#### CP Text: The member nations of the World Trade Organization should establish a global system that provides universal healthcare to all of those nations’ citizens. This system should centrally purchase medicines in accordance with all IP rights and laws and should then universally distribute that medicine, with funds from the richest and healthiest going to subsidize the care of the poorest and sickest as per recommendations made by the CP evidence.

2) In order for universal healthcare to be achieved for all citizens, the system has to be global so that inequity between countries (not just within countries) may be resolved.

Faulkner, 19 - ("Global Universal Healthcare: Is It Within Reach?," Middletown Media, 5-4-2019, https://muncievoice.com/22657/global-universal-healthcare-is-it-within-reach/)//va

One of the biggest questions about global healthcare is how the costs will be distributed. In developed countries, raising taxes is a valid answer, but in some poorer nations, there is little room for tax reform on an already underprivileged population. So what can be done about it? ¶ For global universal healthcare to work, costs must be shared globally. This may mean [charity in third-world nations](https://borgenproject.org/fighting-poverty-developing-countries/), and more public and private partnerships in those areas. In other cases, global organizations can be formed, and surrounding nations that are more prosperous will need to help share the burden of costs with their neighbors. ¶ The biggest key with global universal healthcare is a shift in mentality from [selfishness and nationalism](https://www.muncievoice.com/11582/gop-just-trying-derail-affordable-health-care/) to a worldwide perspective on healthcare and the welfare of world citizens. No one entity can do it alone. ¶ Is [global universal healthcare within reach](https://www.economist.com/leaders/2018/04/26/universal-health-care-worldwide-is-within-reach)? With modern technology and communication and the innovations we have seen in healthcare, the answer is yes. The question then becomes: “Will we reach for it together?” ¶

3) Most people lack access to quality basic healthcare even though they spend shocking amounts of money trying to get it – a global universal healthcare system would pool resources to ensure everyone’s access at a much more efficient price and would solve better than the money currently spent on aid because it would establish infrastructure and employ rural community health workers

Guardian, 18 - ("Universal health care, worldwide, is within reach," Economist, 4-26-2018, https://www.economist.com/leaders/2018/04/26/universal-health-care-worldwide-is-within-reach)//va

