When United Nations diplomats convened in 1945, an aspect on their agenda included the setup of a global health organization. Thus, as of April 7, 1948, the WHO Constitution came into effect—a date now recognized as World Health day. It was established that all countries that are Members of the UN are eligible to become a part of WHO by accepting its Constitution. The executive board is comprised of individuals designated in accordance to WHO region. In terms of its role in the United Nations in its entirety, WHO is responsible for directing and coordinating authority for health within the global system. WHO also provides leadership on global health matters, shapes the health research agenda, articulates evidence-based policy options, distributes technical support to countries, and assesses current health trends.

I: Addressing the Spread and Containment of the Zika Virus

The ongoing outbreak of the Zika Virus in Western Hemisphere is one of the most important global health issues of the 21st century. With direct impact on the health and wellbeing of children, if left unchecked, the spread of the virus could have devastating impacts the development of countries for generations to come. Additionally, because the virus can be spread through mosquitos and sexual contact, the potential for the virus to spread across the globe is significantly high and could quickly transform into a truly global epidemic; targeting developing countries and exacerbating already prevalent issues.

While Zika has documented in the tropics since 1952, the current outbreak began in 2015 and has spread from Brazil to 57 countries; mostly in Central and South America and the Pacific. While Zika had been fairly common, only through the recent outbreak have researchers been able to link the virus with a number of other medical conditions, including Guillain-Barré Syndrome which may lead to paralysis, and Microcephaly, a congenital condition associated with incomplete brain development and abnormal smallness of the head in infants. Furthermore, it is quite likely that additional neurological and developmental may soon be linked to the virus as research continues. In light of the rapid spread and immense impact of the virus on the lives of people throughout the Americas, it has become essential to contain the spread of the Zika Virus.

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1 Centers for Disease Control and Prevention, “All Countries & Territories with Active Zika Virus Transmission”, Centers for Disease Control and Prevention, 2016.
3 Ibid
Like many tropical diseases, the Zika Virus is spread predominantly through the bite of the Aedes Mosquito, meaning that the most effective ways of controlling the outbreak of the virus is to limit the exposure and prevalence of the mosquitoes. This is done through a number of ways including eliminating pools of standing water where mosquitoes breed, the use of mosquito nets, and the use of mosquito killing pesticides. While these methods may be used to limit human exposure to mosquitoes, their effects are only temporary at best do little address the issue on a macro level. Because the Aedes mosquito is common in urban areas and is active during the day, this creates a number of additional challenges in limiting exposure to the virus. One possibility, which has been used to combat Dengue Fever, a topical disease also spread by Aedes Mosquitoes, is to genetically modify the DNA of male mosquitoes which will be released back into the general population. Due to the modifications in the mosquitoes’ DNA, their offspring will then die before reaching maturity, thus reducing the population of active mosquitoes.

In addition to the mosquitoes as vectors for the virus, it has also recently been discovered that Zika can also be transmitted sexually through contact with infected semen and blood. More research must be conducted on the matter; however, researchers have found that the virus may survive in blood and semen well after more visible symptoms have cleared. Because of this, abstention from sex and the use of condoms is recommended as an effective measure to prevent the spread of Zika. This however, is also a challenge considering that many of the affected areas are heavily Catholic.

Because many of the symptoms of Zika can be associated with a number of other common tropical diseases, the sudden and explosive outbreak of the virus took much longer to be identified, making it difficult to suppress early on. While the outbreak in January 2015, it was not identified as Zika until May and the link to Microcephaly was not uncovered until that November. During this time, the virus was able to spread largely unchecked, leading to a surge in the number of children born with Microcephaly. This was particularly difficult because the virus displayed many of the same symptoms as Dengue and cases of the virus had been previously unrecorded in South America, contributing to the delay in addressing the outbreak.

Before the Zika virus can be fully contained, considerable work and research needs to be conducted to better understand the transmission and effects of the disease. Without a complete understanding of the virus, it is difficult if not impossible to stop the spread.

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7 Centers for Disease Control and Prevention, "Zika Virus," Centers for Disease Control and Prevention, June 21, 2016.
8 Ibid
9 Paulo Prada, "Did Brazil, Global Health Agencies Fumble Zika Response?," Reuters, January 30, 2016.
10 Ibid
Additionally, a vaccine for the virus is currently under development, however, funding and support has been lackluster. Similar calls have been made for the development of rapid tests to determine whether or not a person experiencing symptoms has Zika or another illness. Another important method to containing the virus is through mosquito monitoring systems to determine which insecticides are most effective and to lead scientists to the mosquito breeding sites.\footnote{"Zika Virus and Complications: Questions and Answers," World Health Organization, June 20, 2016.}

Due to the significant neurological and developmental effects that the Zika virus has on infants, the outbreak of Zika has the possibility to have lingering consequences well into the future, making it not only a global health issue, but a global developmental issue as well. While more research needs to be conducted to understand the causes, transmission, and effects of the disease, there is considerable work that can be done at the global level to prevent the spread of the virus to other parts of the world, and to assist in the care of those most affected.

**Questions to consider:**
What are the most effective ways to contain the spread of the Zika virus? Who could best provide these goods and services? Which methods are already being used to good effect and which could use work? Are there other methods no one has thought of yet? What are the consequences of not containing the virus? What is the role of the World Health Organization in this crisis?

### II: Addressing the Implications of Counterfeit Medicines

As modern medicine continues to advance and provide cures and treatments for common and deadly diseases, the rise of counterfeit treatments and medicines has also become a truly global issue. With linkages to organized criminal networks and the potential for devastating side effects, the spread of counterfeit medicines must be addressed not only for its implications for global health, but international security as well.

