### 1

#### Interpretation & Violation: The affirmative debater must define the medicine they defend in a delineated text in the 1AC – they didn’t

#### Medicine is the core question of the topic and there’s no consensus on normal means so you must define it.

**Hofmann 21:** Hofmann, Bjorn [Institute for the Health Sciences at the Norwegian University of Science and Technology (NTNU) at Gjøvik, PO Box 1, 2802, Gjøvik, Norway] “Vagueness in Medicine: On Disciplinary Indistinctness, Fuzzy Phenomena, Vague Concepts, Uncertain Knowledge, and Fact-Value-Interaction” *Springer Link,* July 05, 2021 AA <https://link.springer.com/article/10.1007/s10516-021-09573-4>

This article investigates five kinds of vagueness in medicine: disciplinary, ontological, conceptual, epistemic, and vagueness with respect to descriptive-prescriptive connections. **First, medicine is a discipline with unclear borders, as it builds on a wide range of other disciplines and subjects. Second, medicine deals with many indistinct phenomena resulting in borderline cases. Third, medicine uses a variety of vague concepts, making it unclear which situations, conditions, and processes that fall under them. Fourth, medicine is based on and produces uncertain knowledge and evidence. Fifth, vagueness emerges in medicine as a result of a wide range of fact-value-interactions. The various kinds of vagueness in medicine can explain many of the basic challenges of modern medicine, such as overdiagnosis, underdiagnosis, and medicalization.** Even more, it illustrates how complex and challenging the field of medicine is, but also how important contributions from the philosophy can be for the practice of medicine. **By clarifying** and, where possible, **reducing or limiting vagueness, philosophy can help improving care. Reducing the various types of vagueness can improve clinical decision-making, informing individuals, and health policy making.**

#### Vote neg

#### 1] Stable Advocacy: 1AR clarification delinks neg positions that prove why specific medicines are bad by saying it doesn’t fit under their definitions of medicine– wrecks neg ballot access and kills in depth clash about specific medicine. IE, If I read marijuana or opioids they can just delink and say they aren’t medicine.

#### 2] Prep Skew: I don’t know what they will be willing to clarify until CX which means I could go 6 minutes planning to read a disad and then get screwed over in CX when they spec a different definition of medicine. This means that CX can’t check because the time in between is when I should be formulating my start and waiting until then is the abuse. Key fairness because I won’t be able to use the strat I formulated if you skewed my prep and will have a time disadvantage.

#### Preround doesn’t solve either – a] you should be held to what is in your doc b]you didn’t even send a full doc so I don’t know what to ask c] o/w on norming since its more verifiable to just have it in the doc.

#### Paradigms

#### 1] Fairness is a voter – debate is a game that needs rule to evaluate it, and outweighs on reversibility since we can’t undo a unfair decision.

#### 2] DTD – The round was already skewed, and Dropping deter future abuse by punishing heavily. Also, there is no argument to drop.

#### 3] Competing interps – Reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation – it also collapses since reasonability operates on an offense-defense paradigm

#### 4] No RVIs – A - Forcing me to go all in on the shell kills substance education which outweighs on timeframe, B - discourages checking real abuse since I have to go 1 off theory and you can dump on it which outweighs on norm-setting C - Encourages theory baiting – outweighs because if the shell is frivolous, they can beat it quickly D – its illogical for you to win for proving you were fair – outweighs since logic is a litmus test for other arguments

### 2

#### Interpretation: Affirmatives must reduce intellectual property protections for medicines unconditionally and permanently.

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

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

#### My def o/w since it in the context of legal codes and the plan is legal.

#### Violation: The waiver is temporarily since pandemics don’t last forever, and it is conditional since its during pandemics

#### Prefer my interpretation:

#### 1] Semantics outweighs: A] Topicality is a constitutive rule of the activity they agreed to debate the topic when they signed up B] It’s the only stasis point we know before the round so it controls the internal link to engagement. Jurisdiction is a voter since the judge can’t vote on the aff if its not topical

#### 2] Limits : they open the door to an infinite number of affs – from any condition to any time of restriction. Each one becomes its own new aff which explodes our prep burden. They can cherry pic specific time frames that we get for the aff leaving us with no ground, which kills fairness. Also kills clash since we don’t have prep to read which o/w since clash is the point of debate.

#### 3] TVA – Read the aff as an advantage to permanent it solves because it still means pandemic access

#### T before 1AR theory – A] any neg abuse is mitigated by the fact that they weren’t topical B] outweighs on scope b/c 1ac abuse affects every speech after.