BY MANY measures the world has never been in better health. Since 2000 the number of children who die before they are five has fallen by almost half, to 5.6m. Life expectancy has reached 71, a gain of five years. More children than ever are vaccinated. Malaria, TB and HIV/AIDS are in retreat. ¶ Yet the gap between this progress and the still greater potential that medicine offers has perhaps never been wider. At least half the world is without access to what the World Health Organisation deems essential, including antenatal care, insecticide-treated bednets, screening for cervical cancer and vaccinations against diphtheria, tetanus and whooping cough. Safe, basic surgery is out of reach for 5bn people. ¶ Those who can get to see a doctor often pay a crippling price. More than 800m people spend over 10% of their annual household income on medical expenses; nearly 180m spend over 25%. The quality of what they get in return is often woeful. In studies of consultations in rural Indian and Chinese clinics, just 12-26% of patients received a correct diagnosis. ¶ That is a terrible waste. As this week’s special report shows, the goal of universal basic health care is sensible, affordable and practical, even in poor countries. Without it, the potential of modern medicine will be squandered. ¶ How the other half dies Universal basic health care is sensible in the way that, say, universal basic education is sensible—because it yields benefits to society as well as to individuals. In some quarters the very idea leads to a dangerous elevation of the blood pressure, because it suggests paternalism, coercion or worse. There is no hiding that public health-insurance schemes require the rich to subsidise the poor, the young to subsidise the old and the healthy to underwrite the sick. And universal schemes must have a way of forcing people to pay, through taxes, say, or by mandating that they buy insurance. ¶ But there is a principled, liberal case for universal health care. Good health is something everyone can reasonably be assumed to want in order to realise their full individual potential. Universal care is a way of providing it that is pro-growth. The costs of inaccessible, expensive and abject treatment are enormous. The sick struggle to get an education or to be productive at work. Land cannot be developed if it is full of disease-carrying parasites. According to several studies, confidence about health makes people more likely to set up their own businesses. ¶ Universal basic health care is also affordable. A country need not wait to be rich before it can have comprehensive, if rudimentary, treatment. Health care is a labour-intensive industry, and community health workers, paid relatively little compared with doctors and nurses, can make a big difference in poor countries. There is also already a lot of spending on health in poor countries, but it is often inefficient. In India and Nigeria, for example, more than 60% of health spending is through out-of-pocket payments. More services could be provided if that money—and the risk of falling ill—were pooled. ¶ The evidence for the feasibility of universal health care goes beyond theories jotted on the back of prescription pads. It is supported by several pioneering examples. Chile and Costa Rica spend about an eighth of what America does per person on health and have similar life expectancies. Thailand spends $220 per person a year on health, and yet has outcomes nearly as good as in the OECD. Its rate of deaths related to pregnancy, for example, is just over half that of African-American mothers. Rwanda has introduced ultrabasic health insurance for more than 90% of its people; infant mortality has fallen from 120 per 1,000 live births in 2000 to under 30 last year. ¶ And universal health care is practical. It is a way to prevent free-riders from passing on the costs of not being covered to others, for example by clogging up emergency rooms or by spreading contagious diseases. It does not have to mean big government. Private insurers and providers can still play an important role. ¶ Indeed such a practical approach is just what the low-cost revolution needs. Take, for instance, the design of health-insurance schemes. Many countries start by making a small group of people eligible for a large number of benefits, in the expectation that other groups will be added later. (Civil servants are, mysteriously, common beneficiaries.) This is not only unfair and inefficient, but also risks creating a constituency opposed to extending insurance to others. The better option is to cover as many people as possible, even if the services available are sparse, as under Mexico’s Seguro Popular scheme. ¶ Small amounts of spending can go a long way. Research led by Dean Jamison, a health economist, has identified over 200 effective interventions, including immunisations and neglected procedures such as basic surgery. In total, these would cost poor countries about an extra $1 per week per person and cut the number of premature deaths there by more than a quarter. Around half that funding would go to primary health centres, not city hospitals, which today receive more than their fair share of the money. ¶ The health of nations Consider, too, the $37bn spent each year on health aid. Since 2000, this has helped save millions from infectious diseases. But international health organisations can distort domestic institutions, for example by setting up parallel programmes or by diverting health workers into pet projects. A better approach, seen in Rwanda, is when programmes targeting a particular disease bring broader benefits. One example is the way that the Global Fund to Fight AIDS, Tuberculosis and Malaria finances community health workers who treat patients with HIV but also those with other diseases. ¶ Europeans have long wondered why the United States shuns the efficiencies and health gains from universal care, but its potential in developing countries is less understood. So long as half the world goes without essential treatment, the fruits of centuries of medical science will be wasted. Universal basic health care can help realise its promise. ¶

4**)** The body responsible for medicine acquisition would be able to negotiate lower prices from pharma firms without violating IPR – having seven billion customers at a lower price is better than the status quo, so innovation ramps UP because there’s a guaranteed market. This is especially true for diseases like malaria that still haven’t been cured because it’s not profitable – the system is prepared to buy those medicines on a massive scale.

5) Public-private partnerships are key to universal health care systems & have been successful in the real world. The CP spills over to investment in education, sanitation, housing, and other public goods because countries have an incentive to pay less for emergency health care.

