

**Research Group for
Biological Arms Control**



2019 Reader on Publicly Available CBMs

November 2019

About this Reader

The exchange of information under the Biological Weapons Convention (BWC) in the form of the Confidence Building Measures (CBMs) remains the only permanent transparency building tool of the BWC.

This Reader, as its forerunners, presents information on CBM-related developments and the data provided in the openly available CBMs of the current year. The CBM Reader aims to underline the importance of participating in the CBM data exchange as the only established permanent transparency tool for the BWC and to highlight the particular efforts of an increasing number of states to foster transparency by making their CBM submissions available to the public. The CBM Reader series is prepared as part of our efforts to increase transparency around bioweapon relevant activities globally. Such transparency is indispensable for building confidence in compliance with the BWC and must extend to all stakeholders including civil society. For more information please visit www.biological-arms-control.org/projects_improvingthecbms.html.

Development of the CBM regime in 2019

The last formal decision of States Parties with regard to CBMs dates back to 2011. On the 7th Review Conference in 2011 BWC States Parties decided to address CBMs in the 2012 and 2013 the Meetings of Experts and the Meetings of States Parties. It was aimed to discuss a possible update of the CBM forms (that date back to the year 1992) in the ISP, but BWC members did not agree on recommendations for a formal decision at the 8th Review Conference. Some States Parties, however, contributed working papers during the ISP and for the 8th Review Conference (see page 3). On the 8th Review Conference in 2016 Member States came to very few forward-looking decisions in general – and to no decision with regard to CBMs in particular.

Figures shown in this reader also illustrate the need for a debate on how a more active participation in the mechanism could be reached. The debates in the precedent ISP meetings and at the Review Conference show that these issues have potential for development.

Facts about the BWC and its CBMs¹⁾

BWC States Parties: 183

New BWC States Parties in 2019: Tanzania

States Parties with national contact points: 118

CBMs submitted in 2019: 77 as of November 19, 2019

Public CBMs in 2019: 31 as of November 19, 2019

First-time public CBM submission in 2019:
Morocco

**Number of states having participated in the
CBM data exchange in 30 years:** 116

¹⁾ For reference see data provided by BWC Implementation Support Unit (ISU), accessible at www.unog.ch

CBM-specific publications in 2019

Quite some publications have mentioned the CBM mechanism in 2019. However, we could find only one that goes into detail:

Filippa Lentzos, 2019. Trust and Transparency in Biodefense; in: K. Singh, J. H. Kuhn (eds.) 2019: Defense Against Biological Attacks; p. 53-68.

For earlier publications, please check former versions of this reader at: http://biological-arms-control.org/projects_improvingthecbms.html.

Participation in the CBM regime in 2019

As on 19 November 2019, 77 BWC states parties had submitted their CBM (or expressed their intention to do so before the MSP). Therewith the long-time phenomenon that participation is relatively high in years with Review Conferences, but drops down significantly in the following year, does only appear in a moderated form. The overall participation in the CBM mechanism improved slightly over time. Since the beginning of the data exchange in 1987, the annual level of participation was never higher than 45 per cent of the BWC states parties, in 2019 77 of the member states have submitted a CBM. In total, 116 countries submitted a CBM at least once. This means that 66 BWC states parties have yet to submit their first CBM declaration. Continuity in states' participation also remains weak: Only 37 countries have submitted a CBM in each of the past 10 years, and 25 countries have submitted a CBM only once or twice since 1987.

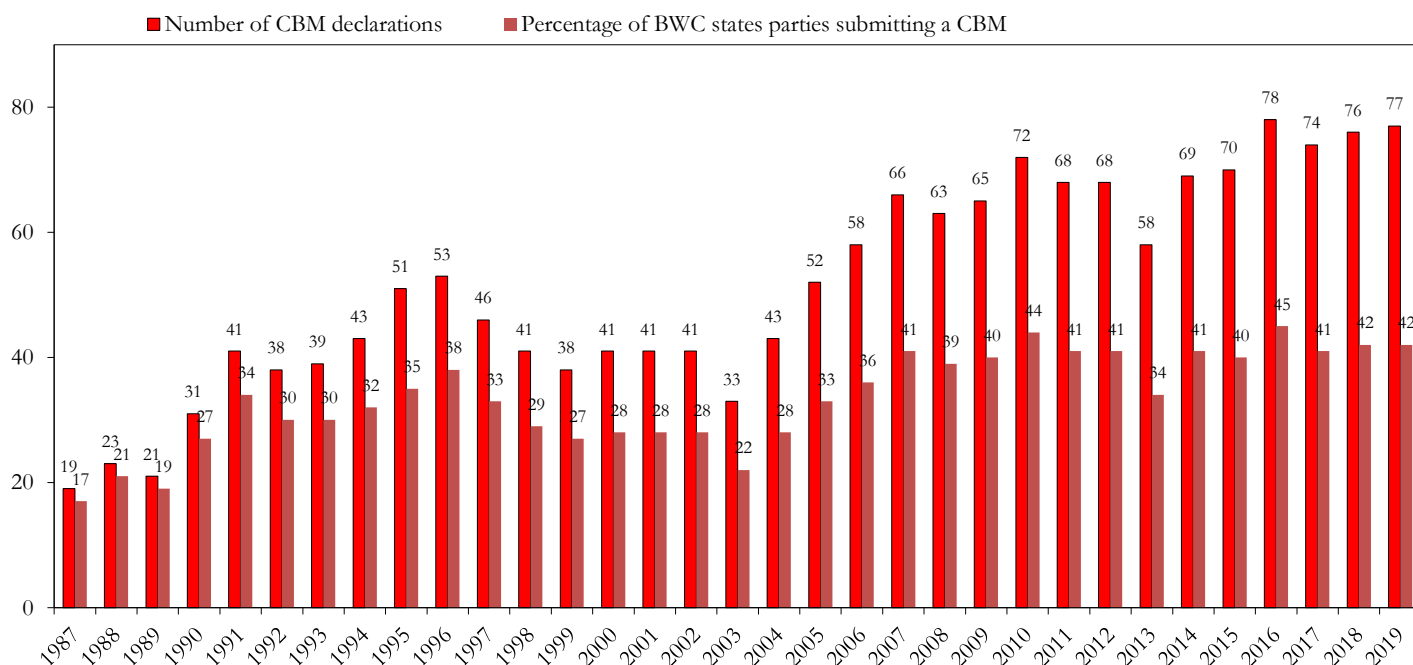
First time submission in 2019: none

First-time public submission in 2019: Morocco

CBM submissions in 2019 (States in bold made their CBM available to the public.):

