

AIRBORNE ASSASSIN: WHY THE OFFICIAL STOCKPILES OF THE SMALLPOX VIRUS MUST BE DESTROYED

ABSTRACT

Smallpox, one of the deadliest viruses, preyed upon the human population for thousands of years, leaving a trail of death and destruction in its wake. In 1980, after a successful global immunization campaign, the World Health Organization (WHO) declared that smallpox was officially eradicated. As a precautionary measure, WHO formally requested that all countries destroy their stockpiles of the virus or send their stockpiles to one of two government laboratories. As a result of this request, smallpox, a virus that kills a third of those infected, officially exists within the confines of two Collaborating Centres: the Center for Disease Control and Prevention (CDC) in Atlanta, Georgia and the Vector Institute (Vector) in Novosibirsk, Siberia. Since then, the issue of whether to destroy the official stockpiles of the smallpox virus has been vigorously debated. Recent incidents, such as protocol lapses at the CDC that exposed employees to anthrax and the discovery of a forgotten stockpile of smallpox at the National Institutes for Health (NIH), have further pushed the issue. In an increasingly interconnected global community, the prospect of an outbreak of a highly contagious, eradicated disease is more than disconcerting. Smallpox can and has escaped the confines of a laboratory before. In a world plagued by conflict and violence, the potential for bioterrorism cannot be overlooked, especially when considering smallpox has been weaponized as an agent of biological warfare before. This Comment advocates for the destruction of the official stockpiles of the smallpox virus through the introduction of a bilateral treaty between the United States and Russia. Additionally, this Comment proposes a United Nations Security Council resolution that includes a four-point legal framework that will effectively address current and future threats of bioterrorism. Lastly, in accordance with many international scholars, this Comment endorses the express criminalization of bioterrorism under international law.

INTRODUCTION

When Janet Parker accepted a job as a medical photographer at England's University of Birmingham Medical School, she likely did not anticipate that her name and her story would make history.¹ However, in 1978, Parker did make history when she became the last known person to die from smallpox.² At the university, Parker spent much of her time tucked away in a darkroom, developing photographs.³ Unfortunately for Parker, a laboratory studying one of the world's most devastating diseases was just beneath her feet.⁴

Professor Henry Bedson managed the laboratory situated directly underneath Parker's darkroom.⁵ Bedson, a medical researcher, was convinced that he was on the verge of a breakthrough with the smallpox virus.⁶ The World Health Organization (WHO) believed him; however, it condemned the inadequate conditions of his laboratory.⁷ Although WHO wanted Bedson to continue his research, it could not continue funding an unsafe facility and other organizations balked at the prospect of funding a laboratory to study what was then an all-but-eradicated virus.⁸ Thus, Bedson found himself at a crossroads. He remained committed to his cause and decided to hasten his smallpox research until the funding ran dry.⁹

This accelerated pace led to recklessness, further deteriorating the already inadequate conditions in Bedson's laboratory.¹⁰ The procedural safeguards that would have prevented smallpox, an airborne virus, from escaping the laboratory were shirked.¹¹ On account of the negligent conditions in Bedson's laboratory, the inevitable happened: the smallpox virus entered the air.¹² While

¹ Colette Flight, *Smallpox: Eradicating the Scourge*, BBC, http://www.bbc.co.uk/history/british/empire_seapower/smallpox_01.shtml (last updated Feb. 17, 2011) [hereinafter Flight, *Eradicating the Scourge*].

² Adam Wears, *The Tragic Death of Janet Parker, Smallpox's Last Victim*, KNOWLEDGENUTS (Sept. 8, 2013), <http://knowledgenuts.com/2013/09/08/the-tragic-death-of-janet-parker-smallpoxs-last-victim/>.

³ Birmingham Mail, *When Birmingham Was Gripped by Deadly Smallpox Virus*, BIRMINGHAM MAIL (June 2, 2011, 10:58 AM), <http://www.birminghammail.co.uk/news/local-news/birmingham-mail-feature-when-birmingham-was-gripped-155391>.

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ Esther Inglis-Arkell, *The Horrifying Story of the Last Death by Smallpox*, IO9 (Aug. 18, 2013, 12:00 PM), <http://io9.gizmodo.com/the-horrifying-story-of-the-last-death-by-smallpox-1161664590>.

⁸ *See id.*

⁹ *See* Birmingham Mail, *supra* note 3.

¹⁰ *See* Inglis-Arkell, *supra* note 7.

¹¹ *See id.*

¹² *See* Birmingham Mail, *supra* note 3.

Bedson's researchers kept up to date on their smallpox vaccinations, Janet Parker had not been vaccinated in twelve years.¹³ As she developed photographs, particles of this airborne assassin traveled through the building's air ducts and into her darkroom, where she unknowingly breathed the deadly pathogen into her lungs.¹⁴

On August 11, 1978, Janet Parker fell ill with a headache and muscular pain.¹⁵ At first, she attributed her symptoms to a cold, but the smallpox virus continued to rage inside of her.¹⁶ She developed a rash, which doctors insisted was benign.¹⁷ Shortly thereafter, her symptoms worsened and troubling spots emerged on her face and body.¹⁸ Parker was admitted to the local hospital for treatment.¹⁹ Although a spotted rash is often the calling card of the smallpox virus,²⁰ it took six days for Parker to be diagnosed.²¹ Doctors likely did not immediately attribute Parker's symptoms to smallpox because it was a nearly eradicated virus that she had previously been vaccinated for.²² Three weeks later, Janet Parker succumbed to the virus, cementing her tragic place in history as the last known victim of smallpox.²³

In 1980, following the success of a global immunization campaign, WHO declared that smallpox was officially eradicated.²⁴ Prior to its eradication, scientists around the world studied the virus in the hopes of perfecting a vaccine.²⁵ As a precautionary measure, WHO formally requested that all countries destroy their stockpiles of the virus or send their stockpiles to one of two government laboratories.²⁶ As a result of this request, smallpox, a virus

¹³ Inglis-Arkill, *supra* note 7.

¹⁴ See Birmingham Mail, *supra* note 3.

¹⁵ SEC'Y OF STATE FOR SOC. SERV., REPORT OF THE INVESTIGATION INTO THE CAUSE OF THE 1978 BIRMINGHAM SMALLPOX OCCURRENCE, 1980, HC, ¶ 2 (UK).

¹⁶ See Birmingham Mail, *supra* note 3.

¹⁷ SEC'Y OF STATE FOR SOC. SERV., *supra* note 15.

¹⁸ See *id.*

¹⁹ See *id.*

²⁰ See *Smallpox Fact Sheet*, CTR. FOR DISEASE CONTROL & PREVENTION (last updated Jan. 15, 2016), <http://emergency.cdc.gov/agent/smallpox/overview/disease-facts.asp>.

²¹ Birmingham Mail, *supra* note 3. Upon learning that Parker contracted smallpox as a result of his laboratory's unsafe procedures, Bedson became overcome with guilt and committed suicide. *Id.*

²² See *id.*

²³ See Inglis-Arkill, *supra* note 7.

²⁴ *Emergencies Preparedness, Response: Smallpox*, WORLD HEALTH ORG., <http://www.who.int/csr/disease/smallpox/en/> (last visited Oct. 5, 2016).

²⁵ Even the famed scientist, Edward Jenner, experimented with the smallpox virus. See Stefan Riedel, *Edward Jenner and the History of Smallpox and Vaccination*, 18 PROCEEDINGS: BAYLOR UNIV. MED. CTR. 21, 21 (2005). His work greatly contributed to the eventual vaccine. *Id.*

²⁶ RICHARD PRESTON, DEMON IN THE FREEZER: A TRUE STORY 96 (2003).

that kills a third of those infected,²⁷ officially exists within the confines of two WHO Collaborating Centres: the Center for Disease Control and Prevention (CDC) in Atlanta, Georgia and the Vector Institute (Vector) in Novosibirsk, Siberia.²⁸

The issue of whether or not to destroy the official stockpiles of the smallpox virus became a subject of vigorous debate.²⁹ Despite much of the scientific community arguing in favor of destruction,³⁰ the virus remains within the CDC and Vector.³¹ However, recent incidents, such as protocol lapses at the CDC that exposed employees to anthrax³² and the discovery of a forgotten stockpile of smallpox at the National Institutes for Health (NIH),³³ have breathed new life into the debate. In a world rife with conflict and violence, the prospect of bioterrorism, which “involves the malicious use of pathogenic microbes to cause disease, death, and fear in civil populations,”³⁴ cannot be ignored. As Janet Parker’s death illustrates, smallpox can and has escaped the confines of a laboratory.³⁵ Even more startling, the virus has previously been weaponized as an agent of biological warfare.³⁶ What would happen if smallpox, the virus that brutally ravaged the human population, fell into the wrong hands?

This Comment advocates for the destruction of the official stockpiles of the smallpox virus through the introduction of a bilateral treaty between the United States and Russia. Additionally, this Comment proposes a United Nations (U.N.) Security Council resolution that includes a four-point legal framework

²⁷ Flight, *Eradicating the Scourge*, *supra* note 1.

²⁸ *Id.* WHO Collaborating Centres are institutions such as research institutions directed by the Director-General to carry out activities in support of WHO’s programs. *Collaborating Centres*, WORLD HEALTH ORG., <http://www.who.int/collaboratingcentres/en/> (last visited Oct. 7, 2016).

²⁹ See D.A. Henderson, *Deliberations Regarding the Destruction of Smallpox Virus: A Historical Review, 1980-1998* (Nov. 20, 1998) (unpublished working paper) (available at <http://www.cojoweb.com/Biodefense7.html>) [hereinafter Henderson, *Deliberations Regarding the Destruction of Smallpox Virus*].