Guardian, 17 - ("How to make global universal healthcare a reality," 7-7-2017, <https://www.theguardian.com/global-development-professionals-network/2017/jul/07/how-to-make-global-universal-healthcare-a-reality)//va>

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Helen leads health policy work on increasing access to health services for people with disabilities, neglected tropical diseases and eye illnesses]

1 | Accept there’s no such thing as a ‘perfect healthcare model’ All healthcare models have their challenges in terms of systems capacity, fiscal space and good governance. I think the progress of countries like Thailand and Sri Lanka towards universal health is certainly laudable, but they each have different approaches to getting there. Thailand’s journey began incrementally and over the years through consistent investment in Primary Health Care (PHC). Meanwhile, India is more focused on achieving Universal Health Care (UHC) through mixed health markets featuring both public and private sector players. Priya Balasubramaniam, senior public health scientist and director, PHFI-RNE Universal Health Initiative,[Public Health Foundation of India](http://www.phfi.org/), New Delhi, India ¶ 2 | Have the same healthcare provider for the rich and the poor If we have dual systems with the “national service” caring for the poor and the private sector caring for the rich, quality will be an afterthought. We need the rich and poor to be cared for by the same provider – this ensures that high quality will be a political priority as those with voting influence are directly affected by the quality of services provided. Jolene Skordis, director,[UCL Centre for Global Health Economics](http://www.ighe.org/), London, UK[@JSkordis](https://twitter.com/JSkordis) ¶3 | Give public-private partnerships serious consideration The PPP model needs to be taken to scale in PHC in order to achieve UHC in a planned time frame. I have worked in many parts of the developing world and in general governments have not been able to step up. Now is the time to test new models as the old system is not working. We need a blended service delivery mechanism. We have to open up the insurance space and governments must push for universal insurance cover for all citizens. This is what we’re trying to do in [Kenya](http://www.huffingtonpost.com/siddharth-chatterjee/kenyas-health-sector-chal_b_11503202.html?ncid=engmodushpmg00000004). Siddharth Chatterjee, resident coordinator to Kenya, United Nations, Nairobi, Kenya[@sidchat1](https://twitter.com/sidchat1)[@UNDPKenya](https://twitter.com/UNDPKenya) ¶4 | Learn from the places getting it right Ghana’s health system isn’t the best I’ve seen but they’ve got some very fundamental things right and have been continually improving over many years. Some of the fundamentals are a commitment to all Ghanaians getting quality, affordable healthcare, and trying to create a national-level risk pool – so the healthier and wealthier subsidise the sicker and poorer. From small-scale experimentation with community-based health insurance, they scaled up to national health insurance, and are now working through the tough challenges of purchasing health services more strategically and sustainably for everyone. The private sector plays a significant role in Ghana’s healthcare provision – a recent World Bank study of Ghana’s private sector noted that Ghanaians access care from private sources more than half of the time. Cicely Thomas, senior programme officer,[Results for Development](http://www.r4d.org/), Washington DC, US [@results4dev](https://twitter.com/results4dev)[@cicelysimone](https://twitter.com/cicelysimone) ¶5 | Raise taxes to reach the poorestIn the majority of developed countries, health services are mostly private. But they are publicly regulated and financed. What we have learned over time is that an equitable system always relies on cross-subsidy, from rich to poor and from healthy to sick. Progressive taxation and public subsidy to ensure access to services is the essence if we want to reach