# 1NC R2 Loyola

## 1

#### Interpretation – Reduce means decreasing an existing quantity – it excludes preventing a future increase/implementation

**Popattanachai 18** – PhD dissertation at Nottingham Trent University (NAPORN, “REGIONAL COOPERATION ADDRESSING MARINE POLLUTION FROM LAND-BASED ACTIVITIES: AN INTERPRETATION OF ARTICLE 207 OF THE LAW OF THE SEA CONVENTION FOCUSING ON MONITORING, ASSESSEMENT, AND SURVEILLANCE OF THE POLLUTION” <http://irep.ntu.ac.uk/id/eprint/33374/1/Naporn%20Popattanachai%202018.pdf>

For the second question, the provision demonstrates that the goal of adoption of such laws and regulations must be to ‘prevent, reduce, and control’ MPLA. In so doing, the LOSC obliges States to ‘taking into account internationally agreed rules, standards, and recommended practices and procedures’.480 Having considered the ordinary meanings of the term ‘prevent, reduce, and control’, ‘**prevent’ means ‘to stop something from happening or someone from doing something.**’481 **The word ‘reduce’ means ‘to make something smaller in** size, **amount**, degree, importance etc.’482 and the word ‘control’ means ‘to order, limit, or rule something or someone's actions or behaviour.’ 483 From the meanings, **the term ‘prevent’ suggests an action to** stop the future occurrence of something, **whereas** the terms ‘**reduce’** and ‘control’, noting their difference, point to an action dealing with something that has already happened and continues to occur, but needs to be made smaller, limited or regulated. Also, control also applies to future pollution in the sense that it limits the future pollution to be created or emitted not to exceed the specified level. Therefore, the preliminary reading of these terms suggests that laws and regulations adopted to deal with MPLA must yield the result that conforms with these terms. In so doing, the adoption of laws and regulations to prevent, reduce, and control MPLA can be done by legislating primary or secondary regulations with the use of various legal techniques and procedures and are underpinned by some rules and principles of international law discussed in the previous chapter. These legal techniques and procedures can be used to achieve the prevention, reduction and control of MPLA depending on the design and use of them. Noting that the measures outlined below are not exhaustive and not exclusively limited to implement any specific obligation, these are typical legal techniques and procedures used to prevent, reduce, and control pollution and therefore protect the environment. They can be categorised into two groups, that is, (1) substantive and (2) procedural legal techniques and measures. They can be discussed hereunder.

#### Two Violations –

#### 1] The Plan is an explicit delay on patent enforcement – that means patents don’t exist in the status quo

Dictionary.com No Date “Delay” <https://www.dictionary.com/browse/delay>

**to put off to a later time; defer**; postpone:

#### 2] Marijuana patents don’t exist right now – your evidence says they’re pending approval but none say that they exist meaning you don’t reduce anything.

#### Standards -

#### 1] Limits – the topic is already massive since there’s hundreds of patents on current medicines – allowing the aff to apply to future medical patents explodes predictability since it triples the possible aff case list.

#### 2] Ground – no author assumes a futuristic patent enforcement so there’s no da ground against them. Delay also isn’t defined so they could infinitely delay it to spike out of all of our links.

## 2

#### Interpretation: The affirmative must specify which intellectual property rights they reduce and to what degree they reduce them.

#### There’s no normal means.

Chopra 18, Samir. “The Idea of Intellectual Property Is Nonsensical and Pernicious: Aeon Essays.” Aeon, Aeon Magazine, 12 Nov. 2018, aeon.co/essays/the-idea-of-intellectual-property-is-nonsensical-and-pernicious. Samir Choprais professor of philosophy at Brooklyn College of the City University of New York. He is the author of several books, including A Legal Theory for Autonomous Artificial Agents (2011), co-authored with Laurence White.//sid

In the United States, media and technology have been shaped by these laws, and indeed many artists and creators owe their livelihoods to such protections. But recently, in response to the new ways in which the digital era facilitates the creation and distribution of scientific and artistic products, the foundations of these protections have been questioned. Those calling for reform, such as the law professors Lawrence Lessig and James Boyle, free software advocates such as Richard Stallman, and law and economics scholars such as William Landes and Judge Richard Posner, ask: is ‘intellectual property’ the same kind of property as ‘tangible property’, and are legal protections for the latter appropriate for the former? And to that query, we can add: is ‘intellectual property’ an appropriate general term for the widely disparate areas of law it encompasses? The answer to all these questions is no. And answering the latter question will help to answer the former. Stallman is a computer hacker extraordinaire and the fieriest exponent of the free-software movement, which holds that computer users and programmers should be free to copy, share and distribute software source code. He has argued that the term ‘intellectual property’ be discarded in favour of the precise and directed use of ‘copyright’, ‘patents’, ‘trademarks’ or ‘trade secrets’ instead – and he’s right. This is not merely semantic quibbling. The language in which a political and cultural debate is conducted very often determines its outcome. Stallman notes that copyright, patent, trademark and trade secret law were motivated by widely differing considerations. Their intended purposes, the objects covered and the permissible constraints all vary. In fact, knowledge of one body of law rarely carries over to another. (A common confusion is to imagine that an object protected by one area of law is actually protected by another: ‘McDonald’s’ is protected by trademark law, not copyright law, as many consumers seem to think.) Such diversity renders most ‘general statements … using “intellectual property”… false,’ Stallman [writes](https://www.gnu.org/philosophy/not-ipr.en.html). Consider the common claim that intellectual property promotes innovation: this is actually true only of patent law. Novels are copyrighted even if they are formulaic, and copyright only incentivises the production of new works as public goods while allowing creators to make a living. These limited rights do not address innovations, which is also true of trademark and trade secret law. Crucially, ‘intellectual property’ is only partially concerned with rewarding creativity (that motivation is found in copyright law alone). Much more than creativity is ‘needed to make a patentable invention’, Stallman explains, while trademark and trade secret law are orthogonal to creativity or its encouragement. Clubbing these diversities under the term ‘intellectual property’ has induced a terrible intellectual error A general term is useful only if it subsumes related concepts in such a way that semantic value is added. If our comprehension is not increased by our chosen generalised term, then we shouldn’t use it. A common claim such as ‘they stole my intellectual property’ is singularly uninformative, since the general term ‘intellectual property’ obscures more than it illuminates. If copyright infringement is alleged, we try to identify the copyrightable concrete expression, the nature of the infringement and so on. If patent infringement is alleged, we check another set of conditions (does the ‘new’ invention replicate the design of the older one?), and so on for trademarks (does the offending symbol substantially and misleadingly resemble the protected trademark?) and trade secrets (did the enterprise attempt to keep supposedly protected information secret?) The use of the general term ‘intellectual property’ tells us precisely nothing. Furthermore, the extreme generality encouraged by ‘intellectual property’ obscuresthe specific areas of contention created by the varying legal regimes. Those debating copyright law wonder whether the copying of academic papers should be allowed; patent law is irrelevant here. Those debating patent law wonder whether pharmaceutical companies should have to issue compulsory licences for life-saving drugs to poor countries; copyright law is irrelevant here. ‘Fair use’ is contested in copyright litigation; there is no such notion in patent law. ‘Non-obviousness’ is contested in patent law; there is no such notion in copyright law. Clubbing these diversities under the term ‘intellectual property’ has induced a terrible intellectual error: facile and misleading overgeneralisation. Indiscriminate use of ‘intellectual property’ has unsurprisingly bred absurdity. Anything associated with a ‘creator’ – be it artistic or scientific – is often grouped under ‘intellectual property’, which doesn’t make much sense. And the widespread embrace of ‘intellectual property’ has led to historical amnesia. According to Stallman, many Americans have held that ‘the framers of the US Constitution had a principled, procompetitive attitude to intellectual property’. But Article 1, Section 8, Clause 8 of the US Constitution authorises only copyright and patent law. It does not mention trademark law or trade secret law. Why then does ‘intellectual property’ remain in use? Because it has polemical and rhetorical value. Its deployment, especially by a putative owner, is a powerful inducement to change one’s position in a policy argument. It is one thing to accuse someone of copyright infringement, and another to accuse of them of the theft of property. The former sounds like a legally resolvable technicality; the latter sounds like an unambiguously sinful act.