1. Argentina	16. Denmark	33. Kenya	49. Nigeria	66. South Africa
2. Armenia	17. Ecuador	34. Kyrgyzstan	50. Norway	67. Sweden
3. Australia	18. Estonia	35. Latvia	51. Oman	68. Switzerland
4. Austria	19. Finland	36. Lebanon	52. Pakistan	69. Thailand
5. Belarus	20. France	37. Liechtenstein	53. Philippines	70. Tunisia
6. Belgium	21. Georgia	38. Lithuania	54. Poland	71. Turkey
7. Brazil	22. Germany	39. Luxembourg	55. Portugal	72. Ukraine
8. Bulgaria	23. Greece	40. Malaysia	56. Qatar	73. United Arab Emirates
9. Canada (En, Fr)	24. Honduras	41. Mali	57. Rep. Korea	74. UK
10. Chile	25. Hungary	42. Malta	58. Romania	75. USA
11. China	26. India	43. Mauritius	59. Russian Fed.	76. Uzbekistan
12. Colombia	27. Iraq	44. Mexico	60. Saudi Arabia	
13. Cuba	28. Ireland	45. Montenegro	61. Senegal	
14. Cyprus	29. Italy	46. Morocco	62. Serbia	
15. Czech Re- public	30. Japan	47. Netherlands	63. Singapore	
	31. Jordan	48. New Zea- land	64. Slovakia	
	32. Kazakhstan		65. Slovenia	

Figure 1. CBM submissions per year between 1987 and 2019 (Numbers in this figure may differ from numbers provided by the Implementation Support Unit. This is due to differences in counting states that were formerly part of other states, such as the former republics of the Soviet Union. This figure provides the actual number of CBM declarations submitted in the respective year.)



As of 19 November 2019, 31 countries have made their 2019 CBM declarations publicly available. All of the 31 publicly available CBMs can be found on the website of the Implementation Support Unit (ISU) (<https://bwc-ecbm.unog.ch/group/ecbm-portal>):

Australia, Austria, Belgium, Bulgaria, Canada (in English and French), Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Ireland, Japan, Latvia, Lithuania, Luxembourg, Mexico, Morocco, Netherlands, New Zealand, Norway, Portugal, Romania, Serbia, Slovakia, Slovenia, Sweden, Switzerland, Ukraine, United Kingdom and the USA.

At least Belgium provided two separate versions of their CBMs, one for the restricted part of the ISU website and one for the public.

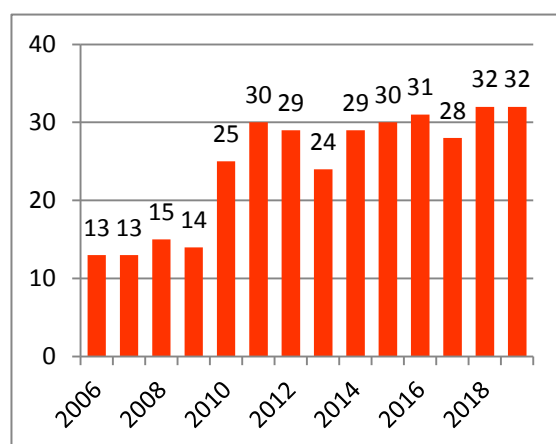


Table 1. Countries that made their CBM declarations publicly available, 2006-2019

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Albania					x									
Australia	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Austria				x	x	x	x	x		x	x	x	x	x
Bangladesh			x											
Belgium						x	x	x	x	x	x	x	x	x
Brazil					x									
Bulgaria		x	x		x	x	x	x	x	x	x	x	x	x
Canada (En and Fr)						x	x	x	x	x	x	x	x	x
Croatia	x								x				x	
Cyprus						x	x							x
Czech Republic	x			x	x	x	x	x	x	x	x	x	x	x
Denmark		x	x		x	x	x		x	x	x	x	x	x
Ecuador						x								
Estonia					x	x		x			x	x	x	x
Finland	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Georgia				x	x	x								
Germany	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Greece						x	x	x						
Hungary									x	x				
Ireland	x	x	x	x	x	x				x	x	x	x	x
Japan							x	x	x	x	x	x	x	x
Latvia	x			x		x	x	x	x	x	x	x	x	x
Liechtenstein		x	x	x	x	x		x	x					
Lithuania	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Luxembourg									x	x	x	x	x	x
Madagascar							x							
Malaysia	x					x								
Mauritius											x			
Mexico										x	x	x	x	x
Morocco														x
Myanmar											x		x	
Netherlands								x	x	x	x	x	x	x
New Zealand	x	x	x		x	x	x	x	x	x	x	x		x
Norway			x		x	x	x	x		x	x	x	x	x
Poland					x									
Portugal					x	x	x	x	x	x	x	x	x	x
Qatar							x	x						
Republic of Moldova							x	x	x	x	x		x	
Romania			x	x	x	x	x	x	x	x	x	x	x	x
Senegal					x									
Serbia							x		x	x		x	x	x
Slovakia									x				x	x
Slovenia									x	x	x	x	x	x
Sweden	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Switzerland	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Thailand					x	x	x							
Turkey						x	x		x	x	x	x	x	
Ukraine						x	x			x	x	x	x	x
United Kingdom	x	x	x	x	x	x	x	x	x	x	x	x	x	x
USA					x	x	x	x	x	x	x	x	x	x
Total	13	13	15	14	25	30	29	24	29	30	31	28	32	31

As shown in Table 1 above 50 countries have made their CBM publicly available at least once since 2006. Many states make their CBMs publicly available in an erratic way. No explanation readily offers itself for why many states make their CBMs publicly available in one year but not in another.

Summary of data in publicly available 2019 CBM declarations

A summary of the data declared in the 31 publicly available CBMs of 2019 is provided in the table below. More detailed information can be found in the Annex to this Reader. 36 maximum biological containment facilities were declared in publicly available CBMs in 2019, four of which were partially or wholly funded by ministries of defence. 16 of the 31 countries making their 2019 CBM publicly available declared having a biodefence programme; they provided information on 58 biodefence facilities. And lastly, 29 unusual disease outbreaks and 71 vaccine production facilities were declared in the 31 publicly available CBMs of 2019.

Table 2. Summary of data in publicly available CBM declarations, 2019

Form A, part 1:	Number of maximum biological containment facilities (BSL-4 or equivalent) declared.
Form A, part 2 (i):	Does the state party declare having a biodefence programme?
Form A, part 2 (iii):	Number of biodefence facilities declared.
Form B (ii):	Number of unusual disease outbreaks declared.
Form F:	Does the state party declare having a past offensive and/or defensive programme?
Form G:	Number of vaccine production facilities declared.
ND / NN:	“Nothing to declare” / “Nothing new to declare” indicated in Form X.