universality of access to health services. Agnes Soucat, director, health financing and governance,[World Health Organisation](http://www.who.int/en/), Geneva, Switzerland[@asoucat](https://twitter.com/asoucat)[@WHO](https://twitter.com/WHO) ¶6 | Don’t focus on arbitrary targets for health spending The Abuja declaration expects African governments to spend 15% of GDP on healthcare. That’s not easy to do – and is not essential. Singapore spends about 5% of GDP on healthcare and has done a fantastic job in ensuring every citizen has access to a good quality service. Sri Lanka spends between 3%–5% and India is pushing for 2.5%. But the question should be about what can you do best with what you can afford to spend. There is no magic GDP number that will deliver UHC since every country has varied resources. Ultimately it is not only about more money, but also how you end up spending your existing health budget that matters. Resources are often misspent in the health sector with an inordinate focus towards hospital care. Siddharth Chatterjee and Priya Balasubramaniam ¶7 | Invest more in preventing people getting sick Health is not just the remit of health ministries – sanitation, housing, welfare and education are just a few of the bedrocks of improving population health. We shouldn’t think of healthcare as a pill or a hospital or programme to treat a single disease. Healthcare is clean water and a diet that does not place you at risk of diabetes or stunting. Healthcare is the education you need to find work and pay for a safe and warm home for your family. Healthcare is delaying early marriage and early pregnancy for vulnerable girls. Prevention has been relatively neglected in our policy priorities. Perhaps because prevention activities can seldom be charged for and people are not yet sick so it can be hard to convince both the public and policymakers of the benefits of preventative measures, even though prevention is usually the most cost-effective way to address disease. Jolene Skordis ¶8 | Make tackling individual diseases have a wider impact In resource-limited settings, what health initiatives can catalyse overall healthcare systems strengthening? Vertical initiatives anchored to one disease, such as the focus on HIV through PEPFAR and Global Fund, have led to broader health-system strengthening by alleviating the HIV burden as well as increasing outcomes in mother-to-child transmission. Anand Reddi, corporate and medical affairs, Gilead Sciences Inc, San Francisco, US[@ReddiAnand](https://twitter.com/ReddiAnand)[@GileadSciences](https://twitter.com/GileadSciences) ¶9 | Focus on equity, not just the number of people reached If we look back at the millennium development goals it is clear that the focus on reaching big numbers has had a detrimental effect on equity. Too often, national policies do not specifically address how marginalised groups will be reached by development programmes in order to benefit from the new facilities and services provided. This problem is often made worse in low-income areas where the services are offered on a cost recovery basis. Helen Hamilton, policy adviser for health,[Sightsavers](http://www.sightsavers.org/), Haywards Heath, UK[@HelenCHamilton](https://twitter.com/HelenCHamilton)[@Sightsavers\_Pol](https://twitter.com/Sightsavers_Pol) ¶10 | Be honest about how money shapes healthcare decisions India’s case (and that of South Africa, Brazil and the US) proves how users of a health services are often not the best judge of health services. We rely on doctors to tell us what care we need. If doctors can profit from giving us incorrect advice, they may well do so – particularly if there is little harm likely to be done (eg sending paying patients for extra, unneeded tests or procedures). This results in the cost of care increasing rapidly in the private sector, to the point where even the middle classes can’t afford health insurance in South Africa and the US. We need to remove the profit motive from healthcare if we want efficiency and effectiveness. Jolene Skordis ¶