³⁰ *See id.*

³¹ Flight, *Eradicating the Scourge*, *supra* note 1.

³² Lena H. Sun, *CDC Says About 75 Scientists May Have Been Exposed to Anthrax*, WASH. POST (June 19, 2014), https://www.washingtonpost.com/national/health-science/cdc-says-about-75-scientists-may-have-been-exposed-to-anthrax-and-receiving-antibiotics/2014/06/19/4b96467e-f7ea-11e3-8aa9-dad2ec039789_story.html.

³³ Brady Dennis & Lena H. Sun, *FDA Found More Than Smallpox Vials in Storage Room*, WASH. POST (July 16, 2014), https://www.washingtonpost.com/national/health-science/fda-found-more-than-smallpox-vials-in-storage-room/2014/07/16/850d4b12-0d22-11e4-8341-b8072b1e7348_story.html.

³⁴ David P. Fidler, *Bioterrorism, Public Health, and International Law*, 3 CHL J. INT’L L. 7, 11 (2002).

³⁵ *See* Birmingham Mail, *supra* note 3.

³⁶ PRESTON, *supra* note 26, at 112.

to effectively address current and future threats of bioterrorism. Lastly, in accordance with many international scholars, this Comment endorses the express criminalization of bioterrorism under international law. Part II of this Comment discusses the eradication of smallpox, its official and unofficial existence today, and the debate surrounding whether the official stocks should be destroyed. Part III critiques the current legal frameworks in place that are meant to address bioterrorism. To successfully destroy the smallpox virus and protect against future threats, Part IV proposes the aforementioned bilateral treaty, U.N. Security Council resolution, and express criminalization that will effect the necessary change. Part V serves as a brief summary and conclusion.

I. NOW AND THEN: SMALLPOX THROUGH THE YEARS

A. *The Eradication of Smallpox*

The smallpox virus has been affecting and infecting the human race for thousands of years.³⁷ Caused by the variola virus,³⁸ smallpox is virulent,³⁹ contagious,⁴⁰ and easily “transmitted from person to person via infected aerosols and droplets from infected symptomatic people.”⁴¹ The famed scientist and father of immunology, Edward Jenner, referred to smallpox as “the speckled monster,” referring to its most well-known symptom: a spotted rash that spreads across the infected individual’s skin.⁴² A person infected with smallpox remains contagious until each and every spot on their body has scabbed and fallen off.⁴³ In spite of its longstanding existence, smallpox experienced a particularly deadly resurgence in the nineteenth and twentieth

³⁷ See Aneela Naureen Hussain, *Smallpox*, MEDSCAPE, <http://emedicine.medscape.com/article/237229-overview> (last updated Nov. 17, 2015). One of the earliest suspected cases of smallpox dates back to 1157 BCE, and was discovered in the remains of the Egyptian pharaoh, Ramses V. *Id.* When researchers studied his mummified remains, they noted the trademark scarring that is common with smallpox. *History of Smallpox*, HIST. OF VACCINES, <http://www.historyofvaccines.org/content/timelines/smallpox> (last visited Oct. 5, 2016). The existence of a smallpox-like disease is also present in Sanskrit medical texts, which date back to 1500 BCE. *Id.*

³⁸ *Smallpox Fact Sheet*, *supra* note 20. For more information on the variola virus, see Hussain, *supra* note 37.

³⁹ Flight, *Eradicating the Scourge*, *supra* note 1.

⁴⁰ *Frequently Asked Questions and Answers on Smallpox*, WORLD HEALTH ORG., <http://www.who.int/csr/disease/smallpox/faq/en/> (last updated June 28, 2016).

⁴¹ *Emergencies Preparedness, Response: Smallpox*, *supra* note 24. Humans are the only known natural hosts of the variola virus. *Smallpox Fact Sheet*, *supra* note 20.

⁴² Flight, *Eradicating the Scourge*, *supra* note 1.

⁴³ See *Smallpox Fact Sheet*, *supra* note 20.

centuries.⁴⁴ The death toll from these epidemics was staggering with “[s]ome estimates indicat[ing] that 20th-century worldwide deaths from smallpox numbered more than 300 million.”⁴⁵ Although smallpox did not discriminate in terms of the countries it infected,⁴⁶ developing countries were hit the hardest, experiencing “as many as fifty million smallpox cases per year.”⁴⁷ In 1959, “60% of the world’s population lived in areas where smallpox was endemic.”⁴⁸

In response to smallpox’s ongoing devastation and increased pressure from the international community, WHO launched the Smallpox Eradication Programme (SEP).⁴⁹ The SEP’s strategy was twofold: “to vaccinate at least 80% of the population and to establish systems for surveillance (case detection) and containment of outbreaks.”⁵⁰ The SEP ran from 1966 until 1980, when WHO officially declared that smallpox had successfully been eradicated.⁵¹ Most notably, smallpox became “the first disease to have been eradicated through concerted and determined global action.”⁵² D.A. Henderson, one of the scientists who directed the SEP, attributes its success largely to “a unique, fully collaborative international effort on the part of WHO and Member States.”⁵³ Because WHO had no binding legal authority to force countries to participate, the SEP was designed “to evolve within a framework of broad principles and expectations, pragmatically modified by reality.”⁵⁴

B. Official (and Unofficial) Housing of the Smallpox Virus

As mentioned above, in the midst of the SEP, WHO formally requested that all countries either destroy their stockpiles of the smallpox virus or send

⁴⁴ *History of Smallpox*, *supra* note 37.

⁴⁵ *Id.*

⁴⁶ David A. Koplow, *That Wonderful Year: Smallpox, Genetic Engineering, and Bio-Terrorism*, 62 MD. L. REV. 417, 431 (2003). In the nineteenth century, “three major epidemics rocked even the most developed European countries.” *Id.*

⁴⁷ *Id.* at 432 (referring to the 1950s).

⁴⁸ D.A. Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, 65 BULL. WORLD HEALTH ORG. 535, 536 (1987) [hereinafter Henderson, *Principles and Lessons from the Smallpox Eradication Programme*].

⁴⁹ F. FENNER ET AL., WORLD HEALTH ORG., *Smallpox and its Eradication*, 6 HIST. OF INT’L PUB. HEALTH 1, 422 (1988).

⁵⁰ Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, *supra* note 48.

⁵¹ *Id.*

⁵² *Id.* at 535.

⁵³ *Id.*

⁵⁴ FENNER ET AL., *supra* note 49.

them to one of two Collaborating Centres.⁵⁵ Although WHO did not have the legal authority to compel countries to relinquish their stockpiles, all laboratories were eventually deemed compliant.⁵⁶ As of today, smallpox may only officially exist within the two Collaborating Centres: the CDC⁵⁷ and Vector.⁵⁸ Unfortunately, these facilities are not infallible. From exposing employees to live anthrax⁵⁹ to improperly sending deadly pathogens,⁶⁰ the lapses at the CDC have become readily apparent in recent years. Vector is also problematic because it was once used as a Soviet biological weapons laboratory that in fact weaponized smallpox.⁶¹ In 1989, scientists at Vector “were making and tending a stockpile of twenty tons of weapons-grade smallpox.”⁶² They intended to put smallpox into bio-warheads, which would parachute down to earth and spray smallpox particles into the air.⁶³ Between egregious lapses in protocol at the CDC and Vector’s nefarious history, it is reasonable to question whether the official smallpox stockpiles are truly secure.

The security of the official stockpiles is a cause for concern; however, the very real likelihood that unofficial stockpiles exist is equally as alarming.⁶⁴ After WHO called for all countries to dispose of their smallpox stockpiles, “no inspections were carried out to verify that other countries had destroyed their

⁵⁵ Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, *supra* note 48, at 535. In 1975, it was known that “at least seventy-five laboratories had frozen stocks of smallpox virus.” PRESTON, *supra* note 26.

⁵⁶ See PRESTON, *supra* note 26. See also Koplow, *supra* note 46, at 438.

⁵⁷ It is rumored that the CDC keeps its stockpile in a stainless steel freezer. PRESTON, *supra* note 26. The freezer is secured to the ground and contains an alarm system that will alert federal marshals. See *id.*

⁵⁸ *Id.* The Russian stockpile was moved to Vector after its previous home was deemed unsafe. See Koplow, *supra* note 46, at 439.

⁵⁹ Sun, *supra* note 32.

⁶⁰ Dennis & Sun, *supra* note 33. The CDC “improperly sent potentially deadly pathogens, including anthrax, botulism bacteria and a virulent bird flu virus to other laboratories in five separate incidents over the past decade” Brady Dennis & Lena H. Sun, *CDC Says It Improperly Sent Dangerous Pathogens in Five Incidents in Past Decade*, WASH. POST (July 11, 2014), https://www.washingtonpost.com/national/health-science/cdc-says-it-improperly-sent-dangerous-pathogens-in-five-incidents-in-past-decade/2014/07/11/acd55bfc-0882-11e4-a0dd-f2b22a257353_story.html.

⁶¹ Judith Miller, *Russian Scientist Dies in Ebola Accident at Former Weapons Lab*, N.Y. TIMES (May 25, 2004), <http://www.nytimes.com/2004/05/25/world/russian-scientist-dies-in-ebola-accident-at-former-weapons-lab.html>.

⁶² PRESTON, *supra* note 26.

