



# SO21 Vaccines AC

**1AC**

# 1AC – Trade Wars

## 1AC – Util

The standard is maximizing expected wellbeing. Prefer hedonistic act util:

1] Pleasure and pain are intrinsic value and disvalue – everything else regresses – robust neuroscience.

**Blum et al. 18** Kenneth Blum, 1Department of Psychiatry, Boonshoft School of Medicine, Dayton VA Medical Center, Wright State University, Dayton, OH, USA 2Department of Psychiatry, McKnight Brain Institute, University of Florida College of Medicine, Gainesville, FL, USA 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA 5Department of Precision Medicine, Geneus Health LLC, San Antonio, TX, USA 6Department of Addiction Research & Therapy, Nupathways Inc., Innsbrook, MO, USA 7Department of Clinical Neurology, Path Foundation, New York, NY, USA 8Division of Neuroscience-Based Addiction Therapy, The Shores Treatment & Recovery Center, Port Saint Lucie, FL, USA 9Institute of Psychology, Eötvös Loránd University, Budapest, Hungary 10Division of Addiction Research, Dominion Diagnostics, LLC, North Kingstown, RI, USA 11Victory Nutrition International, Lederach, PA., USA 12National Human Genome Center at Howard University, Washington, DC., USA, Marjorie Gondré-Lewis, 12National Human Genome Center at Howard University, Washington, DC., USA 13Departments of Anatomy and Psychiatry, Howard University College of Medicine, Washington, DC US, Bruce Steinberg, 4Division of Applied Clinical Research & Education, Dominion Diagnostics, LLC, North Kingstown, RI, USA, Igor Elman, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, David Baron, 3Department of Psychiatry and Behavioral Sciences, Keck Medicine University of Southern California, Los Angeles, CA, USA, Edward J Modestino, 14Department of Psychology, Curry College, Milton, MA, USA, Rajendra D Badgaiyan, 15Department Psychiatry, Cooper University School of Medicine, Camden, NJ, USA, Mark S Gold 16Department of Psychiatry, Washington University, St. Louis, MO, USA, "Our evolved unique pleasure circuit makes humans different from apes: Reconsideration of data derived from animal studies", U.S. Department of Veterans Affairs, 28 February 2018, accessed: 19 August 2020, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6446569/>, R.S.

**Pleasure is not only** one of the three **primary reward functions** but **it also defines reward**. As homeostasis explains the **functions of** only a limited number of **rewards**, **the** principal **reason why particular stimuli**, objects, events, situations, and activities **are rewarding** may be **due to pleasure**. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. **Pleasure, as the primary effect of rewards**, drives the prime reward functions of learning, approach behavior, and decision making and **provides the basis for hedonic theories of reward** function. **We are attracted by** most **rewards and exert intense efforts to obtain them**, just **because they are enjoyable** [10]. Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, **using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure** [14]. **Pleasure as a hallmark of reward is sufficient for defining a reward**, but it may not be necessary. **A reward may generate positive** learning and approach **behavior** simply **because it contains substances that are essential for body function**. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain's pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals. Evolutionary theories of pleasure: The love connection BO:D Charles Darwin and other biological scientists that have examined the biological **evolution and its basic principles found** various **mechanisms that steer behavior and biological development**. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us "what we are," i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others—when we are in love or desperately search for it. It is well established that modern biological theory conjectures that **organisms are the result of evolutionary competition**. In fact, Richard **Dawkins stresses gene survival and propagation as the basic mechanism of life** [20]. Only genes that lead to **the fittest phenotype will make it**. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, **the ultimate, distal function of rewards is to increase evolutionary fitness** by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring. **Behavioral reward functions have evolved to help individuals to survive and propagate their genes**. Apparently, **people need to live well and long enough to reproduce**. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish

and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. **That is why foods, drinks, mates, and offspring are rewarding.**

There have been theories linking pleasure as a required component of health benefits salutogenesis, (salogenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the "Brain Reward Cascade" (BRC) endorphin and endogenous morphine mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health. Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage. Finding happiness is different between apes and humans As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site.

Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure. Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are many brain regions, often termed hot and cold spots, that significantly modulate (increase or decrease) our pleasure or even produce the opposite of pleasure—that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows—producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered.

Desire and reward centers It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called "REWARD" involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation. In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the "Feel Good" response. This defined system of the brain is involved in all addictions—substance, and non—substance related. In 1995, our laboratory coined the term "Reward Deficiency Syndrome" (RDS) to describe genetic and epigenetic

induced hypodopaminergia in the "Brain Reward Cascade" that contribute to addiction and compulsive behaviors [3,6,41]. Furthermore, ordinary "liking" of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for "sweet"; and in Greek, hodone is the term for "pleasure." Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42].

Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans. In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: "liking," "learning," and "wanting" [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or "wanting" hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45]. Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic "high" that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between "stages," and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations. Over many years the controversy of dopamine involvement in especially "pleasure" has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50] In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders.

In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: "Humans have evolved a dopamine system that is different than the one in chimpanzees." This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: "It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction)." Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five

chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, there was a remarkable contrast in the neocortices, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain's reward system: the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement.

Notably, abnormal dopamine levels have been linked to disorders including Parkinson's, schizophrenia and spectrum disorders such as autism and addiction or RDS. Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans' ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology

and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible afterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shifting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual's physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

**That outweighs---bindingness---if I put my hand on a hot stove, I'd pull it back before a signal is sent to my brain---pleasure and pain always guide action, anything else regresses**

**2] Actor spec—governments must use util because they don't have intentions and are constantly dealing with tradeoffs**

**3] Use epistemic modesty for clash---disincentives debaters going all in for framework**

**4] Utilitarianism should be used in the context of public health emergencies---this framework avoids abuses while ensuring just outcomes at the tail end of disease risks.**

**Kirkwood 9** School of Health Studies, Faculty of Health Sciences, University of Western Ontario. 06/01/2009. "In the Name of the Greater Good?" Emerging Health Threats Journal, vol. 2, no. 0. CrossRef, doi:10.3402/ehjt.v2i0.7092.

Public health authorities in many economically advantaged nations are bracing themselves to face future pandemics that will harm large numbers of citizens. Modern medical horrors such as Monkeypox or the much-feared future mutations of Avian Influenza (H5N1) are mentioned in the same breath as virulent strains of influenza, as a danger to our 'way of living.' Far beyond sickness and large numbers of death, an outbreak of one of these pandemics poses a real threat to long-term health, as well as to the social and economic well being of significant percentages of our surviving population.<sup>1</sup> While confronting issues brought forth by a pandemic, the fundamental nature of public health and its focus on the welfare of a population demands special attention to utilitarian considerations of promotion of the greatest good—in this case, health—as well as the limitation of illness and death in the 'worst-case' scenarios posed by the most lethal of pandemics. Of particular interest to this paper are questions related to the obligation of health-care workers (HCWs) to report to work in the face of heightened immunological threat and whether those same workers should have greater access to immunizations and treatments than should non-HCWs. Utilitarianism within public health ethics The fundamental feature of the ethical theory of utilitarianism states that moral behavior is that which promotes good and minimizes harm.<sup>2</sup> In writings based on public health, utilitarianism is widely recognized as a fragment in the ethical 'scheme' of public health,<sup>3</sup> but it is not afforded a stronger role for two primary reasons: first, considering its extreme position, utilitarianism is morally problematic,<sup>4</sup> as it could literally permit anything in the name of the 'greatest good to the greatest number,' and second it is virtually impossible to live a moral life under the most extreme forms of utilitarianism, because the obligations are too difficult to discern (the 'what' of promoting the good) and impossible to execute (the 'how').<sup>5</sup> Utilitarianism, in a moderate form, used in public health ethics, means that our actions and policies should be focused on increasing the total 'net' goodness rather than an average 'net' good for each person. The institutions of individual rights and the recognition of patient autonomy are not contradictory to this, but are believed to serve the overall good, as individual benefit increases the total good, and serves as a preventative measure of unjustified majoritarian actions against smaller groups. This model of utilitarianism is evident in many aspects of public health. Not only through health-promotion projects that encourage the otherwise illness-free individuals to take up a more healthful diet and exercise regimen but also through harm-reduction programs, in which people with negative health behaviors such as abuse of drugs or dietary fats are aided to eliminate, or at least minimize the harm they cause to those around them. In everyday practice, the force of this utilitarian aspect has a supportive role along with other ethical elements of public health practice, and presents a balanced moral justification for all actions undertaken in accordance with this practice.<sup>6</sup> However, I contend that there must be an 'escalator clause' in the utilitarian aspect that suggests that in the event of an extensive threat to the existence of a