## Innovation DA

#### The pharma industry is strong now but patents are key for continued economic growth. Batell and PhRMA 14:

Batell and PhRMA {Battelle is the world’s largest nonprofit independent research and development organization, providing innovative solutions to the world’s most pressing needs through its four global businesses: Laboratory Management, National Security, Energy, Environment and Material Sciences, and Health and Life Sciences. The Pharmaceutical Research and Manufacturers of America (PhRMA) represents the country’s leading pharmaceutical research and biotechnology companies, which are devoted to inventing medicines that allow patients to live longer, healthier, and more productive lives.}, 14 – “The U.S. Biopharmaceutical Industry: Perspectives on Future Growth and The Factors That Will Drive It,” http://phrma-docs.phrma.org/sites/default/files/pdf/2014-economic-futures-report.pdf//marlborough-wr//

Compared to other capital-intensive, advanced manufacturing industries in the U.S., the biopharmaceutical industry is a leader in R&D investment, IP generation, venture capital investment, and R&D employment. Policies and infrastructure that helped foster these innovative activities have allowed the U.S. to seize global leadership in biopharmaceutical R&D over the past 30 years. However, as this report details, other countries are seeking to compete with the U.S. by borrowing and building upon some of these pro-innovation policies to improve their own operating environment and become more favorable to biopharmaceutical companies making decisions about where to locate their R&D and manufacturing activities. A unique contribution of this report was the inclusion of the perspective of senior-level strategic planning executives of biopharmaceutical companies regarding what policy areas they see as most likely to impact the favorability of the U.S. business operating environment. The executives cited the following factors as having the most impact on the favorability of the operating environment and hence, potential growth of the innovative biopharmaceutical industry in the U.S.: • Coverage and payment policies that support and encourage medical innovation • A well-functioning, science-based regulatory system • Strong IP protection and enforcement in the U.S. and abroad The top sub-attribute identified as driving future biopharmaceutical industry growth in the U.S. cited by executives was a domestic IP system that provides adequate patent rights and data protection. Collectively, these factors underscore the need to reduce uncertainties and ensure adequate incentives for the lengthy, costly, and risky R&D investments necessary to develop new treatments needed by patients and society to address our most costly and challenging diseases. With more than 300,000 jobs at stake between the two scenarios, the continued growth and leadership of the U.S. innovative biopharmaceutical industry cannot be taken for granted. Continued innovation is fundamental to U.S. economic well-being and the nation’s ability to compete effectively in a globalized economy and to take advantage of the expected growth in demand for new medicines around the world. Just as other countries have drawn lessons from the growth of the U.S. biopharmaceutical sector, the U.S. needs to assess how it can improve the environment for innovation and continue to boost job creation by increasing R&D investment, fostering a robust talent pool, enhancing economic growth and sustainability, and continuing to bring new medicines to patients.

#### COVID has kept patents and innovation strong, but continued protection is key to innovation by incentivizing biomedical research – it’s also crucial to preventing counterfeit medicines, economic collapse, and fatal diseases, which turns case. Macdole and Ezell 4-29:

Jaci Mcdole and Stephen Ezell {Jaci McDole is a senior policy analyst covering intellectual property (IP) and innovation policy at the Information Technology and Innovation Foundation (ITIF). She focuses on IP and its correlations to global innovation and trade. McDole holds a double BA in Music Business and Radio-Television with a minor in Marketing, an MS in Education, and a JD with a specialization in intellectual property (Southern Illinois University Carbondale). McDole comes to ITIF from the Institute for Intellectual Property Research, an organization she co-founded to study and further robust global IP policies. Stephen Ezell is vice president, global innovation policy, at the Information Technology and Innovation Foundation (ITIF). He comes to ITIF from Peer Insight, an innovation research and consulting firm he cofounded in 2003 to study the practice of innovation in service industries. At Peer Insight, Ezell led the Global Service Innovation Consortium, published multiple research papers on service innovation, and researched national service innovation policies being implemented by governments worldwide. Prior to forming Peer Insight, Ezell worked in the New Service Development group at the NASDAQ Stock Market, where he spearheaded the creation of the NASDAQ Market Intelligence Desk and the NASDAQ Corporate Services Network, services for NASDAQ-listed corporations. Previously, Ezell cofounded two successful innovation ventures, the high-tech services firm Brivo Systems and Lynx Capital, a boutique investment bank. Ezell holds a B.S. from the School of Foreign Service at Georgetown University, with an honors certificate from Georgetown’s Landegger International Business Diplomacy program.}, 21 - ("Ten Ways Ip Has Enabled Innovations That Have Helped Sustain The World Through The Pandemic," Information Technology & Innovation Foundation, 4-29-2021, https://itif.org/publications/2021/04/29/ten-ways-ip-has-enabled-innovations-have-helped-sustain-world-through)//marlborough-wr/

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.

#### Pharmaceutical innovation is key to protecting against future pandemics, bioterrorism, and antibiotic resistance.

Marjanovic and Fejiao ‘20 Marjanovic, Sonja, and Carolina Feijao. Sonja Marjanovic, Ph.D., Judge Business School, University of Cambridge. Carolina Feijao, Ph.D. in biochemistry, University of Cambridge; M.Sc. in quantitive biology, Imperial College London; B.Sc. in biology, University of Lisbon. "Pharmaceutical Innovation for Infectious Disease Management: From Troubleshooting to Sustainable Models of Engagement." (2020). [Quality Control]

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

#### Bioterror causes extinction---early response key

Farmer 17 (“Bioterrorism could kill more people than nuclear war, Bill Gates to warn world leaders” http://www.telegraph.co.uk/news/2017/02/17/biological-terrorism-could-kill-people-nuclear-attacks-bill/)