⁶³ *Id.*

⁶⁴ See Colette Flight, *Silent Weapon: Smallpox and Biological Warfare*, BBC, http://www.bbc.co.uk/history/worldwars/coldwar/pox_weapon_01.shtml (last updated Feb. 17, 2011) [hereinafter Flight, *Silent Weapon*].

stocks of the virus.”⁶⁵ In fact, China, Cuba, India, Iran, Israel, Pakistan, and Yugoslavia are suspected of having retained smallpox vials.⁶⁶ Even Frank Fenner, one of the leaders of the SEP, believes that Russia possesses more smallpox than what it officially holds at Vector.⁶⁷ Dr. Ken Alibek, a former Vector scientist, thinks it is possible that, after the fall of the Soviet Union, disgruntled Vector scientists may have sold samples of smallpox or left “to work in rogue states engaged in illicit biological weapons development.”⁶⁸ This theory resonates with Western intelligence agencies, which contend that North Korea, Iraq, and Russia “have the capacity to deploy smallpox as a weapon of mass destruction.”⁶⁹ Following the 2014 discovery of a forgotten smallpox stockpile in a storage room at the NIH,⁷⁰ it is impossible not to wonder where else the virus might be hiding.

C. *To Destroy or Not to Destroy—That is the Question*

Once the SEP successfully eradicated smallpox, many in the scientific community questioned whether the official stockpiles should be retained at all.⁷¹ WHO’s Committee on Orthopoxvirus Infections was given the momentous task of deciding whether to retain or destroy the official stocks.⁷² Before deciding, the Committee met widely with the scientific community to elicit their views on the subject.⁷³ Scientists who advocated for retention saw scientific value in the stockpiles and did not want to lose the genetic information held within the virus.⁷⁴ With the potential for unofficial stockpiles and rogue science, they argued that the official stocks should be retained to create a better vaccine.⁷⁵ Scientists who advocated for destruction “feared the

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ David Brown, *Destruction of Smallpox Samples Is Reassessed*, WASH. POST (Mar. 15, 1999), <http://www.washingtonpost.com/archive/politics/1999/03/15/destruction-of-smallpox-samples-is-reassessed/c1b1dbbd-14a1-488e-b43f-672bcdbe2f0e/> (“I think the likelihood that the Russians destroyed everything except what they had in the WHO laboratory is very small”).

⁶⁸ Flight, *Silent Weapon*, *supra* note 64.

⁶⁹ *Id.* After a former Iraqi bioweapons researcher professed that some of his colleagues had experimented with camelpox, “[s]ome people have inferred that Iraq had smallpox, and was using camelpox as a safe ‘surrogate’ in tests” because camelpox is genetically similar to smallpox but does not infect humans. Brown, *supra* note 67.

⁷⁰ Dennis & Sun, *supra* note 33.

⁷¹ See Henderson, *Deliberations Regarding the Destruction of Smallpox Virus*, *supra* note 29.

⁷² See *id.*

⁷³ See *id.*

⁷⁴ See *id.*

⁷⁵ Brown, *supra* note 67.

reintroduction of smallpox”⁷⁶ into a vulnerable population. Although they acknowledged that unofficial stockpiles could exist, they believed that an international agreement “would diminish to some extent the likelihood of the virus being released.”⁷⁷

With arguments made on both sides, it became increasingly clear that the majority of the scientific community advocated for the destruction of the official smallpox stockpiles.⁷⁸ Thus, in 1994, the Committee voted unanimously in favor of destruction and set specific deadlines to carry out its decision.⁷⁹ However, every deadline was either delayed or ignored altogether.⁸⁰ As each deadline passed, so did the expectation that the virus would actually be destroyed.

II. BIOTERRORISM: CURRENT LEGAL FRAMEWORK

A. *Outbreak: If Smallpox Were Used as an Agent of Bioterror Today*

After the terrorist attacks of September 11, 2001 and the anthrax attacks that followed, the fear that smallpox could be used as a biological weapon was pervasive amongst nations.⁸¹ Although many years have passed since then, this fear should persist. Evidence indicates that al-Qaeda actively pursued and amassed biological weapons well before the September 11th attacks and has continued to prioritize the development of biological weapons.⁸² Prior to the September 11th attacks, scientists “conduct[ed] basic training courses in chemical, biological, and radiological weapons for hundreds of extremists” at al-Qaeda training camps.⁸³ Al-Qaeda leadership recruited a “Pakistani government biologist . . . to develop a biological weapons program” in addition

⁷⁶ Henderson, *Deliberations Regarding the Destruction of Smallpox Virus*, *supra* note 29.

⁷⁷ *Id.*

⁷⁸ *See id.* In 1993, the Counsel of the American Society of Microbiology, the Executive Board of the International Union of Microbiological Societies, the Board of Scientific Counselors of the National Center for Infectious Diseases of the CDC, the Board of Directors of the American Type Culture Collection, and the Russian Academy of Medical Sciences all advocated for destruction. *See id.*

⁷⁹ *Id.*

⁸⁰ Koplou, *supra* note 46, at 443.

⁸¹ Sheryl G. Stolberg & Judith Miller, *A Nation Challenged: Bioterror Role an Uneasy Fit for the C.D.C.*, N.Y. TIMES (Nov. 11, 2011), <http://www.nytimes.com/2001/11/11/us/a-nation-challenged-medicine-bioterror-role-an-uneasy-fit-for-the-cdc.html>. There was speculation that one of the planes hijacked on 9/11 may have been heading for the CDC. *Id.*

⁸² Rolf Mowatt-Larssen, *Al Qaeda's Pursuit of Weapons of Mass Destruction*, FOREIGN POL'Y (Jan. 25, 2010), <http://foreignpolicy.com/2010/01/25/al-qaedas-pursuit-of-weapons-of-mass-destruction/>.

⁸³ *Id.*

to another program that focused solely on the development of weaponized anthrax.⁸⁴ Shortly before September 11th, two members of al-Qaeda were detained in the United States with a crop duster manual and a biology textbook in their possession.⁸⁵ This discovery suggested that a biological attack was imminent⁸⁶ and the gravity of that potential attack was heightened by the use of a crop duster, as it has the ability to quickly spray a multitude of deadly pathogens into the airspace.⁸⁷ Following the September 11th terrorist attacks, al-Qaeda operatives continued to receive biological and chemical weapons training.⁸⁸ Al-Qaeda's biological and nuclear weapons programs are mentioned in many of the group's documents and, the September 11th mastermind himself, Khalid Sheikh Mohammed, confirmed some of the programs' details.⁸⁹ Al-Qaeda's longstanding, steady pursuit and development of biological weapons is deeply unsettling and a credible threat to both national and global security.

While al-Qaeda and its bioterrorism programs remain troubling, it is important not to discount the new kid on the block: the rapidly emerging global threat known as the Islamic State of Iraq and Syria (ISIS). Having already carried out a large-scale massacre in Paris⁹⁰ as well as downing a Russian airliner with a soda can bomb,⁹¹ it is clear that ISIS is a force to be reckoned with. With mass atrocities as its goal, ISIS next move could very well be bioterrorism; and documents recovered from an ISIS laptop seem to confirm this conjecture. The laptop's owner, who studied chemistry and physics, sought to use his education to develop biological weapons for ISIS.⁹² This conjecture

⁸⁴ *Id.* Al-Qaeda attempted an anthrax attack on the United States; however, it was ultimately unsuccessful. *See id.*

⁸⁵ *Id.*

⁸⁶ *See id.*

⁸⁷ *See* Lynn C. Klotz & Edward J. Sylvester, *Crying Wolf: The Terrorist Crop-Duster*, HUFFINGTON POST: THE BLOG (June 14, 2010, 5:12 AM), http://www.huffingtonpost.com/dr-lynn-c-klotz/crying-wolf-the-terrorist_b_538204.html.

⁸⁸ Mowatt-Larssen, *supra* note 82.

⁸⁹ *Id.* Khalid Sheikh Mohammed later recanted some of his prior statements regarding al-Qaeda's nuclear and biological weapons programs. *Id.*

⁹⁰ *See generally* Rukmini Callimachi, *ISIS Claims Responsibility, Calling Paris Attacks 'First of the Storm'*, N.Y. TIMES (Nov. 14, 2015), <http://www.nytimes.com/2015/11/15/world/europe/isis-claims-responsibility-for-paris-attacks-calling-them-miracles.html>.

⁹¹ *See generally* Barbara Starr & Catherine E. Shoichet, *Russian Plane Crash: U.S. Intel Suggests ISIS Bomb Brought Down Jet*, CNN (Nov. 4, 2015, 8:37 PM), <http://www.cnn.com/2015/11/04/africa/russian-plane-crash-egypt-sinai/>; C.J. Chivers, *Bomb Experts Analyze the ISIS Soda-Can Bomb Photo*, N.Y. TIMES (Nov. 18, 2015, 6:01 PM), <http://www.nytimes.com/live/paris-attacks-live-updates/a/>.

⁹² Harald Doornbos & Jenan Moussa, *Found: The Islamic State's Terror Laptop of Doom*, FOREIGN POL'Y (Aug. 28, 2014), <http://foreignpolicy.com/2014/08/28/found-the-islamic-states-terror-laptop-of-doom/>.

is supported by the laptop's contents, which included documentation "on how to develop biological weapons and how to weaponize the bubonic plague from infected animals."⁹³ The laptop also contained research on how to safely test a weaponized disease.⁹⁴ The laptop's owner understood the devastation biological weapons can cause, remarking that "[t]he advantage of biological weapons is that they do not cost a lot of money, while the human casualties can be huge."⁹⁵ Although it is unknown whether ISIS currently possesses any biological weapons, some contend that this extremist group has the capabilities and wherewithal to produce them.⁹⁶

If a smallpox outbreak were to occur today,⁹⁷ the potential damage would be incalculable. Firstly, in our increasingly interconnected world, the potential for transmission of this airborne assassin is amplified with each plane, train, and airspace shared.⁹⁸ Secondly, there is no diagnostic test for smallpox and many doctors are unfamiliar with the symptoms of an eradicated disease.⁹⁹ This means "that the diagnosis of initial smallpox cases will be delayed, further promoting spread of [the] disease."¹⁰⁰ Thirdly, because routine smallpox vaccinations stopped in the 1970s,¹⁰¹ "the global susceptibility to [the] smallpox virus is higher than it has ever been in modern history."¹⁰² The smallpox vaccine is currently unavailable to the public,¹⁰³ and even so, it has many adverse side effects, including death.¹⁰⁴ Lastly, and most significantly, the current frameworks in place to address a smallpox outbreak or biological

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *See id.*

⁹⁷ If smallpox were to reappear, "[i]t would have to be from deliberate use." Brown, *supra* note 67.