### 3

#### The standard is maximizing expected well-being. Prefer:

#### [1] TJFs Prefer – ground – both debaters are guaranteed access to ground – Aff gets plans and advantages, while Neg gets disads and counterplans. News is also published in the lens of well being. Additionally, anything can function as an impact as long as an external benefit is articulated, so all your offense applies.

#### [2] Actor spec: Governments aggregate since policies help some and hurt others, which means side constraints free actions. That outweighs everything else since different agents have different ethical standings. Takes out calc indites since they’re empirically denied, and link turns them because the alt would be no actions.

#### [3] Extinction outweighs under any framing

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] AT

There appears to be 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)

### 3

#### Biotech industry strong now.

Cancherini et al. 4/30 [(Laura, Engagement Manager @ McKinsey & Company, Joseph Lydon, Associate Partner @ McKinsey & Company, Jorge Santos Da Silva, Senior Partner at McKinsey & Company, and Alexandra Zemp, Partner at McKinsey & Company), “What’s ahead for biotech: Another wave or low tide?“, McKinsey & Company, 4-30-2021, https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/whats-ahead-for-biotech-another-wave-or-low-tide] TDI

As the pandemic spread across the globe in early 2020, biotech leaders were initially pessimistic, reassessing their cash position and financing constraints. When McKinsey and BioCentury interviewed representatives from 106 biotech companies in May 2020,4 half of those interviewed were expecting delays in financing, and about 80 percent were tight on cash for the next two years and considering trade-offs such as deferring IPOs and acquisitions. Executives feared that valuations would decline because of lower revenue projections and concerns about clinical-trial delays, salesforce-effectiveness gaps, and other operational issues.

Belying this downbeat mood, biotech has in fact had one of its best years so far. By January 2021, venture capitalists had invested some 60 percent more than they had in January 2020, with more than $3 billion invested worldwide in January 2021 alone.5 IPO activity grew strongly: there were 19 more closures than in the same period in 2020, with an average of $150 million per raise, 17 percent more than in 2020. Other deals have also had a bumper start to 2021, with the average deal size reaching more than $500 million, up by more than 66 percent on the 2020 average (Exhibit 3).6

What about SPACs?

The analysis above does not include special-purpose acquisition companies (SPACs), which have recently become significant in IPOs in several industries. Some biotech investors we interviewed believe that SPACs represent a route to an IPO. How SPACs will evolve remains to be seen, but biotechs may be part of their story.

Fundamentals continue strong

When we asked executives and investors why the biotech sector had stayed so resilient during the worst economic crisis in decades, they cited innovation as the main reason. The number of assets transitioning to clinical phases is still rising, and further waves of innovation are on the horizon, driven by the convergence of biological and technological advances.

In the present day, many biotechs, along with the wider pharmaceutical industry, are taking steps to address the COVID-19 pandemic. Together, biotechs and pharma companies have more than 250 vaccine candidates in their pipelines, along with a similar number of therapeutics. What’s more, the crisis has shone a spotlight on pharma as the public seeks to understand the roadblocks involved in delivering a vaccine at speed and the measures needed to maintain safety and efficacy standards. To that extent, the world has been living through a time of mass education in science research and development.

Biotech has also benefited from its innate financial resilience. Healthcare as a whole is less dependent on economic cycles than most other industries. Biotech is an innovator, actively identifying and addressing patients’ unmet needs. In addition, biotechs’ top-line revenues have been less affected by lockdowns than is the case in most other industries.

Another factor acting in the sector’s favor is that larger pharmaceutical companies still rely on biotechs as a source of innovation. With the top dozen pharma companies having more than $170 billion in excess reserves that could be available for spending on M&A, the prospects for further financing and deal making look promising.

For these and other reasons, many investors regard biotech as a safe haven. One interviewee felt it had benefited from a halo effect during the pandemic.

More innovation on the horizon

The investors and executives we interviewed agreed that biotech innovation continues to increase in quality and quantity despite the macroeconomic environment. Evidence can be seen in the accelerating pace of assets transitioning across the development lifecycle. When we tracked the number of assets transitioning to Phase I, Phase II, and Phase III clinical trials, we found that Phase I and Phase II assets have transitioned 50 percent faster since 2018 than between 2013 and 2018, whereas Phase III assets have maintained much the same pace. There could be many reasons for this, but it is worth noting that biotechs with Phase I and Phase II assets as their lead assets have accounted for more than half of biotech IPOs. Having an early IPO gives a biotech earlier access to capital and leaves it with more scope to concentrate on science.