Country	Form A, part 1	Form A, part 2 (i)	Form A, part 2 (iii)	Form B (ii)	Form F (off/def)	Form G
Australia	4	yes	1	0	no/no	2
Austria	0	yes	1	ND	no/no	ND
Belgium	0	yes	2	ND	ND	0
Bulgaria	0	no	NN	ND	ND	NN
Canada	2	yes	2	15	yes/yes	16
Croatia	ND	no	ND	ND	ND	ND
Cyprus	ND	ND	ND	ND	ND	ND
Czech Republic	2	no	ND	ND	NN	4
Denmark	0	yes	1	ND	no/yes	3
Estonia	0	no	ND	ND	ND	ND
Finland	0	yes	1	ND	ND	ND
Germany	3	yes	5	0	NN	6
Ireland	0	no	ND	0	ND	NN
Japan	2	yes	1	ND	NN	NN
Latvia	0	yes	1	ND	NN	ND
Lithuania	0	no	ND	ND	no/no	NN
Luxembourg	0	no	ND	NN	no/no	ND
Mexico	0	no	ND	ND	ND	NN
Morocco	NN	ND	ND	ND	ND	2
Netherlands	0	yes	1	0	no/yes	8
New Zealand	0	ND	ND	ND	no/no	ND
Norway	0	yes	3	ND	no/no	3
Portugal	0	yes	1	ND	no/yes	1
Romania	0	ND	ND	ND	ND	2
Serbia	ND	no	ND	ND	no/no	ND
Slovakia	ND	ND	ND	ND	ND	ND
Slovenia	0	no	ND	ND	ND	ND
Sweden	1	yes	2	ND	no/no	1
Switzerland	2	yes	10	0	no/yes	2
Ukraine	0	no	ND	ND	ND	9
United Kingdom	10	yes	1	0 ¹	yes/yes	3
USA	10	yes	25	14 ²	NN	9

¹ No outbreaks of human related disease, but there were three cases of monkeypox, which were known to relate to importation of disease to the UK through international travel.

² Two human disease events and 12 animal disease events.

ANNEX

The following table summarizes the data declared in **CBM Form A, Part 1**, of the publicly available CBM submissions from 2018 (covering 2017) and compares them with the information in publicly available CBMs from 2007 to 2018. The table provides the names and locations of facilities declared in CBM Form A, part 1, their containment levels, the year(s) they were declared, and whether the facilities were wholly or partly funded by ministries of defence (MoD). Grey cells indicate that there was no CBM submission or that it was not made publicly available (either on the ISU-website or by providing the Hamburg Research Group with the CBM) in the respective year. “ND” indicates that the state ticked the “Nothing to declare” box in Form 0. “NN” indicates that the state ticked the “Nothing new to declare” box in Form 0 and provided no further information. “/” indicates that no data were provided.

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
Australia	1. Australian Animal Health Laboratory (East Geelong)	BL4	x	x	x	x	x	x	x	x	x	x	NN	no	NN	no	NN	no
	2. National High Security Quarantine Laboratory (North Melbourne)	BL4	x	x	x	x	x	x	x	x	x	x	NN	no	NN	no	NN	no
	3. Queensland Health and Forensic Scientific Services (Cooper Plains)	BL4	x	x	x	x	x	x	x	x	x	x	NN	no	NN	no	NN	no
	4. Emerging Infectious Disease and Biohazard Response Unit (Westmead)	BL4	/	x	x	x	x	x	x	x	x	x	NN	no	NN	no	NN	no
Austria	1. Federal Ministry of Defence and Sport / Armament and Defence Technology Agency Div NBC & Environmental Protection Technology (Vienna)	BL3			x	x	x	x	x	x	x	x	x	partly	x	wholly	x	wholly
Belgium	1. Fédéral d'Orientation (FOL) de la défense (DLD)	BL3					ND	ND	ND	ND	x	x	x	wholly	ND	partly	ND	partly
Bulgaria	1. National Center of Infectious and Parasitic Diseases (Yanko Sakazov Blvd., Sofia)	BL3	x	x	x	x	x	x	x	NN	NN	x	NN	no	NN	/	x	/
	2. Department of Microbiology and Virology, Military Medical Academy (St. Georgi Sofijski Str., Sofia)	BL3	/	/	/	/	/	/	/	/	/	x	NN	wholly	NN	/	x	/
	3. National Diagnostic Research Veterinary Medicine Institute (Pencho Slaveikov Blvd., Sofia)	BL3	/	/	/	x	x	/	/	/	/	x	NN	no	NN	/	x	/
Canada	1. National Microbiology	BL4					x	x	x	/	x	x	x	no	NN	no	x	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Laboratory (Winnipeg)																	
	2. National Centre for Foreign Animal Disease (Winnipeg)	BL4					x	x	x	/	x	x	x	no	NN	no	x	no
Croatia	<i>Nothing to declare</i>	/								ND								
Cyprus	<i>Nothing to declare</i>	/					ND	n.a.									NN	/
	1. State Veterinary Institute Jihlava (Jihlava)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	2. State Veterinary Institute Prague (Lysolaje)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	3. Tekro, spol.s.r.o. (Uničov)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	4. Collection of Animal Pathogenic Microorganisms (Brno)	BL3			NN	NN	/	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	5. Institute of Molecular Pathology (Hradec Králové)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	6. Central Military Health Institute, Department Těchonín (Těchonín)	BL4			NN	NN	x	x	NN	x	NN	NN	NN	/	NN	/	NN	/
	7. Central Military Health Institute, Department Prague (Prague)	BL2			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	8. Laboratory for Biological Monitoring and Protection (Milín)	BL4			NN	NN	x	x	NN	x	NN	NN	NN	/	NN	/	NN	/
	9. Laboratory of Molecular Biology (Hradec Králové)	BL2			NN	NN	/	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	10. Division of Infectious Diseases, Department of Infectious Diseases and Epizootology, Faculty of Veterinary Medicine (Brno)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	11. National Institute of Public Health; Centre of Epidemiology and Microbiology (Šrobárova)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
	12. Bioveta, a.s. (Ivanovice na Hané)	BL3			NN	NN	x	/	NN	/	NN	NN	NN	/	NN	/	NN	/
Denmark	1. Centre for Biosecurity and Biopreparedness (Copenhagen)	BL2	x	x		x	/	ND		x	ND	ND	ND	/	NN	no	NN	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	2. Anonymous lager university in Denmark (no location provided)	BL3	/	/		/	x	ND			ND	ND	ND	/	NN	no	NN	/
	3. TB Vaccine Research (Copenhagen)	BL3	/	/		/	x	ND		/	ND	ND	ND	/	NN	no	NN	/
	4. QC Bio (Copenhagen)	BL3	/	/		/	x	ND		/	ND	ND	ND	/	NN	no	NN	/
	5. International Reference Laboratory of Mycobacteriology (Copenhagen)	BL3	/	/		/	x	ND		/	ND	ND	ND	/	NN	no	NN	/
	<i>Nothing to declare</i>	n.a.					ND											
Ecuador	1. Joint Laboratories of Tartu University Clinics (Tartu)	BL3				ND	ND					x		/	x	/	x	/
Estonia	2. Microbiology Laboratory of North-Estonia Regional Hospital	BL3										x		/	x	/	x	/
	3. Veterinary & Food Laboratory	BL3										x		/	x	/	x	/
	4. Laboratory for Mycobacteriosis of University of Life Sciences	BL3										x		/	x	/	x	/
	1. Centre for Biothreat Preparedness (Helsinki)	BL3	x	x	x	x	x	x	x	x	x	x	x	partly	x	partly	x	partly
Finland	2. National Institute of Health and Welfare, Bacteriological and Virological Lab (Helsinki, Turku)	BL3	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	3. University of Helsinki: Yersinia Research Laboratory (Helsinki)	BL2	x	x	x	x	x	x	x	x	x	x	/	partly	x	partly	x	no
	4. University of Helsinki: Department of Virology (Helsinki)	BL3	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	5. Institute of Biotechnology (Helsinki)	BL3	/	/	/	/	/	/	x	/	/	/	/	n.a.	x	/	/	/
	6. Finnish Food Safety Authority (Evira) (Helsinki)	BL3	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	7. Finnish Defence Research Agency (FDRA) (Lakiala)	BL3	x	x	x	x	x	x	x	x	x	x	x	wholly	x	wholly	x	wholly
	8. University of Helsinki: Department of Food and Environmental Sciences (Helsinki)	BL3	/	/	/	/	/	/	/	x	x	x	x	no	x	no	x	/