#### Reduce requires quantification.

Passarello 13 – J.D. Candidate, Duke University School of Law, 2013. (Nicholas, NOTE: THE ITEM VETO AND THE THREAT OF APPROPRIATIONS BUNDLING IN ALASKA, 30 Alaska L. Rev. 125, Lexis)//BB

With respect to the item veto power, the question in the case was whether or not the governor could strike descriptive language without affecting the rest of the appropriation. The state constitution clearly guarantees the power to "strike or reduce items in appropriations bills." 61 To determine what exactly it is that the governor may strike, the Alaska Supreme Court here addressed the meaning of "item" for the first time. 62 The court concluded that "item" means "a sum of money dedicated to a particular purpose." 63 This holding rested on five lines of analysis, all of which indicate that the amount of an appropriation is the object affected by the item veto power. First, the court noted that the word "item" implies "a notion of unity between two essential elements of an appropriation: the amount and the purpose." 64 Altering the amount of an item is expressly allowed in the Constitution via the reduction power, 65 but to alter the purpose would destroy that unity by fundamentally changing the item into something else not enacted by the legislature. 66 Second, the use of the word "reduce" implies a quantitative effect, and the drafters likely intended the companion word "strike" to [\*136] have the same type of effect as well. 67 Third, "reduce" and "strike" describe the same action applied to different extents: when an amount is "reduced" to the point where it is lessened to nothing, it is effectively "struck." 68 Thus, the object of the "strike"must be associated with an amount of money to the extent that it can be lessened. 69 Fourth, the historical purpose of the item veto was to curtail the amount of state spending by mitigating the effects of log-rolling, a purpose most closely directed at the amount of the appropriation. 70 Fifth, "public policy disfavors a reading of "item' that would permit the executive branch to substantively alter the legislature's appropriation bills, resulting in appropriations passed without the protection our constitution contemplates." 71 For these reasons, the court concluded that the power to "strike" only refers to completely diminishing the amount of an appropriations item, not the descriptive language accompanying it.

#### Violation: they don’t

#### Standards

#### a] Shiftiness – vague plan wording wrecks Neg Ground since it’s impossible to know which DAs link or which CPs are competitive since different IP’s have different implications – absent 1AC specification, the 1AR can squirrel out of links by saying they don’t effect a certain protection or they don’t reduce IP enough to trigger the link.

#### b] Topic Education – nuanced debates about IP requires specification since each form of IPR has specific issues related to it so generalization disincentivizes in-depth research. Topic Education is a voter since we only debate the topic for two months.

#### Reductions Spec isn’t regressive – it’s a core discussion central to the literature, we’ve read a card proving predictability, and is a floor for topic debates.

#### CX doesn’t check - 1] Skews pre-round prep – key to in-depth clash, 2] Judges don’t flow CX which makes it unverifiable

#### Education is a voter since it is the only portable and durable skill that influences our subject formation. Fairness is a voter since a] debate is a game, competition equity matters proven by desire for wins, b] is worthless without rules and equal access.

#### Drop the debater – a] deters future abuse through a loss and b] set better norms for debate since you are less likely to repeat a practice you can lose for

#### Competing interps – [a] reasonability is arbitrary and encourages judge intervention since there’s no clear model of debate, [b] it creates a race to the top where we create the best possible norms for debate through offense [c] offense defense paradigm is the best method for evaluation since you can compare benefits under both interps easier.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, if logic isn’t true then you should hack against them, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices

## 3

#### Counterplan Text – Member states of the World Trade Organization ought to consult the World Health Organization on whether or not to [do the Plan]. The World Health Organization ought to publicly declare that their decision on [the Plan] will represent their future decisions on all intellectual property protections on medicines.

#### The Plan’s unilateral action by the WTO on medical IP undermines WHO legitimacy – forcing a perception of WHO action against Patents is key to re-assert it – they say yes.

Rimmer 4, Matthew. "The race to patent the SARS virus: the TRIPS agreement and access to essential medicines." Melbourne Journal of International Law 5.2 (2004): 335-374.

<https://law.unimelb.edu.au/__data/assets/pdf_file/0007/1681117/Rimmer.pdf> (BA (Hons), LLB (Hons) (Australian National University), PhD (New South Wales); Lecturer at ACIPA, the Faculty of Law, The Australian National University)//SidK + Elmer