Looking forward, the combination of advances in biological science and accelerating developments in technology and artificial intelligence has the potential to take innovation to a new level. A recent report from the McKinsey Global Institute analyzed the profound economic and social impact of biological innovation and found that biomolecules, biosystems, biomachines, and biocomputing could collectively produce up to 60 percent of the physical inputs to the global economy. The applications of this “Bio Revolution” range from agriculture (such as the production of nonanimal meat) to energy and materials, and from consumer goods (such as multi-omics tailored diets) to a multitude of health applications.

#### IP protections are key to innovation – recouping startup costs and high risk of failure

Grabowski et al 15 [(Henry, Professor of Economics, member of the faculty for the Health Sector Management Program, and Director of the Program in Pharmaceuticals and Health Economics at Duke University) “The Roles of Patents and Research And Development Incentives In Biopharmaceutical Innovation,” Health Affairs, 2/2015] JL

The essential rationale for patent protection for biopharmaceuticals is that long-term benefits in the form of continued future innovation by pioneer or brand-name drug manufacturers outweigh the relatively short-term restrictions on imitative cost competition associated with market exclusivity. Regardless, the entry of other branded agents remains an important source of therapeutic competition during the patent term.

Several economic characteristics make patents and intellectual property protection particularly important to innovation incentives for the biopharmaceutical industry. **5** The R&D process often takes more than a decade to complete, and according to a recent analysis by Joseph DiMasi and colleagues, per new drug approval (including failed attempts), it involves more than a billion dollars in out-of-pocket costs. **6** Only approximately one in eight drug candidates survive clinical testing. **6**

As a result of the high risks of failure and the high costs, research and development must be funded by the few successful, on-market products (the top quintile of marketed products provide the dominant share of R&D returns). **7**,**8** Once a new drug’s patent term and any regulatory exclusivity provisions have expired, competing manufacturers are allowed to sell generic equivalents that require the investment of only several million dollars and that have a high likelihood of commercial success. Absent intellectual property protections that allow marketing exclusivity, innovative firms would be unlikely to make the costly and risky investments needed to bring a new drug to market.

Patents confer the right to exclude competitors for a limited time within a given scope, as defined by patent claims. However, they do not guarantee demand, nor do they prevent competition from nonidentical drugs that treat the same diseases and fall outside the protection of the patents.

New products may enter the same therapeutic class with common mechanisms of action but different molecular structures (for example, different statins) or with differing mechanisms of action (such as calcium channel blockers and angiotensin receptor blockers). 9 Joseph DiMasi and Laura Faden have found that the time between a first-in-class new drug and subsequent new drugs in the same therapeutic class has been dramatically reduced, from a median of 10.2 years in the 1970s to 2.5 years in the early 2000s. 10 Drugs in the same class compete through quality and price for preferred placement on drug formularies and physicians’ choices for patient treatment.

Patents play an essential role in the economic “ecosystem” of discovery and investment that has developed since the 1980s. Hundreds of start-up firms, often backed by venture capital, have been launched, and a robust innovation market has emerged. **11** The value of these development-stage firms is largely determined by their proprietary technologies and the candidate drugs they have in development. As a result, the strength of intellectual property protection plays a key role in funding and partnership opportunities for such firms.

#### Biopharmaceutical innovation is key to prevent future pandemics and bioterror.

Marjanovic and Feijao 20 [(Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitative biology, Imperial College London; B.Sc. in biology, University of Lisbon.) "How to Best Enable Pharma Innovation Beyond the COVID-19 Crisis," RAND Corporation, 05-2020, https://www.rand.org/pubs/perspectives/PEA407-1.html] TDI

As key actors in the healthcare innovation landscape, pharmaceutical and life sciences companies have been called on to develop medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also infectious diseases that represent public health threats. Infectious agents such as anthrax, smallpox and tularemia could present threats in a bioterrorism context.1 The general threat to public health that is posed by antimicrobial resistance is also well-recognised as an area in need of pharmaceutical innovation. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and competition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an indispensable partner in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceutical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is essential for socially responsible companies in the sector. 2 It is therefore unsurprising that we are seeing industry-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently contributing in a variety of ways. Examples include pharmaceutical companies donating existing compounds to assess their utility in the fight against COVID19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating trials for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accelerate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The primary purpose of such innovation is to benefit patients and wider population health. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be relatively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pressure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world’s poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing combination product that is being tested for therapeutic potential against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider how pharmaceutical innovation for responding to emerging infectious diseases can best be enabled beyond the current crisis. Many public health threats (including those associated with other infectious diseases, bioterrorism agents and antimicrobial resistance) are urgently in need of pharmaceutical innovation, even if their impacts are not as visible to society as COVID-19 is in the immediate term. The pharmaceutical industry has responded to previous public health emergencies associated with infectious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contributions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still low.12 There are important policy questions as to whether – and how – industry could engage with such public health threats to an even greater extent under improved innovation conditions.