population, the force of this utilitarian aspect becomes the **primary consideration** in proportion to the threat. Therefore, the greater the threat, **the greater the moral force of utilitarianism** in making public health decisions. This also entails that the greater the threat, **the greater the moral impetus to minimize the harm to the population**. On duty, outbreaks, and distribution of resources Obligations to minimize harm and promote the goods of public health are not particularly controversial in times of relatively stable 'good-health'

measures among the populace. The more troubling question emerges from the scenario in which promoting health and minimizing illness and death demands more from HCWs. How can, or should, we compel HCWs to attend to their duties in the event that a highly lethal form of communicable disease should start spreading?<sup>7</sup> Although current debates focus on questions of duty, and how much personal risk invalidates that commitment, utilitarian aspects of that obligation are not given enough weight in the debate. In many of the debates, the question of risk is posed in terms of how we do not expect a trained 'first responder' to recklessly endanger his or her life to save the life of another. The classic story of the lifeguard is offered as exemplar: a lifeguard is not expected to rescue a drowning swimmer if a shark is clearly present.<sup>8</sup> Although this statement seems reasonable, it does not justify itself. By contrast, the consideration of the utilitarian aspect makes the point that in attempting to save a life, two are likely to be lost, thus propagating a greater total harm. The same holds true for the example of firefighters rushing into a house badly damaged by an active fire. Although there may be a life on that second floor to save, we do not expect any number of firefighters to sacrifice their lives for the doomed soul because the loss of many, including the original life in peril, is a maximization of harm, when harm should be minimized. When you control for the risks involved, such as using precautions to assure a level of safety for the rescuers, such as shark nets for the lifeguard, or safety gear for the firefighters, then the obligation to assist comes back into full force, as the potential for greater harm is manageable.<sup>9</sup> It is the variable of risk, which creates variable demands on those whose duty it is to care for the population in times of crisis. We consider not only the risk to the obligated but also a question of the scope of risk to the population. In academic and public debates regarding the compulsion to attend to duty in the face of danger, one fallacy has been allowed to stand: the notion that exposure to a pandemic can be avoided if one simply does not come to his or her job as a HCW. Although it is true that working in a hospital during times of influenza outbreak puts one at a greater risk for contracting the illness,<sup>10</sup> the more widespread the outbreak, the more people become sick, and the more likely the 'stay-at-home' HCW will become sick even after having avoided contact in the course of his or her duties. We could reasonably state that, by virtue of staying home during a time of need for his or her service, the HCW improves the odds that he or she will contract this illness outside professional practice as part of the greater number who will be exposed. Another feature of the argument offered to defend dereliction of duty is to suggest that this risk that the HCW takes with his or her own health is a fixed variable, and thus should be considered as an exception to duty. On the contrary, it is a common feature of the infection-control literature that states that doctors and nurses are overwhelmingly neglectful toward their own basic infection-control protocols.<sup>11</sup> Therefore, the threat is not a fixed variable, but one that is actually quite within the scope of the control of a HCW. Ethically, one cannot willfully or negligently enhance the exceptions to duty. At the same time, it is an obligation of the management to ensure that diligent HCWs are equipped to do all they can to reduce their risks. During the SARS crisis in Toronto, health-care administrators did not effectively communicate which precautions should be undertaken by HCWs to protect themselves.<sup>12</sup> It bears mentioning that once clear direction could be given about the type and execution of masking procedures, the intrahospital transmission of SARS decreased to 0%.<sup>13</sup> This fact speaks to the issue of risk, as the non-transmission of SARS correlated with the increased attentions of management and staff to infection-control precautions and the provision and use of proper equipment.<sup>14</sup> When we speak in terms of risk and pandemics from the utilitarian perspective discussed herein, we recognize that it is completely nonsensical to sacrifice highly trained HCWs by rushing them ill equipped into dangerous situations. Much as with the example of firefighters and the unsafe burning house, we find it morally unacceptable to treat them as disposable, because of the singularity of their lives and their right to exist as individuals. There is also the detriment we would cause in an event such as a pandemic by losing the people trained to save us to the very threat they were trained to save us from. By that same logic, it could be argued that HCWs should have first access to available and medically accepted vaccinations by virtue of the fact that those HCWs are absolutely essential to our survival. The fear of an Avian Influenza outbreak brought with it much debate about scarce Tamiflu supplies and giving HCWs preferential access.<sup>15</sup> However, the added value of a HCW is the fact that he or she will be facing the greater risk by virtue of faithful and responsible execution of his or her duty, and if this is true, and we have seen from the example of SARS that it is not always the case that HCWs exercise due diligence or face unmanageable risks of infection simply by being 'on-site'. Then we should do more to protect them. Nevertheless, if the claim is that they can excuse themselves from duty because of risk, then we excuse ourselves from privileging their protection, through the preferential access to measures such as Tamiflu. The same should be true for access to vaccines or treatments: those who are compelled into service to defend the overall health of a society at tremendous risk should be first in line, as their opportunity for infection and to act as a vector for infection both within and outside their health-care facilities means that the greater good is served by privileging their access to prophylaxis. A common objection to this comes from the perspective of social justice. The objection would point out that those who are least able to prevent their own infection, such as those from the lower socioeconomic classes, retirees and pensioners, and other vulnerable groups, would be denied access to the protections and treatments that are going to HCWs who, to varying degrees, enjoy more comfortable socioeconomic positions. Although this question of access is valid in questions of many public health interventions, the preference of HCWs in questions of preferential access to vaccines and treatments is not unjust in these terms. Fundamentally, justice addresses unjustified imbalances in treatment. Aristotle famously mandated that equals should be treated as equals, and unequals as unequals.<sup>16</sup>

The key point of justice is that there should be a valid justification for differential treatment, and in that light, in this context, we are describing **pandemics** that **pose a unique and credible threat to the public in a manner that could fundamentally undermine our way of life**. Preferential treatment of HCWs, in this limited context, is a just and defensible practice. It is **this** same special status that we afford those who can save us from the most lethal and dangerous illnesses in times of public health emergency that also **places greater demands on those same people**. **The greater the risk to society, the greater the responsibilities on those who can reduce the body count**. The relationship between the duty of a HCW and the lethality of a disease is **proportional—danger and obligation increase in step with each other**, as opposed to other conceptions that suggest a threshold of exception as the risk of illness becomes too great. The fundamental flaw with this suggestion is that a negation of duty in such an outbreak simply allows the outbreak to pose an even greater threat to the population. Including that same derelict HCW rather than confronting the illness in the relatively controlled environment of a hospital. Conclusions Utilitarianism in the form of promoting the good and diminishing the bad is a key moral belief in the realm of public health. It is one view in concert with others, all working to counterbalance each view to achieve a tenable moral equilibrium. In the extreme cases under consideration herein, such equilibrium dictates that the moral force of health promotion and harm minimization increases in relation to the threat posed to the well being of a larger society. In the case of widespread death or disability caused by a pandemic, this paper contended that an increased threat generates a heightened obligation on the part of HCWs, while also creating a reasonable expectation that those same HCWs will have preferential access to vaccines and treatments.