Bioterrorists could one day kill hundreds of millions of people in an attack more deadly than nuclear war, Bill Gates will warn world leaders. Rapid advances in genetic engineering have opened the door for small terrorism groups to tailor and easily turn biological viruses into weapons. A resulting disease pandemic is currently one of the most deadly threats faced by the world, he believes, yet governments are complacent about the scale of the risk. Speaking ahead of an address to the Munich Security Conference, the richest man in the world said that while governments are concerned with the proliferation of nuclear and chemical weapons, they are overlooking the threat of biological warfare. Mr Gates, whose charitable foundationis funding research into quickly spotting outbreaks and speeding up vaccine production, said the defence and security establishment “have not been following biology and I’m here to bring them a little bit of bad news”. Mr Gates will today (Saturday) tell an audience of international leaders and senior officers that the world’s next deadly pandemic “could originate on the computer screen of a terrorist”. He told the Telegraph: “Natural epidemics can be extremely large. Intentionally caused epidemics, bioterrorism, would be the largest of all. “With nuclear weapons, you’d think you would probably stop after killing 100million. Smallpox won’t stop. Because the population is naïve, and there are no real preparations. That, if it got out and spread, would be a larger number.” He said developments in genetic engineering were proceeding at a “mind-blowing rate”. Biological warfare ambitions once limited to a handful of nation states are now open to small groups with limited resources and skills. He said: “They make it much easier for a non-state person. It doesn’t take much biology expertise nowadays to assemble a smallpox virus. Biology is making it way easier to create these things.” The increasingly common use of gene editing technology would make it difficult to spot any potential terrorist conspiracy. Technologies which have made it easy to read DNA sequences and tinker with them to rewrite or tweak genes have many legitimate uses. He said: “It’s not like when someone says, ‘Hey I’d like some Plutonium’ and you start saying ‘Hmmm.. I wonder why he wants Plutonium?’” Mr Gates said the potential death toll from a disease outbreak could be higher than other threats such as climate change or nuclear war. He said: “This is like earthquakes, you should think in order of magnitudes. If you can kill 10 people that’s a one, 100 people that’s a two... Bioterrorism is the thing that can give you not just sixes, but sevens, eights and nines. “With nuclear war, once you have got a six, or a seven, or eight, you’d think it would probably stop. [With bioterrorism] it’s just unbounded if you are not there to stop the spread of it.” By tailoring the genes of a virus, it would be possible to manipulate its ability to spread and its ability to harm people. Mr Gates said one of the most potentially deadly outbreaks could involve the humble flu virus. It would be relatively easy to engineer a new flu strain combining qualities from varieties that spread like wildfire with varieties that were deadly. The last time that happened naturally was the 1918 Spanish Influenza pandemic, which went on to kill more than 50 million people – or nearly three times the death toll from the First World War. By comparison, the recent Ebola outbreak in West Africa which killed just over 11,000 was “a Richter Scale three, it’s a nothing,” he said. But despite the potential, the founder of Microsoft said that world leaders and their militaries could not see beyond the more recognised risks. He said: “Should the world be serious about this? It is somewhat serious about normal classic warfare and nuclear warfare, but today it is not very serious about bio-defence or natural epidemics.” He went on: “They do tend to say ‘How easy is it to get fissile material and how accurate are the plans out on the internet for dirty bombs, plutonium bombs and hydrogen bombs?’ “They have some people that do that. What I am suggesting is that the number of people that look at bio-defence is worth increasing.” Whether naturally occurring, or deliberately started, it is almost certain that a highly lethal global pandemic will occur within our lifetimes, he believes. But the good news for those contemplating the potential damage is that the same biotechnology can prevent epidemics spreading out of control. Mr Gates will say in his speech that most of the things needed to protect against a naturally occurring pandemic are the same things needed to prepare for an intentional biological attack. Nations must amass an arsenal of new weapons to fight such a disease outbreak, including vaccines, drugs and diagnostic techniques. Being able to develop a vaccine as soon as possible against a new outbreak is particularly important and could save huge numbers of lives, scientists working at his foundation believe.