⁹⁸ One study analyzed the rate of transmission of smallpox in contemporary industrialized societies and determined that one infected person could infect four to six others. Tara O'Toole et al., *Shining Light on "Dark Winter,"* 34 CLINICAL INFECTIOUS DISEASES 972, 975 (2002).

⁹⁹ See Lawrence K. Altman, *Smallpox Vaccine Knowledge Found Lacking*, N.Y. TIMES (May 10, 2002), <http://www.nytimes.com/2002/05/10/us/smallpox-vaccine-knowledge-found-lacking.html>.

¹⁰⁰ O'Toole et al., *supra* note 98, at 974.

¹⁰¹ FENNER ET AL., *supra* note 49, at 424. WHO called for the cessation of routine smallpox vaccination programs in all countries. *See id.*

¹⁰² O'Toole et al., *supra* note 98, at 974. See Edward P. Richards et al., *The Smallpox Vaccination Campaign of 2003: Why Did It Fail and What Are the Lessons for BioTerrorism Preparedness?*, 64 LA. L. REV. 851, 857 (2004) ("Smallpox vaccination does not give life-long immunity, and approximately half of the world's population has never been vaccinated.")

¹⁰³ *Frequently Asked Questions About Smallpox Vaccine*, CTR. FOR DISEASE CONTROL & PREVENTION (Dec. 29, 2004), <http://www.bt.cdc.gov/agent/smallpox/vaccination/faq.asp>.

¹⁰⁴ Edward A. Belongia & Allison L. Naleway, *Smallpox Vaccine: The Good, the Bad, and the Ugly*, 1 CLINICAL MED. & RES. 87, 89 (2003).

attack fall woefully short. These frameworks will be explored more fully below.

B. Current Bioterrorism Preparedness Programs

The world's most respected global health organizations address the possibility of a bioterrorism attack by having plans in place to combat a smallpox outbreak in the twenty-first century.¹⁰⁵ Both the CDC and WHO have outlined preparedness programs to respond, contain, and treat an outbreak.¹⁰⁶ These plans emphasize quick identification and diagnosis of the virus so as to isolate those infected and prevent smallpox from spreading further into the population.¹⁰⁷ Once a case of smallpox has been confirmed, both plans call for vaccination.¹⁰⁸ WHO even maintains an emergency stockpile of the smallpox vaccine.¹⁰⁹

While it is commendable for the CDC and WHO to take proactive steps to tackle a potential resurgence of the virus, the likely ineffectiveness of these preparedness programs in the face of an actual outbreak offers little comfort.¹¹⁰ There has never been a widespread, full-scale biological attack using airborne pathogens;¹¹¹ thus, these procedures have never actually been implemented and are largely untested.¹¹² The United States has dealt with biological terrorism using an airborne pathogen on only one occasion: the 2001 anthrax attacks.¹¹³

¹⁰⁵ See, e.g., *CDC Smallpox Response Plan and Guidelines*, CTR. FOR DISEASE CONTROL & PREVENTION (Mar. 20, 2003), <http://www.bt.cdc.gov/agent/smallpox/response-plan/files/exec-sections-i-vi.pdf>.

¹⁰⁶ See *id.*; see also *Preparedness in the Event of a Smallpox Outbreak*, WORLD HEALTH ORG., <http://www.who.int/csr/disease/smallpox/preparedness/en/> (last visited Oct. 7, 2016).

¹⁰⁷ See *Preparedness in the Event of a Smallpox Outbreak*, *supra* note 106; see also *CDC Smallpox Response Plan and Guidelines*, *supra* note 105.

¹⁰⁸ See *CDC Smallpox Response Plan and Guidelines*, *supra* note 105; see also *Preparedness in the Event of a Smallpox Outbreak*, *supra* note 106.

¹⁰⁹ *Preparedness in the Event of a Smallpox Outbreak*, *supra* note 106.

¹¹⁰ Kelly S. Culpepper, *Bioterrorism and the Legal Ramifications of Preventative and Containment Measures*, 12 QUINNIAC HEALTH L.J. 245, 276 (2008).

¹¹¹ When biological agents are utilized in a way that results in widespread, mass casualties, the pathogens are often referred to as weapons of mass destruction (WMDs). See Oliver Grundmann, *The Current State of Bioterrorist Attack Surveillance and Preparedness in the US*, 7 RISK MANAGEMENT & HEALTHCARE POL'Y 177, 178 (2014) ("Despite the possibility of causing mass casualties, to date there have been no reported incidents where biological agents have been causatively linked to be used as WMDs [weapons of mass destruction].").

¹¹² Culpepper, *supra* note 110.

¹¹³ See *Anthrax: The Threat*, CTR. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/anthrax/bioterrorism/threat.html> (last updated Aug. 1, 2014). It is important to note that there are other instances of bioterrorism in U.S. history. See Scott Keyes, *A Strange but True Tale of Voter Fraud and Bioterrorism*, ATLANTIC (June 10, 2014), <http://www.theatlantic.com/politics/archive/2014/06/a-strange-but->

Like smallpox, anthrax can be transmitted through the air and inhaled.¹¹⁴ Although considered “the worst biological attacks in U.S. history,” with five deaths and only seventeen individuals exposed,¹¹⁵ the 2001 anthrax attacks failed to develop into a widespread, biological attack that would cause mass destruction. With little experience combatting bioterrorism, “the effectiveness of these procedures will not be tested until an actual outbreak occurs.”¹¹⁶

Although untested, it is clear that, in the event of a widespread outbreak, these preparedness programs would still fall devastatingly short. While both the CDC and WHO emphasize the importance of a timely identification of the virus, this is easier said than done. Having been eradicated for decades, many doctors are unfamiliar with the virus¹¹⁷ and may not correctly diagnose an infected patient. With no diagnostic testing widely available¹¹⁸ and the general lack of smallpox knowledge in the medical community,¹¹⁹ there is a high likelihood that an infected patient could be misdiagnosed, which would enable the virus to spread amongst the unimmunized, at-risk population. Despite vaccination being a key point in both preparedness plans, when facing a smallpox epidemic, receiving the vaccine is more of a pipe dream than a reality. With an ever-growing population, WHO’s emergency stockpile of the smallpox vaccine is not enough to combat a full-blown epidemic.¹²⁰ There simply will not be enough to vaccinate everyone in need.

true-tale-of-voter-fraud-and-bioterrorism/372445/. For example, the 1984 Rajneeshee bioterror attack, which involved the salmonella poisoning of 751 individuals, is the largest bioterror attack on record. *Id.* The sheer number of infected individuals suggests that the attack was indeed widespread; however, this bioterror attack did not involve an airborne pathogen. *Id.* Unlike anthrax, the pathogen used was ingested rather than inhaled. *Id.*

¹¹⁴ See *Anthrax: How People are Infected*, CTR. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/anthrax/basics/how-people-are-infected.html> (last updated Sept. 1, 2015).

¹¹⁵ See *Amerithrax or Anthrax Investigation*, FED. BUREAU OF INVESTIGATION, <https://www.fbi.gov/history/famous-cases/amerithrax-or-anthrax-investigation> (last visited Oct. 7, 2016).

¹¹⁶ Culpepper, *supra* note 110.

¹¹⁷ Altman, *supra* note 99.

¹¹⁸ O’Toole et al., *supra* note 98, at 974. It is important to note that part of WHO’s preparedness program is “promoting the development of diagnostic tests for suspected cases of smallpox;” however, at present, no widely available diagnostic tests exist. *Preparedness in the Event of a Smallpox Outbreak*, *supra* note 106.

¹¹⁹ Altman, *supra* note 99.

¹²⁰ Koplow, *supra* note 46, at 441.

C. *International Agreements Addressing Bioterrorism*

The threat of bioterrorism is hardly new. The international community has grappled with this issue since the early twentieth century¹²¹ and, as a result, produced two notable treaties: the Geneva Protocol and the Biological and Toxin Weapons Convention (BWC). The first treaty, the Protocol for the Prohibition of the Use in War of Asphyxiating Poisonous or Other Gases, and of Bacteriological Methods of Warfare, is more commonly referred to as the Geneva Protocol.¹²² The Geneva Protocol, which prohibits the use of chemical and biological weapons in war,¹²³ was the international community's first attempt to limit biological weapons.

While undoubtedly a groundbreaking agreement, the Geneva Protocol's inadequacies are glaring. For instance, in banning the use of biological weapons only in warfare,¹²⁴ the Geneva Protocol failed to ban the use of biological weapons in other instances, such as terrorist attacks. Furthermore, "the treaty was silent on the production, storage, or transfer of chemical and biological weapons"¹²⁵ and permitted countries to reserve the right to use biological or chemical warfare in retaliation.¹²⁶ Because of these deficiencies and a lack of "mechanisms for verifying or compelling parties' compliance,"¹²⁷ the Geneva Protocol was unable to effectively regulate the growing threat of bioterrorism.

