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#### The biotech industry is strong now---it’s weathered the COVID storm.

Cancherini et al. 21 – Consultant in McKinsey’s Brussels office

Laura Cancherini, Joseph Lydon, Jorge Santos da Silva, Alexandra Zemp, “What’s ahead for biotech: Another wave or low tide?,” McKinsey & Company, April 2021, https://www.mckinsey.com/industries/life-sciences/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide

Unlike most industries in these extraordinarily challenging times, biotech is experiencing a high. Executives in many other sectors are becoming more pessimistic about the outlook for their businesses as the global pandemic continues to spread.1 But the search to understand and find treatment or preventive solutions to COVID-19 has focused intense government, media, and public attention on science and medicine, reinforcing the perception that biotech acquisitions and partnerships represent a good investment.

In an effort to understand worldwide biotech financing in the context of the COVID-19 crisis, McKinsey analyzed the sector’s financial performance and interviewed 20 C-level executives from small and midsize biotechs and venture-capital (VC) firms.

The pandemic has had an enormous financial impact on many sectors, but biotech has weathered the storm: after a brief downturn early in the crisis, it recovered quickly (Exhibit 1). Between January 2020 and January 2021, the average share price for European and US biotechs increased at more than twice the rate of the S&P 500, and Chinese biotechs performed more than six times better, with their average share price more than doubling in a year. Overall, biotech is outperforming its sister industry, pharmaceuticals, as well as many household-name consumer-goods and technology companies.

With acquisitions, partnerships, IPOs, and fundraising still increasing, biotech’s star has, if anything, risen higher than it was before the pandemic. The industry’s response to the crisis, its record of innovation, and its reputation as a safe haven for investment have all served it well. But whether biotech can sustain this performance is open to question. This article looks at the industry’s record of growth, its resilience during the global pandemic, and the factors that could determine whether the biotech wave continues.

#### Biotech is key to climate change solutions---waiving IP rights decks it by setting a sweeping precedent that chills innovation.

Brand 21 – Assistant General Counsel and Director of Intellectual Property at the Biotechnology Innovation Organization

Melissa Brand, “TRIPS IP Waiver Could Establish Dangerous Precedent for Climate Change and Other Biotech Sectors,” IP Watchdog, May 2021, https://www.ipwatchdog.com/2021/05/26/trips-ip-waiver-establish-dangerous-precedent-climate-change-biotech-sectors/id=133964/

While the discussions around waiving intellectual property (IP) rights set forth in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) are currently (and somewhat amorphously) limited to COVID-19 related drug and medical products, it is probably shortsighted to ignore the implications for other technologies critical to sustaining our environment and advancing a more healthful world. In fact, if we want to ensure continued investment in these technologies, we should be very concerned about the message conveyed by the international political tide: if you overcome a challenging scientific problem and your solution has the potential to save lives, be prepared to be subjected to intense political pressure and to potentially hand over your technology without compensation and regardless of the consequences.

The biotech industry is making remarkable advances towards climate change solutions, and it is precisely for this reason that it can expect to be in the crosshairs of potential IP waiver discussions. President Biden is correct to refer to climate change as an existential crisis. Yet it does not take too much effort to connect the dots between President Biden’s focus on climate change and his Administration’s recent commitment to waive global IP rights for Covid vaccines (TRIPS IP Waiver). “This is a global health crisis, and the extraordinary circumstances of the COVID-19 pandemic call for extraordinary measures.” If an IP waiver is purportedly necessary to solve the COVID-19 global health crisis (and of course we dispute this notion), can we really feel confident that this or some future Administration will not apply the same logic to the climate crisis? And, without the confidence in the underlying IP for such solutions, what does this mean for U.S. innovation and economic growth? United States Trade Representative (USTR) Katherine Tai was subject to questioning along this very line during a recent Senate Finance Committee hearing. And while Ambassador Tai did not affirmatively state that an IP waiver would be in the future for climate change technology, she surely did not assuage the concerns of interested parties.

International Pressure May Be Influencing Domestic IP Policy

The United States has historically supported robust IP protection. This support is one reason the United States is the center of biotechnology innovation and leading the fight against COVID-19. However, a brief review of the domestic legislation arguably most relevant to this discussion shows just how far the international campaign against IP rights has eroded our normative position. The Clean Air Act, for example, contains a provision allowing for the mandatory licensing of patents covering certain devices for reducing air pollution. Importantly, however, the patent owner is accorded due process and the statute lays out a detailed process regulating the manner in which any such license can be issued, including findings of necessity and that no reasonable alternative method to accomplish the legislated goal exists. Also of critical importance is that the statute requires compensation to the patent holder. Similarly, the Atomic Energy Act contemplates mandatory licensing of patents covering inventions of primary importance in producing or utilizing atomic energy. This statute, too, requires due process, findings of importance to the statutory goals and compensation to the rights holder.

A TRIPS IP waiver would operate outside of these types of frameworks. There would be no due process, no particularized findings, no compensation and no recourse. Indeed, the fact that the World Trade Organization (WTO) already has a process under the TRIPS agreement to address public health crises, including the compulsory licensing provisions, with necessary guardrails and compensation, makes quite clear that the waiver would operate as a free for all.

Forced Tech Transfer Could Be on The Table

When being questioned about the scope of a potential TRIPS IP waiver, Ambassador Tai invoked the proverb “Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.” While this answer suggests primarily that, in times of famine, the Administration would rather give away other people’s fishing rods than share its own plentiful supply of fish (here: actual COVID-19 vaccine stocks), it is apparent that in Ambassador Tai’s view waiving patent rights alone would not help lower- and middle-income countries produce their own vaccines. Rather, they would need to be taught how to make the vaccines and given the biotech industry’s manufacturing know-how, sensitive cell lines, and proprietary cell culture media in order to do so.

In other words, Ambassador Tai acknowledged that the scope of the current TRIPS IP waiver discussions includes the concept of forced tech transfer. In the context of climate change, the idea would be that companies who develop successful methods for producing new seed technologies and sustainable biomass, reducing greenhouse gases in manufacturing and transportation, capturing and sequestering carbon in soil and products, and more, would be required to turn over their proprietary know-how to global competitors.

While it is unclear how this concept would work in practice and under the constitutions of certain countries, the suggestion alone could be devastating to voluntary international collaborations. Even if one could assume that the United States could not implement forced tech transfer on its own soil, what about the governments of our international development partners? It is not hard to understand that a U.S.-based company developing climate change technologies would be unenthusiastic about partnering with a company abroad knowing that the foreign country’s government is on track – with the assent of the U.S. government – to change its laws and seize proprietary materials and know-how that had been voluntarily transferred to the local company.

Necessary Investment Could Diminish

Developing climate change solutions is not an easy endeavor and bad policy positions threaten the likelihood that they will materialize. These products have long lead times from research and development to market introduction, owing not only to a high rate of failure but also rigorous regulatory oversight. Significant investment is required to sustain and drive these challenging and long-enduring endeavors. For example, synthetic biology companies critical to this area of innovation raised over $1 billion in investment in the second quarter of 2019 alone. If investors cannot be confident that IP will be in place to protect important climate change technologies after their long road from bench to market, it is unlikely they will continue to invest at the current and required levels.

Next on the Chopping Block

It is quite reasonable to be worried about the broad implications of a TRIPS IP waiver precedent. International campaigns to weaken IP rights seem to be taking hold in U.S. domestic policy. The TRIPS IP waiver discussions will not conclude in the near term and will not yield more shots in people’s arms. This is not even truly disputed, as our own administration acknowledges that the goal here is technology transfer abroad. Given the signaling that our Administration believes waiving IP rights is an appropriate measure to end global crises, it is proper to worry that facets of the biotech sector addressing climate change may be next on the chopping block.

