### Counter ROB

#### Counter RoB: The Judge should pick the best debater achieved by comparing the consequences of both sides. Prefer:

#### This RoB provides a stable stasis point that isn’t arbitrary or self-serving. Both sides have an equal chance of winning with this predictable RoB.

#### Subsumes their RoB – no reason to limit impacts of debate – just weigh your impacts above mine.

### Framing

**The standard is maximizing expected wellbeing. Prefer:**

1. **Death is the worse possible thing since it erases our very existence**

Paterson 03, Craig [Department of Philosophy, Providence College, Rhode Island] 2003, “A Life Not Worth Living?”, Studies in Christian Ethics

Contrary to those accounts, I would argue that it is **death** per se that **is** really **the objective evil** for us, not because it deprives us of a prospective future of overall good judged better than the alter- native of non-being. It cannot be about harm to a former person who has ceased to exist, for no person actually suffers from the sub-sequent non-participation. Rather, death in itself is an evil to us because **it ontologically destroys the** current existent **subject** — it is the ultimate in metaphysical lightning strikes.80 The evil of death is truly an ontological evil borne by the person who already exists, independently of calculations about better or worse possible lives. Such an evil need not be consciously experienced in order to be an evil for the kind of being a human person is. Death is an evil because of the change in kind it brings about, a change that is destructive of the type of entity that we essentially are. **Anything**, whether caused naturally or caused by human intervention (intentional or unintentional) **that** drastically **interferes in the process of maintaining** the person in **existence is an objective evil** for the person. What is crucially at stake here, and is dialectically supportive of the self-evidency of the basic good of human life, is that death is a radical interference with the current life process of the kind of being that we are. In consequence, **death** itself **can be** credibly **thought of as a ‘primitive evil’ for all persons**, regardless of the extent to which they are currently or prospectively capable of participating in a full array of the goods of life.81  In conclusion, concerning willed human actions, it is justifiable to state that any intentional **rejection of human life** itself **cannot** therefore **be warranted since it is** an expression of an **ultimate disvalue** for the subject, namely, the destruction of the present person; a radical ontological good that we cannot begin to weigh objectively against the travails of life in a rational manner. To deal with the sources of disvalue (pain, suffering, etc.) we should not seek to irrationally destroy the person, the very source and condition of all human possibility.82

1. **Requires the prevention of extinction which is a pre-req to all other frameworks.**

GPP 17 Global Priorities Project, [Future of Humanity Institute at the University of Oxford, Ministry for Foreign Affairs of Finland] 2017, “Existential Risk: Diplomacy and Governance,” Global Priorities Project, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>

1.2. THE ETHICS OF EXISTENTIAL RISK In his book Reasons and Persons, Oxford philosopher Derek Parfit advanced an influential argument about the importance of avoiding extinction: I believe that if we destroy mankind, as we now can, this outcome will be much worse than most people think. Compare three outcomes: (1) Peace. (2) A nuclear war that kills 99% of the world’s existing population. (3) A nuclear war that kills 100%. (2) would be worse than (1), and (3) would be worse than (2). Which is the greater of these two differences? Most people believe that the greater difference is between (1) and (2). I believe that the difference between (2) and (3) is very much greater. ... The Earth will remain habitable for at least another billion years. **Civilization began only a few thousand years ago.** If we do not destroy mankind, these few thousand years may be only a tiny fraction of the whole of civilized **human** history. The difference between (2) and (3) may thus be the difference between this tiny fraction and all of the rest of this history. If we compare this possible history to a day, what has occurred so far is only a fraction of a second.65 In this argument, it seems that Parfit is assuming that the survivors of a nuclear war that kills 99% of the population would eventually be able to recover civilisation without long-term effect. As we have seen, this may not be a safe assumption – but for the purposes of this thought experiment, the point stands. What makes existential catastrophes especially bad is that they would “destroy the future,” as another Oxford philosopher, Nick Bostrom, puts it.66 This future could potentially be extremely long and full of flourishing, and would therefore have extremely large value. In standard risk analysis, when working out how to respond to risk, we work out the expected value of risk reduction, by weighing the probability that an action will prevent an adverse event against the severity of the event. **Because the value of preventing existential catastrophe is so vast, even a tiny probability of prevention has huge** expected **value**.67 Of course, there is persisting reasonable disagreement about ethics and there are a number of ways one might resist this conclusion.68 Therefore, it would be unjustified to be overconfident in Parfit and Bostrom’s argument. In some areas, government policy does give significant weight to future generations. For example, in assessing the risks of nuclear waste storage, governments have considered timeframes of thousands, hundreds of thousands, and even a million years.69 Justifications for this policy usually appeal to principles of intergenerational equity according to which future generations ought to get as much protection as current generations.70 Similarly, widely accepted norms of sustainable development require development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.71 However, when it comes to existential risk, it would seem that we fail to live up to principles of intergenerational equity. Existential catastrophe would not only give future generationsless than the current generations; it would give them nothing. Indeed, reducing existential risk plausibly has a quite low cost **for us** in comparison with the huge expected value **it has** for future generations. In spite of this, relatively little is done to reduce existential risk. Unless we give up on norms of intergenerational equity, they give us a strong case for significantly increasing our efforts to reduce existential risks. 1.3. WHY EXISTENTIAL RISKS MAY BE SYSTEMATICALLY UNDERINVESTED IN, AND THE ROLE OF THE INTERNATIONAL COMMUNITY In spite of the importance of existential risk reduction, it probably receives less attention than is warranted. As a result, concerted international cooperation is required if we are to receive adequate protection from existential risks. 1.3.1. Why existential risks are likely to be underinvested in There are several reasons why existential risk reduction is likely to be underinvested in. Firstly, it is a global public good. Economic theory predicts that such goods tend to be underprovided. The benefits of existential risk reduction are widely and indivisibly dispersed around the globe from the countries responsible for taking action. Consequently, a country which reduces existential risk gains only a small portion of the benefits but bears the full brunt of the costs. Countries thus have strong incentives to free ride, receiving the benefits of risk reduction without contributing. As a result, too few do what is in the common interest. Secondly, as already suggested above, existential risk reduction is an intergenerational public good: most of the benefits are enjoyed by future generations who have no say in the political process. For these goods, the problem is temporal free riding: the current generation enjoys the benefits of inaction while future generations bear the costs. Thirdly, many existential risks, such as machine superintelligence, engineered pandemics, and solar geoengineering, pose an unprecedented and uncertain future threat. Consequently, it is hard to develop a satisfactory governance regime for them: there are few existing governance instruments which can be applied to these risks, and it is unclear what shape new instruments should take. In this way, our position with regard to these emerging risks is comparable to the one we faced when nuclear weapons first became available. Cognitive biases also lead people to underestimate existential risks. Since there have not been any catastrophes of this magnitude, these risks are not salient **to** politicians and **the public**.72 This is an example of the misapplication of the availability heuristic, a mental shortcut which assumes that something is important only if it can be readily recalled. Another cognitive bias **affecting perceptions of existential risk** is scope neglect. In a seminal 1992 study, three groups were asked how much they would be willing to pay to save 2,000, 20,000 or 200,000 birds from drowning in uncovered oil ponds. The groups answered $80, $78, and $88, respectively.73 In this case, the size of the benefits had little effect on the scale of the preferred response. People become numbed to the effect of saving lives when the numbers get too large.74 Scope neglect is a particularly acute problem for existential risk because the numbers at stake are so large. Due to scope neglect, decision-makers are prone to treat existential risks **in a** similar way to problems **which are** less severe by many orders **of magnitude.** A wide range of other cognitive biases are likely to affect the evaluation of existential risks.75

**Innovation DA**

**Future pandemics are inevitable – globalization and climate change**

**IPBES 21** IPBES WORKSHOP ON BIODIVERSITY AND PANDEMICS. IPBES, 2021. Web. 3 Sept. 2021. The Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) is the intergovernmental body which assesses the state of biodiversity and ecosystem services, in response to requests from Governments, the private sector and civil society.

Pandemics represent an existential threat to the health and welfare of people across our planet. The scientific evidence reviewed in this report demonstrates that pandemics are becoming more frequent, driven by a continued rise in the underlying emerging disease events that spark them. Without preventative strategies, pandemics will emerge more often, spread more rapidly, kill more people, and affect the global economy with more devastating impact than ever before. Current pandemic strategies rely on responding to diseases after their emergence with public health measures and technological solutions, in particular the rapid design and distribution of new vaccines and therapeutics. However, COVID-19 demonstrates that this is a slow and uncertain path, and as the global population waits for vaccines to become available, the human costs are mounting, in lives lost, sickness endured, economic collapse, and lost livelihoods. Pandemics have their origins in diverse microbes carried by animal reservoirs, but their emergence is entirely driven by human activities. The underlying causes of pandemics are the same global environmental changes that drive biodiversity loss and climate change. These include land-use change, agricultural expansion and intensification, and wildlife trade and consumption. These drivers of change bring wildlife, livestock, and people into closer contact, allowing animal microbes to move into people and lead to infections, sometimes outbreaks, and more rarely into true pandemics that spread through road networks, urban centres and global travel and trade routes. The recent exponential rise in consumption and trade, driven by demand in developed countries and emerging economies, as well as by demographic pressure, has led to a series of emerging diseases that originate mainly in biodiverse developing countries, driven by global consumption patterns. Pandemics such as COVID-19 underscore both the interconnectedness of the world community and the rising threat posed by global inequality to the health, wellbeing and security of all people. Mortality and morbidity due to COVID-19 may ultimately be higher in developing countries, due to economic constraints affecting healthcare access. However, large-scale pandemics can also drastically affect developed countries that depend on globalized economies, as COVID-19’s impact on the USA and many European countries is currently demonstrating.