To remedy the shortcomings of the Geneva Protocol, the second treaty, the Biological Weapons Convention, was born.¹²⁸ The goal of the BWC was to "prohibit[] the development, production, acquisition, transfer, retention, stockpiling, and use of biological and toxin weapons."¹²⁹ The treaty mandates that review conferences be held every five years in order to address new and

¹²¹ R. WILLIAM JOHNSTONE, *BIO-TERROR: ANTHRAX, INFLUENZA, AND THE FUTURE OF PUBLIC HEALTH SECURITY* 24–25 (2008).

¹²² Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571 [hereinafter Geneva Protocol].

¹²³ *Id.*

¹²⁴ Koplow, *supra* note 46, at 453.

¹²⁵ Culpepper, *supra* note 110, at 252.

¹²⁶ Koplow, *supra* note 46, at 453.

¹²⁷ *Id.* at 454.

¹²⁸ Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, Apr. 10, 1972, 26 U.S.T. 583, 1015 U.N.T.S. 163 (entered into force Mar. 10, 1975) [hereinafter the BWC].

¹²⁹ *The Biological and Toxin Weapons Convention*, U.S. DEP'T STATE, <http://www.state.gov/t/isn/bw/c48737.htm> (last visited Oct. 25, 2016).

changing biological threats.¹³⁰ The BWC is particularly significant because it was “the first multilateral disarmament treaty banning the production and use of an entire category of weapons.”¹³¹ The treaty entered into force in 1975 and as of April 2013, it had 170 parties and twelve signatory states.¹³²

Although the BWC rectified some of the issues found within the Geneva Protocol, it is still a flawed document that has failed to effectually address bioterrorism. For instance, the BWC “does not have an internationally supported approach to preventing bioterrorism proliferation;”¹³³ thus, it is not universally applied. As with the SEP, international cooperation is crucial to the success of the BWC and yet many countries are not members.¹³⁴ The activities of some non-member states, such as Egypt, Israel, and Syria, should give the international community pause.¹³⁵ From Egypt’s political unrest¹³⁶ to Israel’s relentless conflict with Palestine¹³⁷ and Syria’s “long-standing biological-warfare program,”¹³⁸ the international community should fear the possibility that these non-member states could resort to using biological weapons to quell discord or to ignite conflict. However, even if every country were a member of the BWC, the treaty only regulates the behavior of sovereign states, meaning that bioterrorism by non-state actors, like ISIS, remains unregulated.¹³⁹ Non-state actors have engaged in deadly biological and chemical attacks since the

¹³⁰ *Id.*

¹³¹ *About the BWC*, U.N. OFF. AT GENEVA, [http://www.unog.ch/80256EE600585943/\(httpPages\)/77CF2516DDC5DCF5C1257E520032EF67?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/77CF2516DDC5DCF5C1257E520032EF67?OpenDocument).

¹³² *The Biological and Toxin Weapons Convention*, *supra* note 129. A signatory state “refers to a state that is in political support of the treaty and willing to continue its engagement with the treaty process” but has not ratified or implemented said treaty. Renee Dopplick, *Legal Obligations of Signatories and Parties to Treaties*, INSIDE JUSTICE (Mar. 17, 2010), http://www.insidejustice.com/intl/2010/03/17/signatory_party_treaty/. Although not legally bound to the terms of the treaty, signatory states are prohibited from doing anything that would “‘defeat the object and purpose’ of the treaty.” *Id.*

¹³³ Culpepper, *supra* note 110, at 252.

¹³⁴ *Id.* at 252–53.

¹³⁵ *Id.* at 253.

¹³⁶ *See generally* *Egypt Protests: At Least 14 Dead in Unrest As Country Marks Fourth Anniversary of Uprising*, ABC (Jan. 25, 2015, 3:20 PM), <http://www.abc.net.au/news/2015-01-26/people-killed-in-unrest-on-egypt-uprising-anniversary/6045594>.

¹³⁷ *See generally* Phil Black et al., *Israeli Palestinian Conflict: Two Viewpoints; One Tragic Outcome*, CNN (Oct. 21, 2015, 9:11 AM), <http://www.cnn.com/2015/10/21/middleeast/israeli-palestinian-root-of-violence/>.

¹³⁸ *See generally* Jill Bellamy van Aalst & Olivier Guitta, *Syria’s Real Threat: Biological Weapons*, NAT’L INTEREST (Sept. 19, 2013), <http://nationalinterest.org/commentary/syrias-real-threat-biological-weapons-9093>.

¹³⁹ Koplów, *supra* note 46, at 493.

BWC's inception¹⁴⁰ and there continues to be little in place to prevent them from doing so again.

Furthermore, the BWC lacks the verification and enforcement mechanisms necessary to achieve its objectives.¹⁴¹ As a result, the treaty has already been violated and those violations went undetected for inconceivably long periods of time.¹⁴² Even if these mechanisms were in place, the language of the treaty itself is problematic. The BWC specifies that a country can retain tools or continue activities commonly associated with developing biological weapons if they are "for a prophylactic, protective, or other peaceful purpose."¹⁴³ Because "[m]any biological activities, technology, and equipment can be used for beneficial purposes," it is difficult to distinguish whether a country's objectives are for nefarious or peaceful purposes.¹⁴⁴ With issues regarding verification, enforcement, and the textual language of the treaty itself, one might assume that these issues would be resolved at one of the BWC's mandated review conferences. Unfortunately, there have been many attempts to revise the BWC, but negotiations have proven futile and the treaty remains flawed.¹⁴⁵

The aforementioned preparedness programs and treaties are just a few of the myriad ways¹⁴⁶ that the international community has responded to the threat of bioterrorism. However, their blatant shortcomings will fail to provide the necessary security that a deliberate outbreak of the smallpox virus, or any other biological weapon, demands. These shortcomings suggest that, as a whole, the world is unprepared for a widespread biological attack. At present, there are no tools in international law that effectively ensure the enforcement of biological weapon norms, and bioterrorism is too dangerous to let violations go undetected and without consequence. With the potential for bioterrorism perpetually looming, changes must be made to destroy the last remaining

¹⁴⁰ See generally Holly Fletcher, *Aum Shinrikyo*, COUNCIL ON FOREIGN RELATIONS (June 19, 2012), <http://www.cfr.org/japan/aum-shinrikyo/p9238#p2>. In 1995, the Japanese cult, Aum Shinrikyo, released sarin, a deadly nerve gas, onto subway trains. *Id.* As a result, twelve people died and six thousand sought medical treatment. *Id.*

¹⁴¹ Koplow, *supra* note 46, at 457.

¹⁴² Culpepper, *supra* note 110, at 252; PRESTON, *supra* note 26.

¹⁴³ BWC, *supra* note 128, art. I.

¹⁴⁴ Culpepper, *supra* note 110, at 253.

¹⁴⁵ Koplow, *supra* note 46, at 461. Following the 2001 anthrax attacks, some wondered if this bioterror attack would resurrect the BWC; however, the BWC was not invoked at all. See Fidler, *supra* note 34, at 14.

¹⁴⁶ Other examples include the State Department's Office of Cooperative Threat Reduction as well as the Biosecurity Engagement Program. See *Office of Cooperative Threat Reduction (CTR)*, U.S. DEP'T OF STATE, <http://www.state.gov/t/isn/offices/c55411.htm> (last visited Oct. 7, 2016); Culpepper, *supra* note 110, at 254.

smallpox vials once and for all and to protect against current and future biological threats.

III. NECESSARY CHANGES TO ADDRESS BIOTERRORISM

A. *Bilateral Treaty with Russia to Destroy Official Stockpiles*

The first step that should be taken to combat bioterrorism is for the United States and Russia to formally destroy their official stockpiles of the smallpox virus held at the CDC and Vector, respectively. To accomplish this objective, the United States and Russia must enter into a bilateral treaty in which each country pledges to destroy its personal stocks.

The Treaty between the United States and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, also known as the New START Treaty,¹⁴⁷ provides a useful framework and starting point to determine the structure and terms of the proposed treaty. The New START Treaty, which entered into force on February 5, 2011, focuses on reducing nuclear weapons and launchers deployed by the United States and Russia.¹⁴⁸ This treaty is particularly helpful because it emphasizes verification and transparency,¹⁴⁹ principles that are crucial to successfully eliminate smallpox stockpiles. In terms of verification, the treaty calls for “on-site inspections¹⁵⁰ and exhibitions, data exchanges, and notifications related to strategic offensive arms and facilities covered by the Treaty.”¹⁵¹ The New START Treaty also mandates a specific timeline: the United States and Russia must meet the Treaty’s central limits within seven years of its date of enforcement.¹⁵² Most notably, the Treaty provides each country with “the flexibility to determine for itself the structure of its strategic forces within the aggregate limits of the Treaty.”¹⁵³ These limits are not established subjectively, but rather through “rigorous analysis conducted by Department of Defense planners.”¹⁵⁴

¹⁴⁷ See *New Start*, U.S. DEP’T OF STATE, <http://www.state.gov/t/avc/newstart/index.htm> (last updated July 28, 2016).

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* The treaty calls for eighteen on-site inspections to be conducted each year. *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *New Start*, *supra* note 147.

