# Disease Neg – UTNIF

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### Solvency – Pandemics

#### R&D solves pandemic preparedness

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Federal agencies, Congress and the White House must jointly foster improved research and development for pandemic preparedness and response, experts said during a recent webinar hosted by the Capitol Hill Steering Committee on Pandemic Preparedness & Health Security.

“Over the last two years, the United States and the rest of the world have really seen the immense value of research and development in terms of new tools technologies, drugs and vaccines to combat infectious disease threats,” said panel moderator Anita Cicero, deputy director at the Johns Hopkins Center for Health Security, which manages the steering committee.

“It’s vital to examine how federal agencies, Congress and the White House can reimagine how they work with each other and the private sector to foster greater agility, speed, innovation and coordination in research and development for pandemic readiness,” Cicero said during the Nov. 17 webinar, “Modernizing Research & Development for Pandemic Readiness.”

Former U.S. Rep. Susan Brooks (R-IN), an honorary founding member of the steering committee, pointed out that the United States is “completely and rightly” considered a global leader in R&D and in technological innovation.

“Yet, during my tenure in Congress, it was clear that the federal bureaucracy was often not known for being nimble or for its transparency or its ability to work outside the rigid guidelines and meet funding mechanisms with non-federal partners,” said Brooks. “However, what the COVID-19 pandemic did show us is that the federal government is quite capable of harnessing biomedical innovation with the private sector to deliver effective vaccines and therapeutics faster than we ever thought possible.”

In fact, during the ongoing COVID-19 pandemic, the U.S. government has robustly funded public-private partnerships, which Brooks said have the potential to improve the nation’s ability to detect and contain deadly pathogens.

“So, in order to be better prepared for future threats and potentially prevent future pandemics, we have to modernize our research and development, we have to leverage new technologies and incentivize collaboration,” she said. “And we must incorporate this reality across the many federal agencies that are involved.”

Toward that goal, said Brooks, the questions now are: What structural changes are needed; what funding is required; what strategies must be institutionalized; and how can the government efficiently lead and coordinate these efforts?

One answer, according to Dr. Eric Lander, director of the White House Office of Science and Technology Policy, is the American Pandemic Preparedness Plan, which the Biden administration released in September for transforming U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high-consequence biological threats.

Lander said the whole-of-government plan, which among numerous goals authorizes $65 billion over a decade, aims to achieve these capabilities by a systematic effort and shared vision for biological preparedness across the federal government.

For instance, many agencies must be involved along with Congress, which provides the legislative authority, and the White House, including the Department of Defense, the Food and Drug Administration (FDA), and the Department of Health and Human Services (HHS), Lander said. Together, they must coordinate on getting out vaccines and therapeutics quicker; providing early warning systems to identify earlier the appearances of viruses with pandemic potential; providing real-time monitoring on where such viruses are headed; and innovating on personal protective equipment (PPE), for example.

Specifically, several of the five key areas necessary to protect the United States against biological threats, according to the plan, include dramatically improving and expanding the U.S. arsenal of vaccines, therapeutics and diagnostics; ensuring situational awareness about infectious-disease threats, for both early warning and real-time monitoring; and building core capabilities, including PPE, stockpiles and supply chains, biosafety and biosecurity, and regulatory improvement.

#### US biotech investment alone solves

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Leading in biotechnology is crucial for many U.S. economic and strategic goals; however, the U.S. must balance these with necessary regulation and oversight. Geopolitical events, such as global pandemics or great power competition, can also influence this balancing act. How can leaders strike the right balance to attain maximal benefit and prosperity for the United States? It was also clear that professionals in the biological sciences should play a role in determining this balance, potentially through organizations such as the National Academies that bridge the scientific and policy communities. 12 Responsible leadership is a central factor in establishing the necessary oversight starting at labs and extending to the intergovernmental sphere. Biotechnology and biosecurity regimes call for principled leadership that is responsive to scientists, policymakers, and stakeholders across institutions. Engaged leaders devise whole of enterprise solutions, an issue noticeably lacking with COVID-19 and a theme which will certainly appear in the future. Accordingly, oversight from knowledgeable leaders is a vital force in crafting policy that will spur innovation to build trust across sectors. Leaders and bureaucrats setting the regulatory tone should be mindful of striking the right balance: scientists who labor under burdensome regulatory regimes may be stymied in their pursuit of technological advancement. Leaders should avoid counterproductive measures such as layers of oversight, redundant paperwork, or a distrustful culture that hinder scientists’ spirit of risk taking or engagement beyond a stovepiped world. One troubling reality exists: much of global oversight falls between seams of multinational organizations, and cooperation from scientists and policymakers is essential to remedy a dilemma brought further into relief by COVID-19. There is no ambiguity on the necessary role of scientific expertise in biosecurity and biotechnology: to leverage cooperation to play an outsized role in working beyond the sphere of geopolitical competition. Panelists were unanimous in scientists’ power to work effectively across borders, to make friends via science. Forging relationships based on like-minded scientific expertise creates the possibility for the scientific community to harmonize interests that may sit uneasily between sparring nations’ heads of state. A basis for a Track 2 or 1.5 dialogue between different governments may run through the long-standing friendships that were cultivated by scientists before the return of great power competition. Scientist-to-scientist bonds offer policymakers with a foundation to utilize not only for diplomatic ends, but also in the possibility of a future global pandemic that necessitates collaboration. Scientific relationships will be the cornerstone for future cooperation, even when the fires of geopolitical competition flare up. Biotechnological competition with China represents a rupture from the past and threatens American primacy in this domain. Chinese policymakers identified biotechnology as a key space for China to dominate. China’s prioritization of biotechnology meets multiple ends for a state poised to shape geopolitics: Chinese biosecurity, the nation’s economy, and the health of the Chinese people. China’s strategic whole of nation investment in biotechnology aims to unseat the United States from its place of historic control over the material and intellectual production of biotechnology. In a break from historic competitors, a rival nation-state is pouring resources into technology development at levels that are comparable with the United States’ publicprivate funding streams. With the arrival of a near peer competitor in biotechnology, how should U.S. policymakers strike the right policy balance? On the one hand, stakeholders in government, philanthropy, and the private sector cannot underestimate the magnitude of the challenge. The implications for the United States extend beyond facing a competitor. China’s military-civil fusion, alongside torrents of state funding, aspires to fuse agents across China into the mission of overtaking America’s global position. The stakes are clear, and the consequences of losing preeminence for American biosecurity and economy should not be underestimated. 13 On the other hand, engagement with Chinese scientists and policymakers should not be dismissed out of hand. The experts agreed that China should be encouraged to take up a partnership role in the global biosecurity and biotechnology architecture. Evidence of Chinese willingness to participate exist at the institutional and personal level, and the voices on both sides of the Pacific urging cooperation should not be squelched. An American whole of enterprise solution to compete with China can exist in parallel with outreach efforts to prevent future pandemics. Striking the right balance between engaging and competing with China will not be easily executed, yet it is a policy solution that leaders in Beijing and Washington must embrace. A whole of sector push to facilitate developing nations’ biotechnology and biosecurity development can garner influence for the United States. Developed countries no longer hold a monopoly over biotechnologies. Developing countries are increasing investments in biotechnology, and this represents an opportunity for the United States to assert global leadership. Leveraging the United States’ scientific expertise to compete against China, shape norms, and usher in a global regulatory regime is not only a positive series of outcomes. It gestures to a policy agenda for the America’s role in the world’s biotechnology and biosecurity frontier. Nation-state competition is not the only challenge facing the United States. A pattern of panic and neglect historically led policymakers and the public to abandon investments in biosecurity of the order required to overcome COVID-19 and future pandemics. Institutions that preserve focus on biosecurity and biotechnology must be built that strike the right balance between encouraging oversight, elevating scientific expertise, competing with China, and cooperating internationally. The United States’ security, health, and economy are tethered to a biotechnological future that demands attention, not neglect.

### Solvency – Data Collaboration

#### Using data science solves

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In a global crisis involving a highly transmissible novel pathogen, some heterogeneity in national responses is to be expected. Yet the current pandemic demonstrates that an international framework for pandemic detection and response that relies so heavily on the transparency, judgment, and discretion of individual national governments leaves too many opportunities for failure. The Task Force recommends the following measures to improve the availability and reliability of early epidemic threat surveillance and to enable rapid identification, characterization, and tracking of emerging infectious diseases. First, the United States should work with other governments and civil society partners to build and integrate national and global epidemic surveillance systems, which would detect, share, and publicize early signs of an outbreak in near real time. This framework should establish a voluntary, international sentinel surveillance network, founded on health-care facilities around the world that regularly share hospitalization data, using anonymized patient information, to identify unusual trends. National voluntary sentinel surveillance systems could target vulnerable communities—such as nursing homes or low-income neighborhoods—which could allow for the detection of new, dangerous outbreaks within these groups before they became unstoppable. Participation in these international and national sentinel networks should be incentivized with grants and technology transfers. Other surveillance methods being used in this and previous outbreaks are worth expanding. Wastewater surveillance to detect the presence of certain viruses was pioneered in polio eradication and is now being harnessed in some settings to track coronavirus trends. Kinsa, which uses internet-connected thermometers to predict the spread of the flu, has been used to identify anomalous fever spikes that could be COVID-19 related. These and similar methods, known as syndromic surveillance, could be used more broadly to identify presence of pathogens with outbreak potential, even before people start becoming sick. Just as national security agencies have expanded their activities to include and rely on data surveillance expertise, so should public health communities. Since 2013, the CDC has fostered an open collaboration, called FluSight, to improve the science and usability of epidemic forecasts of influenza for public health decision-making. Proposals to create similar systems for sharing data on epidemic threats are worthy of support.[125](https://www.cfr.org/report/pandemic-preparedness-lessons-COVID-19/recommendations/" \l "_edn125) This data should feed into an integrated global disease surveillance data platform, created under the auspices of the Health Security Coordination Committee. This platform should enlist participating government agencies and relevant nongovernmental agencies to standardize assessment of data and characterization of threats. It should share the results of those assessments and raise the alarm over any unusual trends with the UN coordinator, WHO Emergency Program, and the general public. This global surveillance architecture should be linked to public health agencies in participating nations, including the CDC, so that the data can be used to directly inform preparedness and response activities to both global and domestic threats.