**IP driven innovation key to combatting pandemics**

**Ezell and McDole 21** Ezell, Stephen, and Jaci McDole. "Ten Ways IP Has Enabled Innovations That Have Helped Sustain The World Through The Pandemic." Itif.org. N.p., 2021. Web. 3 Sept. 2021. Jaci McDole is a senior policy analyst covering intellectual property (IP) and innovation policy at ITIF. She focuses on IP and its correlations to global innovation and trade. Her work includes ITIF’s Innovate4Health Initiatives (2017–2019) and A Covid-19 TRIPS Waiver Makes No More Sense for Copyrights Than It Does for Patents (2021). McDole comes to ITIF from the Institute for Intellectual Property Research, an organization she cofounded to study and further robust global IP policies. Stephen J. Ezell is ITIF vice president for Global Innovation Policy. He focuses on science, technology, and innovation policy as well as international competitiveness and trade policy issues. He is the coauthor of Innovating in a Service Driven Economy: Insights Application, and Practice (Palgrave McMillan, 2015) and Innovation Economics: The Race for Global Advantage (Yale 2012).

Innovation can—and does—happen anywhere and at any time. As society ground to a halt in 2020, innovators around the world worked tirelessly to develop treatments, vaccines, and solutions to COVID-19 pandemic-related challenges. From personal protective equipment (PPE) to treatments and vaccines to autonomous delivery robots to remote and social distancing solutions for the workplace, intellectual property (IP) played an indispensable role in enabling research, development, and commercialization of many of the innovations meeting the challenges of the pandemic. IP enables start-ups to gain access to much-needed capital. IP gives innovators the confidence to invest in research and development (R&D) and provides incentives for commercialization. Indeed, it is difficult to innovate without the protection of ideas. Despite this, some—particularly anti-business IP opponents—have blamed IP rights for a host of problems, including limited access to therapeutics, vaccines, and biotechnology. They offer seemingly simple solutions—weaken or eliminate IP rights—and innovation will flow like manna from heaven. Eliminating IP rights might accelerate the diffusion of some pre-existing innovations, but it would absolutely limit future innovations. Innovators, a bit like Charlie Brown kicking the football held by Lucy, would be wary of trusting governments who might say, “Well, this time we won’t take away your IP rights, so go ahead and invest large amounts of time and money.” Given the nature of COVID-19, nations around the world cannot afford to take this risk. Future pandemics and other challenges for which we will need to rely on IP-protected innovations to overcome are near certain to arise. Moreover, the blame game usually ignores the real, underlying problems. For access to innovations to fight COVID-19, especially biotechnology, vaccines, and therapeutics, the underlying problems are regulatory delays and a lack of adequate and appropriate manufacturing infrastructure.1 The lack of infrastructure has resulted in supply chain bottlenecks in places where few are currently equipped to handle the manufacturing requirements.2 Meanwhile, regulatory delays have prevented vaccines, therapeutics, and diagnostics from entering certain markets.3 To better understand the role of IP in enabling solutions related to COVID-19 challenges, this report relies on 10 case studies drawn from a variety of nations, technical fields, and firm sizes. This is but a handful of the thousands of IP-enabled innovations that have sprung forth over the past year in an effort to meet the tremendous challenges brought on by COVID-19 globally. From a paramedic in Mexico to a veteran vaccine manufacturing company in India and a tech start-up in Estonia to a U.S.-based company offering workplace Internet of Things (IoT) services, small and large organizations alike are working to combat the pandemic. Some have adapted existing innovations, while others have developed novel solutions. All are working to take the world out of the pandemic and into the future. The case studies are: Bharat Biotech: Covaxin Gilead: Remdesivir LumiraDX: SARS-COV-2 Antigen POC Test Teal Bio: Teal Bio Respirator XE Ingeniería Médica: CápsulaXE Surgical Theater: Precision VR Tombot: Jennie Starship Technologies: Autonomous Delivery Robots Triax Technologies: Proximity Trace Zoom: Video Conferencing As the case studies show, IP is critical to enabling innovation. Policymakers around the world need to ensure robust IP protections are—and remain—in place if they wish their citizens to have safe and innovative solutions to health care, workplace, and societal challenges in the future. THE ROLE OF INTELLECTUAL PROPERTY IN R&D-INTENSIVE INDUSTRIES Intangible assets, such as IP rights, comprised approximately 84 percent of the corporate value of S&P 500 companies in 2018.4 For start-ups, this means much of the capital needed to operate is directly related to IP (see Teal Bio case study for more on this). IP also plays an especially important role for R&D-intensive industries.5 To take the example of the biopharmaceutical industry, it is characterized by high-risk, time-consuming, and expensive processes including basic research, drug discovery, pre-clinical trials, three stages of human clinical trials, regulatory review, and post-approval research and safety monitoring. The drug development process spans an average of 11.5 to 15 years.6 For every 5,000 to 10,000 compounds screened on average during the basic research and drug discovery phases, approximately 250 molecular compounds, or 2.5 to 5 percent, make it to preclinical testing. Out of those 250 molecular compounds, approximately 5 make it to clinical testing. That is, 0.05 to 0.1 percent of drugs make it from basic research into clinical trials. Of those rare few which make it to clinical testing, less than 12 percent are ultimately approved for use by the U.S. Food and Drug Administration (FDA).7 In addition to high risks, drug development is costly, and the expenses associated with it are increasing. A 2019 report by the Deloitte Center for Health Solutions concluded that since 2010 the average cost of bringing a new drug to market increased by 67 percent.8 Numerous studies have examined the substantial cost of biopharmaceutical R&D, and most confirm investing in new drug development requires $1.7 billion to $3.2 billion up front on average.9 A 2018 study by the Coalition for Epidemic Preparedness found similar risks and figures for vaccines, stating, “In general, vaccine development from discovery to licensure can cost billions of dollars, can take over 10 years to complete, and has an average 94 percent chance of failure.”10 Yet, a 2010 study found that 80 percent of new drugs—that is, the less than 12 percent ultimately approved by the FDA—made less than their capitalized R&D costs.11 Another study found that only 1 percent (maybe three new drugs each year) of the most successful 10 percent of FDA approved drugs generate half of the profits of the entire drug industry.12 To say the least, biopharmaceutical R&D represents a high-stakes, long-term endeavor with precarious returns. Without IP protection, biopharmaceutical manufacturers have little incentive to take the risks necessary to engage in the R&D process because they would be unable to recoup even a fraction of the costs incurred. Diminished revenues also result in reduced investments in R&D which means less research into cancer drugs, Alzheimer cures, vaccines, and more. IP rights give life-sciences enterprises the confidence needed to undertake the difficult, risky, and expensive process of life-sciences innovation secure in the knowledge they can capture a share of the gains from their innovations, which is indispensable not only to recouping the up-front R&D costs of a given drug, but which can generate sufficient profits to enable investment in future generations of biomedical innovation and thus perpetuate the enterprises into the future.13 THE IMPORTANCE OF INTELLECTUAL PROPERTY TO INNOVATION Although anti-IP proponents have attacked biopharmaceutical manufacturers particularly hard, the reality is all IP-protected innovations are at risk if these rights are ignored, or vitiated. Certain arguments have shown a desire for the term “COVID-19 innovations” to include everything from vaccines, therapeutics, diagnostics, and PPE to biotechnology, AI-related data, and educational materials.14 This could potentially open the floodgates to invalidate IP protection on many of the innovations highlighted in this report. However, much of the current discussion concerning IP focuses almost entirely on litigation fears or R&D incentives. Although R&D is an important aspect of IP, as previously mentioned, these discussions ignore the fact that IP protection can be—and often is—used for other purposes, including generating initial capital to create a company and begin manufacturing and, more importantly, using licensing agreements and IP to track the supply chain and ensure quality control of products. This report highlights but a handful of the thousands of IP-enabled innovations that have sprung forth over the past year in an effort to meet the tremendous challenges brought on by COVID-19 globally. In 2018, Forbes identified counterfeiting as the largest criminal enterprise in the world.15 The global struggle against counterfeit and non-regulated products, which has hit Latin America particularly hard during the pandemic, proves the need for safety and quality assurance in supply chains.16 Some communities already ravaged by COVID-19 are seeing higher mortality rates related to counterfeit vaccines, therapeutics, PPE, and cleaning and sanitizing products.17 Polish authorities discovered vials of antiwrinkle treatment labeled as COVID-19 vaccines. 18 In Mexico, fake vaccines sold for approximately $1,000 per dose.19 Chinese and South African police seized thousands of counterfeit vaccine doses from warehouses and manufacturing plants.20 Meanwhile, dozens of websites worldwide claiming to sell vaccines or be affiliated with vaccine manufacturers have been taken down.21 But the problem is not limited to biopharmaceuticals. The National Intellectual Property Rights Coordination Center has recovered $48 million worth of counterfeit PPE and other products.22 Collaborative efforts between law enforcement and manufacturers have kept numerous counterfeits from reaching the population. In countries with strong IP protection, the chances of counterfeit products reaching the market are significantly lower. This is largely because counterfeiting tends to be an IP-related issue, and these countries generally provide superior means of tracking the supply chain through trademarks, trade secrets, and licensing agreements. This enables greater quality control and helps manufacturers maintain a level of public confidence in their products. By controlling the flow of knowledge associated with IP, voluntary licensing agreements provide innovators with opportunities to collaborate, while ensuring their partners are properly equipped and capable of producing quality products. Throughout this difficult time, the world has seen unexpected collaborations, especially between biopharmaceutical companies worldwide such as Gilead and Eva Pharma or Bharat Biotech and Ocugen, Inc. Throughout history, and most significantly in the nineteenth century through the widespread development of patent systems and the ensuing Industrial Revolution, IP has contributed toward greater economic growth.23 This is promising news as the world struggles for economic recovery. A 2021 joint study by the EU Intellectual Property Office (EUIPO) and European Patent Office (EPO) shows a strong, positive correlation between IP rights and economic performance.24 It states that “IP-owning firms represent a significantly larger proportion of economic activity and employment across Europe,” with IP-intensive industries contributing to 45 percent of gross domestic product (GDP) (€6.6 trillion; US$7.9 trillion).25 The study also shows 38.9 percent of employment is directly or indirectly attributed to IP-intensive industries, and IP generates higher wages and greater revenue per employee, especially for small-to-medium-sized enterprises.26 That concords with the United States, where the Department of Commerce estimated that IP-intensive industries support at least 45 million jobs and contribute more than $6 trillion dollars to, or 38.2 percent of, GDP.27 In 2020, global patent filings through the World Intellectual Property Organization’s (WIPO) Patent Cooperation Treaty (PCT) system reached a record 275,900 filings amidst the pandemic, growing 4 percent from 2019.28 The top-four nations, which accounted for 180,530 of the patent applications, were China, the United States, Japan, and Korea, respectively.29 While several countries saw an increase in patent filings, Saudi Arabia and Malaysia both saw significant increases in the number of annual applications, with the top two filing growths of 73 percent and 26 percent, respectively.30 The COVID-19 pandemic slowed a lot of things, but it certainly couldn’t stop innovation. There are at least five principal benefits strong IP rights can generate, for both developing and developed countries alike.31 First, stronger IP protection spurs the virtuous cycle of innovation by increasing the appropriability of returns, enabling economic gain and catalyzing economic growth. Second, through patents—which require innovators to disclose certain knowledge as a condition of protection—knowledge spillovers build a platform of knowledge that enables other innovators. For instance, studies have found that the rate of return to society from corporate R&D and innovation activities is at least twice the estimated returns that each company itself receives.32 Third, countries with robust IP can operate more efficiently and productively by using IP to determine product quality and reduce transaction costs. Fourth, trade and foreign direct investment enabled and encouraged by strong IP protection offered to enterprises from foreign countries facilitates an accumulation of knowledge capital within the destination economy. That matters when foreign sources of technology account for over 90 percent of productivity growth in most countries.33 There’s also evidence suggesting that developing nations with stronger IP protections enjoy the earlier introduction of innovative new medicines.34 And fifth, strong IP boosts exports, including in developing countries.35 Research shows a positive correlation between stronger IP protection and exports from developing countries as well as faster growth rates of certain industries.36 The following case studies illustrate these benefits of IP and how they’ve enabled innovative solutions to help global society navigate the COVID-19 pandemic.