The WHO has been instrumental in coordinating the international network of research on the SARS virus. It has emphasised the need for collaboration between the network participants. The WHO presented the containment of the SARS virus as ‘one of the biggest success stories in public health in recent years’.206 However, it **was less active in the debate over patent law** and public health epidemics. The 56th World Health Assembly considered the relationship between intellectual property, innovation and public health. It stressed that in order to tackle new public health problems with international impact, such as the emergence of severe acute respiratory syndrome (SARS), access to new medicines with potential therapeutic effect, and health innovations and discoveries should be universally available without discrimination.207 However, there was much disagreement amongst the member states as to what measures would be appropriate. The WHO has made a number of **aspirational statements** about patent law and access to essential medicines. Arguably, though, the organisation could be a much more informed and vocal advocate. Initially, the WHO did not view the patent issues related to SARS as being within its field of activities. The agency **did not even seem aware of the patent proceedings**, leaving individual research institutions without guidance. Spokesman Dick Thompson said: ‘What we care about is [that] the international collaboration continues to function. Patents, they don’t really concern us’.208 The director of WHO’s Global Influenza project, Klaus Stöhr, expressed his opinion that the patent filings would not interfere with the international cooperation on the SARS research: ‘I don’t think this will undermine the collaborative spirit of the network of labs’.209 However, he believed that, after the international network of researchers had identified the coronavirus, it was necessary to rely upon companies to commercialise such research. Klaus Stöhr conceded: ‘At a certain point of time you have to give way for competitive pharmaceutical companies’.210 On a policy front, the WHO **remained deferential** to the WTO over the debate over patent law and access to essential medicines, observing: Owing to the inconclusive nature of the studies conducted to date, and because of the effect that potentially significant price increases could have on access to drugs in poor countries, WHO is currently monitoring and evaluating the effects of TRIPS on the prices of medicines. It is also monitoring the TRIPS impact on other important issues such as transfer of technology, levels of research and development for drugs for neglected diseases, and the evolution of generic drug markets.211 In such a statement, the WHO appears diffident, **unwilling to take on more than a spectator** role. Such a position is arguably too timid, given the gravity of national emergencies, such as the SARS virus. The organisation could take a much stronger stance on the impact of the **TRIPS** Agreement on public health concerns. The WHO has since enunciated a position statement on the patenting of the SARS virus. A number of high ranking officials from the organisation have commented on the need to ensure that international research into the SARS virus is not impeded by competition over patents. Arguably though, the **WHO should not be limited to a mere spectator role in such policy discussions. It needs to play an active advocacy role in the debate over patent law and access to essential medicines**. The WHO released a position statement on ‘Patent Applications for the SARS Virus and Genes’ on 29 May 2003.212 The organisation stressed that it had no per se objection to the patenting of the SARS virus: Some people have objected to the SARS patent applications on the ground that the virus and its genes should not be patentable because they are mere discoveries, not inventions. This distinction no longer prevents the granting of patents; the novel claim rests not with the virus itself but with its isolation, and likewise with the identification of the genetic sequence not its mere occurrence. Many patents have been issued on viruses and genetic sequences, though the appropriate policies to follow in such cases — particularly as genomic sequencing becomes more routine and less ‘inventive’ — remain matters of dispute.213 Furthermore, it recognised that public institutions could legitimately use patents as a defensive means to prevent undue commercial exploitation of the research: The “defensive” use of patents can be a legitimate part of researchers’ efforts to make their discoveries (and further discoveries derived therefrom) widely available to other researchers, in the best collaborative traditions of biomedical science.214 The WHO affirmed the need for further cooperation between research organisations in respect of the SARS virus: ‘For continued progress against SARS, it is essential that we nurture the spirit of the unprecedented, global collaboration that rapidly discovered the novel virus and sequenced its genome’.215 The WHO announced its intention to monitor the effects of patents (and patent applications) on the speed with which SARS diagnostic tests, treatments, and vaccines are developed and made available for use, and on the manner in which prices are set for these technologies. It observed: In the longer term, the manner in which SARS patent rights are pursued could have a profound effect on the willingness of researchers and public health officials to collaborate regarding future outbreaks of new infectious diseases. WHO will therefore examine whether the terms of reference for such collaborations need to be modified to ensure that the credit for any intellectual property developed is appropriately attributed, that revenues derived from licensing such property are devoted to suitable uses, and that legitimate rewards for innovative efforts do not impose undue burdens on efforts to make tests, therapies, and preventive measure available to all.216 It maintained that in order to tackle new public health problems with international impact, such as the emergence of severe acute respiratory syndrome (SARS), access to new medicines with potential therapeutic effect, and health innovations and discoveries should be universally available without discrimination.219 The Assembly requested that the Director-General continue to support Member States in the exchange and transfer of technology and research findings, according high priority to access to antiretroviral drugs to combat HIV/AIDS and medicines to control tuberculosis, malaria and other major health problems, in the context of paragraph 7 of the Doha Declaration which promotes and encourages technology transfer.220 The WHO also considered a report on the emergence of the SARS virus and the international response to the infectious disease.221 It was ‘deeply concerned that SARS ... poses a serious threat to global health security, the livelihood of populations, the functioning of health systems, and the stability and growth of economies’.222 The Committee on Infectious Diseases requested that the Director-General ‘mobilize global scientific research to improve understanding of the disease and to develop control tools such as diagnostic tests, drugs and vaccines that are accessible to and affordable by Member States’.223 The Director-General of the WHO, Dr Gro Harlem Brundtland, **told the World Health** Assembly that there was a need to build trust and forge solidarity in the face of public health epidemics: ‘**Ensuring that patent regimes stimulate research and do not hinder international scientific cooperation** is a critical challenge — whether the target is SARS or any other threat to human health’.224 Similarly, Dr Marie-Paule Kieny, Director of the WHO Initiative for Vaccine Research, said: If we are to develop a SARS vaccine more quickly than usual, we have to continue to work together on many fronts at once, on scientific research, intellectual property and patents issues, and accessibility. It is a very complicated process, involving an unprecedented level of international cooperation, which is changing the way we work.225 She emphasised that patents and intellectual property issues and their safeguards can help rather than hinder the rapid development of SARS vaccines and ensure that, once developed, they are available in both industrialised and developing countries.226 C Summary The WHO should play a much more active role in the policy debate over patent law and access to essential medicines. James Love, the director of the Consumer Project on Technology, run by Ralph Nader, is critical of the WHO statement on ‘Intellectual Property Rights, Innovation, and Public Health’.227 He maintains that the Assembly could have addressed ‘practical examples, like SARS’ and cites the report in The Washington Post that notes that a number of commercial companies are investing in SARS research.228 The non-government organisation Médecins Sans Frontières has been critical in the past of the passive role played by the WHO in the debate over access to essential medicines: ‘As the world’s leading health agency, and armed with the clear mandate of recent World Health Assembly resolutions, the WHO can and should **do much more’**.229 The WHO should become a vocal advocate for public health concerns at the WTO and its TRIPS Council — especially in relation to patent law and the SARS virus. It must staunchly defend the rights of member states to incorporate measures in their legislation that protect access to medicines — such as compulsory licensing, parallel imports, and measures to accelerate the introduction of generic pharmaceutical drugs. It needs to develop a clearer vision on global equity pricing for essential medicines. The race to patent the SARS virus seems to be an inefficient means of allocating resources. A number of public research organisations — including the BCCA, the CDC and HKU — were compelled to file patents in respect of the genetic coding of the SARS virus. Such measures were promoted as ‘defensive patenting’ — a means to ensure that public research and communication were not jeopardised by commercial parties seeking exclusive private control. However, there are important drawbacks to such a strategy. The filing of patents by public research organisations may be prohibitively expensive. It will also be difficult to resolve the competing claims between the various parties — especially given that they were involved in an international research network together. Seth Shulman argues that there is a need for international cooperation and communication in dealing with public health emergencies such as the SARS virus: The success of a global research network in identifying the pathogen is an example of the huge payoff that can result when researchers put aside visions of patents and glory for their individual laboratories and let their work behave more like, well, a virus. After all, the hallmark of an opportunistic virus like the one that causes SARS is its ability to spread quickly. Those mounting a response need to disseminate their information and innovation just as rapidly.230 There is a danger that such competition for patent rights may undermine trust and cooperation within the research network. Hopefully, however, such concerns could be resolved through patent pooling or joint ownership of patents. Furthermore, a number of commercial companies have filed patent applications in respect of research and development into the SARS virus. There will be a need for cooperation between the public and private sectors in developing genetic tests, vaccines, and pharmaceutical drugs that deal with the SARS virus. There is also a need to reform the patent system to deal with international collaborative research networks — such as that created to combat the SARS virus. Several proposals have been put forward. There has been a renewed debate over whether patents should be granted in respect of genes and gene sequences. Some commentators have maintained that the SARS virus should fall within the scope of patentable subject matter — to promote research and development in the field. However, a number of critics of genetic technology have argued that the SARS virus should not be patentable because it is a discovery of nature, and a commercialisation of life. There has been a discussion over the lack of harmonisation over the criteria of novelty and inventive step between patent regimes. As Peter Yu comments, ‘[w]hile [the] US system awards patents to those who are the first to invent, the European system awards patents to those who are the first to file an application’.231 There have been calls for the requirement of utility to be raised. There have also been concerns about prior art, secret use and public disclosure. Representative Lamar Smith of Texas has put forward the CREATE Act, which recognises the collaborative nature of research across multiple institutions. Such reforms are intended to ensure that the patent system is better adapted to deal with the global nature of scientific inquiry. The race to patent the SARS virus also raises important questions about international treaties dealing with access to essential medicines. The public health epidemic raises similar issues to other infectious diseases — such as AIDS, malaria, tuberculosis, influenza, and so forth. The WHO made a public statement about its position on the patenting of the SARS virus. It has stated that it will continue to monitor developments in this field. Arguably, there is a need for the WHO to play a larger role in the debate **over patent law and** access to essential medicines. **Not only could it mediate legal disputes** over patents in respect of essential medicines, it could be a vocal advocate in policy discussions. The WTO has also played an important role in the debate over patent law and access to essential medicines. A number of public interest measures could be utilised to secure access to patents relating to the SARS virus including compulsory licensing, parallel importation and research exceptions. The appearance of the SARS virus shows that there should be an open-ended interpretation of the scope of diseases covered by the Doha Declaration on the TRIPS Agreement and Public Health. Important lessons should be learned from the emergence of the SARS virus, and the threat posed to global health. As the World Health Report 2003 notes: SARS will not be the last new disease to take advantage of modern global conditions. In the last two decades of the 20th century, new diseases emerged at the rate of one per year, and this trend is certain to continue. Not all of these emerging infections will transmit easily from person to person as does SARS. Some will emerge, cause illness in humans and then disappear, perhaps to recur at some time in the future. Others will emerge, cause human illness and transmit for a few generations, become attenuated, and likewise disappear. And still others will emerge, become endemic, and remain important parts of our human infectious disease ecology.232 Already, in 2004, there have been worries that pharmaceutical drug companies and patent rights are impeding efforts to prevent an outbreak of bird flu — avian influenza.233 There is a need to ensure that the patent system is sufficiently flexible and adaptable to cope with the appearance of new infectious diseases.234