#### Detection and early warning solves spread

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Biological threats are inherently difficult to calibrate. In the natural environment, emerging and re-emerging pathogens are constantly evolving and spread opportunistically. The intentions and capabilities of human actors to exploit biological agents for purposes of terrorism and war are also in flux as advancing biotechnologies enable both state and nonstate actors to develop new threats. Thus, bio surprise is inevitable, even when the risk is generally acknowledged. Following the initial surprise, rapid detection and assessment are critical to staying ahead of the threat. a. Looking ahead a decade, emerging infectious diseases will likely intensify. A combination of factors, including increased human encroachment into remote habitats and the effects of global warming, can be expected to increase the frequency of epidemics and pandemics. Participants agreed that the United States does not have the luxury of preparing for one or the other (naturally-occurring or man-made); it must be prepared for both. b. Early warning can make a huge difference in mitigating human and other consequences. This requires broad surveillance, reliable information, and broad information sharing. The United States and the international community have multiple capabilities in place to look for early warning signs of an emerging public health crisis, but these depend on a high degree of scientific competence and credibility. Both have diminished in recent years or have failed to adapt in the face of growing political and societal challenges to authority and expertise. Divestment, disinformation, and outright attacks have all been contributing factors. c. With early indicators in hand, the role of the scientific community is to out-race the unfolding public health crisis by rapidly characterizing the biological source, openly sharing epidemiological data, implementing public health measures (such as maskwearing, contact tracing, and isolating the sick), and developing medical therapeutics. The ability to do these has greatly advanced in recent years, with improved international cooperation within the scientific community a contributing factor. The potential pathways to medical solutions have also increased significantly (e.g., there are currently 44 vaccines for COVID-19 in clinical evaluation and another 154 in preclinical stages). 3. Looking to the future, specific actions should be in place to enable an effective crisis response. This includes steps to enable the rapid production and deployment of diagnostic tests, monoclonal antibodies, antivirals, and anti-inflammatory drugs. It also includes steps to maintain a capacity for large-scale development and production of vaccines and new therapeutic drugs. In addition, better predictive models would improve the analysis of alternative interventions; however, these models require access to well curated and prepositioned data sets. A key challenge in accelerating responses by the medical research community is the improved use of research that has not yet been peer reviewed; some innovative mechanisms to rapidly review, assess, and make available worthy research are now up and running. 4. In addition, many of the global and regional partnerships needed to respond effectively have not worked as desired during COVID-19 and are in need of repair. These partnerships include the following: public-private, public health-national security, medical-law enforcement, U.S.- allies, international organizations-member states, government-news media, elements of the supply chain, etc. 3 5. To a significant extent, further revisions to national strategy will be driven by lessons learned from the COVID-19 epidemic. As the pandemic tapers off, governmental attention and funding are likely to remain high—for a while. If the past is any guide, however, other demands will emerge, and both attention and funding will decline. Given the expectation of an increased frequency of public health crises in the future, specific actions should be taken now while there is increased funding and public attention on the problem. a. Successful management of a health crisis requires a whole of government response. Essential capabilities include the ability to rapidly get all stakeholders to the table, generate reliable data, quickly define required decisions and make them, rapidly identify and cope with unexpected facets of the problem, coordinate the distribution of limited resources, and coordinate implementation activities across state, federal, and local lines. They also include the ability to manage the domestic and international political dimensions of a situation, rather than try to pretend that a public health crisis is not a political event. The opportunity to learn and practice these skills will improve their efficacy during a crisis. b. Communicating effectively in crisis is an especially important skill. Past crises have repeatedly taught a lesson about the importance of communicating with empathy. This means telling the truth, providing hope, setting expectations, and being explicit about “the ask” of the audience. c. Much more can be done both nationally and internationally to strengthen existing capacities and add new capabilities. Significant gaps remain in the global architecture of institutions and processes for managing biological risks, whether naturally occurring or man-made. d. The United States should also learn from the successes of its COVID-19 response, particularly those from Operation Warp speed. Many panelists commented that the speed by which vaccine candidates have advanced to clinical trials was amazing. This success story demonstrates how the U.S. government can help underwrite cost and risk of new vaccine development for pharmaceutical companies.

#### Managing risks is key

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The prevailing approach to managing pandemic risks is to quickly detect and respond to infectious diseases as they arise. The tools for doing so have steadily improved since the 1980s. Panelists cited two in particular: first, in the mid-1990s, U.S. and Israeli support developed the Global Infectious Disease and Epidemiology Network, a unified online software platform for diagnosing diseases and identifying potential treatments. With the twin advent of genomic science and improved computing power, U.S. universities and federally funded research centers developed significant bioinformatics capabilities to aid in the processing of emergent pandemic data and the identification of responses. The widespread use of relatively inexpensive, high throughput genomic sequencing has aided bioinformatics efforts and may aid in characterizing the risks of future pandemics. The genomes of over 2000 viruses have been sequenced thus far, although approximately 300,000 mammalian viruses remain unsequenced. In contrast, success in predicting the emergence of harmful pathogens has proved more elusive. A stronger worldwide surveillance system that monitors people with novel and unusual diseases would provide additional early warning before pandemics emerge. However, there are domestic and geopolitical barriers to the development of such a surveillance system. Governments are hesitant to provide external researchers with the kind of access necessary to conduct good disease surveillance, while sustained access might require a degree of international cooperation that is unrealistic in an era of renewed interstate competition. In addition, all pathogens are somewhat unique, and the emergence of a particularly virulent infectious diseases can overwhelm the ability of public and private sector actors to prevent spread of a contagion and rapidly produce vaccines and treatments. These challenges affect both man-made and natural pathogens. Man-made threats are further complicated by the dual-uses of many emerging biotechnologies which lack effective means for establishing norms to enforce their misuse. Early warning and response could also be significantly improved with a better understanding of which pathogens might infect humans and cause adverse effects. This could contribute to efforts to anticipate natural pathogens as well as potential man-made threats. A framework for understanding the movement of pathogens from animal to human hosts would involve several aspects, including identifying whether animals and humans share particular cell receptors that would allow for infection, the intracellular components that would allow viruses to replicate, and the mechanism of cross-species transmission. Panelists also identified the importance of studying single- and double-stranded RNA and DNA viruses to better understand their replication. The U.S. government through DARPA and other funding has sponsored several efforts to develop tools for anticipating future pandemics. Nevertheless, such efforts must contend with the unique attributes of otherwise related pathogens. For instance, SARS-CoV-2, the novel coronavirus that causes COVID-19, proved to be more infectious and more harmful than other coronaviruses. 5 Nevertheless, panelists emphasized that it was too costly an effort to study all identified viruses to understand potential risks. A more fruitful approach was to invest in better global biosurveillance to filter out “signals” from “noise”—that is, to leverage the capabilities of the global health community to provide credible early warning when potential pathogens first begin to spread. While there is national interest in anticipating emerging threats, participants did not identify a clear path forward for U.S. government efforts. One recommendation was that the U.S. Intelligence Community reassess its standards for confidence when making judgments about potential pandemic risks. Excessively high confidence requirements for community acceptance of judgments could, the argument goes, limit further study of a potential threat. Another recommendation was to leverage artificial intelligence and computing capabilities to better mine large data sources for insight into emergent threats.

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#### Funding comes from other agencies besides the DoD

CRS 21- Congressional Research Service (“Domestic Funding for COVID-19 Vaccines: An Overview,” CRS, 3-29-21, Accessed Online at <https://crsreports.congress.gov/product/pdf/IN/IN11556>, Accessed Online on 7-4-22)

COVID-19 vaccine research and development (R&D), regulation, manufacture, and purchase have been largely supported by a collaboration among several federal agencies, including the National Institutes of Health (NIH), the Biomedical Advanced Research and Development Authority (BARDA), FDA, DOD, and others (formerly OWS). Six vaccines were chosen for coordinated federal support under OWS. Some vaccine R&D has been supported by NIH, BARDA, and DOD separately from the OWS efforts. For R&D, funding has been provided to accounts at NIH, DOD, and the Public Health and Social Services Emergency Fund (PHSSEF; parent account for BARDA) for COVID-19 related R&D, including vaccine R&D. In addition, over $50 billion in PHSSEF funding has been made available until September 24, 2024 for a broad set of medical countermeasures and surge capacity purposes, including for the development, manufacture, and purchase of vaccines and related supplies. Separately, FDA has received broad supplemental appropriations for its regulatory and other activities. ARPA (P.L. 117-2) further provides appropriations that can be used for activities under this heading (all ARPA funds are mandatory appropriations): • Section 2303 provides $6.05 billion to HHS, available until expended, for research, development, manufacturing, production, and the purchase of vaccines, therapeutics, and ancillary medical products and supplies—available for COVID-19 (or SARS-CoV-2), its variants, and any disease with potential for creating a pandemic. • Section 2304 provides $500 million to FDA, available until expended, for a broad set of activities, including for its review of the performance, safety, and effectiveness of vaccines; inspection of vaccine manufacturing facilities; and oversight of the vaccine supply chain. • Section 3101 provides $10 billion, available until September 30, 2025, for activities under the Defense Production Act with respect to medical supplies and equipment for the pandemic, including for vaccines and related supplies. Funds can support the purchase, production, and distribution of such supplies. After September 30, 2022, funds can be used to meet critical public health needs with respect to any pathogen that the President has determined has the potential for creating a public health emergency.

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### Solvency – NATO Collaboration

#### Security assistance facilitates continued cooperation

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Moreover, countries that receive U.S. military systems are not just buying equipment off the shelf; they are entering into a longer-term relationship with that country for training, maintenance, and sustainment. This is similar to when a consumer buys a smart phone, as they are not simply buying a piece of hardware; they are reliant on the company to access its broader ecosystem of apps and software and trusting the company to safeguard important data. Over time, a consumer becomes locked in and dependent on a particular provider. Similarly, when a state commits to expanding military-to-military ties—often the most sensitive area for a country—they are making a diplomatic bet on that country. As they base their military on U.S. equipment and U.S. training and engagement, they similarly become locked in to the United States. This sets the ground for more productive American partnerships to tackle a range of geopolitical challenges. For example, U.S. security assistance has been key to building ties with Vietnam after the war between the two countries. American assistance provided to clear unexploded ordnance has helped repair diplomatic relations between Hanoi and Washington, while the recent provision of a retired Coast Guard ship to the Vietnam military can help strengthen military ties and potentially open the door to more U.S. assistance and security cooperation, which will further strengthen bilateral relations.

#### DOS security assistance deters adversaries and creates cooperation

Tankel and Ross 20- associate professor at American University, and an adjunct senior fellow at the Center for a New American Security AND\*\* non-resident senior associate at the Center for Strategic and International Studies, served as deputy assistant secretary of defense for security cooperation, and was the senior defense and intelligence adviser to Senate Majority Leader Harry Reid (Stephen and Tommy, “RETOOLING U.S. SECURITY SECTOR ASSISTANCE,” 10-28-20, Accessed Online at <https://warontherocks.com/2020/10/reforming-u-s-security-sector-assistance-for-great-power-competition/>, Accessed Online on 7-1-22)