**The next pandemic risks killing billions**

**Fletcher 20** Fletcher, Martin. "Why Stephen Emmott Fears The Next Pandemic Could Kill A Billion People". Newstatesman.Com, 2020, <https://www.newstatesman.com/politics/environment/2020/08/why-stephen-emmott-fears-next-pandemic-could-kill-billion-people>. Martin Fletcher is a former foreign editor of the Times and a New Statesman magazine contributing writer and online columnist.

In 2012 Stephen Emmott, then head of computational science at Microsoft and a professor of computational science at Oxford University, was persuaded to stage a one-man show at London’s Royal Court Theatre by theatre director Katie Mitchell, who wanted to encourage collaboration between scientists and the arts. It was called ***Ten Billion***, and the ***Guardian*** and***Financial Times*** reviewers both described it as “one of the most disturbing” productions they had ever seen. Standing in a re-creation of his cluttered laboratory, Emmott described the “unprecedented planetary emergency” that humankind faces as the global population – a mere three billion in 1960 – soars rapidly towards ten billion, plundering the planet’s resources, devastating the environment, spewing greenhouse gases into the atmosphere and triggering the sixth mass extinction of life on Earth as we pursue ever more voracious lifestyles. The sold-out show was turned into a best-selling book with the same title and the same set of graphs – all resembling L’s tipped leftwards on to their sides as humanity’s destruction of the natural world took off properly with the Industrial Revolution. “We’re fucked,” Emmott concluded, and he ended by recalling the reply of a highly intelligent young scientific colleague when asked what he could do about the situation: “Teach my son how to use a gun.”  At the time the genial, unpretentious scientist was accused of scaremongering, exaggeration and scientific distortion, but one consequence of mankind’s recklessness that Emmott predicted with absolute certainty was a global pandemic exactly like Covid-19. Indeed, he had collaborated with Neil Ferguson, the Imperial College epidemiologist, on developing the modelling framework for global pandemics that Ferguson would later use to persuade the government to order Britain’s lockdown in March. **A coronavirus-type pandemic was inevitable**, Emmott, presently professor of biological computation at University College London, tells me by telephone from his home in Camberwell, south-east London. “**This one is a very small glimpse** – thankfully not as severe as it could be – into a potential and likely future**.” The next pandemic could kill a billion people**, he warns. “**The population is set to increase from 7.7 billion to at least ten billion**, and possibly more, before the end of this century. Urbanisation is increasing rapidly. ‘**Wet markets’ have proliferated over the past two decades. The proliferation of habitat destruction, forcing animals into direct contact with humans, is increasing** rapidly,” he says. All that, **allied with the relentlessly escalating movement of people and goods around the world, means “we are increasing every day the likelihood of a Spanish flu-type pandemic that would make this one pale by comparison**... We have no idea whether that’s around the corner in a month’s time, a year’s time or two or three decades’ time, but **it’s almost certainly going to happen and that one is going to be really quite deleterious to the human species**.” Of course, there have been plagues and pandemics in the past, he adds, but “this burying our heads in the sand, this view that we have this once a century so we just have to get over it, I think that’s nonsense”. Nor are zoonotic pandemics – those caused by pathogens jumping from animals to humans – the only threat to modern man. There could well be a “crop pandemic”, Emmott says. The “Green Revolution’” of the late 20th century vastly increased food production, but it did so by breeding genetic diversity out of cereal crops, leaving “monocultures” of wheat and corn. At the same time fungicides are becoming less and less effective. That means a range of novel plant pathogens has the potential to destroy much of the world’s food supply. “The consequences of that on political stability and forced migration are unforeseen, unknowable and probably unprecedented,” he says. Yet another potential threat comes from the melting of the world’s northern permafrost due to climate change. That could release a whole range of ancient pathogens that may have been locked in the ice for thousands of years.

## AMR DA

#### AMR research hanging by a thread – reliant on a few companies

Al Jazeera 20 "Pharma Firms Not Making Enough Progress Against Superbugs: Report." Aljazeera.com. N.p., 2020. Web. 27 Aug. 2021.

Drug companies are not making progress against the spread of antibiotic resistance at a scale and speed great enough to tackle the global health threat posed by superbugs, a key benchmark analysis found on Tuesday. The findings of a second [Antimicrobial Resistance (AMR) Benchmark report](https://accesstomedicinefoundation.org/amr-benchmark) by the Access to Medicine Foundation showed that while a few pharmaceutical companies are expanding their efforts, change is not happening at the scale needed to radically impact the problem. Antibiotic and antifungal resistance is estimated to kill 35,900 people in the [United States](https://www.aljazeera.com/topics/country/united-states.html) alone each year. In the European Union and European Economic Area, data show that antimicrobial resistance accounts for at least 17 percent of infections and leads to 33,000 deaths each year. In India, drug resistance exceeds 70 percent for many widespread bacteria, the AMF report said. Compared with 2018, the pipeline of new drugs in development to combat bacterial and fungal infections remains small, with only 51 potential treatments in late-stage clinical trials, the 2020 report found. And only a handful more clinical-stage antibiotics are being developed with integral plans to make them available to those who need them most. “This second benchmark provides a reality check,” said Jayasree Iyer, executive director of AMF. “The progress we see is being overshadowed by our increasing reliance on just a handful of companies.” Drug resistance is driven by the misuse and overuse of antibiotics and other antimicrobials, which encourages bacteria to evolve to survive by finding new ways to beat the medicines. But the low profitability of antibiotics means that only a dwindling number of pharmaceutical companies still invest in developing and manufacturing them. The 2020 AMR Benchmark report said that since 2018, two more companies – Novartis International AG and Sanofi SA – have retreated from new antibiotics research and development, while two more have filed for bankruptcy. Tim Jinks, a specialist in drug resistance at the Wellcome Trust global [health](https://www.aljazeera.com/topics/subjects/healthcare.html) foundation, said the findings pointed to a “tipping point in the manufacturing of new antibiotics – with progress hanging by a thread”. “Drug-resistant infections are one of the greatest global public health threats of our time,” he said. “The pace of change does not match the scale of the challenge.” The report identified three drug companies – GlaxoSmithKline, Entasis Therapeutics and Cipla – as leaders in antimicrobial research and development. It also said they were “followed closely by a few strong performers”, including Pfizer and Johnson & Johnson. Iyer warned, however, that the world should not take these firms’ commitment for granted. The AMR Benchmark measures 30 companies with interests in the anti-infectives market, including multinational pharma companies, biotechnology firms, and generics makers.

#### AMR research on the brink – any reduction in IP forces less research

Plackett 20 Plackett, Benjamin. "Why Big Pharma Has Abandoned Antibiotics." Nature.com. N.p., 2020. Web. 26 Aug. 2021. Benjamin Plackett is a freelance writer in London.

