulators are used to thinking. I fear that this disconnect is forgotten by both sides when the only free-market pushback anyone hears is “open everything immediately.”

This may be ideologically honest and consistent, but save the occasional state Supreme Court judge, is

unlikely to be heard by government while this crisis is underway. The value of individuals having even limited freedom and flexibility to make decisions responsive to the knowledge only they possess is already visible in the first stage of this crisis.

In theory “voluntary” and “forced” are absolute and distinct ideas. In a real world where many things happen at once, enforcement is costly, and no two individuals are the same, those lines can easily blur. Forced business closures in response to COVID-19 fall on visible targets and are relatively easy for regulators to enforce. It would be very difficult for most businesses to make a couple of sales to customers most needing their products or services without bearing fixed startup costs or simply being caught. Regulators likely stomped out this type of local knowledge when they forced many businesses closed.

Individuals and families, through “shelter in place” orders not to mention closed businesses, have borne very large costs as well, whether or not one deems those costs “worth it” in stopping the virus’ spread. But beyond the worst anecdotes and literal readings of rules, most of us have moved about in a manner that, while restricted, involves some degree of personal choice.

Though I’ve certainly reduced my trips out through some combination of risk of law enforcement reprisal, social pressure, and belief that it would slow the virus’ spread, the specific times when I have left the house have been up to me. If my trips out were reduced by three quarters, I likely have a good deal of discretion to make my remaining trips out have value to me in the upper quartile.

Business owners, during forced closures or micro-managed reopenings, have no such opportunity for breathing room through their own discretion. State governments who insist on phased reopenings should instead look to rules with more room for interpretation or, in a counterintuitive manner, can’t be perfectly enforced. This is nobody’s idea of a

perfect solution or one that makes good social media copy. But it would likely reduce economic damage from managed reopenings just underway.

We will have years to make the case that shutdowns were the wrong call, or that government epidemiological models were biased toward disaster, among dozens of other individual or systemic catastrophes. We might spend more time considering this and other incremental steps that could help people now during these uncertain next few months.

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