#### Biotech innovation is uniquely key to combatting climate change.

McMurry-Heath 21 – Physician-scientist and the president and CEO of the Biotechnology Innovation Organization

Michelle McMurry-Heath, “To help solve climate change, look to the biosciences,” STAT News, May 2021, https://www.statnews.com/2021/05/21/climate-change-solutions-from-biosciences/

President Biden’s pledge to cut U.S. greenhouse gas emissions in half by 2030 is an admirable and ambitious undertaking. It’s nearly double the goal set by President Obama in 2015. And it establishes the United States as a world leader in battling climate change.

But reaching the president’s target in just under 10 years is a monumental task. It’s so big, in fact, that we’ll never get there by government action alone. No amount of vehicle efficiency standards, forest conservation efforts, or gas taxes can fully solve the problem.

We have to science our way out of it.

The biosciences, including biotechnology, will play a pivotal role in the fight against climate change. It is already leading the way on several fronts. According to a report from BIO, the organization I work for, the biotech industry’s green initiatives could mitigate the equivalent of 3 billion tons of carbon dioxide every year by 2030, or about half of the country’s annual CO2 emissions.

Take food, for example.

Food consumption — and production — is central to human existence. Global food production accounts for one-quarter of greenhouse gas emissions. A recent report from an international team of researchers concluded that even if all other fossil fuel emissions were eliminated, emissions from food production alone would prevent us from reaching a key goal of the climate change agreement signed in Paris: preventing the global temperature from rising more than 2 degrees Celsius.

Halting food production isn’t an option, so biotech companies are helping farmers become part of the climate solution. Take, for example, Boston-based Joyn Bio. It is engineering bacteria that pull nitrogen directly from the atmosphere. These microbes then pass the nitrogen to crops like wheat and corn, reducing the need to make, transport, and apply nitrogen fertilizers, which reduces greenhouse gas emissions.

Minnesota-based Acceligen is using a technique it calls precision breeding that improves the health of livestock while reducing their waste, greenhouse gas emissions, and water usage.

Biotechnology can also help protect food from climate change. As fungal and bacterial infections accelerated by human-driven environmental disturbances threaten to wipe out Cavendish bananas, Tropic Biosciences in the United Kingdom is using CRISPR gene-editing technology to engineer infection-resistant bananas.

Companies are also rethinking how food is packaged to reduce plastic pollution and open high-tech paths to broader adoption of biodegradables. This would be a game-changer in the interlinked fight to modulate climate change and protect the oceans.

Globally, 100 million tons of plastic are produced every year, 8 million of which ends up in the oceans. The production of plastic requires at least 8% of the world’s petroleum. Greenhouse gas emissions from plastic production and incineration could rise from the current 850 million tons a year to 3 billion tons a year by 2050. And discarded plastic that ends up in the ocean slowly breaks down in sunlight, releasing greenhouse gases and toxic microplastics.

Georgia-based Danimer Scientific — partnering with the Mars Wrigley candy company — is working on biodegradable packaging that uses plant oils to manufacture “plastic” that dissolves in soil and water. Bioplastics and biopolymers can reduce greenhouse gas emissions reductions by up to 80% more compared to their petroleum-based counterparts.

Fuel is another target for biotechnology. Transportation accounts for the highest percentage of U.S. greenhouse gas emissions. While electric cars are gaining popularity, and the $174 billion allocated to support the transition to electrics in Biden’s American Jobs Plan is important, biofuels — which are carbon neutral — will be needed to help reduce emissions in transportation and need comparable support.

The biotech company Synthetic Genomics, for instance, is utilizing saltwater algae, which convert sunlight and carbon dioxide into biomass, to make sustainable auto fuel. By 2025, 10,000 barrels of the algal biofuel could be produced per day for commercial use.

Biofuels will also play an important role in air travel. While flying accounts for less than 3% of global CO2 emissions a year, on a per-mile calculation it’s the least green form of travel. With the number of air travel passengers expected to double by 2040, the Biden administration is upping the financial incentives — through tax credits — for companies that produce sustainable aircraft fuels.

Biotech firms are already stepping up. Companies like Neste, Gevo, and World Energy are using everything from algae to used or wasted cooking oil to create sustainable jet fuels. LanzaTech recycles carbon from industrial emissions and other sources and turns it into aviation fuel — and has recently partnered with other corporations to bring that fuel to market for commercial airline use.

With help from biotechnology, the U.S. can achieve the climate change goals outlined by the Biden administration and the Paris Agreement. Human progress and technology got us into this mess. That same ingenuity can help get us out.

#### Global warming is an existential threat.

Tonn 21 – Professor of Political Science at the University of Tennesse Knoxville

Bruce E. Tonn, “Anticipation, Sustainability, Futures and Human Extinction: Ensuring Humanity’s Journey into The Distant Future,” Routledge, May 2021, https://www.taylorfrancis.com/books/mono/10.4324/9781003000105/anticipation-sustainability-futures-human-extinction-bruce-tonn

Unfortunately, unlike the aftermath of the Black Plague in the Middle Ages, human population continued to slide, or it should be said that the number of Havenots continued to decrease. Next up was climate change. For aforementioned reasons, the countries of the world had not stemmed the use of fossil fuels and, therefore, had not reduced the emissions of GHG into the atmosphere. Few technologies had been put in place to reduce GHG in the atmosphere or sequester the carbon elsewhere. It was as if the planet extracted revenge through withering droughts in Central China, Northern Africa, and North Central North America, deadly heat waves in Western and Central Europe, implacable sea-level rise in the Asia Pacific region, and apocalyptic storms worldwide. People were literally washed away down rivers and into oceans. Agricultural systems collapsed outside of the wealthy areas of the Haves, which were quickly becoming self-sufficient and hermetically sealed to the world of the Havenots. The built environment and urban infrastructures were pummeled. Another round of diseases, mostly mosquito-borne this time, ravaged the world’s population. The developed world offered no safety net for the rest of the world. The largest losses of population were in Asia and Africa, closely followed by Central and South America. Within another thirty years, another billion people perished.

During the next handful of decades, the remaining humans failed to bond together to rebuild human civilization. In fact, just the opposite happened. Instead of conflicts between nations or even ‘clashes of civilizations’, deadly and widespread violence arose between the Haves and Havenots. At the outbreak of the unrest, the militaries of the world had been deployed to protect the wealth and property of the Haves. First as pandemics roiled the world and then as major economic systems collapsed, the viciousness and desperateness of the attacks of the Havenots against the Haves increased.

The military leaders had a choice: defend the Haves or become allies of the Havenots. The Haves had all the technological advantages (not only their life-prolonging technologies, useful if they could survive the chaos, but also their nanotechnologies, biotechnologies, limited but developing renewable energy technologies, and information technologies). The Havenots had strength in numbers. The majority of the military leaders whose forces were equipped with the most sophisticated weaponry and other advanced technologies made a devil’s bargain with the Haves, security in exchange for the promised long-life and luxury.

A protracted period of violence ensued. Both the Haves and Havenots suffered substantial casualties. Eventually, the Haves and their superior military forces ended up in approximately 5,000 heavily defended enclaves (or lifeboats, from their point of view), with about 1,000 humans in each enclave. Most enclaves were former military bases, although many were former resort islands and other easily defensible haunts of the Haves. The enclaves brought to mind the walled cities of the Middle Ages. Unlike their feudal ancestors, they did not rely upon serfs living outside the walls for their food and materials. Because of their technological prowess, they were, after a period of transition, mostly self-sufficient. The poor and otherwise ‘useless’ and ‘excessive’ inhabitants of the enclaves, mostly lower ranking soldiers but also some weak Haves, were quickly evicted so as not to stress the resources of their systems, which would need to last for centuries.