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	9. University of Helsinki: Clostridium botulinum laboratory (Helsinki)	BL2	/	/	/	/	/	/	/	x	x	x	x	no	x	no	x	no
Georgia	1. National Center for Disease Control and Public Health (Tbilisi)	BL2			x	x	x											
	2. Laboratory of Ministry of Agriculture of Georgia (Tbilisi)	BL2			/	x	x											
	1. Bernhard-Nocht-Institut für Tropenmedizin (Hamburg)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
Germany	2. Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health (Insel Riems)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	3. Institut für Virologie der Philipps Universität Marburg (Marburg)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	1. University of Crete School of Medicine (Heraklion)	BL3					x	NN	NN									
Greece	2. Kapodistrian University of Athens School of Medicine (Athens)	BL3					x	NN	NN									
	3. Aristotelian University of Thessaloniki (Thessaloniki)	BL3					x	NN	NN									
	4. Infectious Diseases Hospital (Thessaloniki)	BL3					x	NN	NN									
	5. Hellenic Pasteur Institute (Athens)	BL3					x	NN	NN									
	6. Athens School of Public Health (Athens)	BL3					x	NN	NN									
	1. National Center for Epidemiology (Budapest)	BL4								x	x							
Ireland	1. University College Dublin, National Viral Reference Laboratory (Dublin)	BL3+	x	x	x	x	x				x	x	x	no	x	/	NN	/
	2. Public Health Laboratory, Cherry Orchard Hospital (Dublin)	BL3	x	x	x	x	x				x	x	x	no	x	/	NN	/
Japan	1. Murayama Annex of National	BL4						x	x	x	x	x	x	no	NN	no	NN	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Institute of Infectious Diseases (Tokyo)																	
	2. RIKEN Tsukuba Campus (Ibaraki)	BL4						/	x	x	x	x	x	no	NN	no	NN	no
Latvia	1. Riga East University Hospital Latvian Centre of Infectious Diseases, National Microbiology Reference Laboratory (Riga)	BL3					x	x	x	x	x	x	x	no	x	no	NN	no
	2. Latvian Biomedicine Research and Study centre (Riga)	BL2					/	x	/	/	/	/	/	/	x	/	NN	no
Lichtenstein	<i>Nothing new to declare</i>	/	NN	NN	NN	NN	NN		NN	NN				/				
Lithuania	1. Microbiological laboratory of Vilnius Public Health Centre (Vilnius)	BL3	x	x	x	x	/	/	/	/	/	/	/	/	NN	/	NN	/
	2. Laboratory of Centre for Communicable Diseases (Vilnius)	BL2	x	x	x	x	/	/	/	/	/	/	/	/	NN	/	NN	/
	3. National Food and Veterinary Risk Assessment Institute (Vilnius)	BL3	x	x	x	x	x	x	x	x	x	x	x	no	NN	no	NN	no
	4. National Public Health Surveillance Laboratory (Vilnius)	BL3	/	/	/	/	x	x	x	x	x	x	x	no	NN	no	NN	no
Luxembourg	1. Laboratoire de santé (Dudelange)	BL3								x	x	x	x	no	NN	no	NN	no
Madagascar	/	/						/										
Malaysia	1. Animal and Plant In vitro Laboratory, Biotechnology Research Institute, Universiti Malaysia Sabah (Kota Kinabalu)	BL3					x											
	2. Medical Laboratories for medical microbiology, parasitology and virology (Serdang)	BL2					x											
	3. Institute of Systems Biology, Universiti Kebangsaan (Bangi)	BL2					x											
	4. Veterinary Research Institute (Ipoh)	BL3					x											
	5. Biochemistry Laboratory,	BL3					x											

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Biotechnology Research Institute, Universiti Malaysia Sabah (Kota Kinabalu)																	
	6. Genomics Laboratory, Biotechnology Research Institute, Universiti Malaysia Sabah (Kota Kinabalu)	BL3					x											
	7. Microbiology Laboratory, Biotechnology Research Institute, Universiti Malaysia Sabah (Kota Kinabalu)	BL3					x											
	8. Natural Product Chemistry Laboratory, Biotechnology Research Institute, Universiti Malaysia Sabah (Kota Kinabalu)	BL3					x											
	9. Biosafety Level 3/Animal Biosafety Level 3 Laboratory (Serdang)	BL3					x											
	10. Plant Biotech Facility (PBF), Centre for Research in Biotechnology for Agriculture (Kuala Lumpur)	/					x											
	/	/										ND						
	1. Universidad de Monterrey (Nuevo León)	BL3									x	x	NN	no	NN	no	NN	no
	2. Instituto Nacional de Ciencias Médicas y Nutrición "Salvador Zubirán" (Tlalpan)	BL3									x	x	NN	no	NN	no	NN	no
	3. Centro de Investigación en Tecnología y Diseño del Estado de Jalisco A.C. (Jalisco)	BL3									x	x	NN	no	NN	no	NN	no
Mexico	4. Laboratorios de Diagnostico del Departamento de Medicina Zootecnica de Cerdos (Coyoacán)	BL3									x	x	NN	no	NN	no	/	/
	5. Unidad de Investigación	BL3									x	x	NN	no	NN	no	NN	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Nacional de Enfermedades Respiratorias (Tlalpan)																	
	6. Dirección General de Epidemiología, Instituto de Diagnóstico y Referencia Epidemiológicos (Álvaro Obregón)	BL3									x	x	NN	no	NN	no	NN	no
	7. Comisión México - Estados Unidos para la prevención de la Fiebre Aftosa y otras enfermedades exóticas de los animales (Cuajimalpa)	BL3									x	x	NN	no	NN	no	NN	no
	8. Laboratorio Estatal de Salud Pública del Estado de Sonora (Sonora)	BL3									x	x	NN	no	NN	no	NN	no
	9. Instituto de Investigaciones Biomédicas de la Universidad Nacional Autónoma de México (Coyoacán)	BL3									x	x	NN	no	NN	no	NN	no
	10. Laboratorio Estatal de Salud Pública da Veracruz (Veracruz)	BL3									x	x	NN	no	NN	no	NN	no
	11. Laboratorio Nacional de Máxima Seguridad Biológica para el Estudio de la Tuberculosis y Enfermedades Emergentes (Tlalpan)	BL3									/	x	NN	/	NN	/	/	/
	12. Centro Nacional de Servicios de Diagnóstico en Salud Animal (Pachuca de Soto)	BL3									x	x	NN	no	NN	no	NN	no
	1. National Center for Public Health (Chinsinau)	BL3							NN	NN	x	NN			NN	/		
	2. Republican Center for Veterinary Diagnostics (Chinsinau)	BL3							NN	NN	x	NN			NN	/		
	/	/															NN	/
	/	/										ND			ND	/		
Moldova																		
Morocco																		
Myanmar																		