## 5] Extinction first under any framework

Pummer 15 [Theron, Junior Research Fellow in Philosophy at St. Anne's College, University of Oxford. "Moral Agreement on Saving the World" Practical Ethics, University of Oxford. May 18, 2015] brett

There appears to be a lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that **we – whether we're consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world.** According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. **Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here.** If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how **reducing existential risk is easily the most important thing in the whole world.** This is for the familiar reason that there are so many people who could exist in the future – **there are trillions upon trillions...** upon trillions. There are so many **possible future people** that reducing existential risk is arguably the most important thing in the world, **even if the well-being of these possible people were given only 0.001% as much weight as that of existing people.** Even on a wholly person-affecting view – according to which there's nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there's a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. **There is a tendency to assume that, if an argument appeals to consequentialist considerations** (the goodness of outcomes), **it is irrelevant to non-consequentialists.** But **that is a huge mistake.** Non-consequentialism is the view that there's more that determines rightness than the goodness of consequences or outcomes; **it is not the view that the latter don't matter.** Even John Rawls wrote, **"All ethical doctrines worth our attention take consequences into account in judging rightness.** One which did not would simply be irrational, crazy." **Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view.** They'd thus imply very strong reasons to reduce existential risk, at least when this doesn't significantly involve doing harm to others or damaging one's character. What's even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial "point of view of the universe," indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. **Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk.** It will depend, among other things, on what one's own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don't care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). **To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being.** To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – **suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being,** in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But **once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk.** Add to all of this Samuel Scheffler's recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I'd have very strong reason to reduce existential risk. **We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts?** I've just argued that **there's agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree.** But **even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one** (and 10% sure that one of these other ones is correct), **they would have pretty strong reason, from the standpoint of moral**

uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions... upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It's possible they'll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won't get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: "We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy.... Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly." (From chapter 36 of *On What Matters*)

## Vaccines are ineffective unless everyone gets them

**Yong 6/9** [Ed, (who is he)], 6-9-2021, The Atlantic, "THE FUNDAMENTAL QUESTION OF THE PANDEMIC IS SHIFTING," accessed 8/16/21

<https://www.theatlantic.com/health/archive/2021/06/individualism-still-spoiling-pandemic-response/619133///mhsAM>

During a pandemic, no one's health is fully in their own hands. No field should understand that more deeply than public health, a discipline distinct from medicine. Whereas doctors and nurses treat sick individuals in front of them, public-health practitioners work to prevent sickness in entire populations. They are expected to think big. They know that infectious diseases are always collective problems because they are infectious. An individual's choices can ripple outward to affect cities, countries, and continents; one sick person can seed a hemisphere's worth of cases. In turn, each person's odds of falling ill depend on the choices of everyone around them—and on societal factors, such as poverty and discrimination, that lie beyond their control. Across 15 agonizing months, the COVID-19 pandemic repeatedly confirmed these central concepts. Many essential workers, who held hourly-wage jobs with no paid sick leave, were unable to isolate themselves for fear of losing their livelihood. Prisons and nursing homes, whose residents have little autonomy, became hot spots for the worst outbreaks. People in Black and Latino communities that were underserved by the existing health system were disproportionately infected and killed by the new coronavirus, and now have among the lowest vaccination rates in the country. Perhaps that's why so many public-health experts were disquieted when, **on May 13, the CDC announced that fully**

**vaccinated Americans no longer needed to wear masks in most indoor places.**

"The move today was really to talk about individuals and what individuals are safe doing," Rochelle Walensky, the agency's director, told PBS NewsHour. "We really want to empower people to take this responsibility into their own hands." Walensky later used similar language on Twitter: "Your health is in your hands," she wrote. Framing one's health as a matter of personal choice "is fundamentally against the very notion of public health," Aparna Nair, a historian and an anthropologist of public health at the University of Oklahoma, told me. "For that to come from one of the most powerful voices in public health today ... I was taken aback." (The CDC did not respond to a request for comment.) It was especially surprising coming from a new administration. Donald Trump was a manifestation of America's id—an unempathetic narcissist who talked about dominating the virus through personal strength while leaving states and citizens to fend for themselves. Joe Biden, by contrast, took COVID-19 seriously from the off, committed to ensuring an equitable pandemic response, and promised to invest \$7.4 billion in strengthening America's chronically underfunded public-health workforce. And yet, the same peal of individualism that rang in his predecessor's words still echoes in his. "The rule is very simple: Get vaccinated or wear a mask until you do," Biden said after the CDC announced its new guidance. "The choice is yours." From its founding, **the United States**

**has cultivated a national mythos around the capacity of individuals to pull themselves up by their bootstraps, ostensibly by their own merits. This particular**

**strain of individualism, which valorizes independence and prizes personal freedom, transcends administrations. [and] it has also repeatedly hamstrung America's pandemic**

**response. It explains why the U.S. focused so intensely on preserving its hospital capacity instead of on measures that would have saved people from even needing a hospital. It explains why so many Americans refused to act for the collective good,**

**whether by masking up or isolating themselves. And it explains why the CDC, despite being the nation's top public-health agency, issued guidelines that focused on the freedoms that vaccinated people might enjoy. The move signaled to people with the newfound privilege of immunity that they were liberated from the pandemic's collective problem. It also hinted to those who were still vulnerable that their challenges are now theirs alone and, worse still, that their lingering risk was somehow their fault.** ("If you're not vaccinated, that, again, is taking your responsibility for your own health into your own hands," Walensky said.) Neither is true. **About half of Americans have yet to**

**receive a single vaccine dose; for many of them, lack of access, not hesitancy, is**

**the problem. The pandemic,** meanwhile, is still just that—a pandemic, which **is raging furiously around much of the world, and which still threatens large swaths of highly vaccinated countries, including some of their most vulnerable citizens. It is still a collective problem, whether or not Americans are willing to treat it as such.**

## **The TRIPS agreement and current developed nations are blocking access to vaccines.**

**OAG 20** , 11-25-20, “TRIPS agreement: A waiver makes the COVID-19 vaccine more accessible,” accessed 8-16-21 <https://www.openaccessgovernment.org/covid-19-vaccine-3/98561/>