During this period of violence, the Haves and the military systematically destroyed all advanced technologies outside of the enclaves. This was done so that the Havenots could not develop the capabilities to conquer the remaining enclaves. The military effectively destroyed the remaining energy-producing facilities (including the nuclear power plants), the electricity infrastructure, the worldwide telecommunications infrastructure, shipping and transportation facilities, and even dams and irrigation systems. The result of these attacks was that the Havenots on the outside had little or no technology, no concentrated energy resources, no information technology, no electricity, no water systems, and no advanced weapons. Agricultural productivity approached pre-industrial levels. Plants stressed by heat and drought failed to produce crops. Farm animals and plants regularly fell to agricultural diseases that had previously been preventable. Wild animal stocks were slaughtered with no thought about tomorrow. Accessible stocks of fish in the lakes and oceans were depleted. Leadership and new government structures never re-evolved; anarchy reigned. New pathogens circled the globe with astonishing speed. It was every man, woman, and child for themselves. Over the next century, the reduction in population was steady, and another two billion perished.

Catastrophic changes in the world’s ecosystems coincided with the violence and also plagued the Havenots. In a mad scramble to keep themselves fed, the Havenots severely depleted the world’s stocks of birds and mammals, big and small. This reduction in the number of insect predators led to an explosion in the numbers of destructive insects. Locusts and grasshoppers devastated remaining agricultural crops. In a particularly gruesome twist of fate, the depletion of mammals and birds also reduced the food supplies for mosquitoes around the world. As their predators were eliminated and as their food supplies dwindled, they began to viciously swarm individual humans who lacked shelter. Many did not survive the onslaught.

The Havenots and the Haves alike were killed by immense fires. The dramatic rise in CO2 in the atmosphere and the expansion of ranges of temperate and tropical ecosystems promoted the accelerated growth of plant life all over the planet. Megatons of increased biomass respirated increasing levels of oxygen into the atmosphere. The bacteria that consumed the remaining oil and natural gas reserves also emitted substantial amounts of oxygen into the environment. Indeed, the level of oxygen in the atmosphere quickly began to approach 30%, from a level of about 21% at the turn of the twenty-first century. More plant materials, drought, and oxygen-rich air led to truly horrific conflagrations in North America, Europe, Northern Asia, Southern Africa, and Central and South America. Humans died directly in the fires and also died of asphyxiation if they were in the vicinity of the most massive fires.

Life in the enclaves became decidedly dystopian. The main problem was that no enclave possessed the critical mass of people, knowledge, and materials to maintain their technological base. Technology failed. In most cases, it was impossible to replace and/or fabricate new specialized chips and parts. Because the enclaves had destroyed the globe’s telecommunications infrastructure to deny the Havenots the ability to easily organize, they were unable to communicate with other enclaves. The Haves continued to perceive the Havenots and the ‘outside’, disease-ridden world, to be a threat, although had they left their enclaves they would have known otherwise. This perception kept the Haves sequestered in their enclaves. Over the next 100 years, most of the enclaves collapsed from starvation or were eventually overrun by the Havenots, having failed like the Utopian communities of the eighteenth and nineteenth centuries.

A few enclaves, however, took a different path to extinction. This is because some Haves did achieve part of their vision of Utopia during the hell storm that surrounded them. They did achieve some measure of immortality. In a handful of enclaves, there were Haves who were actually a couple of hundred years old. But they had not planned on the destruction of the rest of the world and their technologies were riddled with bugs.

It was imperative that these Haves strictly control their population. Despite their weaponry, they were essentially trapped in their enclaves. The outside world was disease ridden, chaotic, dangerous, and empty of valuable resources. They had no survival skills beyond their advanced technologies. They could not survive outside of the enclaves. Controlling their population meant that the births needed to be well planned and limited in number, especially since their numbers had been swollen with the ranks of the military.

The major flaw in this strategy is that these Haves, who desperately wanted to be immortal, basically achieved this goal. Through enhanced nutrients, key replacement organs, and medical nanotechnologies, they were able to keep their bodies in excellent condition. They were not afflicted with heart disease or cancer or obesity or diabetes. Their lives within the enclaves were rather safe because Havenots found the risks not worth the effort of confronting these small but deadly enclaves. The Haves did not travel at all nor have many on-site accidents. They were not murdered in the streets, although inevitably some were killed during disputes in their enclaves. They did not commit suicide; they were constitutionally incapable of taking their own lives, having committed themselves to immortality. After a while, the turnover in the enclaves fell to close to zero. No one died. And the enclaves could not afford to allow new births. These Haves were not too worried. After all, they had time on their side, right?

However, as time went on, these super-elders lost the ability to reproduce naturally. The eggs in the female’s ovaries aged and could not be rejuvenated. Also, frozen eggs and sperm turned out to have much shorter shelf lives than had been thought. To reproduce, that left cloning. Although advances in cloning had been impressive, problems with human cloning had not been overcome simply because the practice had been banned by most countries at the beginning of the twenty-first century and had been taboo in the enclaves for most of the time. However, these Haves decided to try to clone humans though they lacked skilled scientists to oversee this process. The results were disastrous. Miscarriages were the most common results. Many fetuses that came to term died shortly after birth. Most were aborted, those that were allowed to go to term died minutes after being born. The very few that lived further were afflicted with cognitive deficiencies, deformed limbs, and, tragically, were infertile. The attempts at cloning were rapidly abandoned.

Another problem that these Haves did not anticipate was the psychological aspects of aging. The minds of these very old people were slowly becoming completely dysfunctional. Of course, they did not suffer from Alzheimer’s or Huntington’s or Parkinson’s diseases. They had genetic tests for these maladies and could prevent or treat these diseases without much effort or risk. What they did suffer from was system overuse and overload. Too many memories over too many years were leading to inefficiencies in memory retention and organization. Sleep no longer was sufficient to help keep their minds organized. As their collective capabilities were eroding at about the same rate, these Haves were unable to recognize what was happening to them. Because of this creeping functional senility, they were also increasingly unable to maintain their other technologies in tip-top shape. Plans to move out of the enclaves vanished. Pictures of health, they were going mad down the path to extinction. Eventually, even these more resilient enclaves perished as their diminished mental capabilities proved insufficient to keep themselves alive.

When the last enclave fell, there were around 500 million Havenots left on earth. Then, what was once referred to as northwest Wyoming exploded in the largest volcanic eruption the earth had witnessed in the past 20 million years. The eruption was 10,000 times the size of the St. Helens eruption. The soot pushed up into the atmosphere severely blocked out the sun everywhere on the earth for several years. Plant life suffered due to the reduction in photosynthesis. Much like what happened several million years ago to the dinosaurs, the number of humans on the earth dropped down to the mere thousands.67

The remaining hunter-gatherer Havenots were exceedingly resourceful. Many were able to scrape by, living in caves, or building shelter from rubble and scavenging for food and water. They had been able to deal with the hell of climate change and seemed poised to deal with this new round of precipitous cooling. Unfortunately, a final sequence of events on a geological scale would soon seal their fate.

The Havenots were a very unlucky lot. Weakened from disease, malnutrition, and inbreeding, they were also becoming very lethargic, light-headed, and disoriented. The shortness of breath was the key symptom explaining this new malady. You see, they were beginning to suffocate because the oxygen levels in the atmosphere had dropped below 20%.

What had happened to the oxygen? The conflagrations had drawn a great deal of oxygen out of the atmosphere. The remnants of civilization were also oxidizing. Old bridges, steel buildings, and especially billions of metal automobiles, trucks, motorcycles, and signs were rusting and rapidly sucking oxygen out of the atmosphere. As the Havenots did not have the technologies in place to produce their own oxygen, they suffered from oxygen deprivation en masse.

Cooling continued to worsen. All the negative feedback effects were in place: severe reduction of sunlight, loss of plant life, reductions in greenhouse gases in the atmosphere, increased radiative cooling, further loss of plant life, further reductions in greenhouse gases, etc. The Arctic Ocean, already refrozen, started its march southward. The Antarctic ice fields rapidly expanded. Glaciers, which had reappeared on the mountain-tops, quickly moved toward the valleys. As a consequence, sea levels dropped precipitously worldwide.