¹⁵⁴ *Id.*

Although progressive, the New START Treaty has some perceived flaws that should be avoided when designing the proposed treaty to eliminate the smallpox stockpiles. The main concern stems from the monitoring and verification components of the treaty,¹⁵⁵ which are of the utmost importance in bioterrorism prevention. For instance, some “have questioned whether the monitoring provisions in the new treaty are sufficient to provide the United States with enough information to either confirm Russian compliance with the treaty or to detect efforts to violate its terms.”¹⁵⁶ It is most unsettling that “neither party can be absolutely certain that the other is in perfect compliance with all the limits and restrictions in the treaty” on account of “ambiguities in the treaty language and varying interpretations of the treaty requirements.”¹⁵⁷ Although the United States is confident in the New START Treaty,¹⁵⁸ its imperfections must not be duplicated to ensure successful destruction of smallpox stockpiles.

In crafting a bilateral treaty between the United States and Russia, treaties of past and present should provide guidance. Because of the chilling effect that reservations had upon the Geneva Protocol, neither Russia nor the United States should be permitted to add reservations to the treaty.¹⁵⁹ Further, the language in the BWC permitting biological activities for beneficial purposes should not be included.¹⁶⁰ In the BWC, this provision served as little more than a loophole because it proved too cumbersome to identify which biological activities were truly for beneficial, rather than malicious, purposes.¹⁶¹ Thus, to close this loophole, the language of the treaty must strictly prohibit all biological activities involving smallpox. Like the New START Treaty, the proposed treaty should focus on verification and transparency by implementing a verification regime that includes on-site inspections. To eliminate potential interpretation issues, the treaty’s terms must be in clear and unambiguous language. If a term remains ambiguous or open to interpretation, the United States and Russia must include a mutually agreed upon interpretation

¹⁵⁵ AMY F. WOOLF, CONG. RESEARCH SERV., R41219, THE NEW START TREATY: CENTRAL LIMITS AND KEY PROVISIONS 28 (2015).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* at 29.

¹⁵⁸ *Id.*

¹⁵⁹ See Koplów, *supra* note 46, at 453.

¹⁶⁰ See Culpepper, *supra* note 110, at 253 (discussing how President George H. W. Bush resisted efforts by states to impose legally binding verification efforts in the BWC).

¹⁶¹ *Id.*

declaration,¹⁶² which will put forth what that term means and how it is to be interpreted upon implementation. As in the New START Treaty, the proposed treaty must include a strict timeline for the destruction of the smallpox stockpiles. To ensure flexibility and fairness in the destruction process, the timeline and overall limits of the treaty must not be decided arbitrarily; such components should therefore be determined following a comprehensive analysis by Department of Defense planners.

Implementing this treaty would substantially minimize the threat of a smallpox outbreak. Without one of the world's deadliest viruses chilling in laboratory freezers, mishaps or lapses in protocol at the Collaborating Centres¹⁶³ will no longer be able to trigger a smallpox outbreak. With the official homes of smallpox destroyed, so too is the opportunity for a rogue actor or state to acquire the virus. While there is the possibility that unofficial stockpiles of the virus exist, scientists have previously advocated for an international agreement, believing that a treaty would decrease the possibility of a deliberate release of the virus.¹⁶⁴ In the event of an actual outbreak, the official stockpiles are not necessary to produce the smallpox vaccine;¹⁶⁵ thus, they are merely ticking time bombs, sitting in flawed laboratories and waiting to fall into the wrong hands.

Critics of a bilateral treaty between the United States and Russia will undoubtedly cite the long, tumultuous history between the two countries. Although the Cold War is over and the Iron Curtain has been lifted, relations between the United States and Russia have remained strained. President Obama has publicly criticized Russia's invasion of the Ukraine as a violation of Ukrainian sovereignty¹⁶⁶ and even included imposing sanctions to "counter Russian aggression" as a key part of his 2015 National Security Strategy.¹⁶⁷

¹⁶² "An interpretative declaration is an instrument that is annexed to a treaty with the goal of interpreting or explaining the provisions of the latter." *Glossary*, U.N. TREATY COLLECTION, https://treaties.un.org/pages/overview.aspx?path=overview/glossary/page1_en.xml (last visited Oct. 7, 2016).

¹⁶³ The CDC is not alone in its disconcerting mishaps. A Vector scientist pricked her finger with a needle that contained the Ebola virus and subsequently died. See Miller, *supra* note 61.

¹⁶⁴ See Henderson, *Deliberations Regarding the Destruction of Smallpox Virus*, *supra* note 29.

¹⁶⁵ The smallpox vaccine does not even contain any smallpox. See *Questions and Answers About Smallpox Vaccine*, CTR. FOR DISEASE CONTROL & PREVENTION (Mar. 13, 2009), <http://emergency.cdc.gov/agent/smallpox/faq/characteristics.asp>.

¹⁶⁶ Lucy Westcott, *Obama at the U.N.: World Cannot Stand By as Russia Violates Ukraine's Sovereignty*, NEWSWEEK (Sept. 28, 2015, 12:44 PM), <http://www.newsweek.com/obama-un-world-cannot-stand-russia-violates-ukraines-sovereignty-377494>.

¹⁶⁷ *National Security Strategy*, WHITE HOUSE (Feb. 2015), https://www.whitehouse.gov/sites/default/files/docs/2015_national_security_strategy.pdf (last visited Oct. 7, 2016).

Recent efforts to reduce Russia's smallpox stockpiles were "scaled back in response to political difficulties in dealing with the Russian government."¹⁶⁸ With the advent of a new year, the prospect of improved United States-Russia relations seems grim. In Russia's latest national security strategy, President Vladimir Putin designated activities by the United States and the North Atlantic Treaty Organization (NATO) as dangerous to Russia's national security¹⁶⁹ and accused the United States and its allies of "attempting to maintain their dominance in global affairs" through a "policy of [Russian] containment."¹⁷⁰ As of October 2016, the working relationship that the United States had with Russia in Syria has deteriorated.¹⁷¹ U.S. Secretary of State, John Kerry, has even accused Russia of committing war crimes in the war-torn region.¹⁷²

In spite of the discernible tumult between these two world powers, it is important to note that the United States and Russia¹⁷³ have previously engaged in extensive bilateral negotiations on a similar subject matter when tensions were at their highest. In the midst of the Cold War, the United States and Russia engaged in the Strategic Arms Limitation Talks (SALT), which produced two international agreements, SALT I and SALT II.¹⁷⁴ SALT I and SALT II were put in place as a means of controlling deadly arms, such as anti-ballistic missiles and nuclear weapons.¹⁷⁵ Despite a tempestuous relationship, these adversaries were able to come together, compromise, and create treaties with the greater good of humanity in mind. Although relations between the United States and Russia remained tense after negotiations, both countries complied with the terms of the treaties until they expired.¹⁷⁶

¹⁶⁸ Culpepper, *supra* note 110, at 254 (CTR was originally developed to reduce Soviet stockpiles but its efforts were scaled back on the account of the Russian government).

¹⁶⁹ Olga Olikier, *Unpacking Russia's New National Security Strategy*, CTR. FOR STRATEGIC & INT'L STUDIES (Jan. 7, 2016), <http://csis.org/publication/unpacking-russias-new-national-security-strategy>.

¹⁷⁰ Jack Farchy, *Putin Names NATO Among Threats in New Russian Security Strategy*, FIN. TIMES (Jan. 2, 2016, 5:30 PM), <http://www.ft.com/intl/cms/s/0/6e8e787e-b15f-11e5-b147-e5e5bba42e51.html#axzz3wlfLaLg1>.

¹⁷¹ *See Syria Conflict: US Calls for Russia and Syria War Crimes Probe*, BBC NEWS (Oct. 7, 2016), <http://www.bbc.com/news/world-middle-east-37590014>.

¹⁷² *Id.*

¹⁷³ At the time of the SALT negotiations, Russia was the Soviet Union. *See* Office of the Historian, *Strategic Arms Limitations Talks/Treaty (SALT) I and II*, U.S. DEP'T OF STATE, <https://history.state.gov/milestones/1969-1976/salt> (last visited Oct. 7, 2016).

¹⁷⁴ *See id.*

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

Ultimately, the SALT negotiations and the resulting international agreements illustrate that the United States and Russia can successfully collaborate in pursuit of important global issues.¹⁷⁷ If these two countries were able to convene during the Cold War, when United States-Russia relations were at its most contentious point, then they should be able to do so once again. Also, the purpose of the SALT negotiations, controlling deadly weapons, would be nearly identical to the purpose of negotiations surrounding the destruction of smallpox.¹⁷⁸ Smallpox can be transformed into a biological weapon and it has been before.¹⁷⁹ Like a nuclear weapon or a ballistic missile, a biological attack using smallpox would result in the unparalleled destruction of an unprotected population.

This principle of successful collaboration in the face of global issues emerged more recently as both the United States and Russia prioritized the elimination of ISIS. Some contend that recent terrorist attacks perpetrated by ISIS will “increase[] the chances of greater U.S.-Russian cooperation.”¹⁸⁰ In his plan to defeat ISIS, President Putin emphasized collective action by proposing the creation of an international coalition and encouraging other countries to support Syria’s efforts against ISIS.¹⁸¹ The United States has shown a willingness to collaborate with Russia on this issue since it has begun including Russia in strategic talks and has relaxed its stance on ousting the Russian-supported President of Syria, Bashar al-Assad.¹⁸² Further illustrating collaboration, the United States and Russia proposed a “resolution before the U.N. Security Council that places sanctions on ISIS in the same way it previously did to al Qaeda.”¹⁸³ The resolution, which was adopted unanimously, demonstrates “that both countries can—at least in theory—join together to fight ISIS, even as they are often on opposing sides.”¹⁸⁴ In spite of sanctions against Russia, President Obama does not wish for a new Cold War; instead, he publicly advocated for a “strong Russia” that will “work with the

¹⁷⁷ *See id.*

¹⁷⁸ *Id.*

¹⁷⁹ Tim Weiner, *Soviet Defector Warns of Biological Weapons*, N.Y. TIMES (Feb. 25, 1998), <http://www.nytimes.com/1998/02/25/world/soviet-defector-warns-of-biological-weapons.html>.