When scientists, public-health bodies and governments around the world warn that antimicrobial resistance is the next great health crisis, they have good reason. Since the 1960s, bacteria and other microorganisms have become increasingly resistant to antimicrobial drugs, leading to more and more people dying. Drug-resistant diseases kill around 700,000 people each year, but a United Nations interagency group on antimicrobial resistance estimates that this could swell to 10 million a year by 2050 if no action is taken. This is more than the number of people who currently die from cancer worldwide every year. Despite the clear need for more antimicrobial agents, such drugs have not been forthcoming. Fewer new antibiotics are reaching the market; the last entirely original class of antibiotic was discovered in the late 1980s. One reason is that discovering and bringing antibiotics to market is often not profitable for pharmaceutical companies. A 2017 estimate puts the cost of developing an antibiotic at around US$1.5 billion[1](https://www.nature.com/articles/d41586-020-02884-3#ref-CR1). Meanwhile, industry analysts estimate that the average revenue generated from an antibiotic’s sale is roughly $46 million per year. “That’s tiny and nowhere near the amount needed to justify the investment,” says Kasim Kutay, chief executive of Novo Holdings, an investment firm in Hellerup, Denmark, focused on the life sciences. As a result, many large pharmaceutical firms have dropped out of the market in favour of pursuing profitable lines of drug development, such as cancer treatments (see ‘Low approval ratings’). In their place, smaller companies and funding bodies are striving to fill the gap. But fixing the economics of drug development might take a radical approach. Deaths caused by infectious diseases have fallen by 70% since antibiotics were introduced on a large scale in the 1940s, according to the UK biomedical funding charity Wellcome. This could be in jeopardy unless the economics of the market can be re-imagined. A 2017 review found that in one strain of bacteria, the prevalence of resistance to levofloxacin, an antibiotic used to treat a wide variety of infections, grew from roughly 2% before 2000 to 27% between 2011 and 2015 in the Asia Pacific region[2](https://www.nature.com/articles/d41586-020-02884-3#ref-CR2). “The problem is terrible and not too far away,” warns Asad Khan, a microbiologist at the Aligarh Muslim University in Aligarh, northern India. “I think many governments and funding bodies haven’t yet understood the scale of what we’re facing.” Many economists have also been slow to act. One review found that only 55 of more than 1 million peer-reviewed economics articles in the EconLit database were related to antimicrobial resistance[3](https://www.nature.com/articles/d41586-020-02884-3#ref-CR3). Papers on climate change, by comparison, totalled around 16,000. Yet economics has a significant role in the lack of antibiotics coming to market. Any type of pharmaceutical development is an expensive process, but for antibiotics it is especially hard. One issue is that the cost–benefit ratio — how much profit will result from an investment — is much less favourable than for other drugs. “Profit is basically volume multiplied by price,” says Richard Smith, a health economist at the University of Exeter, UK. For antibiotics, neither element is high enough to offset the cost of development. Prices are low because in many countries government agencies have a role in assessing the price, not the manufacturer alone. In the United Kingdom, for instance, the National Institute for Health and Care Excellence (NICE) assesses the clinical strength and cost-effectiveness of new medicines. “The point of NICE is to try and keep drug prices low,” says Smith. Other countries have a similar set-up. For a new drug to be included in the Australian government’s Pharmaceutical Benefits Scheme, which subsidizes the cost of medication, it has to be approved by a committee of health professionals and economists, who evaluate whether the drug offers value for money. Canada also regulates the price of patented medicines to keep prices low. At the same time, physicians avoid prescribing new antibiotics to help delay the development of bacterial resistance. This means that governments and health agencies are even less likely to accept a premium for new antibiotics, says Smith. “Antibiotics used to be profitable back in the 1960s when you didn’t have to consider resistance as an issue,” he says. Typically, a drug is granted a 5–10 year exclusivity period, during which the manufacturer is shielded from competition from any generic versions that might be developed. But even this isn’t enough to recoup the vast development costs. Once the exclusivity period expires, other drug makers can enter the market — and, without the need to account for large research expenditures, they can drop the price. According to a policy review[4](https://www.nature.com/articles/d41586-020-02884-3#ref-CR4) by the UK Office of Health Economics, the relatively short treatment cycle for a course of antibiotics reduces the volume that can be sold. Antibiotics are typically prescribed for a couple of weeks, whereas therapies for chronic diseases are taken for months or even years. In a 2003 study, researchers found that an injectable antibiotic is roughly three times less profitable than are drugs used for the treatment of cancer[5](https://www.nature.com/articles/d41586-020-02884-3#ref-CR5). Drugs for musculoskeletal conditions, meanwhile, are around 11 times more lucrative.

#### Increase use of generics leads to increase resistance of microbes

Eban 19 [Katherine Eban, an investigative journalist and the author of the New York Times bestseller Bottle of Lies: The Inside Story of the Generic Drug Boom, May 17 2019, “How Some Generic Drugs Could Do More Harm Than Good,” Time Magazine, <https://time.com/5590602/generic-drugs-quality-risk/> ]

For the 16 years that Dr. Brian Westerberg, a Canadian surgeon, worked volunteer missions at the Mulago National Referral Hospital in Kampala, Uganda, scarcity was the norm. The patients usually exceeded the 1,500 allotted beds. Running water was once cut off when the debt-ridden hospital was unable to pay its bills. On some of his early trips, Westerberg even brought over drugs from Canada in order to treat patients. But as low-cost generics made in India and China became widely available through Uganda’s government and international aid agencies in the early 2000s, it seemed at first like the supply issue had been solved. Then on February 7, 2013, Westerberg examined a feverish 13-year-old boy who had fluid oozing from an ear infection. He suspected bacterial meningitis, though he couldn’t confirm his diagnosis because the CT scanner had broken down. The boy was given intravenous ceftriaxone, a broad-spectrum antibiotic that Westerberg believed would cure him. But after four days of treatment, the ear had only gotten worse. As Westerberg prepared to operate, the boy had a seizure. With the CT scanner working again, Westerberg ordered an urgent scan, which revealed small abscesses in the boy’s skull, likely caused by the infection. When a hospital neurosurgeon looked at the images and confidently declared that surgery was unnecessary and the swelling and abscesses would abate with effective antibiotic treatment, Westerberg was confused. They had already treated the boy with intravenous ceftriaxone, which hadn’t worked. His confusion deepened when his colleague suggested that they switch the boy to a more expensive version of the drug. Why swap one ceftriaxone for another? Most people assume that a drug is a drug — that Lipitor, for example, or a generic version, is the same anywhere in the world, so long as it’s made by a reputable drug company that has been inspected and approved by regulators. That, at least, is the logic that has driven the global generic-drug revolution: that drug companies in countries like India and China can make low-cost, high-quality drugs for markets around the world. These companies have been hailed as public-health heroes and global equalizers, by making the same cures available to the wealthy and impoverished. PAID PARTNER CONTENT 6 Prepaid Funeral Plan Myths: Learn More BY DIGNITY MEMORIAL But many of the generic drug companies that Americans and Africans alike depend on, which I spent a decade investigating, hold a dark secret: they routinely adjust their manufacturing standards depending on the country buying their drugs, a practice that could endanger not just those who take the lower-quality medicine but the population at large. These companies send their highest-quality drugs to markets with the most vigilant regulators, such as the U.S. and the European Union. They send their worst drugs — made with lower-quality ingredients and less scrupulous testing — to countries with the weakest review. The U.S. drug supply is not immune to quality crises — over the last ten months, dozens of versions of the generic blood pressure drugs valsartan, losartan and irbesartan have been subject to sweeping recalls. The active ingredients in some, manufactured in China, contained a probable carcinogen once used in the production of liquid rocket fuel. But the patients who suffer most are those in so-called “R.O.W. markets” — the generic-drug industry’s shorthand for “Rest of World.” In swaths of Africa, Southeast Asia and other areas with developing markets, some generic drug companies have made a cold calculation: they can sell their cheapest drugs where they will be least likely to get caught. In Africa, for instance, pharmaceuticals used to come from more developed countries, through donations and small purchases. So when Indian drug reps offering cheap generics started arriving, the initial feeling was positive. But Africa soon became an avenue “to send anything at all,” said Kwabena Ofori-Kwakye, associate professor in the pharmaceutics department at the Kwame Nkrumah University of Science and Technology in Kumasi, Ghana. The poor quality has affected every type of medication, and the adverse impact on health has been “astronomical,” he told me. Multiple doctors I spoke to throughout the continent said they have adjusted their medical treatment in response, sometimes tripling recommended doses to produce a therapeutic effect. Dr. Gordon Donnir, former head of the psychiatry department at the Komfo Anokye teaching hospital in Kumasi, treats middle-class Ghanaians in his private practice and says that almost all the drugs his patients take are substandard, leading him to increase his patients’ doses significantly. While his European colleagues typically prescribe 2.5 milligrams of haloperidol (a generic form of Haldol) several times a day to treat psychosis, he’ll prescribe 10 milligrams, also several times a day, because he knows the 2.5 milligrams “won’t do anything.” Donnir once gave ten times the typical dose of generic Diazepam, an anti-anxiety drug, to a 15-year-old boy, an amount that should have knocked him out. The patient was “still smiling,” Donnir said. Many hospitals also keep a stash of what they call “fancy” drugs — either brand-name drugs or higher-quality generics — to treat patients who should have recovered after a round of treatment but didn’t. Confronted with the ailing boy at the Mulago hospital, Westerberg’s colleagues swapped in the more expensive version of ceftriaxone and added more drugs to the treatment plan. But it was too late. In the second week of his treatment, the boy was declared brain dead. Westerberg’s Ugandan colleagues were not surprised. Their patients frequently died when treated with drugs that should have saved them. And there were not enough “fancy” drugs to go around, making every day an exercise in pharmaceutical triage. It was also hard to keep track of which generics were safe and which were not to be trusted, said one doctor in Western Uganda: “It’s anesthesia today, ceftriaxone tomorrow, amoxicillin the next day.” Westerberg, shaken by his newfound knowledge, flew back to Canada and teamed up with a Canadian respiratory therapist, Jason Nickerson, who’d had similar experiences with bad medicine in Ghana. They decided to test the chemical properties of the generic ceftriaxone that had been implicated in the Ugandan boy’s death. Another of Westerberg’s colleagues brought him a vial from the Mulago hospital pharmacy. The drug had been made by a manufacturer in northern China, which also exported to the U.S. and other developed markets. But when they tested the ceftriaxone at Nickerson’s lab, it contained less than half the active drug ingredient stated on the label. At such low concentration, the drug was basically useless, Nickerson said. He and Westerberg published a case report in the CDC’s Morbidity and Mortality Weekly Report. Although they couldn’t say with certainty that the boy had died due to substandard ceftriaxone, their report offered compelling evidence that he had. Some companies claim that, while their drugs are all high-quality, there may be some variance in how they are produced because regulations differ from market to market. But Patrick H. Lukulay, former vice president of global health impact programs for USP (formerly U.S. Pharmacopeia), one of the world’s top pharmaceutical standard-setting organizations, calls that argument “totally garbage.” For any given drug, he says, “There’s only one standard, and that standard was set by the originator,” meaning the brand-name company that developed the product. It’s not just those in developing markets who should be alarmed. Often, substandard drugs do not contain enough active ingredient to effectively cure sick patients. But they do contain enough to kill off the weakest microbes while leaving the strongest intact. These surviving microbes go on to reproduce, creating a new generation of pathogens capable of resisting even fully potent, properly made medicine. In 2011, during an outbreak of drug-resistant malaria on the Thailand-Cambodia border, USP’s chief of party in Indonesia Christopher Raymond strongly suspected substandard drugs as a culprit. Treating patients with drugs that contain a little bit of active ingredient, as he put it, is like “putting out fire with gasoline.” USP is so concerned about this issue that in 2017 it launched a center called the Quality Institute, which funds research into the link between drug quality and resistance. In late 2018, Boston University biomedical engineering professor Muhammad Zaman studied a commonly used antibiotic called rifampicin that, if not manufactured properly, yields a chemical substance called rifampicin quinone when it degrades. When Zaman subjected bacteria to this substance, it developed mutations that helped it resist rifampicin and other similar drugs. Zaman concluded from his work that substandard drugs are an “independent pillar” in the global menace of drug resistance. The low cost of generic drugs makes them essential to global public health. But if those bargain drugs are of low quality, they do more harm than good. For years, politicians, regulators and aid workers have focused on ensuring access to these drugs. Going forward, they must place equal value on quality, through an exacting program of unannounced inspections, routine testing of drugs already on the market and strict legal enforcement against companies manufacturing subpar medicine. One model is the airline industry, which through international laws and treaties, has established clear global standards for aviation safety. Without something similar for safe and effective drugs, the twin forces of subpar medicine and growing drug resistance will be so destructive that developed countries won’t be able to ignore them. As Elizabeth Pisani, an epidemiologist who has studied drug quality in Indonesia, put it, “The fact is, pathogens know no borders.”An increase in poverty increases likelihood of civil war, terrorism, and instability that destabilizes on a global scale