One of America’s most important foreign policy tools is not fit for purpose. U.S. security sector assistance — the means by which the United States strengthens alliances and partners — is stuck in the past. Crucially, it is out of sync with U.S. priorities when it comes to where resources are needed most and the types of capabilities required by America’s allied and partners. Despite widespread agreement on the need to prioritize strategic competition with Russia and China, the United States still directs a disproportionate amount of assistance toward the Middle East. An emphasis on counter-terrorism since 9/11 has also contributed to an emphasis on building the wrong capabilities. The United States is not equipping allies and partners with the capabilities they need to deal with competitors who are adopting increasingly sophisticated strategies in the areas of cyber security, strategic communications, and illicit commercial activity. Moreover, the mechanisms needed to integrate security sector competition with other instruments of national power, including diplomacy, military operations, strategic communications, and other foreign assistance, are underdeveloped at best. These shortcomings hinder U.S. allies and partners, in turn leaving them vulnerable to Chinese and Russian influence. Assistance could and should be a critical tool for deterring competitors and enabling, influencing, and reassuring frontline allies and partners. Making it so will require the United States to change how it envisions, prioritizes, plans, and executes security sector assistance, and that it become more adept at using assistance for signaling purposes. This in turn will necessitate that the executive and legislative branches work together to expand the resources for security assistance or to slay the sacred cows that account for the misuse of the resources currently available. In taking these steps, the U.S. government should ensure that assistance is delivered in a way that reinforces, rather than neglects, its fundamental commitment to democracy and human rights, for ignoring these values cedes valuable ground to America’s competitors. Signs of a Gradual Shift The United States provides security sector assistance to foreign civilian and military forces, agencies, and institutions ranging from local law enforcement and judicial systems to standing militaries. This assistance is intended to strengthen U.S. access to key territories and facilities, shape partners’ national security decision-making and governance, and build their capacity and capabilities for use against shared threats and adversaries. It also promotes the U.S. defense industry via arms transfers, supports the infrastructure and operations of multilateral organizations such as NATO, and increases military interoperability. The State Department implements assistance across the entire security sector, including organizations responsible for defense, law enforcement, and security of key assets like ports and borders. The Department of Defense has a narrower mandate, and provides assistance to partner militaries under the umbrella of security cooperation. The Pentagon also engages in a range of other activities — combined exercises, staff talks, port visits, and officer exchanges — that fall under security cooperation as well. We use the term security sector assistance for simplicity, and distinguish where these additional security cooperation activities are relevant. The U.S. government does not typically define [Foreign Military Sales](https://www.dsca.mil/programs/foreign-military-sales-fms) as assistance, but we believe it should, and that it ought to factor Direct Commercial Sales into its assistance planning as well. Both types of sales can lead to sustained U.S. engagement with a partner in the form of training, maintenance, and sustainment for the purchased items. Over the last several years, the national security enterprise has, with a great many fits and starts, endeavored to shift its broader focus — from weapons systems to diplomacy — away from counter-terrorism and toward strategic competition with state actors. As part of this shift, policymakers have attempted to realign security assistance to contribute more directly to strategic competition, primarily by creating new resources for security assistance in Europe and the Asia-Pacific region. The [European Deterrence Initiative](https://www.eucom.mil/document/39921/fy-2020-european-deterrence-initiative-fact-s), launched in 2014, has allocated around $6 billion annually to enhance America’s deterrent posture vis-à-vis Russia. It has been supplemented by the [Ukraine Security Assistance Initiative](https://securityassistance.org/content/%22ukraine%20security%20assistance%20initiative%22), authorized by Congress in Fiscal Year 2016 to provide $250 million in security assistance to bolster Ukraine’s security. Congress also created the [Southeast Asia Maritime Security Initiative](https://www.defensenews.com/home/2015/05/30/carter-announces-425m-in-pacific-partnership-funding/) in 2014, later re-designated as the Indo-Pacific Maritime Security Initiative, and funded it as a five-year, $425 million security assistance effort, which it has since extended through FY2025. This program is intended to improve the ability of Southeast and East Asian nations to address growing Chinese assertiveness in the South China Sea. In the FY2021 defense bill currently being finalized, Congress is set to authorize a [Pacific Deterrence Initiative](https://warontherocks.com/2020/05/the-pacific-deterrence-initiative-peace-through-strength-in-the-indo-pacific/), modeled on the European Deterrence Initiative, with as much as [$6 billion annually](https://www.defensenews.com/congress/2020/06/11/senate-panel-oks-6-billion-military-fund-to-confront-china/) to improve U.S. posture in the Asia-Pacific region, reportedly with a significant security assistance component. These efforts have been laudable, but far from sufficient. The European Deterrence Initiative has largely been used to [shift enduring costs](https://www.gao.gov/assets/690/688849.pdf) for U.S. military presence in Europe into the Overseas Contingency Operations portion of the defense budget. It has also dedicated the vast majority of funds to posture and equipment pre-positioning, with little attention to security assistance beyond combined exercises — a significant missed opportunity. The Ukraine Security Assistance Initiative has been managed insularly by the U.S. Europe Command, which has bypassed synchronization with other Defense Department and U.S. government stakeholders, leading to a [focus](https://www.ponarseurasia.org/memo/washington-security-assistance-kyiv-improving-long-term-returns-military-investments-ukraine) on the provision of “training and equipment at the expense of developing a long-term strategic vision and implementation of meaningful defense reform.” In the Asia-Pacific, the Maritime Security Initiative has shown promise, but its relatively limited funding has failed to significantly contribute to a rebalance of assistance toward the region, and it has largely funded projects with little deterrent value. Incoming U.S. Indo-Pacific Commander Adm. Philip Davidson [declared](https://www.nytimes.com/2018/09/20/world/asia/south-china-sea-navy.html), “China is now capable of controlling the South China Sea in all scenarios short of war with the United States.” Moreover, none of these initiatives have prioritized partner security sector governance — a vital element of any strategy that seeks to shape the behavior of U.S. allies and partners. As Congress considers the Pacific Deterrence Initiative, it is essential that these mistakes — failure to integrate security assistance with other instruments of national power, overemphasis on posture at the expense of cooperation, and too little ambition for assistance initiatives — are not repeated. Even avoiding them, however, will go only so far in terms of optimizing security sector assistance for the challenges ahead. The U.S. government should also address broader challenges with the way security sector assistance is prioritized and executed.

### Solvency – Science Diplomacy

#### DoS solves science diplomacy

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Science diplomacy (SD), a transformative tool of soft power that combines knowledge-based, technologically enabled problem-solving with international political agency, is underutilized but indispensable.  In the face of the negative attributes of globalization – including polarization and the tendency to socialize the costs while privatizing benefits – SD alone offers the prospect of engaging shared interests to overcome political constraints and enlarge international cooperation.  Notwithstanding conventional convictions and the present spike in the incidence of armed conflict, there are no military solutions to the world’s most pressing problems – security is much more than a martial art.  Accordingly, sustaining broadly based development, bridging digital divides and responding to the needs of the poor must become priorities for both diplomacy and international policy. Unfortunately, they are not.

The situation is not entirely bleak. Some specialized agencies (UN, EU) and governments (US, UK, [Switzerland](http://www.sciencediplomacy.org/perspective/2014/swiss-science-diplomacy), Spain, Japan and NZ) have demonstrated a number of best practices in SD. New Zealand’s Chief Science Advisor, Peter Gluckman, has worked tirelessly to establish an International Network of Government Science Advice ([INGSA](http://www.ingsa.org/)). Vaughan Turekian, the Science and Technology Advisor at the US State Department, has launched a raft of innovative [initiatives](http://www.state.gov/e/stas/c51577.htm). The SESAME Synchrotron [project](https://www.theguardian.com/world/2016/aug/30/sesame-particle-accelerator-project-middle-east-jordan) in Jordan is co-managed by a group of countries not known for their habits of cooperation – Palestine, Israel, Turkey and Cyprus, among others. Iran is no longer pursuing nuclear weapons development, and Syria’s chemical weapons program has been wound down. Still, these examples represent the exceptions rather than the rule.

It is long past time that science diplomacy, and international S&T more generally, became the preoccupation of both foreign ministries and international organizations, with priorities and resources reallocated accordingly.

#### The DoS is comparatively better for international diplomacy

Lord 8- president and CEO of IREX, an independent nonprofit organization dedicated to building a more just, prosperous, and inclusive world by empowering youth, cultivating leaders, strengthening institutions, and extending access to quality education and information (Kristin, “The State Department, Not the Pentagon, Should Lead America’s Public Diplomacy Efforts,” Brookings, 10-29-08, Accessed Online at <https://www.brookings.edu/opinions/the-state-department-not-the-pentagon-should-lead-americas-public-diplomacy-efforts/>, Accessed Online on 7-4-22)

In most circumstances, the Department of Defense (DoD) should not serve as the most visible face of the United States overseas. This is particularly true in areas where the public feels threatened by American power.

The Middle East is one area where polls show distrust of American motives and concern that America seeks to dominate the region militarily. Indeed, according to a Pew Global Attitudes Project survey taken last year, 64 percent of Turks – citizens of a NATO ally – see the United States as the greatest threat to their country in the future. Civilians, including those who do not work for government agencies, are the best conduits for building trust with wary publics.

Civilians should not just be the public face of communications. They should also set strategy and tactics that advance American foreign policy interests, in close cooperation with defense officials and military commanders. This is officially the role of the State Department, our nation’s lead agency in making and implementing foreign policy. Yet, informally, resources drive outcomes, and the Pentagon has most of the money.

Consider this: The $100 million annual price tag of the initiative described above is just one element of the Pentagon’s communication efforts in one country. Yet, it is equivalent to roughly one-eighth of the State Department’s entire public diplomacy budget for the entire world.

Perhaps the DoD’s new Iraq activities deserve this level of prominence – but it is unlikely that a government-wide discussion of priorities ever took place. Whereas $100 million per year is big money for public diplomats, it is small change for the military, which spends $434 million per day in Iraq.

The State Department, meanwhile, must meet a host of pressing concerns ranging from short-term communication needs to long-term educational exchanges with about $800 million per year.

## DOD DA

### Link – Disease Collaboration

#### The aff is resource intensive

Cullison and Morrison 22- Senior Associate (Non-resident) of the Global Health Policy Center at the CSIS AND\*\* Senior Vice President and Director at the Global Health Policy Center at the CSIS (Thomas and J. Stephen, “Bring DOD Fully into the Mix of Pandemic Preparedness and Response,” Center for Strategic and International Studies, 6-30-22, Accessed Online at <https://www.csis.org/analysis/bring-dod-fully-mix-pandemic-preparedness-and-response>, Accessed Online on 7-5-22)

Throughout the Covid-19 pandemic, the Department of Defense (DOD) has made major contributions, both domestically and internationally, to civilian-led preparedness and response, particularly in logistics and planning, and numerous biomedical arenas including research, direct clinical care, and all aspects of public health including a worldwide network of infectious disease research laboratories. Certainly, DOD will be called upon to augment civil authorities for future similar crises both at home and abroad as it has been so often in the past with Ebola, SARS, MERS, and numerous other outbreaks. Often, however, these contributions arise amid sudden emergency demands, in an ad hoc fashion, without adequate forward mission planning and budgeting, and without clear backing in U.S. national security doctrine. And often DOD actions have deliberately low visibility—they are soon out of sight, out of mind—and are neither appropriately acknowledged nor well understood. At the recent [second Global Covid-19 Summit](https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/12/2nd-global-covid-19-summit-commitments/), organized by the White House in collaboration with heads of state representing the G7, G20, African Union, and Caribbean Community (CARICOM), there was no mention of DOD’s special assets and recent performance, no DOD presence among participants, and no consideration of DOD’s current and future contributions to the global response. At some level, that omission is no surprise: the summit is first and foremost about the civilian response. At another, it is a sign of an enduring problem. Multiple factors account for why the DOD role is so often obscured: DOD is typically called upon, at short notice, to play a temporary role addressing critical, often embarrassing gaps, indeed failures, in the civilian sphere. DOD is itself hesitant and ambivalent: many within DOD do not regard its support of pandemic response as part of its core mission, even though its special expertise in intentional or accidental biological events is well recognized. Medical and public health capabilities overwhelmed by a pandemic are fundamentally no different from other disasters for which militaries routinely prepare and respond, both domestically and internationally, when civilian capabilities are insufficient. Yet significant preparation and planning are regularly exercised for many likely scenarios, such as wildfires, tropical storms, and earthquakes, while the same is not true for biological events. Certain live sensitivities are always at play. DOD commitments cannot be open-ended, otherwise they will compromise DOD’s core readiness and operational missions. The commitments cannot be seen, either at home or abroad, as militarizing and dominating the pandemic response. To answer these concerns, it is critically important to clarify early what the likely required capabilities are and how they will be resourced. When that step has not been taken ahead of a sudden emergency, hesitation can follow. These many important considerations notwithstanding, DOD remaining in relative obscurity also carries a price. Often DOD’s capacities are allowed to wither after the emergency has faded, particularly if DOD is not at the interagency table—before, during, and after the crisis—to contribute in a sustained way to strategic planning for future pandemics, with adequate forward budgeting. If DOD’s special assets are not operationally integrated with other agencies, well in advance, into overall U.S. health security strategies, both at home and abroad, hesitation, ambivalence, and ad hoc decisionmaking will follow. This all contributes to high inefficiency and confusion, impeding an effective DOD role.