Last week, **the TRIPS Council**, a group tasked with administering the agreement and facilitating discussion among members, **met** informally **to** once more **discuss a proposal to suspend certain provisions of the TRIPS Agreement. And**, once more, **key developed countries and a handful of emerging markets stood against the majority of members and rejected such an idea. The proposal**, put forward initially by South Africa and India, **will come before the Council formally next month in an effort make more policy space for countries to gain access to COVID-19 treatments and vaccines. It has now garnered support from a diverse set of countries** including Kenya, Eswatini, Mozambique, Pakistan, Sri Lanka, Tunisia, Indonesia, Egypt, Cuba, Tanzania (on behalf of the African Group), Venezuela, Nigeria, and Bangladesh. Opponents argue that the TRIPS Agreement already has plenty of flexibility to allow countries to address the current crisis, and removing key protections for new innovation could discourage development of much needed treatments and vaccines. While the primary purpose of patents is to address a market failure – resulting from a high cost of research and development – and (is supposed) to encourage innovation – this time, however, things are different. Governments around the world have taken an active role in funding efforts to find treatments and vaccines, without which, much of this research would be impossible. Moreover, **the companies producing these products have guaranteed demand all over the world, which would secure substantial profits even if much of the research and development money had come from their own pockets. The TRIPS Council and the developed countries rejecting the proposal are fully aware of this fact.** A temporary waiver of pharmaceutical patent protection is essential because relying solely on pharma companies to voluntarily grant licenses to other drug manufacturers will not have adequate reach in global markets. For example, earlier this year, Gilead negotiated licenses for the production of *remdesivir* with several pharmaceutical producers in India and Pakistan, with permission to export to 127 low-income countries. Moreover, Gilead promised to donate the first 1.5 million doses. However, this negotiation left out key middle-income countries, like Mexico and much of Latin America, who would be unable to produce the medicine on their own and are also excluded from the global supply chain through the restrictions in those licenses. In other words, if a country is not among the 127 listed, they have to negotiate medicine prices directly with Gilead, with very little bargaining power. Similarly, even if Pfizer, Moderna and AstraZeneca decided to grant licenses to produce their vaccines through manufacturers in other parts of the world, the reach of such licenses will be limited, and many countries will be forced to negotiate individually for their own purchase of the vaccine. Relying on these licenses would demand that many countries negotiate with the pharma company on a drug-by-drug basis, an approach that is both time-consuming and expensive. Given also that developed countries have already secured much of the anticipated vaccine production, countries outside of these licensing agreements may have to wait even longer for access to the vaccine. Finally, if we rely on policies already permitted under the TRIPS Agreement, many countries and disadvantaged groups will still not have access to new treatments and vaccines. The TRIPS agreement does allow countries to grant compulsory licenses to their own drug manufacturers if they have failed to negotiate a satisfactory agreement with the innovating company and in cases of extreme urgency (Art. 31). The rules also allow countries that don't have production capacity to import those licensed medicines (Art. 31*bis*), though this has happened only once. In these cases, the government chooses an appropriate amount to pay the innovating pharmaceutical company. Compulsory licenses, however, involve a complex process of bureaucratic red tape. Moreover, like voluntary

licenses, they take place on a drug-by-drug basis. A country granting such a license would have to go through the complex administrative process not once, but many different times in order to get access to each different intervention, treatment or vaccine available. This process of administering multiple compulsory licenses requires sophisticated institutions, not to mention a lot of money. All of these logistical hurdles make the process of compulsory licensing little used (except for HIV/AIDs treatments), even in less urgent contexts, and thus are not sufficient for increasing production of COVID-19 therapies and vaccines. Opponents of the waiver also point out that TRIPS has an established exception for national security emergencies, which would be applicable under present circumstances. Under that exception, a country may simply violate the rules in the treaty and, if challenged, refer to the national emergency as a defense. This “flexibility” however, suffers from even more deficiencies than compulsory licenses. In the first place, if a country violates treaty rules on this basis, other member states may still bring a complaint against it. The defendant State then has the responsibility to show that there was a national emergency *and* that the measures (which violated the agreement) were necessary to address it (Art. 73(b)). These defenses are rarely, if ever invoked and for that reason, the outcome is highly uncertain. Furthermore, the costs associated with the defense may be prohibitive for many countries as they concurrently battle limited fiscal space and an increasing debt overhang during the long slow recovery following the pandemic.

## **The second wave of COVID-19 was caused by low vaccination, and more waves will come.**

**Thomson 5/21, 5-3-21, “Fact Check-Multiple factors contributed to India’s second wave,” accessed 8-16-21**

**<https://www.reuters.com/article/factcheck-india-notvaccineeffect/fact-check-multiple-factors-contributed-to-indias-second-wave-idUSL1N2MQ0XA>**

As **India** is in the grip of a deadly surge of **COVID-19** cases with at least 300,000 people testing positive daily for the past week, a misleading claim on social media suggests the country’s **spike was caused by** vaccination against the coronavirus. This is false: experts say multiple factors, including **a slow vaccination campaign**, relaxation in preventive measures **and more transmissible variants** are all contributing to India’s current scenario.

Weeks after India’s government assured the country was in the “end-game” of the pandemic, **a second wave of infections in the country has overwhelmed health facilities** and crematoriums **and prompting an increasingly urgent response from allies overseas sending equipment** “Many are greatly horrified by the surge of cases in India. Doctors who are not employed by the government or own vaccine stock have been warning that taking the vaccine may lower your ability to stand up to the variants,” a Facebook post here claims, which features a report by the BBC on India’s vaccine rollout here , shared over 130 times. Overall, vaccines do not lower your immunity, but prepare your body to fight a disease. It is true that inoculation may sometimes cause mild symptoms, like low-grade fever or muscle aches, but these symptoms are normal signs that your body is building protection against the pathogen. As previously explained by Reuters here , a vaccinated person is much less likely to get infected by either a non-variant (also known as wild-type) of SARS-CoV-2 or a variant, and therefore less likely to spread the disease, than not-vaccinated people are. Bhramar Mukherjee, an epidemiologist at the University of Michigan ( here ) who has been modeling the trajectory of the outbreak in India with a team of researchers, dismissed the claim that vaccines were to blame for the situation in India. On the contrary, she noted that **a more accelerated vaccination program would have put the country in a much better scenario**. “If anything, **the sluggish start to the vaccination program in January instead of rapid acceleration in January-March is hurting India bigtime with the management of the pandemic**,” Mukherjee said in a statement emailed to Reuters. **Only 2% of Indians have received a full dose and 9% at least one dose as of April 28 and these percentages were even lower when the surge erupted, she explained**. Inoculation in the country accelerated in the late weeks of March, with anyone over 45 being eligible to be vaccinated starting April, CNBC reported here . A Reuters graphic shows this increase in inoculations here (search “India”). Moreover, experts say **the only way India can turn the tide is to ramp up vaccinations** and impose strict lockdowns in the so-called red zones of high infection ( here ). The country has already opened up the immunization program to all adults

**but faces a shortage.** According to Mukherjee, “it is a confluence of factors that has led to this catastrophe,” mentioning both the lack of “early intervention measures”, such as lockdowns, mask mandates and restricting large gatherings and a “well thought-out plan for sequencing that could help us track variants.” (Further reading about this here ). Some health experts said India became complacent in the winter, when new cases were running at about 10,000 a day and seemed to be under control. Authorities lifted restrictions, allowing for the resumption of big gatherings. Others said that it could also be a more dangerous variant of the virus coursing through the country ( here , here ). “We cannot rule out the role of more infectious variants (homegrown and known imported variants) in different parts of the country”, said Giridhar Babu, professor of epidemiology at the Public Health Foundation of India on April 22 when responding to record figures of contagion ( here ). The northern Indian state of Punjab, for example, which has reported one of the highest recent fatality rates in the country, said in late March that 81% of 401 COVID-19 samples it sent for genome sequencing were found to be the British variant B.1.1.7 ( here ), which scientists in Britain say is 70% more transmissible and much deadlier than previous ones ( here ). Meanwhile the Indian variant B.1.617 is widely present in Maharashtra, the country’s hardest-hit state, according to India’s National Centre for Disease Control; early modelling of the variant has suggested increased transmissibility, according to the World Health Organization ( here , here ). On April 27, the WHO stated that it “remains unclear” to what extent virus variants are contributing to the increase in cases ( here ). “No factor in itself explains this surge but our calculations indicate even with a more transmissible variant early lockdowns and other public health intervention measures could have saved thousands of lives,” said the University of Michigan’s Mukherjee. False. Vaccination won’t make you more vulnerable to virus variants. Experts say multiple factors, including a slow vaccination campaign, relaxation in preventive measures and more transmissible variants are all contributing to India’s current scenario. This article was produced by the Reuters Fact Check team. Read more about our work to fact-check social media posts here