¹⁸⁰ Dina Gusovsky, *Russia, US May Find Common Ground in Fight Against ISIS*, CNBC (Nov. 16, 2015, 2:27 PM), <http://www.cnbc.com/2015/11/16/russia-us-may-find-common-ground-in-fight-against-isis.html>.

¹⁸¹ Westcott, *supra* note 166.

¹⁸² *See* Gusovsky, *supra* note 180.

¹⁸³ Jose Pagliery, *US and Russia Team Up at UN to Fight ISIS*, CNNMONEY (Dec. 17, 2015, 10:39 PM), <http://money.cnn.com/2015/12/17/news/us-russia-isis/>.

¹⁸⁴ *Id.*

U.S. to strengthen international order as a whole.”¹⁸⁵ Although tensions persist between the two countries,¹⁸⁶ their increased cooperation and ability to join forces in the interest of addressing a global threat suggests that these world powers can collectively combat the threat of bioterrorism by implementing a bilateral treaty to finally eliminate their respective stockpiles.

B. United Nations Security Council Resolution: Implementing a New Legal Framework

While the destruction of the official stockpiles of the smallpox virus is undoubtedly a monumental step towards increased global security, a bilateral treaty between the United States and Russia would only address one potential biological weapon. Viruses can mutate,¹⁸⁷ evolve, and be genetically engineered.¹⁸⁸ Long-forgotten diseases can reemerge in modern society.¹⁸⁹ With smallpox removed from the equation, there is no telling what agent of biological warfare could emerge next. The Geneva Protocol and the BWC have failed to effectively address these issues; thus, the international community needs a new, flexible framework that can adapt to the rapidly evolving field of bioterrorism¹⁹⁰ and combat each newly weaponized pathogen.

The international body that is most adept to develop and implement such a framework is the U.N. Security Council. Per the U.N. Charter, the Security Council is responsible “for the maintenance of international peace and security” and can “impose sanctions or even authorize the use of force” to achieve this objective.¹⁹¹ The 193 countries that are U.N. Member States¹⁹² are obligated under the Charter to comply with the decisions put forth by the Security Council.¹⁹³ Because the Security Council is tasked with “determining

¹⁸⁵ Westcott, *supra* note 166.

¹⁸⁶ See *Syria Conflict: US Calls for Russia and Syria War Crimes Probe*, *supra* note 171.

¹⁸⁷ For a discussion on virus mutation rates, see generally Rafael Sanjuán et al., *Viral Mutation Rates*, 84 *J. VIROLOGY* 9733–48 (2010).

¹⁸⁸ For information on genetically engineered viruses, see generally Peter Palese & Bernard Roizman, *Genetic Engineering of Viruses and Virus Vectors: A Preface*, 93 *PROC. NAT'L ACAD. SCI. USA* 11287 (1996).

¹⁸⁹ In October 2015, an Oregon teenager was diagnosed with the bubonic plague. Debra Goldschmidt, *Plague Confirmed in Oregon Teen*, CNN (Oct. 30, 2015, 11:22 AM), <http://www.cnn.com/2015/10/30/health/oregon-teen-has-plague/>.

¹⁹⁰ FENNER ET AL., *supra* note 49.

¹⁹¹ *The Security Council*, UNITED NATIONS, <http://www.un.org/en/sc/> (last visited Oct. 7, 2016).

¹⁹² *Member States of the United Nations*, UNITED NATIONS, <http://www.un.org/en/members/index.shtml> (last visited Oct. 7, 2016).

¹⁹³ *The Security Council*, *supra* note 191.

the existence of a threat to the peace or act of aggression,”¹⁹⁴ it is the ideal institution to address bioterrorism, which is an indisputable threat to international peace and security. To properly secure international peace and protect against biological warfare, the Security Council must put forth a binding resolution that compels all Member States to adopt and implement a four-point legal framework. Modeled after the SEP’s “framework of broad principles and expectations”¹⁹⁵ with a strong consideration of the shortcomings that befell prior attempts to address bioterrorism, this Comment proposes the following framework.

1. Recognition

All members of the international community should refer any and all suspicious biological activities to the Security Council. From there, the Security Council should investigate and decide whether there is a credible threat. Once a biological threat has been identified, the Security Council should decide what course of action to take, specifically whether the biological agent at issue should be destroyed. Although the decision regarding what approach to take will lie with the Security Council, the international global health community should provide guidance. Because WHO is one of the most influential voices in that community, it should guide the Security Council through support, collaboration, and counsel. Because WHO’s involvement in the SEP was crucial to the eradication of smallpox,¹⁹⁶ the organization should once again play an important role in the eradication of other biological agents. Before making a decision, the Security Council should consult with and consider the opinions of both the scientific and international communities.¹⁹⁷ It should also analyze the biological agent’s scientific value in terms of future research and whether or not the agent is necessary for the creation of a vaccine. The Security Council should then vote until a quorum is achieved. If the Security Council agrees to destroy the agent, they shall set a strict deadline for enforcement. WHO’s deadline for destruction of the official smallpox samples was continuously deferred or ignored until no deadline remained,¹⁹⁸ thus, the deadline set by the Security Council should be rigidly enforced.

¹⁹⁴ *Id.*

¹⁹⁵ FENNER ET AL., *supra* note 49.

¹⁹⁶ Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, *supra* note 48, at 535.

¹⁹⁷ Henderson, *Deliberations Regarding the Destruction of Smallpox Virus*, *supra* note 29.

¹⁹⁸ Koplow, *supra* note 46, at 443.

2. *Enforcement*

One of the most significant issues surrounding the Geneva Protocol and the BWC was the absence of any enforcement mechanism.¹⁹⁹ To avoid repeating history's mistakes, some scholars call for the creation of an apolitical institution with legal authority to serve as the necessary enforcement mechanism.²⁰⁰ Thus, the United Nations should develop an agency within the organization that will ensure the enforcement of the Security Council's decisions. This agency should remain staunchly apolitical to safeguard its collaboration with states.²⁰¹ Similar to the U.N.'s peacekeeping troops, this agency must have the proper authority and jurisdiction to interfere with the bioterrorism activities of sovereign states and non-state actors.²⁰²

3. *Verification*

When WHO asked all states to relinquish their smallpox stockpiles, some laboratories chose to independently destroy their stocks; however, it is unknown whether such destruction actually took place.²⁰³ WHO never attempted to verify that the stocks were destroyed, which led to speculation that some countries covertly retained unofficial samples of the virus.²⁰⁴ To rectify this issue, verification of compliance is essential. Before the end of the designated timetable for destruction, all U.N. Member States should self-report their compliance to the U.N. enforcement agency. If a state fails to meet the set deadline, the Security Council should impose sanctions until that state has completed its required task. Once a state has self-reported its destruction, the enforcing agency should conduct periodic, unannounced compliance checks. If a state is deemed noncompliant, the Security Council should be permitted to sanction the state, use force, or refer the state to international criminal prosecution.²⁰⁵

¹⁹⁹ *Id.* at 457.

²⁰⁰ Barry Kellman, *An International Criminal Law Approach to Bioterrorism*, 25 HARV. J.L. & PUB. POL'Y 721, 739 (2002).

²⁰¹ *Id.*

²⁰² Koplow, *supra* note 46, at 493.

²⁰³ PRESTON, *supra* note 26.

²⁰⁴ *Id.*

²⁰⁵ Kellman, *supra* note 200 (advocating for the use of international criminal law to address bioterrorism).

4. Collaboration

Like the eradication of smallpox, stopping bioterrorism will require the full cooperation and collaboration of the international community.²⁰⁶ The framework should be universally applied,²⁰⁷ and in order to achieve universal application, the resolution should provide non-member states with incentives to become full-fledged Member States.²⁰⁸ Although WHO has no binding legal authority, the organization has successfully convinced all countries to participate in the SEP,²⁰⁹ and therefore should also encourage non-member states to join this effort. In terms of collaboration, all Member States should be required to report suspicious biological activities of other Member States and non-state actors. If credible, the enforcing agency would be responsible for independently investigating the potential biological threat.

C. Criminalizing Bioterrorism in International Law

A bilateral treaty between the United States and Russia and a U.N. Security Council resolution are pivotal steps towards addressing bioterrorism and protecting international peace and security. In a perfect world, both would be implemented and function successfully. However, coaxing two fervent adversaries, both with widely different views and objectives, to agree on and comply with a treaty may prove challenging.²¹⁰ Further, the Security Council resolution's four-point framework to combat bioterrorism may not be implemented at all if one of the Security Council's five permanent members, such as China or Russia, vetoes the resolution.²¹¹ Regardless of whether the treaty and the Security Council resolution remain viable options, bioterrorism must still be addressed. Thus, it is imperative to expressly criminalize

²⁰⁶ Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, *supra* note 48, at 535.

²⁰⁷ Culpepper, *supra* note 110, at 252.

²⁰⁸ To achieve more signatories, the Montreal Protocol provided various economic incentives for non-signatory states. *See, e.g.*, The Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3.

²⁰⁹ Henderson, *Principles and Lessons from the Smallpox Eradication Programme*, *supra* note 48, at 535.

²¹⁰ Theoretically, if Russia is unwilling to participate in a bilateral treaty to destroy its official stockpiles of the smallpox virus, the United States could still destroy its personal stocks. This move could potentially pressure Russia into reciprocating. However, because the United States was a driving force behind each missed destruction deadline, it is unlikely that the United States will take action unilaterally. *See* Koplow, *supra* note 46, at 443.