## Cap K

### Links

#### **Approaching disease through military planning leads to militarized disease response and turns the case**

Ticktin 2017 – Miriam Ticktin is Associate Professor of Anthropology at The New School for Social Research (“Invasive Pathogens?: Rethinking Notions of Otherness,” Social Research: An International Quarterly, Volume 84, Number 1, Spring 2017, pp. 55-58)

Over the past 10 years, the global north has been increasingly bombarded by news of impending epidemics: SARS in 2003, avian flu in 2005, Ebola in 2013, and Zika in 2015. One thing that has helped to stoke the fear is that these are not simply viruses, but zoonoses—infectious diseases that are transmitted between species, or more specifically, from nonhuman animals or birds to humans. Although zoonoses are clearly not unknown phenomena—an earlier example is HIV/ AIDS—transformations associated with the scope and speed of human mobility and with climate change have led these infections to spread more quickly and widely, leading to a fear not simply of epidemics, but of global pandemics.

Stated differently, a threat of invasion is perceived on multiple fronts: the rapid movement of infections across political borders, but also, the movement of viruses across species borders. In this sense, it seems like threat is everywhere, and no bodies or borders could ever be safe. The field of biosecurity developed in response to this fear. Joseph Masco writes that as early as 2001, after the September 11 attacks, which were quickly followed by anthrax attacks (via letters that contained anthrax spores), public health started to be spoken of in the language of war, blurring the two realms: all vectors, from people to microbes, represented future danger. Biosecurity—initially a term used in New Zealand in the 1990s for animal and agricultural safety, to protect livestock and crops from disease—was incorporated into the counterterror state after 2001, and the logic of disease merged with those of weapons of mass destruction, becoming one unified problem (Masco 2014). That is, invasion by people and pathogens became spoken of in the same language and framed as the same problem.

The response to this problem was the practice of “preparedness,” a series of anticipatory protocols for crisis management, with the goal of being able to respond well to emergencies, from pandemics to terrorist attacks to natural disasters—all of which come to resemble one another in the mind of the planners (Lakoff 2008).

Yet, as many scholars have argued, regimes of biosecurity and preparedness have not simply responded to terror; they have actually created and propagated it. They extend the horizon of crisis, and manufacture an affective apparatus that works to incite a feeling of existential threat. Intentionally or not, they have constructed and legitimized a militarized response to questions of health and disease. In Nathaniel Hupert’s terms, it has created an “us versus them” that anticipates foreign-born infections, and a fear of global contagion by way of people crossing borders. This has resulted in the closure of borders and the quarantining of certain kinds of people. In the case of Ebola, for instance, several countries closed their borders with Guinea, Sierra Leone, and Liberia, despite this being deemed medically unnecessary and even counterproductive. In the popular American press, in the face of Ebola, there were calls for a closure of the USMexican border, demonstrating the conflation of understandings of racial “otherness” with pathology.

Is the best way to tackle the spread of pathogens to fight them with militarized technologies and weaponized regimes of health? Both papers in this section respond negatively to this framing and take on the metaphor of invasion by revisiting the medical science associated with it. In “Who’s Invading Whom? Zika and Intergenerational Public Health,” Hupert turns our understanding of the language of invasion on its head by rethinking epidemiological research and public health practice. He argues that the models we currently draw on are misguided. For example, in its approach to Zika, Brazil marshaled military troops for mass spraying of mosquito larvae, but this was not successful, because we now live in a connected world, and not all countries signed on to the “total war” approach. Hupert makes a compelling argument that this framework misdiagnoses the problem: rather than seeing the virus as the enemy, he expands the frame to demonstrate that Zika is the result of global warming and the creation of a petroleum-based, plastic-filled environment in which the Aedes mosquitoes (those that carry Zika) flourish. In this sense, the “them” in the equation of “us versus them” is in fact us. We are our own worst enemy, and the only way to actually address the spread of such viruses is to think more broadly, to include our own continuing damage to the environment. Hupert suggests that we are invading the health of generations to come by not addressing these longer-term, structural issues.

David Napier also takes on the metaphor of invasion that biosecurity and preparedness are built upon; in his paper “Epidemics and Xenophobia, or, Why Xenophilia Matters,” Napier draws on new understandings of epigenetics, regenerative medicine, and immunology, correcting the idea that the job of the immune system is to attack and fight against invading pathogens, ie, to eliminate the “non-self.” This was a model that grew out of scientific findings in the 1960s and developed in the context of the Cold War, with its associated metaphors of secret invasion. New findings challenge this model, showing that, in fact, the immune system goes out to explore, to familiarize itself with its environment; it specifically works as a “search engine of difference,” looking for the unfamiliar in order to assimilate new information. But Napier not only corrects our scientific understandings; he also proposes that we use this updated science to revise our political approaches. Rather than assuming we should be afraid of the Other, that we are constantly at war with difference, this medical science actually shows the opposite: we require difference in order to survive. Indeed, he argues, it behooves us to revise our politics, in line with this fact.

#### Securitizing biological risks ties health to the protection of global capitalism.

Mohan J. DUTTA, 15. Professor and Head of the Department of Communications and New Media at the National University of Singapore, Adjunct Professor of Communication at the Brian Lamb School of Communication at Purdue University. Neoliberal Health Organizing, 2015, p. 167-169.

The globalization of economies has produced accelerated patterns of movements of capital, goods, services, materials, and labor, simultaneously resulting in the accelerated production and circulation of anxieties constituted around these movements. Neoliberal organizing of health manifests itself in the development and deployment of surveillance, management, and coordination networks that see health primarily in the realm of threats posed by diseases dispersed through global networks, networks of bioterror, emerging infectious diseases, and biowarfare (Salinsky, 2002). The response of health systems therefore is formulated in the form of network structures of biodefense and homeland security, performing functions of surveillance, information gathering, and information dissemination, constituted around the economic logics of growth and efficiency. The protection of the economic opportunities of globalization becomes the function of public health systems formulated in the narrative of geosecurity and implemented in the form of programs controlled by the police-military complex within structures of biodefense, biosecurity and geosecurity. With this emphasis on security, the mandate for health depicts continuity with colonial implementations of public health administration to manage erstwhile colonies, increasingly being set within the military metaphor of health, turning health into a geosecurity threat for the new configurations of empire, and therefore, deploying military interventions to address health issues. Consider the following depiction in a report issued by the U.S. National Intelligence Council (NIC) that offers a picture of the global health threats posed by infectious diseases: New and reemerging infectious diseases will pose a rising global health threat and will complicate U.S. and global security over the next twenty years. These diseases will endanger U.S. citizens at home and abroad, threaten U.S. armed forces deployed overseas, and exacerbate social and political instability in key countries and regions in which the United States has significant interests. (Gordon, 2000) [END PAGE 167] The protection of human health is seen as a function of the military, tied to the goals of defending global capitalism against the threats to health and reflecting the colonial undertones of health containment measures deployed by the instruments of empire. In this instance of the report published by the NIC, knowledge about health is constituted in the realm of intelligence gathering to protect the interests of national security of the United States. Framed as threats to the health of citizens at home and abroad and to the health of the armed forces deployed overseas, infectious diseases are seen as contributors to social and political instability in key strategic regions of significant value to the United States. International relations are understood in the language of security, casting interpenetrating networks as targets of surveillance and management. The portrayal of infectious diseases as threats to geosecurity deploys valuable health resources into the hands of the military, placing the power of disease management under military structures and framing the responses to disease in military interpretations. Moreover, the juxtaposition of epidemic narratives amid narratives of war and bioterror heighten the concerns for geosecurity, foregrounding and necessitating a variety of military response strategies (Aaltola, 2012). The interpenetrating relationship between health and the military constitute one element of the consolidation of power in the hands of the global elite achieved through neoliberal transformations. The military emerges as a global organizational structure for the management of health, simultaneously justifying the deployment of resources to the military and the deployment of military strategies to address health issues. This emphasis on the military framed within the realm of protecting geostrategic interests constructs health in the realm of threats, simultaneously erasing questions of fundamental human rights to health. Similarly, in the president's Emergency Plan for AIDS Relief, a significant proportion of resources are housed in the military in order to deploy military-to-military interventions within the broader umbrella of protecting the geostrategic interests of the United States. Consider, for instance, the workings of the U.S. Africa Command to address HIV/ AIDS prevention as a security threat in Africa. The U.S. Africa Command (AFRICOM) is the result of an internal reorganization of the U.S. military command structure, creating one administrative headquarters that answers to the Secretary of Defense and is responsible for U.S. military relations with 53 African countries. AFRICOM recognizes that HIV/AIDS has an enormous impact on economic and political stability across the continent, and, by degrading military medical readiness, weakens the national security of individual countries. HIV/ AIDS programming will be a key component of AFRICOM's security cooperation and humanitarian assistance activities. (www.pepfar.gov/about/agencies/ cl 9397.htm) [END PAGE 168] Critical to the deployment of a militarized form of governance in addressing health is the consolidation of power within elite structures, working through militarized systems of governance to control disease to protect the economic interests of the status quo. The military, as an instrument of power and control, functions within the narratives of security cooperation and humanitarian assistance activities to assert its power and control in global governance. Intelligence gathering emerges as an instrument for the generation of data to secure and protect zones of economic function. This gathering of targeted intelligence and the deployment of targeted interventions becomes particularly critical within the context of maintaining open zones of communication and economic exchange within the neoliberal structuring of economic relationships. Knowledge and technical interventions in this sense are constituted amid the paradoxical agenda of needing to protect boundaries and at the same time ensuring transnational spaces of movement of capital, labor, services, materials, and markets. In this chapter, we closely interrogate the meanings that circulate around the militarization of health, and attend to the communicative processes through which the militarization of health is achieved. The surveillance of spaces and the militarization of responses, I argue, are continuous with colonial logics of controlling spaces in distant locales of imperial governance, and are discontinuous from the colonial forms of governance because of the paradoxes of networked flows in neoliberal governance.

## Advantage

### Not Inherent

#### NATO response is coordinated now

Garamone 20- Reporter for DoD News (Jim, “NATO Looks to Ensure Health Crisis Doesn't Become Security Crisis,” DoD News, 5-14-20, Accessed Online at <https://www.defense.gov/News/News-Stories/Article/Article/2187309/nato-looks-to-ensure-health-crisis-doesnt-become-security-crisis/>, Accessed Online on 7-5-22)

Royal Air Force Air Chief Marshall Sir Stuart Peach opened today's virtual meeting of the alliance's 30 chiefs of defense to discuss the response to COVID-19 and all the other aspects of security in which the military alliance is involved. Army Gen. Mark A. Milley, the chairman of the Joint Chiefs of Staff, is attending the virtual meeting from the Pentagon. Peach said the unprecedented virtual meeting demonstrates "that despite the challenging times that we are all currently facing, the core mission of NATO continues unchanged: to deliver credible and effective deterrence and defense." Afghanistan, Iraq, Kosovo, Baltic air policing and NATO's forward battlegroups are all on the table for the alliance military leaders. ... Our forces are ready, vigilant and prepared to respond to any threat." Royal Air Force Air Chief Marshall Sir Stuart Peach NATO is not a primary first responder to the pandemic, but it is doing its part, Peach said. "Allies are standing together and acting together in solidarity," he noted in his opening remarks. "Allied national armed forces are supporting national civilian efforts and are playing a key role in slowing the pandemic." Military forces from across the alliance have flown more than 100 missions to transport medical personnel, supplies and treatment capabilities, he said. Military forces have also facilitated the construction of field hospitals adding tens of thousands of treatment beds. "So our alliance is helping to get the right support to the right place, at the right time," he said. "Helping our nations, our allies, save lives. This is also a time when our resilience is being tested."