#### AMR increases poverty substantially in developing countries

Dadgostar 19 Dadgostar, Porooshat. “Antimicrobial Resistance: Implications and Costs.” Infection and drug resistance vol. 12 3903-3910. 20 Dec. 2019, doi:10.2147/IDR.S234610 Porooshat Dadgostar is a Ph.D. student in Health Services Research and Policy at University of Rochester

The literature review findings indicate that the cost of AMR across the globe is extremely high and different in each country.[66](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0066),[72](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0072) The CDC estimated that the cost of antimicrobial resistance is $55 billion every year in the United States, $20 billion for health care and about $35 billion for loss of productivity.[3](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0003),[8](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0008) Recent research by the World Bank indicates that antimicrobial resistance would elevate the rate of poverty and impact low-income countries compared to the rest of the world.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Studies show that annual global GDP could decrease by approximately 1% and there would be a 5–7% loss in developing countries by 2050.[71](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0071),[72](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0072) This percentage ultimately translates into $100-210 trillion.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028),[66](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0066) Multidrug- resistant TB alone could cost the world $16.7 trillion by 2050.[73](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0073),[74](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0074) Furthermore, due to AMR, the gap between the developing countries and the developed countries will become more pronounced; as a result, inequity will substantially increase.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Most of the people who are pushed into extreme poverty as a result of AMR will be specifically from low-income countries.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) This highlights the fact that the underprivileged population of the world will eventually be affected the most because these countries are more contingent on labor income which will be reduced if there is a high prevalence of infectious diseases.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) In addition to the direct impact on GDP, antimicrobial resistance has a major influence on labor through the loss of productivity caused by sickness and premature death.[68](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0068) Deaths because of antimicrobial resistance decrease the workforce, which in turn negatively impacts the size of the population as well as the quality of the country’s human capital.[68](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0068),[75](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0075) Taylor et al have created a theoretical model in order to estimate the economic impacts of AMR on the labor force in the future. In their work, they have compared a baseline (absence of AMR) with the current trend in AMR as well as worse alternatives that might happen if appropriate measures are not taken. According to their results, if there is no change in the current pattern of AMR, in ten years, the world working-age population will decrease by two years. This change will be more pronounced in Eurasia compared to the rest of the world.[75](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0075) In addition, in terms of annual GDP loss, if there is no change in the trends of AMR, the world will lose about $28 billion in ten years. According to this model, with a $20 billion loss in GDP, the European Union and The Organization for Economic Co-operation and Development (OECD) countries stand to lose more than the rest of the world.[75](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0075) The global trade will also be heavily affected by antimicrobial resistance if the continuous trends in AMR still persist.[32](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0032) The World Bank report demonstrates that global exports might decrease significantly by 2050 due to the effects of antimicrobial resistance on labor-intensive sectors.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Thus, it can be concluded that the undesirable outcomes of AMR on the global economy are projected to be even more severe than the global financial recession due to its long-term impacts on the economy.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Impacts of AMR on livestock output will also be significant.[30](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0030) Just like humans, the effect of AMR on animals will be due to mortality and morbidity. The increase in resistance to antimicrobials will make treatments on animals ineffective and cause the infections to become more severe.[26](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0026) Ultimately, this will lead to decreased production and trade of livestock, resulting in elevated prices of protein due to the decrease in protein sources such as milk, egg, and meat.[26](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0026),[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Shortage of protein will be a major concern, considering that the demand for animal proteins is on the rise worldwide.[36](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0036) According to the World Bank, AMR will have drastic impacts on livestock production in low-middle income countries.[32](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0032) Estimates have indicated that if the persistent trends in AMR do not slow down, there will be an 11% loss in livestock production by 2050.[28](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0028) Such a substantial loss in animal production will lead to a decline in income generation which will exacerbate the economic situation.[26](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6929930/#CIT0026)

AMR

#### Increase in poverty threatens global stability – terrorism, civil war, and disease

Patrick 09 Patrick, Stewart. Too Poor For Peace? Global Poverty, Conflict, And Security In The 21St Century Reviewed By Stewart Patrick. 2009. Web. 28 Aug. 2021 tewart Patrick is a senior fellow and director of the Program on International Institutions and Global Governance at the Council on Foreign Relations (CFR). Prior to joining CFR, he directed the Center for Global Development’s project on Weak States and U.S. National Security. His most recent book is The Best Laid Plans: The Origins of American Multilateralism and the Dawn of the Cold War (Rowman & Littlefield, 2008).

Five years ago, the World Bank published Breaking the Conflict Trap, a groundbreaking book identifying intrastate war as a critical barrier to poverty eradication in a large cohort of developing countries (Collier et al., 2003). Too Poor for Peace? Global Poverty, Conflict, and Security in the 21st Century picks up where Paul Collier and his colleagues left off, this time focusing on the impact of poverty on violent conflict. The book’s broad thesis is that alleviating poverty in the 21st century is not only a moral but also a security imperative. “Extreme poverty literally kills,” write editors Lael Brainard and Derek Chollet (p. 3). This claim is true both directly—through hunger, malnutrition, and disease—and indirectly, by leaving poor countries vulnerable to domestic upheaval and war and by generating transnational threats that endanger regional and international security. At the same time, the poverty-insecurity nexus constitutes a “tangled web,” with overlapping threads of intervening variables and strands of reverse causality. Poverty and violence reinforce one another, but their specific relationship is mediated by context-specific drivers ranging from resource scarcity to weak institutions to malignant political leadership to demographic trends. Like spiders’ webs, each country is unique; there is no single route to prosperity (or penury), no single pathway to peace (or war). Drawn from an August 2006 conference sponsored by the Aspen Institute, “The Tangled Web: The Poverty-Insecurity Nexus,” this slim volume is divided into two parts.The first chapters usefully distill recent findings (including some published elsewhere by the same authors) on specific links between poverty and conflict. The later chapters review, more unevenly, the practical dilemmas confronting external actors seeking to engage poor, conflict-prone states. Throughout, the authors use refreshingly clear, jargon-free prose aimed at an educated policy audience. Among the most interesting—if controversial—chapters is Susan Rice’s examination of the negative implications of developing-country poverty for global (as opposed to human) security. (Full disclosure: Rice and I are frequent collaborators.) She makes an impassioned case that poverty breeds insecurity by undermining the capacity of states to deliver four sets of critical goods: basic physical security, legitimate governance, economic growth, and social welfare. Beyond bringing misery to their inhabitants, such poverty-induced capacity gaps produce negative “spillovers” for regional and global security, in the form of cross-border terrorism, crime, disease, and environmental degradation. She contends that in an age of global threats—from terrorists in Mali to Ebola in the Democratic Republic of the Congo—the United States cannot afford to be indifferent to poverty that weakens state capacity. Rice’s chapter raises as many questions as it answers. The world is full of weak states, of course, and not all generate negative spillovers, much less those of the same type or magnitude, which suggests that intervening mechanisms and situational variables are involved. Are states that suffer from particular types of weakness more susceptible to particular types of threats? And does a state’s vulnerability depend on whether its weak performance is a function of the political will of its governing regime, a low level of state capacity, or some combination of the two? Rice is more persuasive in showing the linkage between weak states and transnational spillovers than in demonstrating how poverty is linked to state weakness. Although she qualifies her argument by noting that “though poverty underlies state weakness” the latter is “also a consequence of other capacity deficits,” her use of the bloodless term “capacity” gives too short shrift to the role of human agency (and particularly the role of corrupt, misgoverning elites) in generating poor state performance (p. 34). The role of intervening variables is front and center in Colin Kahl’s chapter addressing the links between demography, environment, and civil strife in the developing world, based on his similarly titled book (Kahl, 2006). In recent years, the environmental security literature has been dominated by two diametrically opposed perspectives. The “neo-Malthusian” view attributes civil strife to deprivation brought about by population growth, environmental degradation, and natural resource scarcity. The alternative “resource abundance” thesis contends that an embarrassment of resource riches fuels violence, whether by creating a tempting “honey pot” for factions to fight over or by subsidizing institutional pathologies (the wellknown “resource curse”). Kahl considers this dichotomy a false one, noting that scarcity and abundance can occur simultaneously at different levels of analysis. For instance, abundance in one resource can create scarcity in another; different sorts of resources present different risks for developing countries; and the pathologies of scarcity and abundance can occur and interact with one another in the same country over time. Kahl’s distinctive contribution is to recognize that resource “scarcity” is not only a natural but also a social phenomenon, reflecting political and economic competition, and that the relationship between demographic and environmental pressures and conflict is mediated by (among other factors) the strength of the state, the nature and quality of its governing institutions, and the identity, solidarity, and power of societal groups. According to Berkeley economist Edward Miguel, “the poverty-violence link is arguably the most robust finding in the growing research literature investigating the causes of civil wars” (p. 51). But is poverty breeding violence, or vice versa? To answer this question, Miguel and two colleagues employ an intriguing natural experiment: They analyze the impact of drought—a purely exogenous economic shock that increases poverty—on state propensity for conflict in Africa. Their findings are startling: “The size of the estimated impact of lagged economic growth on conflict is huge,” Miguel writes, with a one percent decline in GDP “increasing the likelihood of civil conflict by more than two percentage points” (pp. 54-56). In contrast, they find little correlation between violent conflict and variables like political repression, democratic freedom, ethnic fragmentation, colonial history, or population density. In sum, “economic factors trump all others in causing African civil conflicts” (p. 55). Miguel suggests that this robust finding has clear policy implications: Very little foreign aid, he observes, addresses the immediate triggers of civil conflict. Donors could change this by directing a significant proportion of external assistance toward helping countries cope with the sharp income fluctuations created by exogenous shocks, such as poor weather or collapsing commodity prices. By extending such insurance, the international community could help remove support for rebel movements. The past decade and a half has seen a surge in policy attention to the possible security implications of demographic change—some of it thoughtful (e.g., Cincotta et al., 2003; Urdal & Brunborg, 2005), some of it sensationalized (e.g., Kaplan, 1994). Henrik Urdal’s chapter provides a judicious assessment of the potential risks and rewards of “youth bulges” in developing countries. He finds a robust correlation between a country’s youth cohort and its propensity for low-intensity conflict. “For each percentage point increase of youth in the adult population,” he writes, “the risk of conflict increases by more than four percent” (p. 96). And yet large youth cohorts have the potential to be a blessing rather than a curse, particularly if they precede significantly smaller cohorts. As fertility rates continue to decline (sometimes dramatically) in the coming years, much of the developing world stands to gain a “demographic dividend,” in the form of increased economic growth and lower vulnerability to violence. The second portion of the book is devoted to several policy challenges confronting external actors in violence-prone poor countries. These chapters address working with youth in war-torn countries (Marc Somers); bolstering responsible political leadership where corruption is the norm (Robert Rotberg); operating as private actors in insecure environments (Jane Nelson); and promoting democracy as well as security and basic needs (Jennifer Windsor). Somers observes that young people—and particularly young males—are typically demonized as a national liability, rather than as a potential asset in building a more peaceful future. Ironically, he notes, “it often seems that nations do not know what to do with their own young people while armed groups keep discovering new ways to make use of them” (p. 102). Somers calls for carefully targeted programs that harness the energy and vision of youth and provide young men, in particular, with the opportunity to gain both employment and dignity. Rotberg looks at the other end of the status hierarchy, highlighting the critical role of leadership in overcoming poverty in Africa. Throwing a bucket of cold water on those who still attribute poverty in developing countries primarily to a lack of foreign aid, he argues that the divergent trajectories of African countries can be explained overwhelmingly by their quality of governance, and specifically the personal leadership qualities of heads of state or government. He pointedly juxtaposes the authoritarian Robert Mugabe, the former independence hero who has managed to drive once-prosperous Zimbabwe into the ground, with visionary leaders like South Africa’s Nelson Mandela, Botswana’s Festus Mogae, and Senegal’s Abdolaye Wade. Rotberg documents a rising demand for good governance in Africa, but what of the supply? Here the answers are less clear. Rotberg claims that sub-Saharan Africa appears to lack “a practical ethic of public service,” but he offers few ideas on how outside actors might work with internal reformers to help instill such an ethos. The book’s one shortcoming might be the modesty of its aims and claims. The editors could have been bolder in seeking to break new conceptual ground, to offer more definitive conclusions on the basis of current research, and to address the policy implications of the book’s overall findings. Like many conference volumes, it lacks an overarching theoretical framework or conceptual model to lend coherence to its disparate chapters and to explain how the various drivers and intervening variables can and do fit together.Theintroduction, for instance, includes no trend lines or maps of current levels of poverty or conflict, leaving the reader to wonder if the situation is as dire as described—and which states, precisely, areentwined in the “nexus.” And although the editors review some prominent debates, they generally abstain from evaluating purported causal linkages or proposing steps to cut them. The absence of a conclusion reinforces the depressing sense that the filaments of “the tangled web” will remain tightly knotted.