## **The pandemic continuation will lead to trade war tensions between countries, like the U.S., and China.**

**Jean 20** “How the COVID-19 Pandemic Is Reshaping the Trade Landscape and What to Do About It,”

accessed 8-16-20

<https://www.intereconomics.eu/contents/year/2020/number/3/article/how-the-covid-19-pandemic-is-reshaping-the-trade-landscape-and-what-to-do-about-it.html>

On 8 April 2020, **the World Trade Organization (WTO) released its forecast for world trade in 2020, announcing that it expected a fall in volume of between 13% and 32%. Both the magnitude of the fall and the width of the forecasting range** speak volumes about the violent blow the crisis dealt to international trade and about the uncertainty surrounding ensuing consequences. They **reflect the deeply disruptive economic impacts of lockdown measures taken to counter the pandemic.** Since these measures should be short-lived, part of their impact is temporary, and it is reasonable to expect that their removal will bring significant economic relief. Yet, I argue that **this crisis will create lasting changes in the trade landscape and serious threats to the rules-based trading system, warranting a reconsideration of trade policy priorities in important respects.** The fact that the shock is violent does not mean that its consequences will last. Four types of reasons lead to the expectation that some of them will be irreversible, though. **The looming economic crisis**, expected to be of unprecedented scale in peace time at least for decades, **will cause a large number of bankruptcies and buyouts, in a manner that is far from homogeneous across countries and sectors. While it is difficult to predict the size of the wave, it is likely to significantly alter competitive positions.** Given the recognised importance of hysteresis and irreversibilities in international trade (e.g. Baldwin, 1990; Ramanarayanan, 2017), the consequences for international trade patterns might be long-lasting. The macroeconomic conditions will also likely suffer lasting alterations. Based on historical evidence from major pandemics, Jorda et al. (2020) conclude that **significant macroeconomic effects persist for about 40 years,** resulting in substantially depressed real rates of return, possibly as a result of increased risk aversion and

precautionary saving. In the present case, **this effect might reinforce the underlying trend of secular stagnation observed since the global financial crisis.** The spectacular fall in inflation expectations witnessed in the US as early as March 2020 points in this direction, while China's factory prices fell at the sharpest rate in four years in April 2020 (e.g. Smith, 2020a; Smith 2020b; Chen and Lee, 2020). Another hint at such possible trends is the fact that upon the end of the strict lockdown, the Chinese economy witnessed a surge in exports in April but a decline in imports, suggesting that the negative consequences might be more long-lasting on demand than on supply. If confirmed, these trends suggest that the economic situation may be marked for some time by lagging demand. In this situation, firms' demand for protection from import competition is generally strong. While provisions exist within the WTO system to provide short-term relief in specific cases through safeguard measures, the risk that this pressure will result in spiralling tariffs and retaliatory measures is real. The health crisis already spurred confused and non-cooperative responses, marked by more or less direct and formal export restrictions, including within the EU (Bown, 2020). According to the WTO (2020), in April 2020, **80 countries had introduced export prohibitions or restrictions as a result of the pandemic;** these measures mostly concern health-related products, but some of them concern food products, even though there did not appear to be a supply shortage. **Such measures can be very costly for foreign partners and heavily disruptive for international markets** more generally, as previous episodes have shown, in particular in relation to food crises (e.g. Headey, 2011). Accordingly, they **are bound to create strong tensions between partner countries. This general context is aggravated by the mounting tensions between the US and China.** While the 'phase one' deal signed in January 2020 marked a ceasefire in **the trade war between the two countries,** it did not resolve the underlying sources of tensions, far from it (Jean, 2020). Moreover, the **pandemic will probably call into question China's enforcement of its import commitments under this agreement.** While the woeful absence of US leadership in the pandemic response can only add to the strategic rivalry between the two countries, **increased tension is also visible in the trade arena, as witnessed by the US administration's tightening of the rules restricting exports of sensitive products to China.**





## **1AC – Developing Nations**

**Developing nations do not have access to vaccines.**

**Grainger and Dransfield 21** “Rich nations vaccinating one person every second while majority of the poorest nations are yet to give a single dose”

[https://www.unaids.org/en/resources/presscentre/featurestories/2021/march/20210310\\_covid19-vaccines///montville](https://www.unaids.org/en/resources/presscentre/featurestories/2021/march/20210310_covid19-vaccines///montville)

One year on **from** the declaration of **the COVID-19 pandemic**, the People’s Vaccine Alliance is warning that **developing countries** are facing critical shortages of oxygen and medical supplies to cope with COVID-19 cases yet the **majority have been unable to administer a single dose of a COVID-19 vaccine**. In contrast **rich nations have vaccinated their citizens at a rate of one person per second** over the last month. **Many** of these **rich nations**, including the US, UK and EU, **are blocking a proposal by over 100 developing countries to be discussed at** the World Trade Organisation (**WTO**) today, **which would override the monopolies held by pharmaceutical companies and allow an urgently needed scale up in the production of safe and effective COVID-19 vaccines to ensure poorer countries get access to the doses they desperately need.** While more poor countries will see the arrival of doses in the coming days from the World Health Organisation’s COVAX facility, the amounts available mean **only three per cent of people in those countries can hope to be vaccinated by mid-year, and only one fifth at best by the end of**

**2021.** Almost one million people worldwide have signed a call by the People’s Vaccine Alliance – a group of campaigning organisations including Oxfam, Frontline AIDS, UNAIDS, Global Justice Now and the Yunus Centre – for rich nations to stop protecting big pharma monopolies and profits over people’s lives. On 11 March protests will take place outside pharmaceutical headquarters as part of a global day of action by activists across the world. Recent public opinion polls carried out by YouGov for the Alliance in the US, France, Germany and the UK found that on average, across these countries, more than two-thirds (69 per cent) of people thought that governments should ensure vaccine science and know-how is shared with qualified manufacturers around the world rather than remaining the exclusive property of a handful of pharmaceutical giants and that vaccine developers should be adequately compensated for this. Oxfam International’s Executive Director, Gabriela Bucher, said: “Around the world, two and a half million lives have already been lost due to this brutal disease and **many countries are battling without adequate medical care and no vaccines**. **By allowing a small group of pharmaceutical companies to decide who lives and who dies**, rich nations are prolonging this **unprecedented global health emergency and putting countless more lives on the line. At this crucial time, developing countries need support – not opposition.”**

**Vaccines are critical to stopping the spread of new variants.**

**Kingsland 21** “Are we creating ideal conditions for new coronavirus variants?”

<https://www.medicalnewstoday.com/articles/are-we-creating-ideal-conditions-for-new-coronavirus-variants>