#### Extinction

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

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

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

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

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

### Under view

#### Overreliance on vaccines hurts overall pandemic response.

**Lovelace 21:** Lovelace, Berkeley [health-care reporter for CNBC, mainly covering pharmaceuticals and the Food and Drug Administration] "WHO says Covid vaccines aren’t ‘silver bullets’ and relying entirely on them has hurt nations," *CNBC,* January 13, 2021

The World Health Organization said Friday that [coronavirus](https://www.cnbc.com/2021/01/15/coronavirus-live-updates.html) vaccines aren’t “silver bullets” and **relyi**ng solely on them to fight the pandemic has hurt nations. Some countries in Europe, Africa and the Americas are seeing spikes in Covid-19 cases “because we are collectively not succeeding at breaking the chains of transmission at the community level or within households,” WHO Director-General Tedros Adhanom Ghebreyesus said during a news conference from the agency’s Geneva headquarters. With [global deaths reaching 2 million](https://www.cnbc.com/2021/01/15/coronavirus-live-updates.html) and new variants of the virus appearing in multiple countries, world leaders need to do all they can to curb infections “through tried and tested public health measures,” Tedros said. “There is only one way out of this storm and that is to share the tools we have and commit to using them together.” The [coronavirus](https://www.cnbc.com/coronavirus/) has infected more than 93.3 million people worldwide and killed at least 2 million since the pandemic began about a year ago, according to data compiled by Johns Hopkins University. The virus continues to accelerate in some regions, with nations reporting that their supply of oxygen for Covid-19 patients is running “dangerously low,” the WHO said. Some countries, including the U.S., have focused heavily on the use of vaccines to combat their outbreaks. While vaccines are a useful tool, they will not end the pandemic alone, Mike Ryan, executive director of the WHO’s health emergencies program, said at the news conference. “We warned in 2020 that if we were to rely entirely on vaccines as the only solution, we could lose the very controlled measures that we had at our disposal at the time. And I think to some extent that has come true,” Ryan said, adding the colder seasons and the recent holidays also may have also played a role in the spread of the virus. “A big portion of the transmission has occurred because we are reducing our physical distancing. ... We are not breaking the chains of transmission. The virus is exploiting our lack of tactical commitment,” he added. “We are not doing as well as we could.” Dr. Bruce Aylward, a senior advisor to the WHO’s director-general, echoed Ryan’s comments, saying, vaccines are not “silver bullets” “Things can get worse, numbers can go up,” he said. We have vaccines, yes. But we have limited supplies of vaccines that will be rolled out slowly across the world. And vaccines are not perfect. They don’t protect everyone against every situation.” In the U.S., the pace of vaccinations is going slower than officials had hoped. As of Friday at 6 a.m. ET, more than 31.1 million doses of vaccine had been distributed across the U.S., but just over 12.2 million shots have been administered, according to data compiled by the Centers for Disease Control and Prevention. Meanwhile, cases are rapidly growing, with the U.S. recording at least 238,800 new Covid-19 cases and at least 3,310 virus-related deaths each day, based on a seven-day average calculated by CNBC using Johns Hopkins data. On Thursday, President-elect Joe Biden [unveiled a sweeping plan](https://www.cnbc.com/2021/01/14/biden-unveils-sweeping-plan-to-combat-the-covid-pandemic-in-the-us.html) to combat the coronavirus pandemic in the United States. While his administration will invest billions in a vaccine campaign, it will also scale up testing, invest in new treatments and work to identify new strains, among other measures.

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#### The waiver is too slow

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In addition, neither are there news reports of any other critical drug used for Covid 19 treatment or their shortage nor about a patent related hurdle in the manufacture of any drug used for Covid 19 treatment. For argument’s sake, let us assume that many other patented drugs are being used for Covid -19, which is in short supply and there is no such voluntary license given by the patent owner. Then will this patent waiver help? The answer is simple, unlikely for a year or more. It will be impossible to reverse engineer and set the entire manufacturing process so quickly. If the present technology owner is not willing to support, it would not be easy to find a parallel process of creating the drug in a short duration. Procurement of the active ingredients and raw materials is another challenge. Getting the required approvals and thereafter manufacturing a drug is a time-consuming process. To launch a new drug requires certain safety protocols and clinical trials. A waiver of IP rights will not waive regulatory requirements for drug approvals. Hence, even if a new Indian manufacturer attempts to make a drug, it invariably may take minimum of two to three years. By a waiver of patents, no one can compel the existing manufacturer to share the know-how. So, a waiver of patents on drugs relating to Covid-19 may not give any immediate effect in sourcing drugs for managing Covid19.

### Framework