#### WHO Cred key to Global Right to Health – medicine access is critical.

* Note the Bottom Paragraph is at the bottom of the PDF – I put a paragraph break to indicate it as such – no words are missing.

Bluestone 3, Ken. "Strengthening WHO's position should be a priority for the new Director-General." The Lancet 361.9351 (2003): 2. (Senior Policy Adviser, Voluntary Service Overseas (VSO))//Elmer

To meet these challenges, WHO must strengthen its resolve to maintain its **independence and lead its member states**, **even at the risk of causing controversy**. A meaningful example is the role that WHO can have in **ensuring access to medicines** for the world’s poorest people. WHO is the only global institution that has the **remit to drive this agenda forward**, yet has failed to do so convincingly. The new Director-General must support and reinvigorate the advocacy efforts of the organisation and provide a proper counterbalance to the interests of the pharmaceutical industry and wealthy member states. As the new Director-General takes office, they will face the dual challenge of **seeing that** the broadest possible public health interpretation of the World Trade Organization’s Doha Agreement on Trade Related Aspects on Intellectual Property Rights (TRIPS) **is not lost, and** of seizing an opportunity to bring about an international framework for sustainable and predictable tiered pricing of medicines. Without the active intervention of a public health advocate at the level of WHO, there is a risk that both of these initiatives **could founder.** Some people in positions of power still do not have high expectations of WHO or its new Director-General. But for the world’s poorest people, the overwhelming majority of whom live in developing countries, this person’s legacy could literally make the difference between life and death. Ken Bluestone Senior Policy Adviser, Voluntary Service Overseas (VSO)

New leader should re-establish WHO’s credibility The credibility of WHO’s advocacy of the right to health for all has been eroded in recent years. A large reason is WHO’s **failure to challenge the pharmaceutical** industry on access to medicines for people with HIV/AIDS and other diseases. WHO’s collaboration with the industry in the “Accelerated Access” programme on antiretroviral medicines sounds good. In fact, the programme has served as a cover for the organisation’s frequent acceptance of industry arguments for restricting treatment access. To re-establish WHO’s credibility, the new Director-General must lead the organisation to stand consistently with those most deprived of health services. Kenneth Roth, Executive Director, Human Rights Watch.

#### Right to Health solves Nationalist Populism.

Friedman 17 Eric Friedman March 2017 “New WHO Leader Will Need Human Rights to Counter Nationalistic Populism” <https://www.hhrjournal.org/2017/03/new-who-leader-will-need-human-rights-to-counter-populism/> (JD, Project Leader of the Platform for a Framework Convention on Global Health at the O’Neill Institute for National and Global Health Law at the Georgetown University Law Center in Washington, DC)//Elmer