As a result, enormous amounts of rock now stood bare to the elements. Land scrapped clear due to erosion from floods and storms was not revegetated and was also exposed to the elements. These rocks, along with the husk of human civilization, oxidized, drawing ever more oxygen out of the environment. Indeed, large areas of the earth began to resemble the Red Planet, Mars. All remaining aerobic species not only faced a life deprived of sufficient oxygen, but they now faced the prospect of asphyxiation. Within another couple of hundred years, the oxygen in the atmosphere dropped below 19.5%, on its way to a low of 15%. The last human took her last breath in Southern Africa, just like the last Gorgon did over 250 million years ago.68

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#### CP: Member nations of the World Trade Organization should enter into a prior and binding consultation with the World Health Organization over reducing intellectual property protections. Member nations will support the proposal and adopt the results of consultation.

#### WHO says yes:

#### It opposes data exclusivity and TRIPS-plus measures

WHO 17 [(World Health Organization) “Data exclusivity and other TRIPS-plus measures,” UHC Technical Brief, 2017] JL

Finally, data exclusivity could prevent the registration of generic versions of medicines even when there is no patent on a medicine, e.g. when a pharmaceutical product does not meet the standards for patentability (e.g. because it is not new or an inventive step), the patent lapses, when a country has no patent law, or when patents are not being granted for pharmaceuticals. The latter situation can arise in least-developed countries that are World Trade Organization (WTO) Members, which do not have to grant or enforce patents for pharmaceuticals until 2033.b

It has at times been argued that Article 39.3 of the TRIPS Agreement makes it mandatory for countries to grant data exclusivity. However, careful reading of Article 39.3 (see Box 1) does not warrant this conclusion; the text of the Article does not make any reference whatsoever to exclusivity or exclusive rights.

Article 39.3 requires countries to protect undisclosed registration data about new chemical entities (i) against disclosure and (ii) against unfair commercial use. Thus, regulatory authorities may not publish registration data,c or share them with third parties (e.g. generic competitors). There is some debate as to what exactly is meant by “unfair commercial use”. Does the use of bioequivalence studies instead of full clinical trials represent “unfair commercial use”? There is no “unfair commercial use” by the generic company: the generic manufacturer never uses the originator’s data, and does not even have access to them. Meanwhile, regulatory authorities also do not normally use the originator’s data, though, as mentioned above, they may (indirectly) rely on them. Even even if the regulators were to use the data, it would not be commercial use, as the regulatory agency is not a commercial organization. The unfair comercial use does not apply to the work of a government regulatory body.

Thus, legal and public health experts believe that TRIPS requires data protection, but not data exclusivity – and national laws do not need to be more restrictive than TRIPS. It is important to note that least-developed countries are not required to provide the data protection mandated by TRIPS on pharmaceuticals till 2033.

It is also worthwhile noting that in developing countries, regulatory authorities often rely on data that are already published or otherwise in the public domain – and that therefore do not fall within the scope of Article 39.3 (which imposes protection only for undisclosed data).

As mentioned above, from the perspective of public health and access to medicines, it is preferable not to grant data exclusivity. Moreover, there is no requirement under international law that countries grant data exclusivity; countries have to provide for data protection only.

#### It supports increasing the availability of generics

Hoen 03 [(Ellen T., researcher at the University Medical Centre at the University of Groningen, The Netherlands who has been listed as one of the 50 most influential people in intellectual property by the journal Managing Intellectual Property, PhD from the University of Groningen) “TRIPS, Pharmaceutical Patents and Access to Essential Medicines: Seattle, Doha and Beyond,” Chicago Journal of International Law, 2003] JL

However, subsequent resolutions of the World Health Assembly have strengthened the WHO’s mandate in the trade arena. In 2001, the World Health Assembly adopted two resolutions in particular that had a bearing on the debate over TRIPS [30]. The resolutions addressed:

– the need to strengthen policies to increase the availability of generic drugs;

#### Consultation displays strong leadership and authority which are key to WHO legitimacy

Gostin et al 15 [(Lawrence O., Linda D. & Timothy J. O’Neill Professor of Global Health Law at Georgetown University, Faculty Director of the O’Neill Institute for National & Global Health Law, Director of the World Health Organization Collaborating Center on Public Health Law & Human Rights, JD from Duke University) “The Normative Authority of the World Health Organization,” Georgetown University Law Center, 5/2/2015] JL

Members want the WHO to exert leadership, harmonize disparate activities, and set priorities. Yet they resist intrusions into their sovereignty, and want to exert control. In other words, ‘everyone desires coordination, but no one wants to be coordinated.’ States often ardently defend their geostrategic interests. As the Indonesian virus-sharing episode illustrates, the WHO is pulled between power blocs, with North America and Europe (the primary funders) on one side and emerging economies such as Brazil, China, and India on the other. An inherent tension exists between richer ‘net contributor’ states and poorer ‘net recipient’ states, with the former seeking smaller WHO budgets and the latter larger budgets.

Overall, national politics drive self-interest, with states resisting externally imposed obligations for funding and action. Some political leaders express antipathy to, even distrust of, UN institutions, viewing them as bureaucratic and inefficient. In this political environment, it is unsurprising that members fail to act as shareholders. Ebola placed into stark relief the failure of the international community to increase capacities as required by the IHR. Guinea, Liberia and Sierra Leone had some of the world's weakest health systems, with little capacity to either monitor or respond to the Ebola epidemic.20 This caused enormous suffering in West Africa and placed countries throughout the region e and the world e at risk. Member states should recognize that the health of their citizens depends on strengthening others' capacity. The WHO has a central role in creating systems to facilitate and encourage such cooperation.

The WHO cannot succeed unless members act as shareholders, foregoing a measure of sovereignty for the global common good. It is in all states' interests to have a strong global health leader, safeguarding health security, building health systems, and reducing health inequalities. But that will not happen unless members fund the Organization generously, grant it authority and flexibility, and hold it accountable.

#### WHO is key to disease prevention – it is the only international institution that can disperse information, standardize global public health, and facilitate public-private cooperation

Murtugudde 20 [(Raghu, professor of atmospheric and oceanic science at the University of Maryland, PhD in mechanical engineering from Columbia University) “Why We Need the World Health Organization Now More Than Ever,” Science, 4/19/2020] JL

WHO continues to play an indispensable role during the current COVID-19 outbreak itself. In November 2018, the US National Academies of Sciences, Engineering and Medicine organised a workshop to explore lessons from past influenza outbreaks and so develop recommendations for pandemic preparedness for 2030. The salient findings serve well to underscore the critical role of WHO for humankind.

The world’s influenza burden has only increased in the last two decades, a period in which there have also been 30 new zoonotic diseases. A warming world with increasing humidity, lost habitats and industrial livestock/poultry farming has many opportunities for pathogens to move from animals and birds to humans. Increasing global connectivity simply catalyses this process, as much as it catalyses economic growth.

WHO coordinates health research, clinical trials, drug safety, vaccine development, surveillance, virus sharing, etc. The importance of WHO’s work on immunisation across the globe, especially with HIV, can hardly be overstated. It has a rich track record of collaborating with private-sector organisations to advance research and development of health solutions and improving their access in the global south.

It discharges its duties while maintaining a dynamic equilibrium between such diverse and powerful forces as national securities, economic interests, human rights and ethics. COVID-19 has highlighted how political calculations can hamper data-sharing and mitigation efforts within and across national borders, and WHO often simply becomes a convenient political scapegoat in such situations.

International Health Regulations, a 2005 agreement between 196 countries to work together for global health security, focuses on detection, assessment and reporting of public health events, and also includes non-pharmaceutical interventions such as travel and trade restrictions. WHO coordinates and helps build capacity to implement IHR.