#### Disease telemedicine framework is being developed now

Bricknell 21- Editor-in-Chief at Military-medicine.com interviewing Brigadier Stefan Kowitz, Director of the NATO Multi-National Coordination Centre/European Union Medical Command (Martin, “The NATO response to the COVID-19 pandemic – Interview with Brigadier Stefan Kowitz,” Military-Medicine.com, 9-22-21, Accessed Online at <https://military-medicine.com/article/4191-the-nato-response-to-the-covid-19-pandemic-interview-with-brigadier-stefan-kowitz.html>, Accessed Online on 7-5-22)

During the COVID pandemic, the current role of MMCC/EMC has been to use lessons identified for its future work to support military medical collaboration and coordination across our participating nations, NATO and the EU. Our Telehealth Workshop in May 2021 is an excellent example. Telehealth has been a game-changer during the COVID pandemic, and the use of telehealth has increased in different areas of medical support. Telehealth provides significant means to measure the health of our soldiers and to improve the outcome of their medical treatment. COVID has been a trigger for transformation in telemedicine and telehealth. A follow-on Biosensor and Telehealth Workshop is planned in June 2022 We have just finalised an overview of COVID vaccination policies. The most notable finding is that most nations have not made COVID vaccination compulsory for members of the armed forces (as of Sep 2021). This may be hampering the success of vaccination programmes and reducing benefits for this population of risk. However, the vaccines’ success in preventing COVID infection and their limited side effects may change the situation, until a new variant of the virus appears. MMCC/EMC is increasing its work in civil-military cooperation for the evacuation of patients in large-scale emergencies and in crises, including a higher number of infectious patients. We are working in close cooperation with the NATO Joint Healthcare Working Group and other participating nations on this issue. A workshop on this topic with participants of the responsible civilian and military stakeholders is planned in June 2022. The MMCC/EMC was able to gain initial experience in stockpiling concepts in April 2020, when it was asked by the Euro-Atlantic Disaster Response Coordination Centre (EADRCC) of NATO to develop a medical stockpiling concept for the NATO COVID Trust Fund. An important part of the concept is a calculator that can be used to compute costs, storage space, and required personnel for each module. The NATO COVID Trust Fund has provided many donations based on this concept. Based on these experiences, the MMCC/EMC has extended this medical stockpiling concept to the Military Modular Multipurpose Epidemic/Pandemic Stockpiling (M3-EPS) Concept, which can be used by EU and NATO nations and medical stakeholders. As a surge capacity, rapidly deployable and modular standard packages of medical materiel have been identified and defined for stockpiling. The seven modular standard packages, such as support for intensive care units, can be used to support both military and civilian medical facilities. For example, the bilateral support that the Bundeswehr Medical Service provided to Portugal was based on the principles of M3-EPS and included an ICU capability to enhance a civilian hospital. The French medical services use a similar approach. We hope to bring these results into NATO standardisation work and into national developments. We also aim to increase our preparedness with regard to the stockpiling of CBRN chemical and radiation antidotes. If the MMCC/EMC has the time and resources, it will develop technical guidelines - based on existing NATO STANAGS - for deployed outbreak investigation team, which can be used for both infectious diseases and CBRN agents. We would like to combine deployable medical CBRN capabilities and public health capabilities. Civil-military collaboration regarding reachback laboratories with their sophisticated diagnostic capabilities has to be included in this concept.

### AT Disease

#### Disease can’t cause extinction

Dr. Toby Ord 20, Senior Research Fellow in Philosophy at Oxford University, DPhil in Philosophy from the University of Oxford, The Precipice: Existential Risk and the Future of Humanity, Hachette Books, Kindle Edition, p. 124-126

Are we safe now from events like this? Or are we more vulnerable? Could a pandemic threaten humanity’s future?10

The Black Death was not the only biological disaster to scar human history. It was not even the only great bubonic plague. In 541 CE the Plague of Justinian struck the Byzantine Empire. Over three years it took the lives of roughly 3 percent of the world’s people.11

When Europeans reached the Americas in 1492, the two populations exposed each other to completely novel diseases. Over thousands of years each population had built up resistance to their own set of diseases, but were extremely susceptible to the others. The American peoples got by far the worse end of exchange, through diseases such as measles, influenza and especially smallpox.

During the next hundred years a combination of invasion and disease took an immense toll—one whose scale may never be known, due to great uncertainty about the size of the pre-existing population. We can’t rule out the loss of more than 90 percent of the population of the Americas during that century, though the number could also be much lower.12 And it is very difficult to tease out how much of this should be attributed to war and occupation, rather than disease. As a rough upper bound, the Columbian exchange may have killed as many as 10 percent of the world’s people.13

Centuries later, the world had become so interconnected that a truly global pandemic was possible. Near the end of the First World War, a devastating strain of influenza (known as the 1918 flu or Spanish Flu) spread to six continents, and even remote Pacific islands. At least a third of the world’s population were infected and 3 to 6 percent were killed.14 This death toll outstripped that of the First World War, and possibly both World Wars combined.

Yet even events like these fall short of being a threat to humanity’s longterm potential.15

[FOONOTE]

In addition to this historical evidence, there are some deeper biological observations and theories suggesting that pathogens are unlikely to lead to the extinction of their hosts. These include the empirical anti-correlation between infectiousness and lethality, the extreme rarity of diseases that kill more than 75% of those infected, the observed tendency of pandemics to become less virulent as they progress and the theory of optimal virulence. However, there is no watertight case against pathogens leading to the extinction of their hosts.

[END FOOTNOTE]

In the great bubonic plagues we saw civilization in the affected areas falter, but recover. The regional 25 to 50 percent death rate was not enough to precipitate a continent-wide collapse of civilization. It changed the relative fortunes of empires, and may have altered the course of history substantially, but if anything, it gives us reason to believe that human civilization is likely to make it through future events with similar death rates, even if they were global in scale.

The 1918 flu pandemic was remarkable in having very little apparent effect on the world’s development despite its global reach. It looks like it was lost in the wake of the First World War, which despite a smaller death toll, seems to have had a much larger effect on the course of history.16

It is less clear what lesson to draw from the Columbian exchange due to our lack of good records and its mix of causes. Pandemics were clearly a part of what led to a regional collapse of civilization, but we don’t know whether this would have occurred had it not been for the accompanying violence and imperial rule. The strongest case against existential risk from natural pandemics is the fossil record argument from Chapter 3. Extinction risk from natural causes above 0.1 percent per century is incompatible with the evidence of how long humanity and similar species have lasted. But this argument only works where the risk to humanity now is similar or lower than the longterm levels. For most risks this is clearly true, but not for pandemics. We have done many things to exacerbate the risk: some that could make pandemics more likely to occur, and some that could increase their damage. Thus even “natural” pandemics should be seen as a partly anthropogenic risk.

#### Disease doesn’t cause extinction.

Halstead 19 – John Halstead, doctorate in political philosophy. [Cause Area Report: Existential Risk, Founders Pledge, https://founderspledge.com/research/Cause%20Area%20Report%20-%20Existential%20Risk.pdf]//BPS

However, there are some reasons to think that naturally occurring pathogens are unlikely to cause human extinction. Firstly, Homo sapiens have been around for 200,000 years and the Homo genus for around six million years without being exterminated by an infectious disease, which is evidence that the base rate of extinction-risk natural pathogens is low.82 Indeed, past disease outbreaks have not come close to rendering humans extinct. Although bodies were piled high in the streets across Europe during the Black Death,83 human extinction was never a serious possibility, and some economists even argue that it was a boon for the European economy.84 Secondly, infectious disease has only contributed to the extinction of a small minority of animal species.85 The only confirmed case of a mammalian species extinction being caused by an infectious disease is a type of rat native only to Christmas Island. Having said that, the context may be importantly different for modern day humans, so it is unclear whether the risk is increasing or decreasing. On the one hand, due to globalisation, the world is more interconnected making it easier for pathogens to spread. On the other hand, interconnectedness could also increase immunity by increasing exposure to lower virulence strains between subpopulations.87 Moreover, advancements in medicine and sanitation limit the potential damage an outbreak might do.

#### Selective pressures and UN reports mean risk is low.

Farquhar et al. 17 – Sebastian Farquhar, DPhil student at Oxford specializing in Cyber Security and AI. John Halstead, doctorate in political philosophy. Owen Cotton-Barratt, DPhil in pure mathematics. Stefan Schubert, Oxford's department of experimental psychology. Haydn Belfield, degree in Philosophy, Politics and Economics from Oriel College. Andrew Snyder-Beattie, Director of Research at the Future of Humanity Institute, University of Oxford, MS in biomathematics. [Existential Risk: Diplomacy and Governance, Global Priorities Project 2017]//BPS

For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are very unlikely to cause human extinction. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, less than 4% (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic. One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

#### No extinction – their impacts are all media fear-mongering – ebola proves

Dean 14 [Alex, "Fear Not, Ebola Won't Wipe Us Out", Spiked, 8/6/14, www.spiked-online.com/newsite/article/fear-not-ebola-wont-wipe-us-out/15549#.VaAbVvlViko] // SKY

Whenever a disease breaks out, we are bombarded with doomsday predictions. Coverage of ebola has conformed to this pattern. Major newspapers have bombarded us with page after page of pharmaceutical puffery; some journalists speak as though we are headed for an apocalypse. Commentary has been speculative, pessimistic and quick to apportion blame. The Guardian’s West Africa correspondent says that ‘new hotspots have flared up, fuelled by cross-border trade’, while US Republican politician Phil Gingrey has been making unsubstantiated rants about ‘illegal immigrants carrying deadly diseases’. The head of the World Health Organisation stoked panic with his statement that the virus ‘is moving faster than efforts to control it’. We must compare this reportage, all these ‘the end is nigh’ performances, with the reality. A quick look at hard science shows there is a dramatic mismatch and that commentators have wildly exaggerated the threat ebola poses. We are not headed for extinction. John Oxford, a virologist at the University of London, has explained that the hysteria surrounding ebola is disproportionate to the threat. He points out that ebola ‘doesn’t spread very easily’, and that the virus’s reproductive number - how many people are infected by each carrier - is very low. Where measles has a reproductive number of 12, ebola’s number is 1. Moreover, virologists have been quick to point out that ebola is very easily destroyed, for a virus. A quick wash of the hands and it’s gone. Ebola can devastate families and communities, yes, but when you consider that it has a low death toll compared with other viruses in Africa, we must conclude that reports have been hyperbolic and scaremongering. Yet this disproportionate panic over ebola was to be expected. We saw similar responses when swine flu broke out and the UK’s chief medical officer predicted 65,000 deaths and the media swallowed it up, and again when the House of Lords told us that 65,000 Britons would die from bird flu. Perhaps political and medical bodies have a duty to err on the side of caution – to over-prepare and over-predict – but the media and some of the public also gobbled up these doomsday predictions with relish. What’s the explanation for this? Why do some observers seem to be ravenously awaiting the next big pandemic? Why do we want these viruses to be worse than they are? I think some people long for doomsday predictions because they want their anti-progress attitudes to be validated. Ours is an era in which we are told to fear other people for their unpredictability and to see our fellow humans as a threat. Relationships are sometimes described as ‘toxic’ - such is our misanthropy that we now even describe our ultimate forms of intimacy in the language of disease. Today’s anti-human scaremongers are desperate for their attitudes to be affirmed, and so they exaggerate viruses which are spread through human contact and movement. People convince themselves that ebola is the result of immigration and human contact and modern forms of travel because then their regressive attitudes feel truer, more real. They don’t see the hectic globalised world as exciting; they see it as unnerving and are thrilled when a virus gives them reason to complain about it. These ridiculous attitudes have found no real affirmation, though. Humankind will deal with ebola, and a disease spread through contact should never serve as a reason to despise that contact: intimacy makes life worth living and immigration and trade are the seeds of social and economic progress. We must not allow the fearmongers to undermine our rational convictions. Pay no attention to the miserablists. Fear not, humankind – we are doing okay.