The need for WHO leadership on human rights—and for global leadership on health and human rights beyond WHO—has always been present, yet has become ever more pressing. A reactionary, nationalist populism has been gaining momentum, particularly in the United States and parts of Europe, and some of its most disturbing features, such as xenophobia and disregard for international law and institutions, are surfacing elsewhere. Persisting health challenges—such as immense national and **global health inequities**, with universal health coverage and the Sustainable Development Goals offering some hope of lessening them—and growing threats such as outbreaks of infectious disease, worsening antimicrobial resistance, and climate change demand the type of leadership that the right to health entails. In this immensely challenging environment, WHO needs to become a 21st century institution that has the gravitas and credibility to carve a path through these obstacles towards global health justice. The next WHO Director-General, to be elected in May, must lead the organization there. The right to health can light the way ahead, with reforms to, and driven by, WHO. These reforms must develop an internal governance that is far more welcoming of civil society, with WHO member states significantly increasing contributions so work on the social determinants of health can expand, and with enhanced transparency and accountability. Furthermore, reforms are needed so that WHO leads on global health equity and human rights, including through national health equity strategies and, above all, the Framework Convention on Global Health (FCGH). The FCGH could help bring the right to health to the next level by capturing core aspects of the right to health, such as: 1) participation and accountability, setting clear standards for people’s participation in health policy-making at all levels, and establishing multi-layered health accountability frameworks with standards to which all nations would be held; 2) equity, including by catalyzing national health equity strategies—which must be developed through broad participation, itself a potentially empowering process—and advancing data disaggregation and more equitable financing; 3) financial resources, with global norms on national and international health financing responsibilities; and 4) respecting and promoting the right to health in all policies, from setting standards on health impact assessments—including participatory processes in developing them, human rights standards, an equity focus, and follow-up processes—to firmly ensuring the primacy of the right to health in other legal regimes that may undermine. From an earlier WHO treaty, the Framework Convention on Tobacco Control, we know the power of international law to significantly advance health, with the transformative power of legally binding global health norms. As a treaty, the FCGH would increase political accountability and accountability through the courts, while helping protect health other treaty-based international regimes, such as trade. It would also be a bold assertion of global solidarity for global justice, as so urgently needed, “demonstrating that the community of **nations are indeed stronger together**.” One candidate for the WHO Director-General election, David Nabarro, has recognized the value and civil society support that FCGH has already received, and the need to further explore the treaty (mentioned at 1:46:38 mark). A good first step would be establishing a WHO working group on the FCGH, with broad participation, particularly from states, civil society, and representatives of communities most affected by health inequities, along with relevant international agencies. We see signs of **resistance of the dangerous nationalist populism**, from protests that persist and judicial checks on one of the administration’s vilest acts (an immigration and refugee travel ban, with its effects falling heaviest on Muslims) in the United States to the rejection of the far-right candidate in the elections in the Netherland. Such resistance can prevent some of the worst impacts on the right to health, from discrimination against migrants to cuts to programs vital for health. Meanwhile, let’s construct an edifice for the future of health and human rights, even as we stand against its destruction. WHO, right to health, and FCGH leadership ought to be a core part of that endeavor.

#### Populism is an existential threat.

de Waal 16 Alex de Waal 12-5-2016 “Garrison America and the Threat of Global War” <http://bostonreview.net/war-security-politics-global-justice/alex-de-waal-garrison-america-and-threat-global-war> (Executive Director of the World Peace Foundation at the Fletcher School at Tufts University)//Elmer

Polanyi recounts how economic and financial crisis led to global calamity. Something similar could happen today. In fact we are already in a steady unpicking of the liberal peace that glowed at the turn of the millennium. Since approximately 2008, the historic decline in the number and lethality of wars appears to have been reversed. Today’s wars are not like World War I, with formal declarations of war, clear war zones, rules of engagement, and definite endings. But they are wars nonetheless. What does a world in global, generalized war look like? We have an unwinnable “war on terror” that is metastasizing with every escalation, and which has blurred the boundaries between war and everything else. We have deep states—built on a new oligarchy of generals, spies, and private-sector suppliers—that are strangling liberalism. We have emboldened middle powers (such as Saudi Arabia) and revanchist powers (such as Russia) rearming and taking unilateral military action across borders (Ukraine and Syria). We have massive profiteering from conflicts by the arms industry, as well as through the corruption and organized crime that follow in their wake (Afghanistan). We have impoverishment and starvation through economic warfare, the worst case being Yemen. We have “peacekeeping” forces fighting wars (Somalia). We have regional rivals threatening one another, some with nuclear weapons (India and Pakistan) and others with possibilities of acquiring them (Saudi Arabia and Iran). Above all, today’s generalized war is a conflict of destabilization, with big powers intervening in the domestic politics of others, buying influence in their security establishments, bribing their way to big commercial contracts and thereby corroding respect for government, and manipulating public opinion through the media. Washington, D.C., and Moscow each does this in its own way. Put the pieces together and a global political market of rival plutocracies comes into view. Add virulent reactionary populism to the mix and it resembles a war on democracy. What more might we see? Economic liberalism is a creed of optimism and abundance; reactionary protectionism feeds on pessimistic scarcity. If we see punitive trade wars and national leaders taking preemptive action to secure strategic resources within the walls of their garrison states, then old-fashioned territorial disputes along with accelerated state-commercial grabbing of land and minerals are in prospect. We could see mobilization against immigrants and minorities as a way of enflaming and rewarding a constituency that can police borders, enforce the new political rightness, and even become electoral vigilantes. Liberal multilateralism is a system of seeking common wins through peaceful negotiation; case-by-case power dealing is a zero-sum calculus. We may see regional arms races, nuclear proliferation, and opportunistic power coalitions to exploit the weak. In such a global political marketplace, we would see middle-ranking and junior states rewarded for the toughness of their bargaining, and foreign policy and security strategy delegated to the CEOs of oil companies, defense contractors, bankers, and real estate magnates. The United Nations system appeals to leaders to live up to the highest standards. The fact that they so often conceal their transgressions is the tribute that vice pays to virtue. A cabal of plutocratic populists would revel in the opposite: applauding one another’s readiness to tear up cosmopolitan liberalism and pursue a latter-day mercantilist naked self-interest. Garrison America could opportunistically collude with similarly constituted political-military business regimes in Russia, China, Turkey, and elsewhere for a new realpolitik global concert, redolent of the early nineteenth-century era of the Congress of Vienna, bringing a façade of stability for as long as they collude—and war when they fall out. And there is a danger that, in response to a terrorist outrage or an international political crisis, President Trump will do something stupid, just as Europe’s leaders so unthinkingly strolled into World War I. The multilateral security system is in poor health and may not be able to cope. Underpinning this is a simple truth: the plutocratic populist order is a future that does not work. If illustration were needed of the logic of hiding under the blanket rather than facing difficult realities, look no further than Trump’s readiness to deny climate change. We have been here before, more or less, and from history we can gather important lessons about what we must do now. The importance of defending civility with democratic deliberation, respecting human rights and values, and maintaining a commitment to public goods and the global commons—including the future of the planet—remain evergreen. We need to find our way to a new 1945—and the global political settlement for a tamed and humane capitalism—without having to suffer the catastrophic traumas of trying everything else first.

## 4

#### Pharma drug innovation is high now, alternatives to IP collapse exist

The Economist 20 5-23-2020 "Drug innovation is back in fashion" <https://www.economist.com/leaders/2020/05/23/drug-innovation-is-back-in-fashion> (The Economist is an international weekly newspaper printed in magazine-format and published digitally that focuses on current affairs, international business, politics, and technology.)//Elmer