#### Extinction – defense is wrong

Piers Millett 17, Consultant for the World Health Organization, PhD in International Relations and Affairs, University of Bradford, Andrew Snyder-Beattie, “Existential Risk and Cost-Effective Biosecurity”, Health Security, Vol 15(4), http://online.liebertpub.com/doi/pdfplus/10.1089/hs.2017.0028

Historically, disease events have been responsible for the greatest death tolls on humanity. The 1918 flu was responsible for more than 50 million deaths,1 while smallpox killed perhaps 10 times that many in the 20th century alone.2 The Black Death was responsible for killing over 25% of the European population,3 while other pandemics, such as the plague of Justinian, are thought to have killed 25 million in the 6th century—constituting over 10% of the world’s population at the time.4 It is an open question whether a future pandemic could result in outright human extinction or the irreversible collapse of civilization.

A skeptic would have many good reasons to think that existential risk from disease is unlikely. Such a disease would need to spread worldwide to remote populations, overcome rare genetic resistances, and evade detection, cures, and countermeasures. Even evolution itself may work in humanity’s favor: Virulence and transmission is often a trade-off, and so evolutionary pressures could push against maximally lethal wild-type pathogens.5,6

While these arguments point to a very small risk of human extinction, they do not rule the possibility out entirely. Although rare, there are recorded instances of species going extinct due to disease—primarily in amphibians, but also in 1 mammalian species of rat on Christmas Island.7,8 There are also historical examples of large human populations being almost entirely wiped out by disease, especially when multiple diseases were simultaneously introduced into a population without immunity. The most striking examples of total population collapse include native American tribes exposed to European diseases, such as the Massachusett (86% loss of population), Quiripi-Unquachog (95% loss of population), and theWestern Abenaki (which suffered a staggering 98% loss of population).

In the modern context, no single disease currently exists that combines the worst-case levels of transmissibility, lethality, resistance to countermeasures, and global reach. But many diseases are proof of principle that each worst-case attribute can be realized independently. For example, some diseases exhibit nearly a 100% case fatality ratio in the absence of treatment, such as rabies or septicemic plague. Other diseases have a track record of spreading to virtually every human community worldwide, such as the 1918 flu,10 and seroprevalence studies indicate that other pathogens, such as chickenpox and HSV-1, can successfully reach over 95% of a population.11,12 Under optimal virulence theory, natural evolution would be an unlikely source for pathogens with the highest possible levels of transmissibility, virulence, and global reach. But advances in biotechnology might allow the creation of diseases that combine such traits. Recent controversy has already emerged over a number of scientific experiments that resulted in viruses with enhanced transmissibility, lethality, and/or the ability to overcome therapeutics.13-17 Other experiments demonstrated that mousepox could be modified to have a 100% case fatality rate and render a vaccine ineffective.18 In addition to transmissibility and lethality, studies have shown that other disease traits, such as incubation time, environmental survival, and available vectors, could be modified as well.19-2

#### WHO diplomacy solves great power conflict

Murphy 20 [(Chris, U.S. senator from Connecticut serving on the U.S. Senate Foreign Relations Committee) “The Answer is to Empower, Not Attack, the World Health Organization,” War on the Rocks, 4/21/2020] JL

The World Health Organization is critical to stopping disease outbreaks and strengthening public health systems in developing countries, where COVID-19 is starting to appear. Yemen announced its first infection earlier this month, and other countries in Africa, Asia and the Middle East are at severe risk. Millions of refugees rely on the World Health Organization for their health care, and millions of children rely on the WHO and UNICEF to access vaccines.

The World Health Organization is not perfect, but its team of doctors and public health experts have had major successes. Their most impressive claim to fame is the eradication of smallpox – no small feat. More recently, the World Health Organization has led an effort to rid the world of two of the three strains of polio, and they are close to completing the trifecta.

These investments are not just the right thing to do; they benefit the United States. Improving health outcomes abroad provides greater political and economic stability, increasing demand for U.S. exports. And, as we are all learning now, it is in America’s national security interest for countries to effectively detect and respond to potential pandemics before they reach our shores.

As the United States looks to develop a new global system of pandemic prevention, there is absolutely no way to do that job without the World Health Organization. Uniquely, it puts traditional adversaries – like Russia and the United States, India and Pakistan, or Iran and Saudi Arabia – all around the same big table to take on global health challenges. It has relationships with the public health leaders of every nation, decades of experience in tackling viruses and diseases, and the ability to bring countries together to tackle big projects. This ability to bridge divides and work across borders cannot be torn down and recreated – not in today’s environment of major power competition – and so there is simply no way to build an effective international anti-pandemic infrastructure without the World Health Organization at the center.

#### Ought means should

Merriam Webster, No Date – Merriam Webster’s Learner’s Dictionary, “ought”, <http://www.learnersdictionary.com/definition/ought>  
ought /ˈɑːt/ verb  
Learner's definition of OUGHT [modal verb] 1 ◊ Ought is almost always followed by to and the infinitive form of a verb. The phrase ought to has the same meaning as should and is used in the same ways, but it is less common and somewhat more formal. The negative forms ought not and oughtn't are often used without a following to. — used to indicate what is expected They ought to be here by now. You ought to be able to read this book. There ought to be a gas station on the way. 2 — used to say or suggest what should be done You ought to get some rest. That leak ought to be fixed. You ought to do your homework.

#### Should means must and is immediate

Summers 94 (Justice – Oklahoma Supreme Court, “Kelsey v. Dollarsaver Food Warehouse of Durant”, 1994 OK 123, 11-8, http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker3fn13)

¶4 The legal question to be resolved by the court is whether the word "should"[13](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker3fn13) in the May 18 order connotes futurity or may be deemed a ruling in praesenti.[14](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker3fn14) The answer to this query is not to be divined from rules of grammar;[15](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker3fn15) it must be governed by the age-old practice culture of legal professionals and its immemorial language usage. To determine if the omission (from the critical May 18 entry) of the turgid phrase, "and the same hereby is", (1) makes it an in futuro ruling - i.e., an expression of what the judge will or would do at a later stage - or (2) constitutes an in in praesenti resolution of a disputed law issue, the trial judge's intent must be garnered from the four corners of the entire record.[16](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker3fn16) [CONTINUES – TO FOOTNOTE] [13](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker2fn13) "*Should*" not only is used as a "present indicative" synonymous with *ought* but also is the past tense of "shall" with various shades of meaning not always easy to analyze. See 57 C.J. Shall § 9, Judgments § 121 (1932). O. JESPERSEN, GROWTH AND STRUCTURE OF THE ENGLISH LANGUAGE (1984); St. Louis & S.F.R. Co. v. Brown, 45 Okl. 143, 144 P. 1075, 1080-81 (1914). For a more detailed explanation, see the Partridge quotation infra note 15. Certain contexts mandate a construction of the term "should" as more than merely indicating preference or desirability. Brown, supra at 1080-81 (jury instructions stating that jurors "should" reduce the amount of damages in proportion to the amount of contributory negligence of the plaintiff was held to imply an *obligation* *and to be more than advisory*); Carrigan v. California Horse Racing Board, 60 Wash. App. 79, [802 P.2d 813](http://www.oscn.net/applications/oscn/deliverdocument.asp?box1=802&box2=P.2D&box3=813) (1990) (one of the Rules of Appellate Procedure requiring that a party "should devote a section of the brief to the request for the fee or expenses" was interpreted to mean that a party is under an *obligation* to include the requested segment); State v. Rack, 318 S.W.2d 211, 215 (Mo. 1958) ("should" would mean the same as "shall" or "must" when used in an instruction to the jury which tells the triers they "should disregard false testimony"). [14](http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=20287#marker2fn14) In praesenti means literally "at the present time." BLACK'S LAW DICTIONARY 792 (6th Ed. 1990). In legal parlance the phrase denotes that which in law is presently or immediately effective, as opposed to something that will or would become effective in the future *[in futurol*]. See Van Wyck v. Knevals, [106 U.S. 360](http://www.oscn.net/applications/oscn/deliverdocument.asp?box1=106&box2=U.S.&box3=360), 365, 1 S.Ct. 336, 337, 27 L.Ed. 201 (1882).