### AT Bioterror

#### Bioterrror fails

**Pinker 18** – Steven Arthur Pinker is a Canadian-American cognitive psychologist, Professor at Harvard University. [Enlightenment Now: The Case for Reason, Science, Humanism, and Progress, Viking, Penguin Group]//BPS

Biological agents are particularly ill-suited to terrorists, whose goal, recall, is not damage but theater (chapter 13).58 The biologist Paul Ewald notes that natural selection among pathogens works against the terrorist’s goal of sudden and spectacular devastation. 59 Germs that depend on rapid person-to-person contagion, like the common-cold virus, are selected to keep their hosts alive and ambulatory so they can shake hands with and sneeze on as many people as possible. Germs get greedy and kill their hosts only if they have some other way of getting from body to body, like mosquitoes (for malaria), a contaminable water supply (for cholera), or trenches packed with injured soldiers (for the 1918 Spanish flu). Sexually transmitted pathogens, like HIV and syphilis, are somewhere in between, needing a long and symptomless incubation period during which hosts can infect their partners, after which the germs do their damage. Virulence and contagion thus trade off, and the evolution of germs will frustrate the terrorist’s aspiration to launch a headline-worthy epidemic that is both swift and lethal. Theoretically, a bioterrorist could try to bend the curve with a pathogen that is virulent, contagious, and durable enough to survive outside bodies. But breeding such a fine-tuned germ would require Nazi-like experiments on living humans that even terrorists (to say nothing of teenagers) are unlikely to carry off. It may be more than just luck that the world so far has seen just one successful bioterror attack (the 1984 tainting of salad with salmonella in an Oregon town by the Rajneeshee religious cult, which killed no one) and one spree killing (the 2001 anthrax mailings, which killed five).60 To be sure, advances in synthetic biology, such as the gene-editing technique CRISPR-Cas9, make it easier to tinker with organisms, including pathogens. But it’s difficult to re-engineer a complex evolved trait by inserting a gene or two, since the effects of any gene are intertwined with the rest of the organism’s genome. Ewald notes, “I don’t think that we are close to understanding how to insert combinations of genetic variants in any given pathogen that act in concert to generate high transmissibility and stably high virulence for humans.”61 The biotech expert Robert Carlson adds that “one of the problems with building any flu virus is that you need to keep your production system (cells or eggs) alive long enough to make a useful quantity of something that is trying to kill that production system. . . . Booting up the resulting virus is still very, very difficult. . . . I would not dismiss this threat completely, but frankly I am much more worried about what Mother Nature is throwing at us all the time.”62 And crucially, advances in biology work the other way as well: they also make it easier for the good guys [public protectors] (and there are many more of them) to identify pathogens, invent antibiotics that overcome antibiotic resistance, and rapidly develop vaccines.63 An example is the Ebola vaccine, developed in the waning days of the 2014–15 emergency, after public health efforts had capped the toll at twelve thousand deaths rather than the millions that the media had foreseen. Ebola thus joined a list of other falsely predicted pandemics such as Lassa fever, hantavirus, SARS, mad cow disease, bird flu, and swine flu.64 Some of them never had the potential to go pandemic in the first place because they are contracted from animals or food rather than in an exponential tree of person-to-person infections. Others were nipped by medical and public health interventions. Of course no one knows for sure whether an evil genius will someday overcome the world’s defenses and loose a plague upon the world for fun, vengeance, or a sacred cause. But journalistic habits and the Availability and Negativity biases inflate the odds, which is why I have taken Sir Martin up on his bet. By the time you read this you may know who has won.65

#### No impact to bioterror

**Jefferson, et al, 14** [ Catherine, 21 August 2014 | doi: 10.3389/fpubh.2014.00115, Synthetic biology and biosecurity: challenging the “myths”, Catherine, Jefferson, imageFilippa Lentzos and imageClaire Marris\* Department of Social Science, Health and Medicine, King’s College London, London, UK, Catherine joined SSHM in January 2013. Before joining the department, she worked as a senior policy advisor for international security at the Royal Society, where she led a project on Neuroscience, Conflict and Security. Prior to this she was a research fellow with the Harvard Sussex Program on Chemical and Biological Weapons at the University of Sussex, where she also obtained her DPhil. Catherine’s research interests are focused on the intersection of science and security policy, with a particular emphasis on chemical and biological security, dual use governance of emerging technologies and the growth of the amateur biology community. She is currently involved in research on the social dimensions of synthetic biology within theCentre for Synthetic Biology and Innovation, <http://journal.frontiersin.org/Journal/10.3389/fpubh.2014.00115/full>]

Challenges to Myth 5 There are two dimensions to Myth 5. The first is about the intention of would-be terrorists, and the assumption is that terrorists would seek to produce mass casualty weapons and pursue capabilities on the scale of twentieth century state-level bioweapons programs. While most leading biological disarmament and non-proliferation experts believe that the risk of a small-scale bioterrorism attack is very real and very present, they consider **the risk of sophisticated large-scale bioterrorism attacks to be very small** (65). This is **backed up by historical evidence**. The three confirmed attempts to use biological agents against humans in terrorist attacks in the past were small-scale, low casualty events aimed at causing panic, and disruption rather than excessive death tolls: (i) the Rajneesh cult’s use of Salmonella on salad bars in local restaurants to sicken potential voters and make them stay away from the polls during Oregon elections in 1984; (ii) the 1990–95 attempted use of botulinum toxin and anthrax by the Japanese Aum Shinrikyo cult; (iii) and the “anthrax letters” sent to media outlets and members of US Congress in 2001 resulting in at least 22 cases of anthrax, five of which were fatal (66, 67). The second dimension to Myth 5 is the implicit assumption that producing a pathogenic organism equates producing a weapon of mass destruction. **It does not**. Considerable knowledge and resources are necessary for the processes of scaling up, storage, and developing a suitable dissemination method. These processes present **significant technical and logistical barriers**. Drawing from her in-depth study of the Iraqi, Soviet, and US bioweapons programs (3, 4), Ben Ouagrham-Gormley explains: Scaling up fragile microorganisms that are sensitive to environmental conditions and susceptible to change — and viruses are more sensitive than bacteria — has been one of the stiffest challenges for past bioweapons programs to overcome, even with appropriate expertise at hand. Scaling-up requires a gradual approach, moving from laboratory sample, to a larger laboratory quantity, to pilot-scale production, and then to even larger-scale production. During each stage, the production parameters need to be tested and often modified to maintain the lethal qualities of the agent; the entire scaling-up process can take several years (68). The dissemination of biological agents also poses difficult technical challenges. Whereas persistent chemical agents such as sulfur mustard and VX nerve gas are readily absorbed through the intact skin, no bacteria and viruses can enter the body via that route unless the skin has already been broken. Biological agents must either be ingested or inhaled to cause infection. To expose large numbers of people through the gastrointestinal tract, possible means of delivery are contamination of food and drinking water, yet neither of these scenarios would be easy to accomplish. Large urban reservoirs are usually unguarded, but unless terrorists added massive quantities of biological agent, the dilution effect would be so great that no healthy person drinking the water would receive an infectious dose (66). Moreover, modern sanitary techniques such as chlorination and filtration are designed to kill pathogens from natural sources and would probably be equally effective against a deliberately released agent. Bacterial contamination of the food supply is also unlikely to inflict mass casualties. Cooking, boiling, pasteurization, and other routine safety precautions are generally sufficient to kill pathogenic bacteria. The most likely way to inflict mass casualties with a biological agent is by disseminating it as a respirable aerosol: an invisible cloud of infectious droplets or particles so tiny that they remain suspended in the air for long periods and can be inhaled by large numbers of people. A high-concentration aerosol of B. anthracis or some other pathogen, released into the air in a densely populated urban area, could potentially infect thousands of victims simultaneously. After an incubation period of a few days, depending on the type of agent and the inhaled dose, the exposed population would experience an outbreak of an incapacitating or fatal illness. Although aerosol delivery is potentially the most lethal way of delivering a biological attack, **it involves major technical hurdles that most terrorists would be unlikely to overcome**.To infect through the lungs, infectious particles must be microscopic in size – between 1 and 5 μm in diameter. Terrorists would therefore have to develop or acquire a sophisticated delivery system capable of generating an aerosol cloud with the necessary particle size range and a high enough agent concentration to cover a broad area. Overall, an important trade-off exists between ease of production and effectiveness of dissemination. The easiest way to produce microbial agents is in a liquid form, yet when such a “slurry” is sprayed into the air, it forms heavy droplets that fall to the ground so that only a small percentage of the agent is aerosolized. In contrast, if the bacteria are first dried to a solid cake and then milled into a fine powder, they become far easier to aerosolize, yet the drying and milling process is technically difficult. The Aum Shinrikyo cult struggled with dissemination (67, 69, 70). In one of its anthrax dissemination attempts, it sprayed unknown, but probably very large, quantities of a liquid aerosol (most likely crude culture, unprocessed in any way) of B. anthracis from the roof of the Aum’s headquarters building in Tokyo. For the dissemination, the Aum set up two sprayers on the roof of the eight-story building, each within a large round cooling tower. Pipes were extended from the cooling towers to tanks below, which were filled with a liquid suspension of B. anthracis. The device worked poorly, producing large droplets rather than the very fine aerosol needed for effective transmission of anthrax. It also appears the spore concentration was very low (at least five orders of magnitude below that necessary for a highly infectious wet aerosol). In another dissemination attempt, targeting the area around the Kanagawa prefectural office and the Imperial Palace, the Aum equipped vehicles with spraying devices, but according to prosecutors’ statements, the nozzle of the sprayer clogged and the operation failed. Despite its 200 m2 laboratory containing, amongst other equipment, a glove box, incubator, centrifuge, drier, DNA/RNA synthesizer, electron microscope, two fermenters each having about a 2,000 litre capacity, and an extensive scientific library, and despite its repeated attempts at dissemination, the Aum was unsuccessful in causing any disease, and in retrospect it is clear that the cult did not even make the first substantive step toward an effective bioweapon. If, despite the odds, aerosolization was achieved, the effective delivery of biological agents in the open air is highly dependent on atmospheric and wind conditions, creating additional uncertainties. Only under highly stable atmospheric conditions would the aerosol cloud remain close to the ground where it can be inhaled, rather than being rapidly dispersed. Moreover, most microorganisms are **sensitive to u**ltra**v**iolet radiation and cannot survive more than 30 min in bright sunlight, limiting their use to night-time attacks. One major exception is anthrax, which can be induced to form spores with tough outer coats that enable them to survive for several hours in sunlight. Terrorists could, of course, stage a biological attack inside an enclosed space such as a building, a subway station, a shopping mall, or a sports arena. Such an attack, if it involved a respiratory aerosol, might infect thousands of people, but even here the technical hurdles would by no means be trivial. Finally, even if a biological weapon had been disseminated successfully, the outcome of an attack would be affected by factors like the health of the people who are exposed to the agent, and the speed and manner with which public health authorities and medical professionals detected and were able to respond to the resulting outbreak. A prompt response with effective medical countermeasures, such as antibodies and vaccination, **can significantly blunt the impact of an attack**. Simple, proven ways to curtail epidemics, such as wearing face masks, hand washing, and avoiding hospitals where transmission rates might soar, can also prove effective in stemming the spread of a disease. Indeed, this aspect of a bioterrorism attack is often underplayed in scenarios like Tara O’Toole’s “Dark Winter” and “Atlantic Storm,” where the rates of contagion used are often significantly higher than those in historical cases of natural outbreaks (71).