We are in an evolutionary “arms race” with SARS-CoV-2, which is the virus that causes COVID-19, biologists at the University of East Anglia in the United Kingdom have warned. Writing in the journal *Virulence*, they say that **relaxing control measures while the majority of the world’s population remains unvaccinated risks the evolution of more transmissible, more virulent variants.** These variants may be more dangerous for children and certain vulnerable groups, such as transplant patients with compromised immune systems, they argue. They may also escape the protection afforded by existing vaccines. **Even in countries where vaccination has reduced the numbers of hospitalizations and deaths, high case numbers and large numbers of unvaccinated individuals provide a mixing vessel in which new variants can emerge.** “Relaxing restrictions boosts transmission and **allows the virus population to expand, which enhances its adaptive evolutionary potential and increases the risk of vaccine resistant strains emerging by a process known as antigenic drift,**” they write. Antigenic drift **refers to the continual random mutations in a virus’s genome that change the proteins on the virus particle’s surface.** These are the foreign proteins, or “antigens,” that antibodies recognize. For SARS-CoV-2, the most important is the spike protein that allows the virus to invade cells. Every **change in this protein has the potential to interfere with the immune system’s ability to recognize and disrupt the virus, which will reduce the protection provided by a past infection or vaccination.** Like repeatedly rolling dice, **a larger number of individuals who have had the virus are more likely to generate a mutation that allows it to evade its future hosts’ immune defenses.** Increasingly transmissible variants By the same token, a greater number of cases is also more likely to lead to changes that allow a variant to spread more easily, giving it a competitive edge over all the other strains. The authors point out that during the course of the pandemic, a succession of more transmissible variants have become the dominant strains within populations. “My **main concern is** about the **high case numbers right now,**” said co-lead author Dr. Cock Van Oosterhout, Ph.D., who is a professor of evolutionary genetics at the University of East Anglia. “**Because these remain high, this allows for continued evolution of** [the] **virus,** and that comes at a risk, **including the evolution of more virulent variants, or variants that can escape the vaccine,**” he told *Medical News Today*.

## **Lowering IP protections allows developing nations to get vaccinated.**

**Kavanagh and Sunder 21** “Poor countries may not be vaccinated until 2024. Here’s how to prevent that.”

<https://www.washingtonpost.com/opinions/2021/03/10/dont-let-intellectual-property-rights-get-way-global-vaccination/>

President Biden announced last week that the United States will have enough vaccines for every American adult by the end of May. Other rich nations will soon follow suit, having purchased enough doses to inoculate their populations many times over. **Lower-income countries, however, have yet to find a pathway to herd immunity anytime soon.** Indeed, experts say that **without significant policy changes, poor countries may not be vaccinated against covid-19 until 2023 or 2024.** We must make critical changes now to fix this inequity and avert a public health disaster. **Vaccinating everyone around the world is not just a moral imperative. With variants of the novel coronavirus first found in Brazil, South**

**Africa and Britain already spreading in the United States, it is clear global vaccination is necessary to end the pandemic.**

At the World Trade Organization on Wednesday, the United States and a small number of wealthy countries with ready access to vaccines blocked a proposal by India and South Africa to temporarily waive countries' obligation to enforce patents on covid-19 technologies, including vaccines, during the pandemic. The Biden administration should drop its objection, and WTO members should pass the waiver — quickly. Two decades ago, in the midst of the AIDS crisis, the WTO's Doha Declaration affirmed intellectual property rules "should not prevent members from taking measures to protect public health." But the clarification of the right of nations to issue compulsory licenses and make generic medicines came too late: More than 5 million people in low- and middle-income countries died from AIDS waiting for the WTO to clarify its rules. Now we are in the middle of another global health emergency. **Two-thirds of WTO members back waiving patent**

**rules during the pandemic, but** the United States and others argue that patents are critical for innovation and are not slowing the global supply of vaccines. Neither is true. First, patents played little, if any, role in stimulating the "warp speed" development of covid-19 vaccines. The Moderna vaccine was almost entirely funded by the U.S. government, with an additional \$1 million donated by Dolly Parton. It is inappropriate for a private company to monopolize technology funded by taxpayers. Moderna itself recognizes this, having previously announced that it will not seek to enforce its vaccine patents. The United States also argues the waiver is unnecessary because countries such as India can already begin producing covid-19 vaccines for their own populations,, and export them to developing countries under existing WTO rules. But the current machinery is cumbersome; implementation may take years. **The waiver, however, would allow generic drug companies to**

**begin making and distributing the vaccines as soon as possible.** Finally, the United States and other opponents argue that even if generic drug companies get the patents, there is nobody who can make them. They suggest technology using mRNA underlying some of the new vaccines is so complicated that even respected generic drug companies cannot make the vaccines. This leads us to the next necessary step: tech transfer. **If patent rights are waived, companies** around the world, such as Biovac in South Africa or Cipla in India, **could rapidly retool their manufacturing capacity to make these vaccines, with experts at the ready to help**. But they also

need the recipe. While a patent is supposed to explain how to make a product, many of today's pharmaceutical patent filers intentionally obscure this information. Therefore, the companies making these vaccines should share exactly how they make them. Sharing technology with low- and middle-income countries is standard practice for many medicines. **Gilead Sciences shared**

**technology to help** manufacturers based in **Egypt, India and Pakistan** to **make and sell** remdesivir as a **covid-19 treatment** last year; a company co-owned by Pfizer has done the same for HIV drugs. **Vaccines are harder to engineer** than AIDS drugs, **so sharing tech is essential.**

Having funded key vaccine development, the U.S. government has the leverage to push companies to open up their vaccines to the world. The World Health Organization has already said it will help with expertise, and companies such as Moderna, Pfizer and Johnson & Johnson could receive royalties on the sales. But what they must not do is block producers in Africa, Asia and Latin America from making life saving vaccines and exporting them to their neighbors. We cannot afford to repeat the mistakes of the past. Just as the AIDS crisis in Africa necessitated the Doha Declaration, **the covid-19 pandemic necessitates** both **a temporary intellectual property waiver from the WTO** and a bold effort to share know-how — not in 2024, but now. Indeed, the covid-19 era should change the way we think about patents and public health. **Intellectual property rights are not ends in themselves; they are tools to promote human flourishing.**

## Vaccines are key to ending the pandemic.

**Powell 21** “Vaccines can get us to herd immunity, despite the variants”

<https://news.harvard.edu/gazette/story/2021/02/vaccines-should-end-the-pandemic-despite-the-variants-say-experts/>

A Harvard immunologist said current **vaccines** appear to be **effective enough to end the pandemic**, despite growing concerns that more infectious COVID-19 **variants** would severely blunt the effectiveness of the preventative treatments and set the nation back in its fight against the disease. Galit Alter, professor of medicine at Harvard Medical School and the Ragon Institute of MGH, MIT, and Harvard, said the fast-spreading U.K. variant seems able to evade some vaccine protection, and the South African variant appears able to skirt even more. Despite that, she said, none **have[not]** completely **escaped the body's post-vaccination immune responses**. That's because, Alter said, though much attention has focused on how antibodies boosted after vaccination target their attack on the virus' spike protein, **the immune system has an array of other defenses that vaccination also mobilizes, including antibodies that attack other parts of the virus, and, importantly, T-cells that attack the infected cells the virus hijacks in order to replicate**. “What we're seeing is that these **variants don't** seem to **affect T-cell immunity** all that much **and** they [the **T-cells**] seem to be as **effective in recognizing these variants as they do the original virus**,” Alter said. “What that means is that **we** actually **have** very **important backup mechanisms built into our vaccines that will continue to provide protection against these newly emerging variants**.” Alter, speaking during a noontime briefing Wednesday by the Massachusetts Consortium on Pathogen Readiness (MassCPR), said that **even if our most effective vaccines' effectiveness falls to 70 percent from 95 percent, the world still has a path to achieving the herd immunity that can end the pandemic**. Short of that hopeful scenario, Alter said, lies another that is nonetheless preferable to the continuation of the current wave of widespread illness and death. **Because the vaccines greatly reduce severe disease and death**, a vaccination campaign that removes the most severe cases from the pandemic would mean that those that remained would be mild and asymptomatic cases, something similar to those caused by its close viral cousin: **the common cold**. In that case, Alter said, **though the virus wouldn't be eliminated, its effect would be blunted enough that the pandemic would also effectively end**.