## Developing Countries CP

#### CP: Developed countries ought to establish through the UN a centralized system to donate money for the improvement of healthcare infrastructure in developing countries.

#### Focusing on IP distracts from the real barriers: lack of infrastructure and resources to distribute medicine

Mercurio 07 Bryan Mercurio, Resolving the Public Health Crisis in the Developing World: Problems and Barriers of Access to Essential Medicines, 5 Nw. J. Int'l Hum. Rts. 1 (2007). <http://scholarlycommons.law.northwestern.edu/njihr/vol5/iss1/> Bryan Mercurio is a Law Professor at The Chinese University of Hong Kong.

Even under the best circumstances, merely alleviating the public health crisis in many parts of the developing world to a noticeable degree will be difficult to achieve. The situation requires international cooperation on a massive scale to not only ensure that the developing world has access to essential medicines but to also create incentives to stimulate (or directly fund) research and development into new medicines and vaccines to treat the diseases primarily affecting the developing world. ¶23 It is unfortunate that several high profile NGOs have concentrated their effort in blaming the pharmaceutical industry and the patent regime for worsening the crises.70 While these groups have spent significant monetary resources and intellectual effort directing much of the debate over the access to essential medicines in the developing world on the issue of patent protection of pharmaceuticals to the actions of the pharmaceutical industry and the patent regime, the constant accusations and resulting publicity have not helped the situation and, to the contrary, have been highly divisive, arguably lengthening the time between the Doha Ministerial and the implementation of the Implementation Agreement and obscuring longstanding impediments to improving the lives and health of millions. In order to control the problem and even hope to alleviate suffering, all interested parties must realize that patent protection is only one of many factors that play a role in the health of the developing world and other critical factors, such as poor living conditions, the lack of medical facilities and proper infrastructure, malnutrition, and the lack of means for distributing and administrating medicine, must be addressed in order to alleviate the public health crises. 71 ¶24 Somewhere in the past decade, important facts such as the appallingly low levels of medical infrastructure in developing nations, inadequate levels of foreign assistance and seeming lack of political will in some developing countries to alleviate the suffering were marginalized as the debate focused on TRIPS.72 Thus, even though infrastructure, aid from developed countries and political will in developing countries is not even remotely adequate to ease the worsening health situation in the developing world, the international debate diverted key monetary resources, intellectual efforts and negotiating capacity on a secondary issue. One noted expert concludes: “AIDS activists have done a huge disservice to the problem of providing relief to people in the developing world by directing a disproportionate focus on the patent issue.” 73 ¶25 Crises such as HIV/AIDS, tuberculosis and others gripping much of the developing world are a very real and escalating problem in many developing nations. But the fact is that if patent regulation did not exist, much of the developing world would still lack access to essential medicines. Importantly, 95% of the pharmaceutical products on the WHO Essential Drug List (such as medicines to treat AIDS, tuberculosis and malaria) are off-patent and, due to flexibilities contained in TRIPS and extended by Paragraph 7 of the Declaration and waivers granted in 2002 by the Council for TRIPS, the grace period for LDCs delaying implementation of Sections 5 (patents) and 7 (confidential information) in relation to pharmaceutical products and the marketing rights thereof have been extended until 2016; meaning LDCs do not currently have to provide patent protection for pharmaceuticals. 74 ¶26 To illustrate, as of 2003, of the fifteen antiretroviral (ARV) drugs used for treating AIDS, patent coverage is below 20%, with 172 patents out of the 759 that could theoretically apply.75 Moreover, of the 52 African nations, only South Africa has patent protection for more than half of its AIDS drugs, with 15 patents out of a possible 16. Importantly, 25% of the countries provide no patents and the rest have an average of 4 patented drugs, with no patents on more than a dozen different triple-therapy cocktails used to combat HIV/AIDS.76 Thus, while the majority of African countries do not patent most ARV drugs used to treat AIDS and the majority of countries of sub-Saharan Africa do not have any patent protection for any of the drugs, the AIDS epidemic continues to infect and kill millions of people per year on the continent. ¶27 Interestingly, several members of the medical community also contest the view that patent protection has exacerbated the HIV/AIDS crisis or significantly impeded access to essential medicines. For instance, a widely cited study conducted in 2001 by Amir Attaran and Lee Gillespie-White and published in the Journal of the American Medical Association states: [It appears that] patents and patent law are not a major barrier to treatment access in and of themselves.77 ¶28 Yet the developing world continues to suffer without adequate supply of the needed medicines, begging the question what are the primary causes of, or more appropriately, what are the barriers to resolving, the continuing crises and lack of access to life-saving medicines in the developing world. This article suggests that there are two main solutions for the ongoing public health crises in the developing world: (1) access to existing medicines must increase; and (2) incentives to promote the development of new medicines and vaccines must increase. ¶29 Part IV elaborates upon these two issues by addressing several barriers currently present and offering indicatives and suggestions in an attempt to alleviate the suffering and resolve the public health crises. IV. POLICY BASED SOLUTIONS/INITIATIVES AND THEIR VIABILITY ¶30 The public health crisis in the developing world is a global problem and any potential solution cannot be borne by one entity. Instead, the problem requires a commitment from all members of the international community to provide funding and strategic planning to improve the currently insufficient medical infrastructure of many developing world countries. The burden cannot be placed solely on governments of developing or developed countries, on pharmaceutical companies or on international organisations, such as the WHO. Rather, those entities as well as research groups, the media and even the citizenry of developed nations all must participate as vital actors. This section examines how these entities can all play a pivotal role in easing the suffering in the developing world. At the outset, it must be noted that as situations differ for every region and for every disease it is not possible to design one encompassing solution to the problem. Therefore, the following merely offers general indicatives and suggestions which should be further studied and employed as the situation dictates. A. Global commitment from developed countries The suffering in the developing world will not be alleviated without a global commitment to finance health improvements. As developing countries historically do not have the necessary resources and/or will to finance such an initiative, advanced industrialized countries must take on more responsibility and lead the way in funding the restructuring of the current inadequate medical infrastructure that exists in so many developing countries. One funding initiative governments could take is to raise general revenues through the wide range of available tax instruments or shift financing from other domestic areas to fund this global initiative.78 Practically speaking, however, neither option is particularly appealing as governments are hesitant to raise taxes or shift funds from certain domestic areas to any international effort due to potential opposition by their citizens or embarrassment by opposing political parties. ¶32 In this regard, the media and international organisations – such as the WHO – may be able to play a significant role in raising awareness of the extent to which widespread epidemics ravage much of the developing world. Unfortunately, for many in the developed world, epidemics such as malaria and tuberculosis seem so far removed from their highly industrialized societies, where such diseases do not exist or are controlled to acceptable levels, that often the awareness generated does not arouse sufficient empathy to the cause. This apathy, and corresponding shortage of international funding, is a major contributing factor to the ongoing public health crises in the developing world. This fact led Attaran and Gillespie-White to conclude that “the extreme dearth of international aid finance, rather than patents, is most to blame for the lack of antiretroviral treatment in Africa.” 79 ¶33 On the other hand, there is clear evidence that both governments and citizens of the industrialized world can be generously responsive to public health crises. For instance, one need only look back at the international response to the 2004 Boxing Day Tsunami disaster, where worldwide broadcasting of the sudden devastation resulted in billions of dollars of aid donations within a matter of weeks to fund the provision of necessary medicines, food, clean water and other relief efforts.80 The large-scale international outpouring of aid was no doubt largely a result of people visualising the suffering of millions of displaced people and the death of hundreds of thousands of people in the days following the disaster.81 Perhaps if there was extensive coverage of public health issues in the media informing of the urgency to control widespread epidemics such as HIV/AIDS and malaria, a similar outpouring of aid relief may be possible. At the very least, the campaign may lead to a positive and willing response by citizens of developed countries to support government actions to raise taxes or redistribute domestic funding for this international initiative. 82 ¶34 Developed countries do currently contribute to the fight against diseases in a number of ways, including partially financing medical programmes such as the Global Fund to fight AIDS, Tuberculosis and Malaria83 While such initiatives are certainly a step in the right direction, developed countries have been criticized for their lack of commitment to the effort.84 In this regard, not only must the international community commit to increased financing and aid efforts, but perhaps more importantly, it needs to actually execute and fulfill its existing aid promises and commitments. Increased levels of properly targeted, long-term aid would go a long way towards alleviating the public health crises while at the same time assisting countries in working to end economic dependency. 85 In fact, the situation would improve if countries merely fulfill their commitment to providing an amount equal to 0.7% of gross national income (GNI) on official development assistance (ODA).86 Increased aid, however, will not materialize without effective monitoring coupled with the minimisation of waste and a reduction in corruption; in other words, the international community will only increase their financial obligations and commitment to the developing world when they are confident the aid will be effective.87 ¶35 Closely tied to the above is the fact that a lack of coordination of international aid currently impedes the efficient and effective use of aid.88 The need for large-scale, long term assistance and aid is well known and understood, but the present system of distributing aid and assistance is disparate, wasteful and lacking transparency. 89 The current system sees groups and organisations competing with each other and duplicating technical, research and on the ground efforts.90 In short, useful information and analysis is not well known or published and experiences within organisations, nations or regions are not transferred to others. Not only does this damage and marginalize aid efforts, but it also makes it hard to get adequate levels of assistance and even maintain sufficient quality of drugs. 91 A properly administered system which increases coordination and transparency of activities would improve the situation by combining resources and efforts to maximize efficiency and targeted assistance. While financing is certainly imperative to controlling the pubic health crisis in the developing world, it is not the only global initiative in which nations must engage. Other positive actions that developed countries and international bodies such as the WHO and UN could take to control the crises in the developing world include negotiations and planning efforts with the heads of the affected developing nations to devise strategic plans to distribute funds efficiently and effectively in those affected countries.92