For much of the past two decades big pharma has been a lost cause. Despised by the public, it became notorious for price-gouging, secretiveness and its neglect of global health problems. Big pharma also lost its lustre with investors, despite its bumper profits. They worried that a business model that relied too much on rent-seeking and too little on innovation was unsustainable, and that citizens would eventually revolt and demand more regulation—or even rip up the patent system that gives drugs firms a temporary monopoly over new medicines. As a result, in the five years before the covid crisis the pharmaceutical sector lagged behind America’s s&p 500 index. The pandemic has reminded the world of the industry’s strengths—its capacity to **innovate and provide drugs on a vast scale**. Many of the big firms, such as Johnson & Johnson and Sanofi, are working on covid-19 vaccines and therapies. Scores of smaller companies are at work, too. On May 18th Moderna, an American biotech firm, said that its much-anticipated vaccine has shown positive early results (although some analysts questioned the validity of its tests). AstraZeneca, a big British firm that invests heavily in research and development (r&d), is working on a vaccine with scientists at Oxford University, helped by $1bn of new funding from America’s government. Even before the virus, the industry had started to **invest more heavily**. In the most recent quarter America’s 30 biggest firms boosted their r&d by a median of **6%** year on year. Now medical **innovation is back in fashion.** It looks like big pharma’s moment to shine. However, the pandemic has also created new ethical and political dilemmas. Vaccine nationalism is spreading as governments panic that others may get their hands on crucial drugs first. France’s Sanofi has found itself embroiled in a transatlantic row over who will be first to get any covid-19 vaccine it develops. Paul Hudson, the firm’s boss, stated last week that because the American government invested in his firm’s risky scientific efforts, the United States would have early access. This led to a political explosion in France and a dressing-down from Emmanuel Macron, France’s president. And there is mounting pressure to suspend elements of the patent system. A gathering of the World Health Organisation this week passed a resolution urging drugs firms to pool patent rights. Several dozen current and former world leaders released an open letter demanding that any successful covid-19 vaccine should be made available patent-free. There is an alternative to beggar-thy-neighbour nationalism and taking a sledgehammer to the intellectual-property regime. First, a global agreement is needed to govern the manufacture and distribution of a potential vaccine. It could take several years to vaccinate the world’s population; global co-operation will mean that the vaccine is deployed first where it brings most benefit. Second, the patent system should be preserved because, correctly designed, it **incentivises investment in new treatments**. The big drugs firms have already said they will make any **vaccine available at cost-plus prices**. Arrangements exist for tiered pricing of medicines and free vaccinations for diseases afflicting the world’s poor that should be extended to covid-19 treatments. If a smaller drugs firm tried to price-gouge, governments in the West and elsewhere have the powers to pass compulsory licensing orders in an emergency. When the pandemic passes, there must be no going back to the bad old days. Governments should seek to authorise new drug patents faster, as the best way to balance innovation and lower prices. And big pharma needs to keep investing. That will help shareholders and global public health, too.

#### Best analysis confirms our Link – strong IP protection are the only incentive for drug innovation.

* Answers Evergreening/Me-Too Drugs

Stevens and Ezell 20 Philip Stevens and Stephen Ezell 2-3-2020 "Delinkage Debunked: Why Replacing Patents With Prizes for Drug Development Won’t Work" <https://itif.org/publications/2020/02/03/delinkage-debunked-why-replacing-patents-prizes-drug-development-wont-work> (Philip founded Geneva Network in 2015. His main research interests are the intersection of intellectual property, trade, and health policy. Formerly he was an official at the World Intellectual Property Organization (WIPO) in Geneva, where he worked in its Global Challenges Division on a range of IP and health issues. Prior to his time with WIPO, Philip worked as director of policy for International Policy Network, a UK-based think tank, as well as holding research positions with the Adam Smith Institute and Reform, both in London. He has also worked as a political risk consultant and a management consultant. He is a regular columnist in a wide range of international newspapers and has published a number of academic studies. He holds degrees from the London School of Economics and Durham University (UK).)[Stephen Ezell is vice president, global innovation policy, at the Information Technology and Innovation Foundation (ITIF). He focuses on science and technology policy, international competitiveness, trade, manufacturing, and services issues. He is the coauthor of Innovating in a Service-Driven Economy: Insights, Application, and Practice (Palgrave Macmillan, 2015) and Innovation Economics: The Race for Global Advantage (Yale, 2012). Ezell comes to ITIF from Peer Insight, an innovation research and consulting firm he cofounded in 2003 to study the practice of innovation in service industries. At Peer Insight, Ezell led the Global Service Innovation Consortium, published multiple research papers on service innovation, and researched national service innovation policies being implemented by governments worldwide].//Elmer

