

## Biological and Toxin Weapons including Smallpox

### Policy Position Statement

<b>Key messages:</b>	<p>Preparedness in response to the potential use of biological agents and toxins, including the smallpox virus, against civilians, can be effectively enhanced by strengthening public health infrastructure, particularly infectious disease surveillance and response capacities, which are keys to an effective response to any disease outbreak.</p> <p>The World Health Assembly declared the world free of smallpox on 8 May 1980 following the success of the Global Program to Eradicate Smallpox.</p> <p>However, the smallpox virus remains a possible public health problem through incidental and deliberate dissemination as a biological weapon.</p>
<b>Key policy positions:</b>	<p>PHAA calls on the Australian Government, national and international bodies to review and update current policies on response preparedness to potential use of biological and toxin weapons including Smallpox in the light of recent international developments, including progress in the development and in-vitro testing of new antiretroviral drugs, and the development of new vaccines.</p>
<b>Audience:</b>	<p>Federal, State and Territory Governments, policymakers and program managers, PHAA members, media.</p>
<b>Responsibility:</b>	<p>PHAA International Health Special Interest Group</p>
<b>Date adopted:</b>	<p>23 September 2021</p>

# Biological and Toxin Weapons including Smallpox

## Policy position statement

### PHAA affirms the following principles:

1. That the preparedness in response to the potential use of biological agents including the smallpox virus against civilians can be effectively enhanced by strengthening public health infrastructure, particularly infectious disease surveillance and response capacities, which are keys to an effective response to any disease outbreak.

### PHAA notes the following evidence:

2. There are 183 States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction.<sup>1</sup>
3. The Convention states: *Under all circumstances the use of bacteriological (biological) and toxin weapons and their development, production and stockpiling are effectively prohibited under article I.*<sup>1</sup>
4. The UN recognises the importance of ongoing efforts by States parties to enhance international cooperation, assistance and exchange of equipment, materials and scientific and technological information for the use of bacteriological agents and toxins for peaceful purposes.<sup>1</sup>
5. The World Health Assembly (WHA) declared the world free of smallpox on 8 May 1980, following the success of the Global Program to Eradicate Smallpox. However, the smallpox virus remains a possible public health problem through incidental and deliberate use as a biological weapon.
6. The Variola virus, an orthopox virus, is the etiological agent of smallpox. The most frequent mode of transmission is person-to-person spread via direct deposit of infective droplets onto the nasal, oral, oropharyngeal mucosal membranes with an infectious individual.<sup>2</sup>
7. Smallpox virus and related materials (whitepox virus, viral genomic deoxyribonucleic acid - DNA and other infectious material) are held at two World Health Organization (WHO) Collaborating Centers that are the authorised repositories of variola virus: the State Research Centre for Virology and Biotechnology (Koltsovo, Russian Federation) and the Centers for Disease Control and Prevention (Atlanta, Georgia, USA).<sup>1, 3, 4</sup>
8. Although considered to be near-impossible to synthesise a pox virus in a laboratory setting, scientists at the University of Alberta have recently manufactured the horsepox virus which is closely related to the smallpox virus. The horsepox virus is harmless to humans and the “primary motivation for the research appears to be in order to test vaccines against smallpox”.<sup>5</sup>