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
Netherlands	1. TNO Department of CBRN Protection (Rijswijk)	BL3							x	/	/	x	x	partly	x	mostly	x	mostly
	2. National Institute for Public Health and the Environment (Bilthoven)	BL3							x	x	x	x	x	no	x	no	x	no
New Zealand	1. National Centre for Biosecurity and Infectious Disease (Upper Hutt)	BL3+	x	x		x	x	x	/	ND	ND	ND	x	no			ND	no
Norway	1. Institute of Microbiology, Armed Forces Medical Services (Oslo)	BL3				x	NN	NN	NN	NN	NN	ND	ND	/	ND	/	ND	/
	1. Laboratório de Bromatologia e Defesa Biológica (Lisbon)	BL3	x			x	x	/	/	/	/	x	NN	partly	NN	party	NN	partly
Portugal	2. Unidade de reposta a Emergências e Biopreparação (Lisbon)	BL3				x	x	/	/	/	/	/	/	/	/	/	/	/
	3. Departamento de Doenças Infecciosas (Lisbon)	BL3				/	/	x	x	x	x	x	NN	no	NN	no	NN	no
	4. Unidade de reposta a Emergências e Biopreparação (Braga)	BL3				/	/	/	x	/	/	/	/	/	/	/	/	/
	5. Instituto Nacional de Investigação Agrária e Veterinária (Lisbon)	BL3				/	/	x	x	x	x	x	NN	no	NN	no	NN	no
	6. Life and Health Sciences Research Institute (Braga)	BL3				/	/	/	/	x	x	x	/	/	/	/	/	/
	7. Instituto de Tecnologia Química e Biológica (Lisbon)	BL3				/	/	/	/	x	x	x	NN	no	NN	no	NN	no
	8. Departamento de Farmácia Galénica e Tecnologia Farmacéutica (Lisbon)	BL3				/	/	/	/	/	/	x	NN	no	NN	no	NN	no
	9. Departamento de Microbiologia e Imunologia (DMI) (Lisbon)	BL3				/	/	/	/	/	x	x	NN	no	NN	no	NN	no
	<i>Nothing new to declare</i>	/						ND										
Qatar																		

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
Romania	1. Military Medical Research Center (Bucharest)	BL2+ ¹		NN	x	NN	x	x	x	/	/	x	x	wholly	x	wholly	x	wholly
	2. National Society "Pasteur Institute" (Bucharest)	BL2		NN	/	NN	/	/	/	x	x	x	x	no	x	no	x	no
	3. Institute for Hygiene and Veterinary Public Health (Bucharest)	BL2		NN	/	NN	/	/	/	x	x	x	x	no	x	no	x	no
	4. "Cantacuzino" National Medico-Military Institute of Research and Development (Bucharest)	BL2 ²		/	/	/	/	/	/	/	x	x	x	/	x	/	x	no
	5. Institute for Diagnosis and Animal Health (Bucharest)	BL3		/	/	/	/	/	/	/	x	x	x	/	x	/	x	no
	6. Institute for Control of Veterinary Biological Products and Medicines (Bucharest)	BL2		/	/	/	/	/	/	/	x	x	x	/	x	/	x	/
	7. National Institute for Infectious Diseases "Matei Bals" (Bucharest)	BL3 ³															x	no
Serbia	<i>Nothing to declare</i>	/						ND		ND	ND		ND	/	ND	/	ND	/
Slovakia	<i>Nothing to declare</i>	/								ND					ND	/	ND	/
Slovenia	n.a. ⁴	BL3								NN	NN	NN	NN	/	NN	/	NN	/
Sweden	1. Swedish Defence Research Agency Division of NBC Defence (Umea)	BL3	x	x	x	x	x	/	/	/	/	/	/	/	x	/	/	/
	2. High Containment Laboratory, Public Health Agency of Sweden (Solna)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	3. National Veterinary Institute (Uppsala)	BL3	x	x	x	x	x	/	/	/	/	/	/	/	x	/	/	/
Switzerland	1. Labor Spiez (Spiez)	BL3	NN	NN	NN	x	x	x	x	x	x	x	x	partly	x	partly	x	partly

¹ Biosafety level 3 is under construction (2019, p. 6)

² Biosafety level is not operational (2019, p. 10)

³ Biosafety level 3 is not fully operational, pending validation (2019, p. 7)

⁴ Slovenia declared in 2017 that it has one BL3 laboratory but does not provide further information.

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
Thailand	2. Institute of Virology and Immunology (Mittelhäusern)	BL3	NN	NN	NN	x	x	x	x	x	x	x	x	no	x	no	x	no
	3. National Reference Center for Emerging Viral Infections (Geneva)	BL4	NN	NN	NN	x	x	x	x	x	x	x	x	no	x	no	x	no
	4. Institute of Medical Virology (Zurich)	BL4	NN	NN	NN	/	/	/	/	x	x	x	x	no	x	no	x	no
	<i>Nothing new to declare</i>	/				NN	NN	NN										
Turkey	1. Ankara University Biotechnology Institute (Ankara)	BL2					x	x		/	NN	NN	NN	/	NN	/		
	2. Refik Saydam National Public Health Agency (Ankara)	BL3					x	/		/	NN	NN	NN	/	NN	/		
	3. Borno Veterinary Control and Research Institute (Ankara)	BL3					x	/		/	NN	NN	NN	/	NN	/		
	4. Diagnosis of Poultry Disease Laboratory (Ankara)	BL3					x	/		/	NN	NN	NN	/	NN	/		
	5. Biosafety Level-3 Laboratory Institute	BL3					/	x		/	NN	NN	NN	/	NN	/		
Ukraine	1. Governmental Scientific Oversight Institute for Biotechnology and Microorganism Culture Collection (Kiev)	/					x	x			/	/	/	/	x	no	/	/
	2. State institution "Institute of Microbiology and Immunology named after II Mechnikov of the National Academy of Medical Sciences of Ukraine" (Kharkov)	/					x	x			x	x	x	/	x	no	x	no
	3. State institution "Institute of Epidemiology and Infectious Diseases named after L.V. Gromashevsky National Academy of Medical Sciences of Ukraine" (Kiev)	BL2					x	x			x	/	x	/	x	no	x	no
	4. State institution "Ukrainian Research Anti-Plague Institute named after II Mechnikov" of the	BL3					x	x			x	x	x	/	x	no	x	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Ministry of Health of Ukraine (Odessa)																	
	5. Central Sanitary Epidemiological Station (Kiev)	BL3					x	x			/	/	/	/	/	/	/	/
	6. State institution "Lviv Research Institute of Epidemiology and Hygiene of the Ministry of Health of Ukraine" (Lviv)	BL3					x	x			x	x	x	/	x	no	x	no
	7. National Scientific Center "Institute of Experimental and Clinical Veterinary Medicine" (Kharkov)	BL2					/	x			x	x	x	no	x	no	x	no
	8. Institute of Veterinary Medicine of the National Academy of Agrarian Sciences of Ukraine (Kiev)	/					/	x			x	x	/	/	x	no	x	no
	9. State institution "Public Health Center of the Ministry of Health of Ukraine" / former State institution "Ukrainian Centre for Disease Control and Monitoring of the Ministry of Health of Ukraine" (Kiev)	BL3					/	/			x	x	x	no	x	no	x	no
	10. State Scientific Control Institute of Biotechnology and strains of microorganisms (Kiev)	BL2					/	/			x	x	x	/	x	no	x	no
	11. State Research Institute of Laboratory Diagnostics and Veterinary Sanitary Expertise (Kiev)	BL2					/	/			/	/	/	/	x	no	x	no
	1. Defence Science and Technology Laboratory, Porton Down (Salisbury)	BL4	x	x	x	x	x	x	x	x	x	x	x	wholly	x	mostly	x	mostly
	2. Public Health England - Colindale (London)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	3. Public Health England - Porton (Salisbury)	BL4	x	x	x	x	x	x	/	x	x	x	x	no	x	no	x	no
United Kingdom																		