### 1NC

#### Interp: Reduce means permanent reduction – it’s distinct from “suspend”

**Reynolds 59** – Judge (In the Matter of Doris A. Montesani, Petitioner, v. Arthur Levitt, as Comptroller of the State of New York, et al., Respondents [NO NUMBER IN ORIGINAL] Supreme Court of New York, Appellate Division, Third Department 9 A.D.2d 51; 189 N.Y.S.2d 695; 1959 N.Y. App. Div. LEXIS 7391 August 13, 1959, lexis)

Section 83's counterpart with regard to nondisability pensioners, section 84, prescribes a reduction only if the pensioner should again take a public job. The disability pensioner is penalized if he takes any type of employment. The reason for the difference, of course, is that in one case the only reason pension benefits are available is because the pensioner is considered incapable of gainful employment, while in the other he has fully completed his "tour" and is considered as having earned his reward with almost no strings attached. It would be manifestly unfair to the ordinary retiree to accord the disability retiree the benefits of the System to which they both belong when the latter is otherwise capable of earning a living and had not fulfilled his service obligation. If it were to be held that withholdings under section 83 were payable whenever the pensioner died or stopped his other employment the whole purpose of the provision would be defeated, i.e., the System might just as well have continued payments during the other employment since it must later pay it anyway.  [\*\*\*13]  The section says "reduced", does not say that monthly payments shall be temporarily suspended; it says that the pension itself shall be reduced. The plain dictionary meaning of the word is to diminish, lower or degrade. The word "reduce" seems adequately to indicate permanency.

#### Violation – they fiat a temporary suspension of IPP for medicines because it’s only when they’re “deemed essential”

#### 1. Ground – allows affs to put infinite conditions in the plan and no-link every neg generic – makes it impossible to be neg

#### 2. Precision – if the condition in the plan is not met, IPP for medicines are not being reduced – means they don’t affirm

#### Paradigm Issues –

#### 1. Fairness first – debate is a game, and it’s the only way to determine the better debater

#### 2. Topicality is Drop the Debater – it’s a fundamental baseline for clash, best way to set norms

#### 3. Use Competing Interps –

#### Race to the top

#### Reasonability is arbitrary and invites judge intervention

#### 4. No RVI’s –

#### Chilling effect on T and theory

#### Encourages baiting

#### Illogical – you don’t win for being fair

#### 5. T before theory – less time to set norms, 1NC abuse was necessary to check 1AC abuse

## Case

#### Gastin – only answer to innovation is that governments would compensate the companies, which doesn’t answer i/l – our i/l is about perception for support

#### HRW – also only says “public funding is important” – question is not whether vaccine is profitable, but whether the aff sends a signal to stocks and pharma companies and hurts the biopharmaceutical sector

#### The aff fails, undermines effective response, stifles innovation, and forces the U.S. to pay compensation to pharma companies.

Kowalski et al. 21 – Registered U.S. Patent Attorney, Duane Morris LLP

Thomas J. Kowalski, Deborah L. Lu, Heidi Lunasin, Brandon A. Chan, “Considerations and Implications of the Proposed Temporary Waiver of COVID-19 Vaccine-Related Intellectual Property Rights,” Lexology, May 2021, https://www.lexology.com/library/detail.aspx?g=103174a5-5d3e-45cb-9812-f07263cc8e89

On the other side, in a May 5, 2021, press release, the Pharmaceutical Research and Manufacturers of America (PhRMA) expressed opposition to this proposal, indicating that the waiver of patent protections:

[W]ill undermine our global response to the pandemic and compromise safety… and sow confusion between public and private partners, further weaken already strained supply chains and foster the proliferation of counterfeit vaccines… and does nothing to address the real challenges to getting more shots in arms, including last-mile distribution and limited availability of raw materials… the real challenges… this empty promise ignores.

Other questions remain, including whether the waiver of patent protections related to the development of COVID-19 vaccines will indeed lead to faster production of vaccine doses, especially if there is a lack of infrastructure in developing nations to produce the vaccine, and if will it actually harm and stifle future innovation because valuable vaccine information may be shared with international rivals and competitors without patent protection.

A perspective as to the United States is that a waiver of patent rights may present a number of issues. Absent an act of Congress, for instance, that claims of infringement of patent rights related to the development of COVID-19 vaccines do not fall under the provisions of 35 U.S.C. § 271, or that such claims fall under 35 U.S.C. § 287(c), which exempts medical practitioners from infringement liability of medical process patents, any administrative action that waives patent protection as to a U.S. patent is tantamount to a taking under the Takings Clause of the Fifth Amendment of the Constitution. The federal government would be taking the private rights held by the patentees for public use in distributing the COVID-19 vaccine knowledge to other nations to develop their own vaccine supply. In this situation, the patentees may have recourse to obtain just compensation for the federal government’s use of the property, namely the patent rights. Another related question is is an administrative action that allows for the waiver of patent rights outside the United States would also be considered a taking under the Takings Clause.

It is a wait-and-see situation as to whether a temporary waiver of COVID-19 vaccine-related IPR will be implemented, as well as the conditions of such a waiver, including whether there will be any compensation to patent holders as a result of the waiver (or whether patent holders will be arguing in litigation in various jurisdictions that property rights were taken through such a waiver). Moreover, the implications of the waiver may reach further beyond the current pandemic and impact patent owners and patents beyond those involving COVID-19 vaccines. Thus, we are continuing to follow developments as to COVID-19 vaccine-related IPR and will offer analysis in additional Alerts.

#### Waivers fail to disseminate know-how and opening up IP to the whole world is bad for long-term innovation.

Bergmann 21 – Partner at BakerHostetler, previously worked as a trial and appellate attorney for 12 years at the U.S. Department of Justice

William C. Bergmann, “COVID IP Waiver Doesn't Resolve Vaccine Production Barriers,” Law360, May 2021, https://www.law360.com/articles/1383618

Notably absent from the WTO petition, and Tai's announcement, are any details or proposed pathways with respect to how patent rights and know-how currently held by private pharmaceutical companies would be globally shared and why these companies would have any incentive to do so. Indeed, there are many hurdles that would need to be overcome to implement such as plan, including the agreement of all WTO members.

Those opposing the waiver, and there are many, argue that IP has not been a barrier, but a facilitator of critical, cutting-edge innovation to address the pandemic.[3] For example, Sen. Chris Coon, D-Del., remarked at Center for Strategic and International Studies conference in April:

If we were to simply open up to the world all of the IP at the core of these groundbreaking developments, I think we would then be at risk of losing the private sector investment in development that's critical to this moment of personalized medicine, of breakthrough vaccines and breakthrough medical diagnostics, and I think frankly the world would suffer as a result.[4]

Pharmaceutical companies point out that the reason they have been able to create vaccines so quickly is because they already had proprietary platforms that have been developed over more than a decade, at the cost of hundreds of millions of dollars of private investment.[5] The biggest hurdle to getting vaccines administered widely around the world is not IP protections, but limited infrastructure and supply chain bottlenecks.[6]

Although India is sometimes perceived as a relatively poor country, it has a well-developed generic pharmaceutical industry. The prospect of giving such a country technology that has been developed at private expense over several years raises many issues.

Although the waiver is supposed to be only for the duration of the COVID-19 pandemic, once the genie is out of the bottle there may be no way to put the genie back in.