The issue of counterfeit medicines is complex and multi-faceted. With linkages to organized criminal networks, Counterfeit medicines cause a number of problems and have many implications including health hazards to the public, destruction to a nation’s health structures, lost public confidence in health care systems, and increases in criminal activity.\footnote{Robert Cockburn, Paul N. Newton, et. al. "The Global Threat of Counterfeit Drugs: Why Industry and Governments Must Communicate the Dangers." PLoS Med PLoS Medicine 4, no. 9 (2007).} The issue also incorporates a number of activities that may be difficult to address through a single approach including the manufacture, distribution, and sale of the substances.

The issue of counterfeit medicine is relatively new to the attention of the United Nations and as such only 5-15% of the World Health Organization’s member states report
occurrences of counterfeit medicines.\textsuperscript{13} However, the issue and practice of counterfeit medicine is growing with reports finding that nearly 25\% of all medicines in the least developed countries of the world are counterfeit.\textsuperscript{14} Furthermore, these so called medicines come in a variety of forms including vaccines and pills and may contain any number of elements. These medicines may also contain a number of harmful substances including arsenic, cyanide, and toxic metals, and often don’t even contain the active ingredients, creating grave and dangerous health side effects.\textsuperscript{15}

The issue of counterfeit medications is by no means limited to isolated incidents, but is quickly becoming wide-reaching and broad in its impact with thousands of cases per year. One particularly important example of the dangers of counterfeit medicine occurred in 1995 when Nigeria provided Niger with 50,000 vaccines to fight a growing meningitis outbreak. The vaccines, however, did not contain the active ingredient and as a result, nearly 2,500 people were reported to have died.\textsuperscript{16} While this case is particularly troubling due to the scope of those who fell victim, due to the illicit and individual nature of counterfeit medicine, it is very difficult to get an accurate account of the global scope of this issue. Many cases are left unreported, and it is often difficult to find the source or linkages of related deaths. This is particularly due to the time it takes for the conditions to develop, after which it is difficult to attribute it to the use of counterfeit medicine.\textsuperscript{17} Perhaps one of the more troubling characteristics of counterfeit medicines is its link to organized criminal networks.\textsuperscript{18} This has also become potential for terrorist and criminal organizations, using counterfeit medicines, not only as a funding mechanism, but also as a way to inflict death and damage on targeted populations.\textsuperscript{19}

To fully address the dangers of counterfeit medicines, it is important to understand the causes and sources of these medicines, of which Economics is a primary cause. As global demand for medicine outpaces the supply, many people have turned to alternative sources for medications. This has led to an expanding black market for counterfeit medicines with truly global supply chains. While the demand markets are truly global, it has been reported that much of the world’s counterfeit medicines are being produced in China and more broadly in Southeastern Asia. In 2001, it was reported that China along was home to 500 illegal counterfeit medicine factories, and while it is difficult to attain accurate findings as of current, it

\textsuperscript{14} Ibid.
\textsuperscript{15} Ibid.
\textsuperscript{17} Ibid.
\textsuperscript{19} Ibid.
is very likely that the number has grown sharply in the years since.\textsuperscript{20} Additionally, India, Nigeria, Russia, and Latin America have all seen a rise in suspected counterfeit medication manufacturing and sale measured by the increased prevalence of substandard medicines found in circulation.\textsuperscript{21} Furthermore, due to the expanding networks of suppliers, and the use of illicit websites, it is becoming increasingly easier for people to access these counterfeit medicines. The World Health Organization recently reported on this trend, finding that over 50% of medications sold online from various sources have been found to be counterfeit.\textsuperscript{22} With billions of dollars’ worth of medicine sold online, this represents a sizeable global issue.

The United Nations and the World Health Organization have already begun to take measures to combat the spread of counterfeit medicines including an initiative known as the Member State Mechanism in which members “convene, coordinate, decide and organize activities to address SSFFC (Substandard, spurious, falsely labeled, falsified and counterfeit) medical products”.\textsuperscript{23} Created to protect people from unsafe and counterfeit medicines, the Mechanism is also intended to promote affordable and accessible healthcare to those in need across the globe.\textsuperscript{24}

The World Health Organization has also taken steps to better monitor the trend including the establishment of the Global Surveillance and Monitoring System for SSFFC Medical Products in 2013. This group, consisting of 113 countries, this group aims to “provide technical support in emergencies, link incidents between countries and regions, and issue WHO medical product alerts; and accumulate a validated body of evidence to more accurately demonstrate the scope, scale, harm caused by SSFFC medical products and identify the vulnerabilities, weaknesses and trends.”\textsuperscript{25} Furthermore, the group also encourages countries to report incidents and cases of suspected SSFFC medical products to the WHO as a way to better understand and prevent the proliferation.

While the World Health Organization has been working to stop the spread of illicit counterfeit medicines across the globe, there is still much more that can be done to completely. With the devastating effects that these counterfeit medicines can have on individuals and communities, and the links to organized criminal and terrorist networks, the fight against counterfeit medicines is not only a global health issue, but a security issue as well. Additionally, this is not an issue that state can fight alone, but must be truly global in its approach.

\textsuperscript{21} Ibid
\textsuperscript{24} Ibid.
\textsuperscript{25} Ibid
Questions to consider:
How can state act individually and globally to address the issue of counterfeit medicines? What are the root-causes of the spread of counterfeit medicines? How can the WHO ensure lesser developed countries will be receiving the medicines necessary to address disease outbreaks? How can private industries assist in addressing counterfeit medicines?