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
United States of America	4. National Institute for Biological Standards and Control (Potters Bar)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	5. The Francis Crick Institute Containment 4 facility (London)	BL4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	6. The Pirbright Institute (Pirbright)	SAPO4	/	/	/	/	/	/	x	x	x	x	x	no	x	no	x	no
	7. Animal and Plant Health Agency (Addlestone)	SAPO4	x	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	8. Institute for Animal Health, Pirbright Laboratory (Woking)	SAPO4	x	x	x	x	x	x	/	/	/	/	/	/	/	/	/	/
	9. Merial Animal Health, Biological Laboratory (Pirbright)	SAPO4	/	x	x	x	x	x	x	x	x	x	x	no	x	no	x	no
	10. Schering-Plough Animal Health (Uxbridge)	SAPO4	/	x	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	1. Viral Immunology Center, Georgia State University (Atlanta, GA)	BL4				x	x	x	x	x	x	x	x	no	x	no	/	/
	2. The Betty Slick and Lewis J. Moorman, Jr. Laboratory Complex (San Antonio, TX)	BL4				x	x	x	x	x	x	x	x	partly	x	partly	x	partly
	3. Galveston National Laboratory (Galveston, TX)	BL4				x	x	x	x	x	x	x	x	partly	x	partly	x	partly
	4. Plum Island Animal Disease Center (Greenport, TX)	BL3				x	x	/	/	/	/	/	/	/	/	/	/	/
	5. U.S. Army Medical Research Institute of Infectious Diseases (Fort Detrick, MD)	BL4				x	x	x	x	x	x	x	x	partly	x	partly	x	partly
	6. National Biodefense Analysis and Countermeasures Center (Fort Detrick, MD)	BL4				/	/	x	x	x	x	x	x	partly	x	partly	x	no
	7. Integrated Research Facility at Rocky Mountain Laboratories (Hamilton, MT)	BL4				/	/	x	x	x	x	x	x	no	x	no	x	no
	8. Coordinating Center for Infectious Diseases (Atlanta, GA)	BL4				x	/	/	/	/	/	/	/	/	/	/	/	/
	9. CDC, Deputy Director for	BL4				/	/	x	x	x	x	x	x	partly	x	no	x	no

Country	Name and location of facilities declared in CBM Form A, Part 1	Cont. Level	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	MoD funded in 2017?	Decl. 2018	MoD funded in 2018?	Decl. 2019	MoD funded in 2019?
	Infectious Diseases (Atlanta, GA)																	
	10. Integrated Research Facility at Fort Detrick - NIAID (Fort Detrick, MD)	BL4				/	/	/	/	x	x	x	x	no	x	no	x	no
	11. The Boston University National Emerging Infectious Diseases Laboratories - NEIDL (Boston)	BL4	/	/	/	/	/	/	/	/	/	/	/	/	x	no	x	no

The following table summarizes the data declared in **CBM Form A, Part 2 (ii) and Part 2 (iii)** of the publicly available CBM submissions from 2017 and compares them with the information in publicly available CBMs from 2007 to 2016. The table indicates the overall funding for the biodefence programme as declared in CBM Form A, part 2 (ii), and lists the

names and locations of biodefence facilities declared in CBM Form A, part 2 (iii), specifying the year(s) they were declared. Grey cells indicate that there was no CBM submission or that it was not made publicly available in the respective year. "ND" indicates that the state ticked the "Nothing to declare" box in Form 0. "NN" indicates that the state ticked the "Nothing new to declare" box in Form 0. "/" indicates that no data were provided.

Country	Total funding in million EUR declared in Form A, Part 2 (ii) ⁵													Name and location of facilities declared in CBM Form A, Part 2 (iii)														
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019		
Australia	1.5	1.6	1.7	1.7	2.0	2.0	2.0	1.7	1.7	2.1	2.1	2.3	2.2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Austria			0.01	0.03	0.05	0.03	0.02	0.09	0.09	0.09	0.02	0.09	0.63			x	x	x	x	x	x	x	x	x	x	x	x	
Belgium																		x	x	x	x	x	x	x	x	x	/	
																		/	/	/	/	/	/	/	/	/	/	
																	x	x	x	x	x	x	x	x	x	/		
																		x	/	/	/	/	/	/	/	/	/	
																		x	x	x	x	x	x	x	x	/	/	
Bulgaria								NN	NN	NN	NN	NN	NN								x	x	NN	NN	NN	NN	NN	
																					/	x	NN	NN	NN	NN	NN	
Canada																		x	x	x	x	x	x	x	x	x	x	
																		x	x	x	x	x	x	x	x	x	x	
Croatia								NN				NN									NN				NN			
Cyprus													NN														ND	
Czech Republic	/	/	/	/	/	/	/	/								/	/	x	x	/		NN	NN	NN	NN	NN	NN	
																		x	x									
																		x	x	x	x	x	x	x	x	x	x	

⁵ National currencies were converted to Euros using the online service, <http://www.finanzen.net/waehrungsrechner>. 15 April of each respective year, the deadline for submitting the CBM to the UN, was selected as the date for the currency conversion.

[illegible]

[illegible]

The following table summarizes the data declared in **CBM Form G** of the publicly available CBM submissions from 2018 and compares them with the information in publicly available CBMs from 2007 to 2017. It provides the names and locations of vaccine production facilities declared in CBM Form G, the year(s) they were declared, and the diseases against which vaccines were produced. Grey cells indicate that there was no CBM submission or that it was not made publicly available in the respective year. “ND” indicates that the state ticked the “Nothing to declare” box in Form 0. “NN” indicates that the state ticked the “Nothing new to declare” box in Form 0. “/” indicates that no data were provided.