There may be no practical way to prevent companies receiving such technology from using it to compete in the future against those companies that developed the vaccines with their own funding, particularly with respect to the knowledge of the underlying platforms that will be gained and that will have a much wider application than COVID-19 vaccines. [7]

#### And, the aff’s suspension of intellectual property protections would only make things worse.

McMurry-Heath 08-18 – Physician-scientist and president and CEO of the Biotechnology Innovation Organization

Michelle McMurry-Heath, “Waiving intellectual property rights would compromise global vaccination efforts,” STAT News, August 2021, https://www.statnews.com/2021/08/18/waiving-intellectual-property-rights-compromise-global-vaccination-efforts/

The resurgence of Covid-19 cases in the United States and around the world, in large part due to the highly transmissible Delta variant, makes it even more crucial to step up the pace of the global vaccination campaign.

To do that, some countries have sought to suspend intellectual property (IP) protections on Covid-19 vaccines and therapies. India and South Africa sponsored a proposal to that effect at the World Trade Organization (WTO). The proposal has since been endorsed by other countries, including the United States. They argue that eliminating IP protections would allow any willing company to produce lifesaving Covid-19 vaccines, making them cheaper and more widely accessible in low-income nations.

If true, that would be a compelling argument. But it isn’t.

Covid-19 vaccines are already remarkably cheap, and companies are offering them at low or no cost to low-income countries. Poor access to clinics and transportation are barriers in some countries, but the expense of the shot itself is not. In fact, if the World Trade Organization grants the IP waiver, it could make these vaccines more expensive.

Here’s why. Before Covid-19 emerged, the world produced at most 5.5 billion doses of various vaccines every year. Now the world needs an additional 11 billion doses — including billions of doses of mRNA vaccines that no one had ever mass-manufactured before — to fully vaccinate every eligible person on the planet against the new disease.

Even as Covid-19 vaccines were still being developed, pharmaceutical companies began retrofitting and upgrading existing facilities to produce Covid-19 vaccines, at a cost of $40 to $100 million each. Vaccine developers also licensed their technologies to well-established manufacturers, like the Serum Institute of India, to further increase production.

As a result, almost every facility in the world that can quickly and safely make Covid-19 vaccines is already doing so, or will be in the next few months.

The cutting-edge mRNA vaccines from Moderna and Pfizer-BioNTech face an even bigger capacity issue. Since the underlying technology is new, there are no mRNA manufacturing facilities sitting idle with operators just waiting for licensing agreements to turn on the machines. Nor are there trained personnel to run them or ensure safety and quality control. Embedding delicate mRNA vaccine molecules inside lipid nanoparticle shells at temperatures colder than Antarctica isn’t as easy as following a recipe from Bon Appetit.

Another big barrier to producing more shots is a shortage of raw materials. Suspending intellectual property protections and allowing any manufacturer to try to produce these vaccines, regardless of preparedness or experience, would increase the demand for scarce raw materials, driving up prices and impeding production.

Nor could all companies that suddenly get a green light due to suspended intellectual property rights produce vaccines as cheaply or quickly as existing manufacturers. Building a new vaccine manufacturing facility costs about $700 million, takes many months — if not years — to build and, once opened, requires another four to six months to start producing vaccine doses. And because negotiations surrounding the WTO waiver, which began this summer, could take until December before they are completed, it wouldn’t be until well into 2023 or later that any additional doses would become available.

#### Cant solve – erfani d oenst actualy say anything about countries having resources

#### No covid war -

#### AMR won’t get close to extinction, intervening actors solve it, their internal link can’t

Ed Cara 17, science writer for The Atlantic, Newsweek, and Vocativ, 1/27/17, “The Attack Of The Superbugs,” http://www.vocativ.com/394419/attack-of-the-superbugs/

Antibiotic-resistant infections kill at least 700,000 people worldwide a year right now, according to an exhaustive report commissioned by the UK in 2014, and without any substantial medical breakthroughs or policy changes that slow down resistance, they may claim some 10 million deaths annually by 2050 — eclipsing cancer in general as a leading cause. These deaths largely won’t come from pan-resistant infections, just tougher ones. A preventable death there, a preventable death here. Leaving that aside, antibiotics, along with proper sanitation and nutrition, gird our entire way of living. Most every invasive surgery, pregnancy, organ transplant and chemotherapy session we go through will become riskier. Other diseases like HIV, malaria or influenza will become deadlier, since bacteria often exploit the opening in our immune system they leave behind. And already precarious populations like those living with cystic fibrosis, prisoners, and the poor will lose years off their lives. For all the warranted gloom, though, Farewell does think there are reasons to be hopeful. “I don’t think we are doing enough, but the scientific community along with many governmental and private foundations are very actively involved in finding not only new antibiotics, but new solutions to this problem,” she said. There’s been a noticeable change in attitude and increased urgency surrounding antibiotic resistance, she said, one that she hadn’t seen even five years ago, let alone twenty. Until recently, that attitude change could be seen from places as high up as the U.S. federal government. In 2014, former President Obama issued an executive order aimed at addressing antibiotic resistance, the first real acknowledgement of the problem from an administration, devoting funding and outlining a national action for combatting resistance. Through its federal agencies, the administration pushed to reduce antibiotic use on farms and encouraged doctors to stop using them in excess. “There has been a lot of work done the last couple of years, much of it spurned by [Obama’s] National Action Plan,” said Dr. David Hyun, a senior officer for Pew Charitable Trusts’ Antibiotic Resistance Project. The CDC, in particular, has used its funding to open up regional labs that allow them to better detect and respond to antibiotic-resistant outbreaks like the Nevada case, he said. They ultimately hope to create an expansive surveillance system that can easily keep track of resistance rates on a national, state and regional level. A parallel system also exists for monitoring resistance in the food chain, shepherded by the CDC and the U.S. Department of Agriculture. In fact, it was this sort of cooperation between national and local health agencies that enabled Nevada doctors to stop the worst from happening, said Dr. Lei Chen. The swift identification of a possible CRE strain by the hospital, coupled with the woman’s medical history, led to a precautionary quarantine, while also prompting Chen’s public health department and eventually the CDC into action. And it may help prevent future cases from spilling into the public. According to Chen, the CDC has allocated funding this year to all of Nevada’s state public health departments so they can better detect CRE and other dangerous resistant strains. Under the Trump administration, there’s no telling how these small victories will hold up or whether they will advance. All references to antibiotics once found on the Whitehouse.gov site have been removed, including a link to the Obama administration’s national action plan, and the fact that they’re already tried to bar USDA scientists from discussing their work with the public while stripping funding from other public health agencies isn’t encouraging. Even with the best public policy, however, there’s no clear light at the end of the tunnel. Antibiotic resistance has gradually been worsening, even within the last 15 to 20 years, when superbugs like methicillin-resistant Staphylococcus aureus (MRSA) first became widely known, said Hyun. The effort needed to develop new drugs has been in short supply, hamstrung by pharmaceutical companies’ inability to recoup the costs of bringing new antibiotics to market. That’s because, unlike the latest heart medication, any new antibiotics will have to be treated like the last drops of water during a drought, used as little as possible — the exact opposite way to make money off a new product. Yet, much like climate change, the financial toll of not doing anything will total in the trillions years down the road. And it already numbers in the billions now, according to the CDC. Of course, we need bacteria to survive. And most need or pay no mind to us in return. Even pan-resistant bacteria don’t really mean harm. Some have been found in perfectly healthy people, a fact that’ll either comfort you or keep you awake at night, only causing problems when our immune system wavers. There’s no army of sentient E. coli that will rise up and someday overthrow the human race. But barring the calvary showing up, a new fear of ours will learn to settle in, almost unnoticed. It’ll creep in when we pick our heads up from a nasty fall that scrapes our skin open or breaks our bones; when we wave goodbye to our loved ones before they enter an operating room, or when we cradle our newborns into a world teeming with the living infinitesimal, wishing there was still a way to shield them from it as our parents once could for us. A fear of naked vulnerability. The antibiotic apocalypse will be gentle, if it fully arrives, but it won’t be any less devastating to the human spirit.