## Without vaccines covid leads to global warming and extinction.

**McPherson 20** “Will COVID-19 Trigger Extinction of All Life on Earth?”

<https://opastonline.com/wp-content/uploads/2020/04/will-covid-19-trigger-extinction-of-all-life-on-earth-eesrr-20-.pdf>

Small lives matter. Indeed, the “human body contains about 100 trillion cells, but only maybe one in 10 of those cells is actually — human” [1]. We are comprised of bacteria and other tiny living organisms, as well as non-living entities such as viruses. One such virus has captured the attention of the world, and with good reason. The novel

**coronavirus could trigger extinction of humans, and therefore the extinction of all life on Earth.**

I frequently hear and read that COVID-19 is a nefarious attempt by the so-called “elite” among us to depopulate the burgeoning human population on Earth. Other conspiracy theories abound, including COVID-19 as an attempt to further reduce human rights, promote expensive medical therapies, and otherwise enrich the wealthy at the expense of the bamboozled masses. I do not doubt the ability of the informed wealthy to fleece the ignorant masses. Nor do I doubt the ability of the informed wealthy to turn virtually any situation into an opportunity for monetary gain. A quick glance at the past two centuries provides plenty of examples. However, I doubt the monetarily wealthy among us are interested in accelerating human extinction, even for financial gain. As I explain below,

**the ongoing reduction in industrial activity as a result of COVID-19 almost certainly leads to loss of habitat for human animals, hence putting us on the fast track to human extinction**

I doubt the knowledgeable “elite” are interested in altering the sweet deal they are experiencing with the current set of living arrangements. The aerosol masking effect, or global dimming, has been described in the peer-reviewed literature since at least 1929 [2, 3]. Coincident with industrial activity adding to greenhouse gases that warm the planet,

**industrial activity simultaneously cools the planet by adding aerosols to the atmosphere. These aerosols block incoming sunlight, thereby keeping cool** our pale blue dot. **Reducing industrial activity by as little as 35 percent** is expected to **cause a global-average temperature rise of 1 degree Celsius**

within a few weeks, according to research on the aerosol masking effect [4]. Such research was deemed collectively too conservative by a paper in the 17 January 2019 issue of *Science* [5]. As pointed out by the lead author of the latter paper on 22 January 2019 “Global efforts to improve air quality by developing cleaner fuels and burning less coal could end up harming our planet by reducing the number of aerosols in the atmosphere, and by doing so, diminishing aerosols’ cooling ability to offset global warming” [6]. The cooling effect is “nearly twice what scientists previously thought,” and the paper by Rosenfeld et al. [5] cites the conclusion by Levy et al. [4], indicating as little as 35%

reduction in industrial activity drives a 1 C global-average rise in temperature, thereby suggesting that **as little as a 20% reduction in industrial activity will drive a 1 C spike in temperature** within a few weeks [7]. Additional, recent support for the importance of the aerosol masking effect comes from [8, 9].

**Furthermore, loss of aerosols exacerbates heat waves** [10]. Human extinction might have been triggered several years ago when the global-average temperature of Earth exceeded 1.5 C above the 1750 baseline. According to a comprehensive overview published by *European Strategy and Policy Analysis System* in April, an “increase of 1.5 degrees is the maximum the planet can tolerate; ... at worst, [such a rise in temperature above the 1750 baseline will cause] the extinction of humankind altogether” [11, 12]. Earth’s global-average temperature hit 1.73 C above the 1750 baseline by April, 2018 the highest global-average temperature experienced by *Homo sapiens* on Earth [13, 14]. By 13 March 2020, 2 C above the 1750 baseline was crossed [11]. In other words, human extinction via the death-by-a-thousand-cuts route might be locked in with no further heating of Earth. In light of the ongoing pandemic, the ongoing Mass Extinction Event, and abrupt, irreversible climate change, it is pleasantly surprising that humans still occupy Earth. The pandemic-induced reduction in industrial activity may have already reduced the aerosol masking effect sufficiently to trigger a 1 C temperature spike. The outcome is not yet obvious because the timing of the outbreak of the novel coronavirus was favorable for human habitat. Trees produced leaves in the Northern Hemisphere spring of 2020 as a result of carbohydrates stored the previous year and grain crops were harvested before the novel coronavirus emerged. Results of the recent and ongoing rise in temperature, which have

already been reported in China and India, will become obvious to most humans when many more trees die. Large-scale die-off of trees likely will approximately correspond with catastrophic crop failure. This might occur by the end of this year, although I would rather it not. Every civilization requires bread and circuses. There is little doubt the circuses attendant to industrial civilization will continue until the end of the planetary show for *Homo sapiens*. Bread, however, requires wheat. Wheat production requires a delicate balance of growing conditions that, like habitat for humans, teeters on the brink [15]. The path to near-term human extinction thus runs from a tiny virus underlying a pandemic through a reduction of industrial activity that overheats a planet already running a fever. The outbreak of COVID-19 could very well be the event that accelerates human extinction via reduction of industrial activity, hence loss of habitat for *Homo sapiens*. As a result of the rapid environmental change likely to follow, we are almost certain to lose all life on Earth [16]. History is replete with examples of human hubris. We thought we were mighty, and we certainly have left our mark on Earth. How embarrassing for the big-brained human species that a microscopic virus could pull the trigger on our extinction [15].





## **1AC – Advocacy**

**Plan Text: The member nations of the World Trade Organization ought to reduce intellectual property protections for Covid Vaccines during a pandemic.**

**CP and PICs affirm because they do not disprove my general thesis.**

**CX checks all theory interps otherwise grant me an auto I meet.**

**The member nations of the World Trade Organization are countries:**

World Trade Organization, March 2013, "WTO,"

[https://www.wto.org/english/thewto\\_e/countries\\_e/org6\\_map\\_e.htm](https://www.wto.org/english/thewto_e/countries_e/org6_map_e.htm)

**159 countries are currently members of the WTO.**

[Albania, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Bahrain, Kingdom of Bangladesh, Barbados, Belgium, Belize, Benin, Bolivarian Republic of Venezuela, Bolivia, Plurinational State of Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Central African, Republic, Chad, Chile, China, Colombia, Congo, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of the Congo, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, European Union, Fiji, Finland, Former Yugoslav Republic of Macedonia, France, Gabon, The Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, Hong Kong,

China, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Korea, Republic of Kuwait, Kyrgyz Republic, Laos, Latvia, Lesotho, Liechtenstein, Lithuania, Luxembourg, Macao, China, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands - For the Kingdom in Europe and for the Netherlands Antilles, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman,

Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Saudi Arabia, Kingdom of Senegal, Sierra Leone, Singapore, Slovak Republic, Slovenia, Solomon Islands, South Africa, Spain, Sri Lanka, Suriname, Swaziland, Sweden, Switzerland, Chinese Taipei, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uruguay, Vanuatu, Vietnam, Zambia, Zimbabwe]

**Reduce:**

**Dictionary.com , "Definition of reduce," dictionary,**

<https://www.dictionary.com/browse/reduce>

**2] to lower in degree, intensity, etc.:**

**Intellectual Property Protections:**

Cornell Law [LLI] (credentials:

[https://www.law.cornell.edu/lii/about/lii\\_staff](https://www.law.cornell.edu/lii/about/lii_staff)) "Intellectual property," LII / Legal Information Institute,

[https://www.law.cornell.edu/wex/intellectual\\_property](https://www.law.cornell.edu/wex/intellectual_property)

In general terms, **intellectual property is any product of the human intellect that the law protects from unauthorized use by others.** The

ownership of intellectual property inherently creates a limited monopoly in the protected property.