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Australia	1. Seqirus (Australia) Pty Ltd / former CSL Limited (Parkville and Broadmeadows, VIC)	no	yes	x	x	x	x	NN	NN	NN	NN	NN	NN	NN	x	x
	2. G-Gem Pty Ltd / former Queensland Institute of Medical Research (Herston Road)	no	yes	/	x	x	x	NN	NN	NN	NN	NN	NN	NN	/	/
	3. Ludwig Institute for Cancer Research, Austin Hospital (Heidelberg, VIC)	no	yes	/	x	x	x	NN	NN	NN	NN	NN	NN	NN	/	/
	4. GlaxoSmithKline Australia Pty Ltd (VIC)	no	yes	/	/	/	/	/	/	/	/	/	/	/	x	x
Austria	<i>Nothing to declare</i>	n.a.	n.a.			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Belgium	1. GlaxoSmithKline Biologicals S.A (Rixensart)	n.a. ⁷	n.a.					x	x	x	x	x	x	x	x	/
	2. Pfizer Animal Health (Louvain-la-Neuve)	n.a. ⁷	n.a.					x	/	/	/	/	/	/	/	/
Bulgaria	1. BulBio-NCIPD Ltd (Sofia)	n.a.	n.a.	x	x		x	x	x	x	NN	NN	NN	NN	NN	NN
	2. National Diagnostic and Research Veterinary Medical Institute (Sofia)	n.a.	n.a.	/	/		x	/	/	/	NN	NN	NN	NN	NN	NN
Canada	1. ID Biomedical Corporation of Quebec (GlaxoSmithKline Inc.) (Quebec City, QC)	n.a.	yes					/	/	x	x	x	x	x	x	x
	2. Sanofi Pasteur Limited (Toronto, ON)	n.a.	yes					/	/	x	x	x	x	x	x	x
	3. Medicago (Quebec City, QC)	n.a.	yes					/	/	/	/	x	x	x	x	x
	4. Immunovaccine (Halifax, NS)	Anthrax	yes					/	/	/	/	x	x	x	x	x
	5. Artemis Technologies Inc., No. 50 (Guelph, ON)	no	yes					x	x	x	x	x	x	x	x	x

⁶ As designated by the Centers for Disease Control and Prevention (CDC) in the USA.

⁷ The list of vaccines is removed in the public version of the CBM.

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
	6. Bioniche Life Sciences Inc., No. 8 (Belleville)	no	yes					x	x	x	x	/	/	/	/	/
	7. Biovet Inc., No. 49 (Saint-Hyacinthe, QC)	no	yes					x	x	x	x	x	x	x	x	x
	8. Gallant Custom Laboratories Inc., No. 45 (Cambridge, ON)	no	yes					x	x	x	x	x	x	x	x	x
	9. Elanco Canada Limited, No. 40 (Mississauga, ON)	no	yes					x	x	x	x	/	x	/	/	/
	10. Elanco Canada Limited - Aqua Health, No. 40 (Charlottetown (PEI) and Victoria (PEI))	no	yes					x	x	x	x	x	x	x	x	x
	11. Nutratech Inc., No. 58 (Winnipeg, MB)	no	yes					x	x	x	x	x	/	x	x	x
	12. Saskatoon Colostrum Co. Ltd., No. 44 (Saskatoon, SK)	no	yes					x	x	x	x	x	x	x	x	x
	13. Vacci-Vet Inc., No. 59 (Saint-Hyacinthe, QC)	n.a.	yes					/	/	/	x	x	/	x	x	x
	14. Ceva Animal Health Inc., No. 23 (Guelph, ON)	no	yes					x	x	/	x	x	x	x	x	x
	15. Novartis Animal Health Canada Inc., No. 40 (Mississauga, ON)	no	yes					x	x	x	x	x	x	/	/	/
	16. Biovet Inc., No. 59 (Saint-Hyacinthe, QC)	no	yes					/	/	/	/	/	x	/	/	/
	17. InventVac (Vancouver, BC)	no	yes					/	/	/	/	/	/	/	x	x
	18. National Research Council of Canada (Ottawa, ON)	no	yes					/	/	/	/	/	/	/	/	x
	19. Prevtec Microbia Inc. (Saint-Hyacinthe, QC)	no	yes					/	/	/	/	/	/	/	x	x
	20. Centre for Aquaculture Technologies Canada (Souris)	no	yes					/	/	/	/	/	/	/	/	x
	21. Pfizer Animal Health (Saanichton)	no	yes					x	x	x	/	/	/	/	/	/
	22. Saskatchewan Research Council (Saskatoon)	no	yes					x	x	x	/	/	/	/	/	/
	23. Vetcovac Ltée. (Saint-Hyacinthe)	no	yes					x	x	x	/	/	/	/	/	/
	24. Intervet Canada Corp. (Kirkland)	no	yes					x	x	/	/	/	/	/	/	/
	25. Vétérinaire N.A. Inc. (Lavaltrie)	no	yes					x	x	/	/	/	/	/	/	/
	1. Institute of Immunology	no	yes								x	x				
Croatia																

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Cyprus	<i>Nothing to declare</i>	n.a.	n.a.					ND	ND							ND
Czech Republic	1. Baxter BioScience s.r.o (Kostolec nad Černými Lesy)	no	yes			NN	ND	x	NN	NN	NN	NN	/	NN	NN	NN
	2. SEVAPHARMA a.s. (Hostivar)	no	yes			NN	ND	x	NN	NN	NN	NN	x	NN	NN	NN
	3. Bioveta, a.s. (Ivanovice na Hané)	Anthrax	yes			NN	ND	x	NN	NN	NN	NN	x	NN	NN	NN
	4. DYNTEC, spol. s r.o. (Terežín)	no	yes			NN	ND	x	NN	NN	NN	NN	x	NN	NN	NN
Denmark	5. BIOPHARM, Research Institute of Biopharmacy and Veterinary Drugs (Jiluvé u Prahy)	no	yes			NN	ND	x	NN	NN	NN	NN	x	NN	NN	NN
	1. Statens Serum Institute (Copenhagen)	no	yes	x	x		NN	x	x		x	x	x	/	x	NN
	2. Bavarian Nordic A/S (Kvistgard)	Smallpox	yes	x	x		NN	x	x		x	x	x	x	x	NN
	3. AJ Vaccines (Copenhagen)	no	yes	/	/		NN	/	/		/	/	/	x	x	NN
Ecuador	<i>Nothing to declare</i>	n.a.	n.a.					ND								
Estonia	^{/8}	n.a.	n.a.				ND	ND		n.a.			ND			ND
Finland	^{/9}	n.a.	n.a.	NN	NN	NN	NN	ND	ND	ND	ND	ND	ND	ND	ND	ND
Georgia	<i>Nothing to declare</i>	n.a.	n.a.			ND	ND	ND								
Germany	1. GlaxoSmithKline Biologicals / former Novartis Vaccines and Diagnostics GmbH & Co. KG (Marburg)	Botulism	yes	x	x	x	x	x	x	x	x	x	x	x	x	x
	2. GlaxoSmithKline Biologicals (Branch of SB Pharma GmbH & Co KG) (Dresden)	no	yes	x	x	x	x	x	x	x	x	x	x	x	x	x
	3. IDT Biologika GmbH (Rossau)	Smallpox	yes	x	x	x	x	x	x	x	x	x	x	x	x	x
	4. Bavaria Nordic GmbH (Berlin) ¹⁰	Smallpox	yes	/	/	/	x	x	x	x	/	/	/	/	/	/
	5. Dynavax GmbH / former Rhein Biotech GmbH (Düsseldorf)	no	yes	/	/	/	x	x	x	x	x	x	x	x	x	x
	6. Vibalogics GmbH (Cuxhaven)	no	yes	/	/	/	/	/	x	x	x	x	x	x	x	x