#### Aff leads to more amr – they concede much more people are able to use antibiotics post aff – that’s the problem, people get overprescribed and get

#### No war from COVID.

Salemi 20 Colette Salemi [microeconomist PhD student in applied economics at the University of Minnesota. Her research focuses on conflict, forced displacement, environmental degradation and their intersections.], 10-15-2020, "Analysis," Washington Post, <https://www.washingtonpost.com/politics/2020/10/15/does-covid-19-raise-risk-violent-conflict-not-everywhere/> EH

The situation in Iraq illustrates how the coronavirus threat and policy responses to the pandemic could lead to an increase in violent conflict. But elsewhere in the world, researchers who tally conflict-event counts see stagnant or even falling numbers. And in some countries, conflict trends don’t appear to be responding to covid-19 at all. My research with Jeff Bloem documents considerable differences in the frequency of conflict events across several countries in recent months. Our findings suggest that the pandemic-conflict relationship seen in Iraq does not appear to exist in many other countries. How we did our research We used the Armed Conflict Location and Event Data (ACLED), a database that counts the number of conflict events daily around the world. For 2019 and 2020, ACLED includes more than 100 countries in Africa, Asia, Latin America and Eastern Europe — and tracks three categories of violent conflict: battles, violence against civilians and explosions/remote violence. We examine trends in the number of conflict events over time. To see whether the trend changes in response to covid-19, we look at what happened after the World Health Organization declared a global pandemic (March 11) or the country declared a lockdown. The relationship between pandemics and conflict is theoretically unclear. In some countries, job losses from the covid-19 pandemic mean people have fewer income-generating options — that can make participation in violence seem a more viable alternative. But if market disruptions and reduced global demand are driving down the value of natural resources such as oil wells, then we may see less conflict over control of such resources. We then conducted case studies based on our knowledge of countries with high rates of violent conflict before covid-19. These include countries with active civil wars (such as Syria) as well as countries with violent militia groups (such as the Philippines). Conflict during the coronavirus pandemic varies greatly Worldwide, we didn’t observe an increase in violent conflict. If anything, conflict has decreased, as the figure below shows.

Chart, line chart

Description automatically generated

Violent conflict between March and August 2020 was 23 percent lower than violent conflict during the same period in 2019. Comparing these time periods, battles are down 20 percent and remote violence and bombings are down 40 percent. But violence against civilians — the deliberate attack of unarmed noncombatants by armed groups — continued at similar rates globally. Do these results suggest that covid-19 is fueling reductions in conflict? Probably not — in Syria, for instance, other factors may explain the declines. On March 5, Turkey and Russia brokered a cease-fire agreement covering the Idlib province in Syria. Idlib is the final front of the Syrian government campaign, so this cease fire led to a dramatic decline in violent events nationwide. But the Idlib cease fire wasn’t motivated by covid-19, and would have taken place anyway, pandemic or no pandemic. So even when violence is falling in the covid-19 era, we have to recognize that declines could be driven by events that happened to take place around the same time as the pandemic’s arrival. The same could be true in cases where violent conflict increased — these upticks in violence could have little to do with covid-19. In the ongoing war between Libya’s Government of National Accord (GNA) and the Libyan National Army (LNA), the number of violent events rose steadily in the first half of 2020. The trend line does not change at all when Libya started to respond to covid-19 in March. Libya’s daily violent-incident counts began to fall in late spring, which corresponds with the GNA’s successful seizure of critical holdings from the LNA militia. These results suggest that the GNA and LNA continued their campaigns relatively undeterred by the pandemic. Conflict eventually declined — but this largely reflects the LNA’s retreat. What about other countries? In places with active rebel groups and militias, such as the Philippines and Iraq, we find mixed results. Reports from both countries suggest that rebel groups and government officials (in the Philippines, but not Iraq) are increasing attacks to take advantage of the opportunities in the covid-19 climate. We see little if any change in the number of violent-conflict events per day in the Philippines. But we do see evidence of escalating conflict in Iraq (see figure), much of it attributed to a rise in Islamic State activity. What happens in the Philippines is not an exception. While violent conflict rose in Nigeria for some time, trends are relatively unchanged in Somalia and Congo. These mixed outcomes suggest that there’s still much to learn about pandemics and conflict.

#### Absolutely no chance of extinction from disease

Adalja 16 [Amesh Adalja, infectious disease physician at the University of Pittsburgh] “Why Hasn't Disease Wiped out the Human Race?” June 17, 2016 (http://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/) - MZhu

But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained. I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience. For most of mankind’s history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived. Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like. So what would it take for a disease to wipe out humanity now? In Michael Crichton’s The Andromeda Strain, the canonical book in the disease-outbreak genre, an alien microbe threatens the human race with extinction, and humanity’s best minds are marshaled to combat the enemy organism. Fortunately, outside of fiction, there’s no reason to expect alien pathogens to wage war on the human race any time soon, and my analysis suggests that any real-life domestic microbe reaching an extinction level of threat probably is just as unlikely. Any apocalyptic pathogen would need to possess a very special combination of two attributes. First, it would have to be so unfamiliar that no existing therapy or vaccine could be applied to it. Second, it would need to have a high and surreptitious transmissibility before symptoms occur. The first is essential because any microbe from a known class of pathogens would, by definition, have family members that could serve as models for containment and countermeasures. The second would allow the hypothetical disease to spread without being detected by even the most astute clinicians. The three infectious diseases most likely to be considered extinction-level threats in the world today—influenza, HIV, and Ebola—don’t meet these two requirements. Influenza, for instance, despite its well-established ability to kill on a large scale, its contagiousness, and its unrivaled ability to shift and drift away from our vaccines, is still what I would call a “known unknown.” While there are many mysteries about how new flu strains emerge, from at least the time of Hippocrates, humans have been attuned to its risk. And in the modern era, a full-fledged industry of influenza preparedness exists, with effective vaccine strategies and antiviral therapies. HIV, which has killed 39 million people over several decades, is similarly limited due to several factors. Most importantly, HIV’s dependency on blood and body fluid for transmission (similar to Ebola) requires intimate human-to-human contact, which limits contagion. Highly potent antiviral therapy allows most people to live normally with the disease, and a substantial group of the population has genetic mutations that render them impervious to infection in the first place. Lastly, simple prevention strategies such as needle exchange for injection drug users and barrier contraceptives—when available—can curtail transmission risk. Ebola, for many of the same reasons as HIV as well as several others, also falls short of the mark. This is especially due to the fact that it spreads almost exclusively through people with easily recognizable symptoms, plus the taming of its once unfathomable 90 percent mortality rate by simple supportive care. Beyond those three, every other known disease falls short of what seems required to wipe out humans—which is, of course, why we’re still here. And it’s not that diseases are ineffective. On the contrary, diseases’ failure to knock us out is a testament to just how resilient humans are. Part of our evolutionary heritage is our immune system, one of the most complex on the planet, even without the benefit of vaccines or the helping hand of antimicrobial drugs. This system, when viewed at a species level, can adapt to almost any enemy imaginable. Coupled to genetic variations amongst humans—which open up the possibility for a range of advantages, from imperviousness to infection to a tendency for mild symptoms—this adaptability ensures that almost any infectious disease onslaught will leave a large proportion of the population alive to rebuild, in contrast to the fictional Hollywood versions. While the immune system’s role can never be understated, an even more powerful protector is the faculty of consciousness. Humans are not the most prolific, quickly evolving, or strongest organisms on the planet, but as Aristotle identified, humans are the rational animals—and it is this fundamental distinguishing characteristic that allows humans to form abstractions, think in principles, and plan long-range. These capacities, in turn, allow humans to modify, alter, and improve themselves and their environments. Consciousness equips us, at an individual and a species level, to make nature safe for the species through such technological marvels as antibiotics, antivirals, vaccines, and sanitation. When humans began to focus their minds on the problems posed by infectious disease, human life ceased being nasty, brutish, and short. In many ways, human consciousness became infectious diseases’ worthiest adversary.