# Case

#### Turn – Reducing IP protections allows for lower quality drugs driving malaria

Lybecker 16 Lybecker, Kristina. "Counterfeit Medicines And The Role Of IP In Patient Safety - Ipwatchdog.Com | Patents & Patent Law." IPWatchdog.com | Patents & Patent Law. N.p., 2016. Web. 24 Aug. 2021. [Kristina M. L. Acri née Lybecker](https://www.ipwatchdog.com/author/kristina-lybecker/) is an Associate Professor of Economics at Colorado College in Colorado Springs, and Chair of the Department of Economics and Business.

The threat of counterfeit goods took center stage on June 15th in a hearing convened by Senate Finance Committee Chairman Orrin Hatch (R-Utah). Focusing on trade opportunities and challenges for American businesses in the digital age, Senator Hatch stated: “The Organization for Economic Co-Operation and Development (OECD) recently released a study that shows that counterfeit products accounted for up to 2.5 percent of world trade, or $461 billion, in 2013. This is a dramatic increase from a 2008 estimate that showed that fake products accounted for less than half that amount. Counterfeits are a worldwide problem, but the OECD estimates that the United States is the hardest hit, followed by Italy and France. Of the estimated $461 billion in counterfeit trade in 2013, goods with registered intellectual property rights in the U.S. represented 20 percent, or $92 billion, of the OECD estimate.”[1] As the author of the chapter on illicit trade in counterfeit medicines within the OECD report, I worry that global policymakers may be working against each other when it comes to battling counterfeit drugs, especially in the context of intellectual property rights. While the Senate Hearing and the OECD report highlight the importance of strong IP protection in combating the growing threat of counterfeit goods, their efforts coincide with an initiative by the UN Secretary-General that has the potential to greatly worsen the problems of counterfeit pharmaceuticals. UN Secretary General Ban Ki Moon’s High Level Panel on Access to Medicines proposes “to review and assess proposals and recommend solutions for remedying the policy incoherence between the justifiable rights of inventors, international human rights law, trade rules and public health in the context of health technologies.”[2] The High Level Panel is a thinly veiled attempt to undermine the intellectual property rights architecture that incentivizes pharmaceutical innovation and protects patients from counterfeit medicines. While patents and other forms of intellectual property rights are widely recognized as fostering pharmaceutical innovation, they also serve to inhibit counterfeiting. The World Health Organization has determined that counterfeiting is facilitated where “there is weak drug regulatory control and enforcement; there is a scarcity and/or erratic supply of basic medicines; there are extended, relatively unregulated markets and distribution chains, both in developing and developed country systems; price differentials create an incentive for drug diversion within and between established channels; there is lack of effective intellectual property protection; due regard is not paid to quality assurance”.[3] [Kristina] According to INTERPOL estimates, approximately 30 percent of drugs sold worldwide are counterfeit.[4] However, as is the case with many other counterfeit trade statistics, the origins of this figure are somewhat uncertain, as is the methodology used to make the calculation. Perhaps the most widely-cited statistic originates from the World Health Organization, which estimates that 10 percent of the global market for pharmaceuticals is comprised of counterfeits and reports place the share in some developing countries as high as 50-70%.[5] While difficult to measure, estimates do exist on the extent of the market for counterfeit drugs and the harm done to human health. As noted in my chapter in the OECD report, “INTERPOL estimates that more than one million people die each year from counterfeit drugs.[6] While counterfeit drugs seem to primarily originate in Asia, Asian patients are also significantly victimized by the problem. A 2005 study published in PLoS Medicine estimate that 192,000 people are killed in China each year by counterfeit medicines.[7] According to work done by the International Policy Network, an estimated 700,000 deaths from malaria and tuberculosis are attributable to fake drugs. [8] The World Health Organization presents a much more modest number noting that malaria claims one million lives annually and as many as 200,000 may be attributed to counterfeit medicines which would be avoidable if the medicines available were effective, of good quality and used correctly.[9] Even this number is double that presented by academic researchers Amir Attaran and Roger Bate who claim that each year more than of 100,000 people around the world may die from substandard and counterfeit medications.[10]” [11] Given the devastating impact of counterfeit medicines on patients and the importance of intellectual property protection in combating pharmaceutical counterfeiting, it is troubling that the UN High Level Panel seems poised to prevent a series of recommendations that will undermine public health under the guise of enhancing access. Without the assurance of quality medicines, access is meaningless. Moreover, while falsely presenting intellectual property rights as the primary obstacle to global health care, the High Level Panel downplays a host of other factors that prevent developing country patients from getting the drugs they need: inadequate medical infrastructure, insufficient political will, a shortage of clinical trials in nations where neglected diseases are endemic, poverty, and insufficient market incentives. If the United Nations is serious about addressing the critical need for access to medicines, the Secretary General must come to terms with the reality surrounding the challenges of access to medicine. Although the international patent system may be in need of improvement, it is overly simplistic to blame drug patents, international trade agreements and the global pharmaceutical industry for the access problem. The problem is far more nuanced and complicated than portrayed by the High Level Panel. As the WHO, OECD and Senator Hatch recognize, intellectual property rights are part of the solution. To truly address the access problem, we must move beyond blaming IPRs and begin the difficult work of grappling with structural deficiencies and poverty.

### AT Developing Countries

#### Turn - IP protections from TRIPS lead to increased availability of live saving drugs in developing countries

Kyle and Quian 15 Kyle, Margaret, and Yi Qian. NBER, 2014. Web. 10 Aug. 2021. Margaret Kyle is a Professor of Economics at the Center for Industrial Economics (CERNA) and Yi Quian has a Ph.D. and M.A. in Economics from Harvard University.