Intellectual property is traditionally composed of four categories: patent,

copyright, trademark, and trade secrets. Common Law: Common law did not recognize intellectual property rights. Justice Brandeis communicated this

belief in his dissent to *International News Service v. Associated Press*: "The general rule of **law is**, that the noblest of human productions—knowledge, truths ascertained, conceptions, and ideas—become, after voluntary communication to others, as free as the air to common use." Modern Intellectual Property Rights :The

products of the human intellect that comprise the subject matter of **intellectual property** are typically characterized as **non-rivalrous** (Definition: A good whose consumption by one consumer does not prevent simultaneous consumption by other consumers) **public goods.**

## **Vaccines:**

CDC, 8-9-2021, "Basics of Vaccines," CENTER FOR DISEASE CONTROL, <https://www.cdc.gov/vaccines/vpd/vpd-vac-basics.html>

**A vaccine stimulates your immune system to produce antibodies,** exactly like it would if you were exposed to the disease. After getting vaccinated, **you develop immunity to that disease, without having to get the disease first.** This is what makes vaccines such powerful medicine. Unlike **most medicines, which treat or cure diseases,** **vaccines prevent them.**

## Covid Vaccines have patents right now.

**Dharshini 21** "Covid: The vaccine patent row explained"

<https://www.bbc.com/news/business-57016260>

**Medicines** and other inventions **are covered by patents which provide legal protection against being copied, and vaccines are no exception.**

Patents give makers the rights to their discoveries as well as the means to make more money from them - which is an incentive to encourage innovation.

But these are not normal times.

Last autumn, **developing nations led by India and South Africa proposed to the World Trade Organization (WTO) that the patents on vaccinations** and other Covid-related items **should be waived.**

They argued that, **given the extreme nature of the pandemic, the recipe for the life-saving jabs should be made widely available so they could be produced locally in bulk by other manufacturers.**

## SOLVENCY

The plan solves: Reducing IP protections on vaccines for covid 19  
solves - deaths decrease and pandemic gets resolved

### Countries In support of reducing IP rights

Pharmaceutical Technology, 5-07-2021 "Over 120 countries back IP rights waiver on Covid-19 vaccines"

<https://www.pharmaceutical-technology.com/news/ip-waiver-covid-19-vaccines/>

**Over 120 countries back IP rights waiver on Covid-19 vaccines.** US has

released a statement announcing President Joe Biden's support to wave off intellectual property rights on Covid-19 vaccines temporarily, a move which received support from over 120 countries. In October last year, India and South Africa had floated the proposal to waive IP rights at the World Trade Organization's

(WTO) Trade-Related Aspects of Intellectual Property Rights (TRIPS) Council to waive such protections of the agreement for some patents and technology in response to Covid-19. The latest proposal would permit poorer countries to produce vaccine by themselves. India has welcomed the US Government's stance on the initiative noting that the waiver is a major step to facilitate stepping up the production and availability of inexpensive Covid-19 jabs and vital medicines. The WTO agreement on TRIPS permits members countries to offer more extensive intellectual property protection as per their choice. US Trade representative Katherine Tai said: "This is a global health crisis and the extraordinary circumstances of the Covid-19 pandemic call for extraordinary measures." The Administration believes strongly in intellectual property protections, but in service of ending this pandemic, supports the waiver of those protections for Covid-19 vaccines." Responding to Tai's statement, WTO director-general Ngozi

Okonjo-Iweala said: "I am pleased that the proponents are preparing a revision to their proposal and I urge them to put this on the table as soon as possible so that text-based negotiations can commence.

"It is only by sitting down together that we will find a pragmatic way forward, acceptable to all members, which enhances developing countries' access to vaccines while protecting and sustaining the research and innovation so vital to the production of these life-saving vaccines."

### Reducing IP rights allows for Countries to develop and distribute the Vaccine

Scott Burrell, 2021, "Should vaccines be patent protected in a pandemic? ,"

<https://www.frontier-economics.com/uk/en/news-and-articles/articles/article-i8200-should-vaccines-be-patent-protected-in-a-pandemic/>

It is claimed that waiving IP rights could allow for vaccine technology to be more easily shared.

This would mean generic or otherwise non-licensed manufacturers could begin production in the countries considered to have the production capacity to do so (such as India and Brazil). With even the most optimistic of vaccine supply targets insufficient to meet global demand, a proposal that could allow for production to be ramped up in this way

has the potential to significantly **increase the global stock of available vaccines**. It could also **reduce** the **possibility** of **limited vaccine supplies** being **rationed** according **to price** (though a number of manufacturers have committed to make vaccines available at cost price, at least initially).

## **Vaccine Solves Deaths and The pandemic since it also prevents new varrients**

Alison Galvani,, 6-24-2021, "Deaths & Hospitalizations Averted by Rapid US Vaccination Rollout," No Publication,  
<https://www.commonwealthfund.org/publications/issue-briefs/2021/jul/deaths-and-hospitalizations-averted-rapid-us-vaccination-rollout>

The COVID-19 **pandemic** has unleashed devastating health and economic crises worldwide, **causing more than 3.9 million deaths and 183 million reported infections globally**.<sup>1</sup> While the United States has accounted for more than 600,000 deaths, it also has supported the development of highly efficacious vaccines, granting emergency authorizations and delivering the products at an unprecedented pace. As of July 2, the U.S. had administered more than 328 million vaccine doses, with 67 percent of adults having received at least one dose.<sup>2,3</sup> The number of **cases has fallen** from more than **300,000 per day** at the apex of the pandemic in January 2021 to less than 20,000 per day in mid-June. The precipitous decline in U.S. cases is especially impressive as more transmissible variants have emerged in recent months, including the B.1.1.7 (Alpha), P.1 (Gamma), and B.1.617.2 (Delta) variants. The Alpha variant, first identified in the United Kingdom, is 50 percent more contagious than the original COVID-19 variant,<sup>4</sup> with higher mortality risk.<sup>5</sup> The Gamma variant, initially detected in Brazil and imported to the U.S. in January 2021, became one of the dominant variants by mid-May.<sup>6</sup> Ominously, the Delta variant, linked to a resurgence of COVID-19 infections in India, Nepal, and other southeast Asian countries, is threatening to shift the course of the pandemic in the U.S. With an even higher transmissibility than the Alpha variant,<sup>7</sup> the Delta variant

currently accounts for more than 40 percent of positive tests and is already establishing dominance in some U.S. states.<sup>2,6</sup> The efficacy and safety of authorized **vaccines against the original viral variant** are well established based on randomized controlled trials **showing that they prevent symptomatic and severe disease.**<sup>8–10</sup> However, the effectiveness of the U.S. **vaccination** campaign in **reducing COVID-19 hospitalizations and deaths** in the face of emerging highly transmissible variants has not yet been fully evaluated. To assess the impact of the U.S. vaccination program, we expanded our age-stratified, agent-based model of COVID-19 to include transmission dynamics of the Alpha, Gamma, and Delta variants in addition to the original Wuhan-1 variant.<sup>11</sup> (For details, see [How We Conducted This Study](#)). Briefly, the model compared the observed epidemiologic trajectory (cases, hospitalizations, and deaths) to two counterfactual scenarios, one in which no vaccination program occurred and another under which daily vaccinations were administered at only half the actual daily pace. **Without a vaccination** program, **by the end of June 2021 there would have been approximately 279,000 additional deaths and up to 1.25 million additional hospitalizations.** If the U.S. had achieved only half the actual pace of vaccination, there would have been nearly 121,000 additional deaths and more than 450,000 additional hospitalizations.