The **Current System** Has **Produced a Tremendous Amount of Life-Sciences Innovation** The frontier for biomedical innovation is seemingly limitless, and the challenges remain numerous—whether it comes to diseases that afflict millions, such as cancer or malaria, or the estimated 7,000 rare diseases that afflict fewer than 200,000 patients.24 And while certainly citizens in developed and developing nations confront differing health challenges, those challenges are increasingly converging. For instance, as of this year, analysts expect that **noncommunicable** diseases such as cardiovascular disease and diabetes will account for 70 percent of natural fatalities **in developing countries**.25 Citizens of low- and middle-income countries bear 80 percent of the world’s death burden from cardiovascular disease.26 Forty-six percent of Africans over 25 suffer from hypertension, more than anywhere else in the world. Similarly, 85 percent of the disease burden of cervical cancer is borne by individuals living in low- and middle-income countries.27 To develop treatments or cures for these conditions, novel biomedical innovation **will be needed from everywhere**. Yet tremendous progress has been made in recent decades. To tackle these challenges, the global pharmaceutical industry invested over **$1.36 trillion in R&D** in the decade from 2007 to 2016—and it’s expected that annual R&D investment by the global pharmaceutical industry will reach $181 billion by 2022.28 In no small part due to that investment, **943 new active substances have been introduced** globally over the prior 25 years.29 The U.S. Food and Drug Administration (FDA) has approved more than **500 new medicines since 2000** alone. And these medicines are getting to more individuals: Global medicine use **in 2020 will reach 4.5 trillion doses**, up 24 percent from 2015.30 Moreover, there are an estimated 7,000 new medicines under development globally (about half of them in the United States), with 74 percent being potentially first in class, meaning they use a new and unique mechanism of action for treating a medical condition.31 In the United States, over 85 percent of all drugs sold are generics (only 10 percent of U.S. prescriptions are filled by brand-name drugs).32 And while some assert that biotechnology companies focus too often on “me-too” drugs that compete with other treatments already on the market, the reality is many drugs currently under development are meant to tackle some of the **world’s most intractable diseases**, **including cancer and Alzheimer’s**.33 Moreover, such arguments miss that many of the drugs developed in recent years have in fact been first of their kind. For instance, in 2014, the FDA approved **41 new medicines** (at that point, the most since 1996) many of which were first-in-class medicines.34 In that year, 28 of the 41 drugs approved were considered biologic or specialty agents, and 41 percent of medicines approved were intended to treat rare diseases.35 Yet even when a new drug isn’t first of its kind, it can still produce benefits for patients, both through **enhanced clinical efficacy** (for instance, taking the treatment as a pill rather than an injection, with a superior dosing regimen, **or better treatment** for some individuals who don’t respond well to the original drug) and by generating competition that exerts downward price pressures. For example, a patient needing a cholesterol drug has a host of statins from which to choose, which is important because some statins produce harmful side effects for some patients. Similarly, patients with osteoporosis can choose from Actonel, Boniva, or Fosomax. Or take for example Hepatitis C, which until recently was an incurable disease eventually requiring a liver transplant for many patients. In 2013, a revolutionary new treatment called Solvadi was released that boosted cure rates to 90 percent. This was followed in 2014 by an improved treatment called Harvoni, which cures the Hepatitis C variant left untouched by Solvadi. Since then, an astonishing six new treatments for the disease have received FDA approval, opening up a wide range of treatment options that take into account patients’ liver and kidney status, co-infections, potential drug interactions, previous treatment failures, and the genotype of HCV virus.36 “If you have to have Hepatitis C, now is the time to have it,” as Douglas Dieterich, a liver specialist at the Icahn School of Medicine at Mount Sinai Hospital in New York, told the Financial Times. “We have these marvellous drugs we can treat you with right now, without side effects,” he added. “And this time next year, we’ll have another round of drugs available.”37 Moreover, the financial potential of this new product category has led to multiple competing products entering the market in quick succession, in turn placing downward pressure on prices.38 As Geoffrey Dusheiko and Charles Gore write in The Lancet, “The market has done its work for HCV treatments: after competing antiviral regimens entered the market, competition and innovative price negotiations have driven costs down from the initially high list prices in developed countries.”39 As noted previously, opponents of the current market- and IP-based system contend patents enable their holders to exploit a (temporary) market monopoly by inflating prices many multiples beyond the marginal cost of production. But rather than a conventional neoclassical analysis, an analysis based on “innovation economics” finds it is exactly this “distortion” that is required for innovation to progress. As William Baumol has pointed out, “Prices above marginal costs and price discrimination become the norm rather than the exception because … without such deviations from behaviour in the perfectly competitive model, innovation outlays and other unavoidable and repeated sunk outlays cannot be recouped.”40 Or, as the U.S. Congressional Office of Technology Assessment found, “Pharmaceutical R&D is a risky investment; therefore, high financial returns are necessary **to induce companies to invest** in researching new chemical entities.”41 This is also why, in 2018, the U.S. Congressional Budget Office estimated that because of high failure rates, biopharmaceutical **companies would need to earn a 61.8 percent rate of return on their successful new drug R&D projects in order to match a 4.8 percent after-tax rate of return on their investment**s.42 Indeed, **it’s the ability to recoup fixed costs, not just marginal** costs, through mechanisms such as patent protection that lies at the heart of all innovation-based industries and indeed all innovation and related economic progress. If companies could not find a way to pay for their R&D costs, and could only charge for the costs of producing the compound, **there would be no new drugs developed**, just as there would be no new products developed in any industry. Innovating in the life sciences remains expensive, risky, difficult, and uncertain. Just 1 in 5,000 drug candidates make it all the way from discovery to market.43 A 2018 study by the Deloitte Center for Health Solutions, “Unlocking R&D productivity: Measuring the return from pharmaceutical innovation 2018,” found that “the average cost to develop an asset [an innovative life-sciences drug] including the cost of failure, has increased in six out of eight years,” and that the average cost to create a new drug has risen to $2.8 billion.44 Related research has found the development of new drugs requires years of painstaking, risky, and expensive research that, for a new pharmaceutical compound, takes an average of 11.5 to 15 years of research, development, and clinical trials, at a cost of $1.7 billion to $**3.2 billion**.45 IP rights—including patents, copyrights, and data exclusivity protections—give innovators, whether in the life sciences or other sectors, the **confidence** to undertake the risky and expensive process of innovation, secure in the knowledge they’ll be able to capture a share of the gains from their efforts. And these gains are often only a small fraction of the true value created. For instance, Yale University economist William Nordhaus estimated inventors capture just 4 percent of the total social gains from their innovations; the rest spill over to other companies and society as a whole.46 Without adequate IP protection, private investors would never find it viable to fund advanced research because lower-cost copiers would be in a position to undercut the legitimate prices (and profits) of innovators, even while still generating substantial profits on their own.47 As the report “Wealth, Health and International Trade in the 21st Century” concludes, “Conferring robust intellectual property rights is, in the pharmaceutical and other technological-development contexts, **in the global public’s long-term interests.** Without adequate mechanisms for directly and indirectly securing the private and public funding of medicines and vaccines, research and development communities across the world will lose future benefits that would far outweigh the development costs involved.”48 Put simply, the current market- and IP-based life-sciences innovation system is producing life-changing biomedical innovation. As Jack Scannell, a senior fellow at Oxford University’s Center for the Advancement of Sustainable Medical Innovation has explained, “I would guess that one can buy today, at rock bottom generic prices, a set of small-molecule drugs that has greater medical utility than the entire set available to anyone, anywhere, at any price in 1995.” He continued, “Nearly all the generic medicine chest was created by firms who invested in R&D to win future profits that they tried pretty hard to maximize; short-term financial gain building a long-term common good.”49 For example, on September 14, 2017, the FDA approved Mvasi, the first biosimilar for Roche’s Avastin, a breakthrough anticancer drug when it came out in the mid-1990s for lung, cervical, and colorectal cancer.50 In other words, a medicine to treat forms of cancer that barely existed 20 years ago is now available as a generic drug today. It’s this dynamic that enables us to imagine a situation wherein drugs to treat diseases that aren’t available anywhere at any price today (for instance, treatments for Alzheimer’s or Parkinson’s) might be available as generics in 20 years. But that will only be the case if we preserve (and improve where possible) a life-sciences innovation system that is generally working. The current system does not require wholesale replacement by a prize-based system that—notwithstanding a meaningful success here or there—has produced nowhere near a similar level of novel biomedical innovation.

#### Cannabis wipes out superbugs and kills developing mutations, but further research and investments are required.

Sample ’20 [Ian; journalist at New Scientist and worked at the Institute of Physics as a journal editor, PhD in biomedical materials; 1-19-2020; "Cannabis compound could be weapon in fight against superbugs", Guardian; https://www.theguardian.com/society/2020/jan/19/cannabis-compound-could-be-weapon-in-fight-against-superbugs, accessed 4-16-2021]

A compound made by cannabis plants has been found to wipe out drug-resistant bacteria, raising hopes of a new weapon in the fight against superbugs. Scientists screened five cannabis compounds for their antibiotic properties and found that one, cannabigerol (CBG), was particularly potent at killing methicillin-resistant Staphylococcus aureus (MRSA), one of the most common hospital superbugs. Tests in the lab showed that CBG, which is not psychoactive, killed common MRSA microbes and “persister” cells that are especially resistant to antibiotics and that often drive repeat infections. The compound also cleared up hard-to-shift “biofilms” of MRSA that can form on the skin and on medical implants. Having seen how effective the substance was against bacteria in the lab, the researchers decided to test CBG’s ability to treat infections in animals. In a study that has not yet been published, they found that CBG cured mice of MRSA infections as effectively as vancomycin, a drug widely considered to be the last line of defence against drug-resistant microbes. The study is under review at the ACS Infectious Diseases journal. Eric Brown, a microbiologist who led the work at McMaster University in Hamilton, Ontario, said cannabinoids were “clearly great drug-like compounds”, but noted it was early days in assessing the compounds for use in the clinic. “There is much work to do to explore the potential of the cannabinoids as antibiotics from the safety standpoint,” he said. Antibiotic resistance has become a major threat to public health. England’s former chief medical officer Dame Sally Davies has said the loss of effective antibiotics would lead to “apocalyptic scenarios”, with patients dying from routine infections and many operations becoming too risky to perform. In the study, the researchers describe how the rapid global spread of drug resistance, caused by microbes developing mutations that protect them against antibiotics, has driven an urgent need to explore new sources of drugs. Among antibiotics in use today, the newest date back to discoveries made more than 30 years ago.