### AT Science Diplomacy

#### Science diplomacy fails

Dickson, 10 (David, director of SciDev.net (science for the developing world) and 20+ years in science policy journalism, 6/28/10, “Science in diplomacy: “On tap but not on top,” https://scidevnet.wordpress.com/2010/06/28/the-place-of-science-in-diplomacy-%E2%80%9Con-tap-but-not-on-top%E2%80%9D/)

There’s a general consensus in both the scientific and political worlds that the principle of science diplomacy, at least in the somewhat restricted sense of the need to get more and better science into international negotiations, is a desirable objective. There is less agreement, however, on how far the concept can – or indeed should – be extended to embrace broader goals and objectives, in particular attempts to use science to achieve political or diplomatic goals at the international level. Science, despite its international characteristics, is no substitute for effective diplomacy. Any more than diplomatic initiatives necessarily lead to good science. These seem to have been the broad conclusions to emerge from a three-day meeting at Wilton Park in Sussex, UK, organised by the British Foreign Office and the Royal Society, and attended by scientists, government officials and politicians from 17 countries around the world. The definition of science diplomacy varied widely among participants. Some saw it as a subcategory of “public diplomacy”, or what US diplomats have recently been promoting as “soft power” (“the carrot rather than the stick approach”, as a participant described it). Others preferred to see it as a core element of the broader concept of “innovation diplomacy”, covering the politics of engagement in the familiar fields of international scientific exchange and technology transfer, but raising these to a higher level as a diplomatic objective. Whatever definition is used, three particular aspects of the debate became the focus of attention during the Wilton Park meeting: how science can inform the diplomatic process; how diplomacy can assist science in achieving its objectives; and, finally, how science can provide a channel for quasi-diplomatic exchanges by forming an apparently neutral bridge between countries. There was little disagreement on the first of these. Indeed for many, given the increasing number of international issues with a scientific dimension that politicians have to deal with, this is essentially what the core of science diplomacy should be about. Chris Whitty, for example, chief scientist at the UK’s Department for International Development, described how knowledge about the threat raised by the spread of the highly damaging plant disease stem rust had been an important input by researchers into discussions by politicians and diplomats over strategies for persuading Afghan farmers to shift from the production of opium to wheat. Others pointed out that the scientific community had played a major role in drawing attention to issues such as the links between chlorofluorocarbons in the atmosphere and the growth of the ozone hole, or between carbon dioxide emissions and climate change. Each has made essential contributions to policy decisions. Acknowledging this role for science has some important implications. No-one dissented when Rohinton Medhora, from Canada’s International Development Research Centre, complained of the lack of adequate scientific expertise in the embassies of many countries of the developed and developing world alike. Nor – perhaps predictably – was there any major disagreement that diplomatic initiatives can both help and occasionally hinder the process of science. On the positive side, such diplomacy can play a significant role in facilitating science exchange and the launch of international science projects, both essential for the development of modern science. Europe’s framework programme of research programmes was quoted as a successful advantage of the first of these. Examples of the second range from the establishment of the European Organisation of Nuclear Research (usually known as CERN) in Switzerland after the Second World War, to current efforts to build a large new nuclear fusion facility (ITER). Less positively, increasing restrictions on entry to certain countries, and in particular the United States after the 9/11 attacks in New York and elsewhere, have significantly impeded scientific exchange programmes. Here the challenge for diplomats was seen as helping to find ways to ease the burdens of such restrictions. The broadest gaps in understanding the potential of scientific diplomacy lay in the third category, namely the use of science as a channel of international diplomacy, either as a way of helping to forge consensus on contentious issues, or as a catalyst for peace in situations of conflict. On the first of these, some pointed to recent climate change negotiations, and in particular the work of the Intergovernmental Panel on Climate Change, as a good example, of the way that the scientific community can provide a strong rationale for joint international action. But others referred to the failure of the Copenhagen climate summit last December to come up with a meaningful agreement on action as a demonstration of the limitations of this way of thinking. It was argued that this failure had been partly due to a misplaced belief that scientific consensus would be sufficient to generate a commitment to collective action, without taking into account the political impact that scientific ideas would have. Another example that received considerable attention was the current construction of a synchrotron facility SESAME in Jordan, a project that is already is bringing together researchers in a range of scientific disciplines from various countries in the Middle East (including Israel, Egypt and Palestine, as well as both Greece and Turkey). The promoters of SESAME hope that – as with the building of CERN 60 years ago, and its operation as a research centre involving, for example, physicists from both Russia and the United States – SESAME will become a symbol of what regional collaboration can achieve. In that sense, it would become what one participant described as a “beacon of hope” for the region. But others cautioned that, however successful SESAME may turn out to be in purely scientific terms, its potential impact on the Middle East peace process should not be exaggerated. Political conflicts have deep roots that cannot easily be papered over, however open-minded scientists may be to professional colleagues coming from other political contexts. Indeed, there was even a warning that in the developing world, high profile scientific projects, particular those with explicit political backing, could end up doing damage by inadvertently favouring one social group over another. Scientists should be wary of having their prestige used in this way; those who did so could come over as patronising, appearing unaware of political realities. Similarly, those who hold science in esteem as a practice committed to promoting the causes of peace and development were reminded of the need to take into account how advances in science – whether nuclear physics or genetic technology – have also led to new types of weaponry. Nor did science automatically lead to the reduction of global inequalities. “Science for diplomacy” therefore ended up with a highly mixed review. The consensus seemed to be that science can prepare the ground for diplomatic initiatives – and benefit from diplomatic agreements – but cannot provide the solutions to either.

### AT Data Collaboration

#### Data collaboration fails – effective surveillance is too hard to achieve

Shah and Steinhardt 20- associate professor of Medicine (Biomedical Informatics) at Stanford University and Associate CIO for Data Science at Stanford Healthcare AND\*\* assistant professor of Statistics at University of California, Berkeley (Nigam and Jacob, “How data science can ease the COVID-19 pandemic,” Brookings, 4-27-20, Accessed Online at <https://www.brookings.edu/techstream/how-data-science-can-ease-the-covid-19-pandemic/>, Accessed Online on 7-4-22)

Social distancing and stay-at-home orders in the United States have slowed the infection rate of SARS-CoV-2, the pathogen that causes COVID-19. This has halted the immediate threat to the U.S. healthcare system, but consensus on a long-term plan or solution to the crisis remains unclear. As the reality settles in that there are no quick fixes and that therapies and vaccines will take several months if not years to invent, validate, and mass produce, this is a good time to consider another question: How can data science and technology help us endure the pandemic while we develop therapies and vaccines? Before policymakers reopen their economies, they must be sure that the resulting new COVID-19 cases will not force local healthcare systems to resort to crisis standards of care. Doing so requires not just prevention and suppression of the virus, but ongoing measurement of virus activity, assessment of the efficacy of suppression measures, and forecasting of near-term demand on local health systems. This demand is highly variable given community demographics, the prevalence of pre-existing conditions, and population density and socioeconomics. Data science can already provide ongoing, accurate estimates of health system demand, which is a requirement in almost all reopening plans. We need to go beyond that to a dynamic approach of data collection, analysis, and forecasting to inform policy decisions in real time and iteratively optimize public health recommendations for re-opening. While most reopening plans propose extensive testing, contact tracing, and monitoring of population mobility, almost none consider setting up such a dynamic feedback loop. Having such feedback could determine what level of virus activity can be tolerated in an area, given regional health system capacity, and adjust population distancing accordingly. We propose that by using existing technology and some nifty data science, it is possible to set up that feedback loop, which would maintain healthcare demand under the threshold of what is available in a region. Just as the maker community stepped up to cover for the failures of the government to provide adequate protective gear to health workers, this is an opportunity for the data and tech community to partner with healthcare experts and provide a measure of public health planning that governments are unable to do. Therefore, the question we invite the data science community to focus on is: How can data science help forecast regional health system resource needs given measurements of virus activity and suppression measures such as population distancing? For the data science effort to work, first and foremost, we need to fix delays in data collection and access introduced by existing reporting processes. Currently, most departments of public health are collecting and reporting metrics that are not helpful, and are reporting them with 48 hour delays, and often with errors. Although there are examples of regional excellence in such reporting, by and large, the recommendations from the health IT community around accurate and fast public health reporting remain ignored. For instance, consider the number of COVID-19 hospitalizations, which is the best indicator of the disease’s burden on the regional health system. At the present time, due to time lags in confirming and reporting cases and a failure to distinguish between current and cumulative hospitalizations, even regions that report hospitalization data often provide only a blurry picture of the burden on the regional health system. Regions should ideally report both suspected and confirmed hospital cases and indicate the date of admission, in addition to the date of report or confirmation. Even with perfect reporting, there are fundamental delays in what such data can tell us. For example, new admissions to a hospital today reflect virus activity as of 9 to 13 days ago (which depends, in turn, on social distancing interventions from up to 17 days prior). Not factoring in such considerations have led to significant over-estimation of hospitalization needs nationwide. We therefore need to measure virus activity via proxy measures that are indicative early in the lifecycle of the virus. We must benchmark these against the number of new and total COVID-19 hospitalizations as well as ideally the number of new infections, assuming it is accurately measured through large scale testing. Available proxy measures include test positivity rates in health systems, case counts, deaths and perhaps seropositivity rates. Ongoing symptom tracking via smartphone apps, daily web or phone surveys, or cough sounds can identify potential hotspots where virus transmission rates are high. Contact tracing, which currently requires significant human effort, can also help tracking of potential cases if it can be scaled using technology under development by major American tech companies. With reliable tracking and benchmarking in place, we can calculate infection prevalence as well as daily growth and transmission rates, which is essential for determining if policies are working. This is a problem not only of data collection but also data analysis. Issues of sensitivity, daily variability, time lags, and confounding need to be studied before such data can be used reliably. For instance, symptom tracking is nonspecific and may have difficulty tracking virus activity at low prevalence. Other emerging data sources such as wastewater and smart thermometer data hold similar promise but will have to grapple with these same issues. We then need to estimate the regional effects of policy interventions such as shelter-in-place orders (via mobility reduction) and contact tracing (via reductions in new cases), first as simple forecasts and eventually maturing to what-if analyses. Several efforts have quantified the impact of mobility on virus transmission and some have suggested “safe” forms of mobility. While there are many potential ways to quantify population mobility — such as via traffic patterns, internet bandwidth usage by address, and location of credit card swipes — the most scalable mechanism to measure mobility appears to be via tracking of smartphones. Groups such as the COVID-19 Mobility Data Network provide such data daily in anonymized, aggregated reports. Once the ability to project from mobility to transmission to health system burden is constructed, we can “close the loop” by predicting how much mobility we can afford given measured virus activity and anticipated health system resources in the next two weeks. Researchers have already attempted to calculate “tolerable transmission” in the form of maximum infection prevalence in a given geography that would not overload health systems. Coupling such tolerable transmission estimates with daily assessments of a valid sample of the population (via testing, via daily surveys, via electronic health record-based surveillance) would allow monitoring of changes in transmission which can alert us to the need to intervene, such as by reducing mobility. As new measures such as contact tracing cut transmission rates, these same monitoring systems can tell us that it is safe to increase mobility further. Continuously analyzing current mobility as well as virus activity and projected health system capacity can allow us to set up “keep the distance” alerts that trade off tolerable transmission against allowed mobility. Doing so will allow us to intelligently balance public health and economic needs in real time. Concretely, then, the crucial “data science” task is to learn the counterfactual function linking last week’s population mobility and today’s transmission rates to project hospital demand two weeks later. Imagine taking past measurements of mobility around April 10 in a region (such as the Santa Clara County’s report from COVID-19 Community Mobility Reports), the April 20 virus transmission rate estimate for the region (such as from http://rt.live), and the April 25 burden on the health system (such as from the Santa Clara County Hospitalization dashboard), to learn a function that uses today’s mobility and transmission rates to anticipate needed hospital resources two weeks later. It is unclear how many days of data of each proxy measurement we need to reliably learn such a function, what mathematical form this function might take, and how we do this correctly with the observational data on hand and avoid the trap of mere function-fitting. However, this is the data science problem that needs to be tackled as a priority. Adopting such technology and data science to keep anticipated healthcare needs under the threshold of availability in a region requires multiple privacy trade-offs, which will require thoughtful legislation so that the solutions invented for enduring the current pandemic do not lead to loss of privacy in perpetuity. However, given the immense economic as well as hidden medical toll of the shutdown, we urgently need to construct an early warning system that tells us to enhance suppression measures if the next COVID-19 outbreak peak might overwhelm our regional healthcare system. It is imperative that we focus our attention on using data science to anticipate, and manage, regional health system resource needs based on local measurements of virus activity and effects of population distancing.