²¹¹ *See generally* Stephen Lendman, *Understanding the UN Security Council Veto Power*, CTR. FOR. RES. ON GLOBALIZATION (Sept. 24, 2015), <http://www.globalresearch.ca/understanding-the-un-security-council-veto-power/5477846>.

bioterrorism and related activities under international law.²¹² This move will ultimately put those developing and seeking agents of biological warfare in zugzwang.

At present, “unauthorized use, development, and possession of biological weapons”²¹³ is not expressly considered a crime under international law.²¹⁴ States and terrorists who use biological warfare are indeed subject to some sanctions in the international arena.²¹⁵ If a state or state-sponsored terrorist organization uses a biological agent against a civilian population, then this could constitute a war crime under international law,²¹⁶ which is subject to prosecution in the International Criminal Court (ICC).²¹⁷ If a terrorist uses a biological weapon, any state party to the U.N. Convention on the Suppression of Terrorist Bombings is entitled to prosecute that terrorist.²¹⁸ Unfortunately, this Convention has not been universally adopted by all states.²¹⁹ Further, the aforementioned sanctions against states and terrorists are not applicable until after a biological attack has been perpetrated.²²⁰ On a domestic level, some states have recognized this misstep and enacted legislation that forbids the weaponization of pathogens altogether; however, not all states have done so.²²¹ The unprotected population in an increasingly interconnected world should not be forced to wait for a biological attack in order to secure protection under international law.

To combat bioterrorism before an attack, the development, proliferation, and use of biological weapons must be considered a crime against humanity. The Rome Statute of the ICC defines crimes against humanity as “acts when committed as part of a widespread or systematic attack directed against any civilian population, with knowledge of the attack,” such as murder, extermination, and “other inhumane acts of a similar character intentionally causing great suffering or serious injury to body or to mental or physical

²¹² See Kellman, *supra* note 200.

²¹³ Fidler, *supra* note 34, at 15.

²¹⁴ See Kellman, *supra* note 200, at 730.

²¹⁵ Fidler, *supra* note 34, at 15.

²¹⁶ *Id.*

²¹⁷ Rome Statute of the International Criminal Court art. 5, July 17, 1998, 2187 U.N.T.S. 90 [hereinafter Rome Statute].

²¹⁸ *Id.*

²¹⁹ See International Convention for the Suppression of Terrorist Bombings, Dec. 15, 1997, S. TREATY DOC. No. 106-6 (2002), 2149 U.N.T.S. 256.

²²⁰ See Kellman, *supra* note 200, at 732–33.

²²¹ See *id.* at 731.

health.”²²² Although not specifically listed as a crime against humanity, the objectives of the proliferation, development, and use of biological weapons fit neatly within the ICC’s definition. Under international law, crimes against humanity violate *jus cogens*.²²³ The term *jus cogens*, “encompasses the notion of peremptory norms in international law”²²⁴ and “refers to the legal status that certain international crimes reach.”²²⁵ Under Article 53 of the Vienna Convention on the Law of Treaties, “a peremptory norm of general international law is a norm accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted.”²²⁶ These principles are so salient to the international community that they cannot be circumvented and any treaty in conflict with *jus cogens* is automatically voided.²²⁷ The international peremptory norms under *jus cogens* are not absolute and some scholars insist that the drafters of the Vienna Convention anticipated the emergence of new norms.²²⁸ When the Vienna Convention was adopted in 1969,²²⁹ bioterrorism was not on the forefront of global consciousness. Now, with the advancement of biotechnology, the spread of terrorism, and the use of biological agents, bioterrorism is of a much greater concern. By enacting domestic legislation as well as U.N. conventions and by designating the use of biological weapons as a war crime, many in the international community can demonstrate their absolute denunciation of bioterrorism in accordance with Article 53.²³⁰

The Rome Statute provides the ICC with the authority to prosecute crimes against humanity.²³¹ Although the Rome Statute is not universally adopted,²³² the ICC’s territorial jurisdiction may reach beyond the confines of the treaty. For instance, “[m]ost commentators focus on the territorial basis of the ICC as

²²² Rome Statute, *supra* note 217, art. 7.

²²³ See Rafael Nieto-Navia, *International Peremptory Norms (Jus Cogens) and International Humanitarian Law*, INT’L CRIM. COURT (Mar. 2001), <http://www.iccnw.org/documents/WritingColombiaEng.pdf>.

²²⁴ *Id.*

²²⁵ M. Cherif Bassiouni, *International Crimes: Jus Cogens and Obligatio Erga Omnes*, 59 L. & CONTEMP. PROBS. 63, 63 (1997).

²²⁶ Vienna Convention on the Law of Treaties art. 53, May 23, 1969, 1155 U.N.T.S. 331 [hereinafter Vienna Convention].

²²⁷ Nieto-Navia, *supra* note 223.

²²⁸ *See id.*

²²⁹ *See* Vienna Convention, *supra* note 226.

²³⁰ *See id.*

²³¹ Rome Statute, *supra* note 217, art. 5.

²³² *About*, INT’L CRIM. COURT, https://www.icc-cpi.int/en_menus/icc/about%20the%20court/frequently%20asked%20questions/Pages/4.aspx (last visited Oct. 7, 2016).

legitimizing its jurisdiction over the nationals of non-party states under Article 12”²³³ In addition to territorial jurisdiction, the ICC can prosecute crimes against humanity under universal jurisdiction.²³⁴ Under international law, “[t]he principle of universal jurisdiction allows the national authorities of any state to investigate and prosecute people for serious international crimes even if they were committed in another country.”²³⁵ Similar to piracy, with universal jurisdiction, “any state that can apprehend bioterrorists or investigate their activities should be legally obligated to do so and should have legal authority to prosecute them.”²³⁶ While the ICC may exercise universal jurisdiction, its reach is limited.²³⁷ The ICC must have territorial jurisdiction, consent from the state in question,²³⁸ and “a legitimate interest on the basis of the universal nature of the crimes to prosecute the nationals of non-party states.”²³⁹ However, if the Security Council refers a non-party state or national to the ICC, the ICC can circumvent these requirements and exercise universal jurisdiction.²⁴⁰ Expressly criminalizing bioterrorism as a crime against humanity may not deter bioterrorists because “their activities are already illegal in most jurisdictions in which they operate.”²⁴¹ Nevertheless, with the ability to prosecute both parties and non-parties of the Rome Statute under two jurisdictional principles, the ICC has the power to prevent serious harm by holding bioterrorists accountable before a biological attack occurs.

CONCLUSION

In a world of mass transit and constant interconnectedness, the reintroduction of the easily transmitted, deadly smallpox virus would prove devastatingly detrimental to the unprotected, unvaccinated human population. It is incomprehensible that the stockpiles have not been destroyed despite (1) the prospect of bioterrorism, (2) the scientific community’s support of destroying the virus, and (3) the fact that it holds little scientific value. Keeping

²³³ Michael P. Scharf, *The ICC’s Jurisdiction over the Nationals of Non-Party States: A Critique of the U.S. Position*, 64 L. & CONTEMP. PROBS. 67, 76 (2001).

²³⁴ *Id.*

²³⁵ *Factsheet: Universal Jurisdiction*, CTR. FOR CONST. RIGHTS (Dec. 7, 2015), <https://ccrjustice.org/home/get-involved/tools-resources/fact-sheets-and-faqs/factsheet-universal-jurisdiction>.

²³⁶ Kellman, *supra* note 200, at 731.

²³⁷ See Scharf, *supra* note 233.

²³⁸ *Id.* Consent can be “expressed by ratifying or acceding to the Rome Treaty or by special consent on a case-by-case-basis” *Id.*

²³⁹ *Id.*

²⁴⁰ *Id.* Rome Statute, *supra* note 217, arts. 12–14.

²⁴¹ Fidler, *supra* note 34, at 15.

this virus in the Collaborating Centres is too great of a risk for humanity to incur. This risk can be mitigated through a bilateral treaty between the United States and Russia in which each country pledges to finally destroy their respective stocks of the virus.

The destruction of the official stockpiles is merely one step in the ongoing fight against bioterrorism. As viruses mutate and evolve, the threat of bioterrorism remains constant; thus, it is imperative that the U.N. Security Council puts forth a resolution with a legal framework that is flexible enough to address current and future threats. Having learned from the mistakes of past efforts, this proposed four-point framework focuses on recognizing the biological threat, instituting a strict plan to address the threat, adopting an enforcement mechanism, verifying compliance, and ensuring international collaboration. With the goal of present and future global security, this framework can be adapted to meet each new and developing biological weapon.

Lastly, the development, proliferation, and use of biological weapons must be categorized as a crime against humanity under international law. Including bioterrorism in the list of crimes against humanity is necessary to illustrate the gravity of biological attacks and it opens doors for greater accountability. This categorization allows the ICC to exercise a larger jurisdictional reach over bioterrorists regardless of where they operate. By expressly criminalizing bioterrorism activities, the world will no longer have to wait for a biological attack to occur in order to secure protection under international law.

Working atop a flawed laboratory, Janet Parker could not have known that with each breath, her lungs filled with an airborne assassin. The doctors could not immediately identify a nearly eradicated disease, especially one that she had already been vaccinated for. After succumbing to the speckled monster, Janet Parker became a prime example of why the official smallpox stockpiles must be destroyed. Unfortunately, little has changed in the four decades following her death, as the virus that killed her sits patiently within the freezers of similarly flawed laboratories. Janet Parker was the last person to have died from smallpox and, to this day, she retains that title. Well, at least for now.

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