#### Only CBD solves superbugs.

Stevens ’21 [Kylie; reporter covering medical breakthrough by Researchers at University of Queensland’s Institute for Molecular Bioscience and the peer-reviewed Communications Biology journal; 1-19-2021; Mail Online; https://www.dailymail.co.uk/news/article-9165415/Medical-breakthrough-revealed-cannabis-kill-superbugs-save-10million-lives-year.html, accessed 4-16-2021; RG]

Laboratory studies have shown synthetic cannabidiol, the main nonpsychoactive component of cannabis better known as CBD can kill bacteria in diseases such as gonorrhea, a sexually transmissible infection. The research has been hailed as a potential world medical breakthrough, amid predictions drug-resistant infections could result in 10 million deaths worldwide a year by 2050 unless an alternate treatment is found. The research, recently published in the Communications Biology journal is part of a collaboration between Queensland researchers and Botanix Pharmaceuticals, which lead to the first new class of antibiotics for resistant bacteria in 60 years. 'This is the first time CBD has been shown to kill some types of Gram-negative bacteria. These bacteria have an extra outer membrane, an additional line of defence that makes it harder for antibiotics to penetrate,' Institute for Molecular Bioscience director Dr Mark Blaskovich said in a statement. Researchers also discovered cannabidiol is effective in killing off superbug MRSA found in golden staph bacteria. It may also be used to treat infected diabetic ulcers and wounds. 'Cannabidiol showed a low tendency to cause resistance in bacteria even when we sped up potential development by increasing concentrations of the antibiotic during 'treatment,' Dr Blaskovich added. 'We think that cannabidiol kills bacteria by bursting their outer cell membranes, but we don't know yet exactly how it does that, and need to do further research.'

#### Only innovation now solves AMR super-bugs -- timeframe’s key.

Sobti 19 [Dr. Navjot Kaur Sobti is an internal medicine resident physician at Dartmouth-Hitchcock-Medical Center/Dartmouth School of Medicine and a member of the ABC News Medical Unit. May 1, 2019. “Amid superbug crisis, scientists urge innovation”. <https://abcnews.go.com/Health/amidst-superbug-crisis-scientists-urge-innovation/story?id=62763415>] Dhruv

[The United Nations](https://abcnews.go.com/Politics/amal-clooney-angelina-jolie-speak-us-weighed-vetoing/story?id=62574726) has called antimicrobial resistance a “global crisis.” With the [rise in superbugs](https://abcnews.go.com/Health/superbug-fungus-global-health-threat-600-us-infected/story?id=62297532) across the globe, common infections are becoming harder to treat, and lifesaving procedures riskier to perform. Drug-resistant infections result in about 700,000 deaths per year, with at least 230,000 of those deaths due to multidrug resistant tuberculosis, [according to a groundbreaking report from the World Health Organization (WHO).](https://www.who.int/antimicrobial-resistance/interagency-coordination-group/IACG_final_report_EN.pdf?ua=1) Given that antibiotic resistance is present in every country, antimicrobial resistance (AMR) now represents a global health crisis, according to the UN, which has urged immediate, coordinated and global action to prevent a potentially devastating health and financial crisis. With the rising rates of AMR -- including antivirals, antibiotics, and antifungals -- estimates from the WHO show that AMR may cause 10 million deaths every year by 2050, send 24 million people into extreme poverty by 2030, and lead to a financial crisis as severe as the on the U.S. experienced in 2008. Antimicrobial resistance develops when germs like bacteria and fungi are able to “defeat the drugs designed to kill them,” according to the Centers for Disease Control and Prevention. Through a biologic “survival of the fittest,” germs that are not killed by antimicrobials and continue to grow. WHO explains that “poor infection control, inadequate sanitary conditions and inappropriate food handling encourage the spread” of AMR, which can lead to “superbugs.” Those superbugs require powerful and oftentimes more expensive antimicrobials to treat. Examples of superbugs are far and wide, and can range from drug-resistant bacteria like Pseudomonas aeruginosa and Staphylococcus aureus to fungi like Candida. These bugs can cause illnesses that range from pneumonia to urinary tract and sexually transmitted infections. According to the WHO, AMR has caused complications for nearly 500,000 people with tuberculosis, and a number of people with HIV and malaria. The people at the [highest risk for AMR](https://www.who.int/news-room/detail/27-02-2017-who-publishes-list-of-bacteria-for-which-new-antibiotics-are-urgently-needed) are those with chronic diseases, people living in nursing homes, hospitalized in the ICU or undergoing life-saving treatments such as organ transplantation and cancer therapy. These people often develop infections, which can become antimicrobial-resistant, rendering them difficult, if not impossible, to treat. [(MORE: Melissa Rivers talks about her father's suicide with Dr. Jennifer Ashton)](https://abcnews.go.com/Health/melissa-rivers-talks-fathers-suicide-dr-jennifer-ashton/story?id=62733179&cid=clicksource_26_null_headlines_hed) The CDC notes that “antibiotic resistance has the potential to affect people at any stage of life,” including the “healthcare, veterinary, and agriculture industries, making it one of the world’s most urgent public health problems." AMR can cause prolonged hospital stays, billions of dollars in healthcare costs, disability, and potentially, death. “The most important thing is to understand and embrace the interconnectedness of all of this,” said Dr. Robert Redfield, director of the CDC, in a recent interview with ABC News’ Dr. Jennifer Ashton. It’s not just our countries that are connected.” Research has shown that superbugs like Candida auris “came from multiple places, at the same time. It wasn’t just one organism that [evolved]” in a single location, Redfield added. Given longstanding concerns about antimicrobial misuse leading to AMR, physicians have embraced a medical approach called antibiotic stewardship. This encourages physicians to carefully evaluate which antibiotic is most appropriate for their patient, and discontinue it once it is no longer medically needed. WHO has also highlighted that the inappropriate use of antimicrobials in agriculture -- such as on farms and in animals -- may be an underappreciated cause of AMR. Noting these trends, the WHO has urged for “coordinated action...to minimize the emergence and spread of antimicrobial resistance.” It urges all countries to make national action plans, with a focus on the development of new antimicrobial medications, vaccines, and careful antimicrobial use. Redfield emphasized the importance of vaccination during the global superbug crisis, stating that “the only way we have to eliminate an infection is vaccination.” He added that investing in innovation is key to solving the crisis. While WHO continues to advocate for superbug awareness, they warn that AMR has reversed “a century of progress in health.” The WHO added that “the challenges of antimicrobial resistance” are “not insurmountable,” and that coordinated action will “help to save millions of lives, preserve antimicrobials for generations to come and secure the future from drug-resistant diseases.”