### AT Food Wars

#### No ag impact

Steven **Pinker 11**, Prof @ Harvard, Steven Pinker: Resource Scarcity Doesn’t Cause Wars, <http://www.globalwarming.org/2011/11/28/steven-pinker-resource-scarcity-doesnt-cause-wars/>

Once again it seems to me that the appropriate response is “maybe, but maybe not.” Though climate change can cause plenty of misery… it will not necessarily lead to armed conflict. The political scientists who track war and peace, such as Halvard Buhaug, Idean Salehyan, Ole Theisen, and Nils Gleditsch, are skeptical of the popular idea that people fight wars over scarce resources. Hunger and resource shortages are tragically common in sub-Saharan countries such as Malawi, Zambia, and Tanzania, but wars involving them are not. Hurricanes, floods, droughts, and tsunamis (such as the disastrous one in the Indian Ocean in 2004) do not generally lead to conflict. The American dust bowl in the 1930s, to take another example, caused plenty of deprivation but no civil war. And while temperatures have been rising steadily in Africa during the past fifteen years, civil wars and war deaths have been falling. Pressures on access to land and water can certainly cause local skirmishes, but a genuine war requires that hostile forces be organized and armed, and that depends more on the influence of bad governments, closed economies, and militant ideologies than on the sheer availability of land and water. Certainly any connection to terrorism is in the imagination of the terror warriors: terrorists tend to be underemployed lower-middle-class men, not subsistence farmers. As for genocide, the Sudanese government finds it convenient to blame violence in Darfur on desertification, distracting the world from its own role in tolerating or encouraging the ethnic cleansing. In a regression analysis on armed conflicts from 1980 to 1992, Theisen found that conflict was more likely if a country was poor, populous, politically unstable, and abundant in oil, but not if it had suffered from droughts, water shortages, or mild land degradation. (Severe land degradation did have a small effect.) Reviewing analyses that examined a large number (N) of countries rather than cherry-picking one or toe, he concluded, “Those who foresee doom, because of the relationship between resource scarcity and violent internal conflict, have very little support from the large-N literature.”

## Solvency

### Multilat Fails

#### Multilateralism fails – countries won’t cooperate, causing fragmentation.

**Young et al 13** (Kevin Young, Assistant Professor in the University of Massachusetts Amherst’s Department of Political Science, Thomas Hale, Postdoctoral research fellow at the Blavatnik School of Government, Oxford University, David Held, Professor of politics and international relations at Durham University, “Global Cooperation Buckling Under Past Successes,” The Globalist, Global Cooperation Buckling Under Past Successes, *\*fc*)

A Systemic Crisis While the need for global cooperation continues to grow, the ability of multilateral institutions to deliver the policy coordination we need has not kept pace. The provision of effective global governance isn’t just lacking in one area — like, say, climate change. It is systematically underperforming across a range of issues. These include the management of the global economy to human security and environmental problems. While many have pondered the many pressing global dilemmas facing the world today, there is a paradox accompanying the global situation as a whole. We are failing under the weight of our own success. Decades of multilateral agreements, new institutions and an increasingly robust system of international law have enabled a radical increase in economic globalization, with substantial benefits for a wide range of countries. But our ability to manage all this complexity of progress has not kept pace. Our more integrated global economy demands more, and more effective, collective management. The problems that confront us now are challenges we never would have encountered without the progress made by the existing network of institutions. The various committees based in Basel, the IMF, the G20, and beyond facilitated a sharp deepening of financial interdependence. When the crisis arrived, they proved adequate — albeit just adequate — to coordinate a minimally sufficient series of policy responses to avoid another Great Depression. Instead of an unmitigated disaster we got a mitigated one. They were of course unable to prevent the crisis from occurring in the first place and have not been able to take the measures needed to prevent the next one. Moreover, just as existing international institutions are useful vehicles for cooperation, they can also come to hinder it. International institutions like the IMF, for example, contain a vast array of resources and expertise for addressing global problems. Yet because of their past behavior and the lock-in of US dominance that was secured over six decades ago, many countries do not trust the IMF as a global governor. Newer institutions like the G20 are a testament to successful development of countries like Brazil, India and China, who have been able to strategically engage with economic globalization in recent years. Yet, with a greater plurality of voices at the negotiation table, cooperation becomes more difficult. Fragmentation From Cooperation When institutions proliferate, the overall system may slide toward dysfunctional fragmentation. Our current set of institutions arose from ad hoc crisis management over the postwar period. Each crisis saw the addition of a new committee, a new joint task force or some other institutional addition. But the sum is not greater than the parts. Indeed, the lack of coherence in global economic governance is directly responsible for a number of the challenges we now face. For example, the reform efforts surrounding complex financial instruments like derivatives are as complex as the instruments themselves. There is not one international institution handling the reform process. Rather, there are five different organizations all handling different pieces, separate initiatives at the EU level and a panoply of different countries all acting simultaneously. Some claim that global economic governance has utterly failed, pointing to the worst financial crisis since the Great Depression and a sluggish recovery. Others regard global economic governance as “good enough.” They point out that we averted an even worse disaster and — despite a global recession — didn’t collapse. In fact, both views are correct: global economic cooperation is failing under the weight of its own success. Across a range of issue areas, the remarkable success of global cooperation in the last several decades has made human interconnectedness weigh much more heavily on politics and the economy than it did in the past. But that process of growing cooperation has now stalled, unable to manage the deep interdependence it has created.

#### Multilateralism empirically fails

Naim ‘9 (Moises; 6/21/09; Distinguished Fellow at the Carnegie Endowment for International Peace; “MISSING LINKS Minilateralism The magic number to get real international action,” accessed 6/26/16, http://foreignpolicy.com/2009/06/21/minilateralism/)

Never say never. Because of the global economic crisis, habits that seemed unalterable are suddenly being altered. Americans are now saving more and consuming less. Financial institutions are no longer betting the house on risky investments they do not understand. Wealthy oil-exporting countries are tightening their belts. At least some emerging markets long prone to financial accidents are behaving with uncharacteristic prudence. Everywhere, change is in the air. Everywhere, that is, except in the way humanity responds to its most menacing threats. You know the list: climate change, nuclear proliferation, terrorism, pandemics, trade protectionism, and more. Not one can be solved, or even effectively contained, without more successful international collaboration. And that is not happening. When was the last time you heard that a large number of countries agreed to a major international accord on a pressing issue? Not in more than a decade. The last successful multilateral trade agreement dates back to 1994, when 123 countries gathered to negotiate the creation of the World Trade Organization and agreed on a new set of rules for international trade. Since then, all other attempts to reach a global trade deal have crashed. The same is true with multilateral efforts to curb nuclear proliferation; the last significant international nonproliferation agreement was in 1995, when 185 countries agreed to extend an existing nonproliferation treaty. In the decade and a half since, multilateral initiatives have not only failed, but India, Pakistan, and North Korea have demonstrated their certain status as nuclear powers. On the environment, the Kyoto Protocol, a global deal aimed at reducing greenhouse gas emissions, has been ratified by 184 countries since it was adopted in 1997, but the United States, the world’s second-largest air polluter after China, has not done so, and many of the signatories have missed their targets. The most recent multilateral initiative successfully endorsed by a large number of countries was in 2000, when 192 nations signed the United Nations Millennium Declaration, an ambitious set of eight goals ranging from halving the world’s extreme poverty to halting the spread of HIV/AIDS and providing universal primary education—all by 2015. Although some progress toward achieving these goals has been made—mostly thanks to Asia’s spectacular economic performance—the failure of rich countries to fully fund these efforts, execution problems in poor countries, and the global economic downturn make the achievement of the goals by 2015 unlikely. The pattern is clear: Since the early 1990s, the need for effective multicountry collaboration has soared, but at the same time multilateral talks have inevitably failed; deadlines have been missed; financial commitments and promises have not been honored; execution has stalled; and international collective action has fallen far short of what was offered and, more importantly, needed. These failures represent not only the perpetual lack of international consensus, but also a flawed obsession with multilateralism as the panacea for all the world’s ills. So what is to be done? To start, let’s forget about trying to get the planet’s nearly 200 countries to agree. We need to abandon that fool’s errand in favor of a new idea: minilateralism. By minilateralism, I mean a smarter, more targeted approach: We should bring to the table the smallest possible number of countries needed to have the largest possible impact on solving a particular problem. Think of this as minilateralism’s magic number. The magic number, of course, will vary greatly depending on the problem. Take trade, for example. The Group of Twenty (G-20), which includes both rich and poor countries from six continents, accounts for 85 percent of the world’s economy. The members of the G-20 could reach a major trade deal among themselves and make it of even greater significance by allowing any other country to join if it wishes to do so. Presumably, many would. Same with climate change. There, too, the magic number is about 20: The world’s 20 top polluters account for 75 percent of the planet’s greenhouse gas emissions. The number for nuclear proliferation is 21—enough to include both recognized and de facto nuclear countries, and several other powers who care about them. African poverty? About a dozen, including all the major donor countries and the sub-Saharan countries most in need. As for HIV/AIDS, 19 countries account for nearly two thirds of the world’s AIDS-related deaths. Of course, countries not invited to the table will denounce this approach as undemocratic and exclusionary. But the magic number will break the world’s untenable gridlock, and agreements reached by the small number of countries whose actions are needed to generate real solutions can provide the foundation on which more-inclusive deals can be subsequently built. Minilateral deals can and should be open to any other country willing to play by the rules agreed upon by the original group. The defects of minilateralism pale in comparison with the stalemate that characterizes 21st-century multilateralism. It has become far too dangerous to continue to rely on large-scale multilateral negotiations that stopped yielding results almost two decades ago. The minilateralism of magic numbers is not a magic solution. But it’s a far better bet at this point than the multilateralism of wishful thinking.