Our results suggest several points about the relationship between IPRs and access. First, the existence of IPRs is neither necessary nor sufficient for the launch of pharmaceutical innovations at the country level. That is, the existence of patents on a molecule in a country does not always block generic imitation, nor does the lack of patents always deter an originator from making a product available. This suggests substantial heterogeneity in the value of IPRs, both across countries and across drugs. IPRs that are not enforced are worth very little. IPRs on molecules with very high imitation costs or low potential for profit in a country are also not particularly important. While patented products generally command higher prices, we find that the price premium for patent products is smaller following TRIPS compliance. This may reflect the greater use of pharmaceutical price controls, bargaining power of government purchasers or the threat of compulsory licensing in order to offset some of the market power granted by IPRs. Post-TRIPS patented drugs enjoy higher sales. Finally, IPRs have a very large bearing on product launch. Thus, while the potential for patents to limit access is often emphasized in policy discussions, it appears that IPRs – by creating increased incentives for marketing efforts by originators – may increase the availability of new treatments to populations in developing countries. The TRIPS Agreement, which generally strengthened and harmonized IPRs across countries, does appear to have changed market outcomes. On average, access to new pharmaceuticals has at least not decreased following TRIPS. Point estimates show an increase in the probability of new product launch and quantities sold, although differences are not always statistically significant. While patents are also associated with higher prices, there is some evidence that prices in poorer countries have fallen, though not to the level of off-patent products. However, the effect of IPRs may be confounded by other policy changes. It is certainly possible that in the absence of countervailing policies, stronger IPRs would have resulted in a larger increase in prices. It is also likely that IPRs have very different implications for countries with a large generic sector (e.g., India) than for most of the developing countries we examine. Nevertheless, we believe the results should be considered relatively good news about the relationship between IPRs and access to innovative medicines, although considerable work remains to improve the latter.

#### No Solvency - Reducing IP protections won’t solve – essential medicines not protected anymore and other problems drive up prices

Stevens 16 Stevens, Philip. "A Dose Of Reality On Drug Patents - Capx." CapX. N.p., 2016. Web. 12 Aug. 2021. Philip Stevens is director of Geneva Network, a research organization focusing on health, intellectual property and trade.

Debates on how to improve healthcare in developing countries often start from the same premise: patents can potentially raise drug prices, so they should be abolished for better public health. In the early 2000s this argument drove the campaign against patents on HIV drugs in South Africa. This month, it anchors new NGO campaigns against a proposed EU-India Free Trade Agreement and the Regional Comprehensive Economic Partnership in Asia – both of which may include heightened intellectual property provisions. NGO disquiet about drug patents has even led to the creation of a UN High Level panel on access to medicines, due to report its recommendations in New York next month. Such concerns may in fact be overblown. This is an implication of an interesting new study by researchers at the University of Ottawa and published in April by the World Intellectual Property Organization (WIPO) in Geneva. To better understand how patents impact access to medicines, the researchers counted how many of the World Health Organization’s (WHO) List of Essential Medicines are subject to patent protection in developing countries. This list contains 375 or so medicines considered most important by WHO experts. It’s a hugely influential list, and one based purely on the clinical usefulness of a medicine, not cost or patent status. Developing country governments and large international donors use it to guide which medicines they will procure. The researchers checked national patent registries in developing countries and double-checked with manufacturers. They found that patents for 95% medicines on the list had expired. Put simply, patents are not relevant to the Most of the remaining 5% of medicines – around 20 products – on the WHO list with patent protection are for HIV/AIDS. But patent owners either don’t register or enforce their patents in the poorest countries. For middle-income countries, manufacturers often enter into voluntary licensing deals with generic manufacturers to broaden access, meaning there are cheap generic copies on the international market. The one medicine with no generic equivalent is the cancer drug, bevacizumab (marketed as Avastin by Swiss patent-owner Roche). This modern so-called ‘biologic’ drug is used against many cancers, and works by starving tumours of their blood supply through blocking a key protein. Patented or not, these biologic drugs are difficult for generic competitors to copy cheaply. Unlike most drugs, which are chemically synthesised and made from just a few molecules, biologic drugs are manufactured in living systems such as plant or animal cells, and have complex molecular structures. Their manufacture demands significant investment and technical know-how, meaning such drugs will never be as cheap as, say, generic aspirin. One implication of the study is that if patents were abolished tomorrow it would make little difference to the cost or availability of most medicines used in developing countries. Even so, these medicines are frequently unavailable in public health systems. In 2014, researchers at the University of Utrecht in the Netherlands found that, on average, essential medicines are available in public sector facilities in developing countries only 40% of the time. While generic medicines are cheap to make with no royalties to pay, they are still too costly for most people in developing countries. One example from the WHO list is budesonide, commonly used by asthma sufferers. A single inhaler costs a staggering 50 days wages in Mozambique. In the US, one inhaler costs only $5 to $7 – around 30 minutes work on the median hourly wage. The reasons behind the expense and scarcity of essential medicines in developing countries are complex, but failures of governance loom large. Mark-ups along the distribution chain inflate the final price of medicines and include import tariffs, sales taxes, value-added taxes and retailers’ and wholesalers’ margins. In Kenya, mark-ups add 300% to the manufacturer’s price; in Brazil it’s 200%, says IMS, the global healthcare data provider. Dysfunctional medicine supply chain management is another culprit. A 2015 survey by humanitarian NGO Medecins Sans Frontières reported one in three health facilities in South Africa have shortages of key HIV and tuberculosis drugs. The drugs are imported in sufficient quantities but fail to reach patients due to “local logistical and management problems, ranging from inaccurate forecasting to storage or transport issues”, said MSF. Governments under-invest in health too. While most European Union countries commit 8% to 11% of GDP to health, few Asian and African countries spend more than 5%: not nearly enough given their enormous health challenges. These are the major influences on access to medicines. Public health would be best served if the political focus were on these issues, rather than patents.

#### Turn – COVID waiver would lead to more vaccine skepticism, lower production, and energy taken away from other initiatives

Wilson 21 Wilson, Simon. Why Joe Biden’s Big Pharma patent grab is a terrible idea, Moneyweek.com. N.p., 2021. Web. 30 Aug. 2021. Simon Wilson is the head of Journalism Europe and Americas at BBC World Service.

What’s happened? Earlier this month the US surprised the global community – and stunned investors in drugs companies – by backing the temporary suspension of some globally agreed rules covering intellectual-property (IP) protections for Covid-19 vaccines. A waiver of World Trade Organisation (WTO) rules to help tackle the Covid-19-emergency was first proposed by India and South Africa last October, covering patents not just for vaccines, but also diagnostic tools and therapeutic treatments. Both countries have a large manufacturing sector making generic (off-patent) pharmaceuticals. The US is not signed up to a broader waiver of that kin, but its support for a narrower waiver on vaccine patents is a surprise. Why’s that? Because the US has a vast and powerful pharmaceutical sector and Washington has a long history of opposition to public-health measures that affect intellectual property rights. In 1996, it even threatened sanctions against Brazil for weakening patent laws to improve access to life-saving Aids drugs. Still, there’s no guarantee that a patent waiver – that is, a temporary suspension of certain rules set out in the WTO’s Trade-Related Aspects of Intellectual Property Rights (Trips) agreement – will actually happen. Until earlier this month, the idea had gained little traction, with the US, EU (notably Germany), UK and Japan all opposed. But US support makes it far more likely that some kind of waiver will be agreed. What’s the case for a waiver? The hope is that the waiver will encourage a wider and more geographically diverse production base, as well as encouraging international co-operation. And also that the prospect of a waiver will encourage pharmaceutical companies to enter into more voluntary arrangements and non-exclusive licensing to enable the transfer of technology in a controlled and transparent way. The lesson of the Aids pandemic is that patents “stymie accessible treatment, cost lives, and offer little bona fide enhancement of innovation”, says Laurie Garrett in Foreign Policy. What’s the case against? First, that waiving patents on Covid-19 vaccines would not actually speed up global production or get more shots into arms. Second, that doing so would have damaging long-term effects on future innovation. To take the first, it’s not IP issues that lie behind vaccine supply issues, it’s a range of factors including shortages of critical raw materials, a lack of production facilities and the technology and expertise to manufacture them. We know vaccine patents are not the bottleneck to making more vaccines because “there are no factories capable of producing Covid-19 vaccines sitting idle because they don’t have a patent”, says Matthew Lesh on CapX. Moderna announced last October that it would not be enforcing its own patents – yet there is no generic non-Moderna production. Why not? Because it’s too hard to copy given the obstacles. Pfizer’s vaccine, for example, requires 280 components from 86 suppliers in 19 countries, from glass vials to lipids to special plastics. And AstraZeneca, having established a global supply network with more than 20 partners across 15 countries, ran out of engineers qualified to transfer its technology. Moreover, waiving patents will increase competition for scarce ingredients, with the risk that less efficient and less expert manufacturers would hinder the ability of existing producers to ramp up capacity. And there’s an obvious issue with safety – and the knock-on effects on global confidence in Covid-vaccines as a whole. And the long-term consequences? Security of property rights underpins the whole pharmaceutical sector, which is driven by massive – and massively high-risk – upfront investment in research and development. Weakening or waiving those rights would inevitably discourage companies from investing in future innovation. That would make the world less safe and more vulnerable to the next pandemic threat – and could conceivably even disincentivise investment in pharmaceuticals more broadly. Biden’s “bewildering” support for this is “the single worst presidential economic decision since Nixon’s wage-and-price controls”, says The Wall Street Journal – destroying tens of billions of dollars in US intellectual property and surrendering America’s advantage in biotech, a key growth industry. Certainly, when the next pandemic hits, the world will want the pharmaceutical industry to once again “drop everything and work like hell to make vaccines”, says Tom Chivers on Unherd. “Maybe waiving IP rights will have no impact on their willingness to do that next time, but if there’s even a small chance that it will, it seems a bad bet.” Will it happen? Any agreement will need the backing of all 164 WTO members, and will take weeks or months to secure. Meanwhile, many poor countries have jabbed less than 1% of their populations, 44% of vaccine doses have gone to Europe and North America, and Covid-19 is raging in south Asia and Latin America – and all the while new variants are raising the risk-level globally. Investors are worried about a fall in pharma profits, says The Economist, but the danger – in terms of both health and economy – is far broader than that. If protracted negotiations at the WTO “suck energy away from other initiatives to transfer technology and increase vaccine supplies, that would really be something to fear”. Far more useful than waiving patents, says The Washington Post, would be a concerted effort by Western governments to share their vaccine surpluses, and by Western pharma firms to strike more licensing deals and “share manufacturing know-how, experienced personnel, quality control methods, oversight and raw materials”.