9. In 2001, the deliberate dissemination of the biological toxin anthrax in the US (through contaminated letters) and subsequent advances in biotechnology, makes the threat of use of a biological toxin a realistic possibility.<sup>2, 6</sup>
10. Bacteriological weapons, if used, will inflict innumerable human loss; their destructive effects are multifaceted and protracted. They are indiscriminate and may cause profound physical and psychological trauma to humans, as well as heavy and irreversible damage to the environment. Along with nuclear and chemical weapons, they belong to the category of weapons of mass destruction (hereafter “WMDs”).<sup>1</sup>
11. The scope of the International Health Regulations (2005) are to “prevent, protect against, control and provide a public health response to the international spread of disease...”. Member states must report outbreaks of four highly infectious diseases as public health emergencies of international and biological concern: Smallpox, Polio, new strains of human influenza, and Severe Acute Respiratory Syndrome (SARS).<sup>7</sup>
12. In December 2010, the World Health Organization (WHO) released the scientific review of Variola that demonstrated the immense progress made under the WHO mandate to characterise many different strains of variola virus; develop two antiviral drugs with distinct mechanisms of action; develop less reactogenic smallpox; and develop diagnostic tests for variola virus and other orthopox viruses.<sup>9</sup>
13. An advisory group of independent experts convened by the WHO, reviewed the smallpox research program in November 2013 and made the following recommendations with respect to the size and composition of the WHO smallpox vaccine stockpile:
  - a. Countries donating vaccine to the WHO stockpile should provide the same vaccine that they hold in their domestic stockpile
  - b. In case of smallpox outbreak, vaccination should be limited to close contacts and first responders who have direct contact with symptomatic patients, and to laboratory workers indirect contact with specimens.<sup>10</sup>
14. The Eighth Review Conference of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, [the Biological Weapons Convention (BWC)], was held in Geneva in November 2016.<sup>11</sup> The convention, as the reigning body for regulating biological weapons, continues to ensure that new biotechnologies are used for peaceful purposes only.
15. On 30 January 2020, following the recommendations of the Emergency Committee, the WHO Director-General declared a new outbreak (COVID-19) a Public Health Emergency of International Concern (PHEIC). The worldwide pandemic of the coronavirus disease (COVID-19) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
16. World scientists on COVID-19 met at the World Health Organization’s Geneva to assess the current level of knowledge about the new virus, and agreed on two main goals. The first was to accelerate innovative research to help contain the spread of the epidemic and facilitate care for those affected. The second was to support research priorities that contribute to global research to better prepare for the next epidemic.<sup>8</sup>
17. Implementing this policy would contribute towards achievement of UN Sustainable Development Goals 3: Good Health and Wellbeing, and Goal 16: Peace, Justice and Strong Institutions.

**PHAA resolves to undertake the following actions:**

18. Urge the Australian Government to review and update its current policies on response and preparedness to potential use of biological and toxin weapons including Smallpox in the light of: progress being achieved in the application of the Biological Weapons Convention<sup>1</sup> and the latest WHO review on the smallpox virus; progress in the development and in-vitro testing of new antiretroviral drugs; and the development of diagnostic tests and new vaccines.<sup>12</sup>
19. Lobby the Australian Government to call on the Australian Society for Infectious Diseases to update its 2002 policy on Biological and Toxin Weapons.
20. Support bilateral and multilateral discussions on diverging issues under the BWC, to break down the existing divisions among States with the common goal of strengthening the BWC and thereby upholding the established norm against biological weapons.
21. Lobby the WHO, governments and development partners to provide continued and committed investment in ensuring capacity to implement and enforce International Health Regulation.

**ADOPTED 2008, revised 2017 and 2021**

## References

1. United Nations Audiovisual Library of International Law. Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction. <https://legal.un.org/avl/ha/cpdpsbbtwd/cpdpsbbtwd.html> UN; 2021 [cited 2021 10 June]
2. Centers for Disease Control and Prevention. How does Smallpox spread? Transmission <https://www.cdc.gov/smallpox/transmission/index.html2016> [updated 7 June 2016; cited 2017 14 May].
3. Hughes JM, Gerberding JL. Anthrax bioterrorism: lessons learned and future directions. *Emerg Infect Dis.* 2002;8(10):1013-4.
4. World Health Organization. Smallpox eradication: destruction of variola virus stocks. Report by the Secretariat. Executive Board 134th session. EB134/34. [http://apps.who.int/gb/ebwha/pdf\\_files/EB134/B134\\_34-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/EB134/B134_34-en.pdf) WHO; 2013.
5. Kupferschmidt K. How Canadian researchers reconstituted an extinct poxvirus for \$100,000 using mail-order DNA. *Health, Science and Policy, Scientific Community.* 2017(6 July 2017).
6. World Health Organization. Chapter 3 Summary: New health threats in the 21st century. *World Health Report 2007 A safer future: global public health security in the 21st century.* <http://www.who.int/whr/2007/overview/en/index5.html> WHO; 2007.
7. World Health Organization. *International Health Regulations 2005.* Third edition. France: WHO; 2016.
8. World Health Organization. R&D Blueprint and COVID-19 <https://www.who.int/teams/blueprint/covid-19> [cited 2021 10 June]
9. World Health Organization. Scientific review of variola virus research, 1999-2010. WHO/HSE/GAR/BDP/2010.3. Geneva: WHO; 2010.
10. World Health Organization. *Weekly epidemiological record.* 2014;No 1(89):1-20.
11. Gerstein DM. Can the bioweapons convention survive Crispr? *Bulletin of the Atomic Scientists.* 2016(9679).
12. WHO Advisory Committee on Variola Virus Research. Report of the Seventeenth Meeting. Geneva, Switzerland. 12-13 January 2016. WHO/OHE/PED/2016.1. Geneva: WHO; 2016.