⁸ There are no vaccine production facilities in Estonia (2019, p. 6)

⁹ There are no vaccine production facilities in Finland (2019, p. 16)

¹⁰ Relocated to Denmark (2014)

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Greece	7. Burgwedel Biotech GmbH	Ebola	yes	/	/	/	/	/	/	/	/	/	/	/	x	x
	<i>Nothing to declare</i>	n.a.	n.a.					ND	ND	ND						
Hungary	1. Omninvest Ltd. (Budapest)	no	yes								x	x				
	2. GlaxoSmithKline Biological Kft. (Budapest)	no	yes								/	x				
Ireland	1. Elanco Laboratories (Sligo)	no	yes	x	x	x	x	x			x	x	/	/	NN	NN
	2. MSD International GmbH (Carlow)	no	yes	/	/	/	/	/			x	x	x	x	NN	NN
	3. MSD International GmbH / former Schering-Plough (Brinny)	no	no ¹¹	/	/	/	/	/			x	x	x	x	NN	NN
	4. Pfizer Ireland Pharmaceuticals (Dublin)	no	yes	/	/	/	/	/			x	x	x	x	NN	NN
Japan	1. Denka Seiken Co., Ltd (Tokyo)	no	yes						x	x	NN	x	NN	x	NN	NN
	2. Kitasato Daichi Sankyo Vaccine Co., Ltd (Saitama)	no	yes						x	x	NN	x	NN	x	NN	NN
	3. Takeda Pharmaceutical co., Ltd (Osaka)	no	yes						x	x	NN	x	NN	x	NN	NN
	4. The Research Foundation for Microbial Diseases of Osaka University (Osaka)	no	yes						x	x	NN	x	NN	x	NN	NN
	5. The Chemo-Sero-Therapeutic Research Institute (Kumamoto)	no	yes						x	x	NN	x	NN	x	NN	NN
	6. Japan BCG Laboratory (Tokyo)	no	yes						x	x	NN	x	NN	x	NN	NN
	7. Japan Poliomyelitis Research Institute (Tokyo)	no	yes						x	x	NN	x	NN	/	NN	NN
Latvia	<i>Nothing to declare</i>	/	/					/	ND	ND	ND	ND	ND	ND	ND	ND
Liechtenstein	<i>Nothing new to declare</i>	/	/	NN	NN	NN	NN	NN		NN	NN	NN				
Lithuania	<i>Nothing new to declare</i>	/	/	NN	NN	NN	NN	NN	NN	NN	NN	NN	NN	NN	NN	NN
Luxembourg	<i>Nothing to declare</i>	/	/								ND	ND	ND	ND	ND	ND
Madagascar	/	/	/						/							
Malaysia	1. Institute of Veterinary Services (Putrajaya)	no	yes					x							x	

¹¹ The site holds a manufacturer's authorization for medical products for human use. None of these is a vaccine (2019, p. 20).

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Mauritius	/	/	/										ND			
Mexico	1. Centro de Investigación y Estudios Avanzados en Salud Animal, Universidad Autónoma del Estado de México (Toluca)	no	yes									x	/	NN	/	NN
	2. Laboratorios de Biológicos y Reactivos de México S.A de C.V. (Colonia Popotla and Colonia Santo Tomás)	no	yes									x	x	NN	x	NN
	3. Productora Nacional De Biológicos Veterinarios (Colonia Lomas Altas)	no	yes												x	NN
Moldova	<i>Nothing to declare</i>	n.a.	n.a.					ND	ND	ND	ND	ND	ND		ND	
Morocco	1. Société de Productions Biologiques et Pharmaceutiques Vétérinaires BIOPHARMA (Rabat)	Botulism	yes													x
	2. M.C.I. SANTE ANIMALE (Mohammedia)	Botulism, Anthrax,	yes													x
Netherlands	1. Wageningen Bioveterinary Research / former Central Veterinary Institute (Lelystad)	no	yes							x	x	x	x	x	/	/
	2. Intervet International B.V. / MSD Animal Health (Boxmeer)	no	yes							x	x	x	x	x	x	x
	3. Nederlands Vaccin Instituut (Bilthoven)	no	yes							x	/	/	/	/	/	/
	4. WWV/WWP (Weesp)	no	yes							x	x	x	x	x	x	x
	5. Boehringer Ingelheim Animal Health Operation / former Merial Lelystad (Lelystad)	n.a.	yes							x	x	x	x	x	x	x
	6. Janssen Vaccines & Prevention / former Janssen/Crucell Holland B.V. (Leiden)	no	yes							x	x	x	x	x	x	x
	7. Erasmus Medical Center (Rotterdam)	no	yes							/	x	x	x	x	x	x
	8. Bilt-hoven Biologicals B.V. (Bilthoven)	no	yes							/	x	x	x	x	x	x
	9. Wacker Biotech B.V. / former SynCo Bio Partners B.V. (Amsterdam)	no	yes							/	/	/	/	x	x	x
	10. Patheon Biologics (Groningen)	no	yes							/	x	x	x	x	x	x
New	<i>Nothing to declare</i>	n.a.	n.a.	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND		ND

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Zealand																
Norway	1. Pharmaq (Overhalla)	no	yes		x		x	x	x	x	x	NN	NN	NN	NN	NN
	2. The National Veterinary Institute (Oslo)	no	yes		x		x	x	x	x	x	NN	NN	NN	NN	NN
	3. The Norwegian Institute of Public Health (Nydalen)	no	yes		x		x	x	x	x	x	NN	NN	NN	NN	NN
Portugal	1. Genibet Biopharmaceuticals (Oeiras)	no	yes				ND	x	x	ND	ND	NN	NN	ND	NN	NN
Qatar	<i>Nothing to declare</i>	n.a.	n.a.						ND							
Romania	1. The "Cantacuzino" National Military Institute for Research and Development (Bucharest)	no	yes		/	/	x	NN	x	x	x	x	x	x	x	x
	2. SC Pasteur - Filiala Filipesti Srl, working point Bucharest / former National Society "Pasteur Institute" S.A. (Bucharest)	no	yes		x	x	/	NN	x	x	x	x	x	x	x	x
	3. S.C. Pasteur Filiala Filipesti S.R.L. (Prahova)	no	yes		/	/	/	/	/	x	x	/	/	/	/	/
Serbia	4. ROMVAC COMPANY S.A. (Voluntari)	Anthrax	yes		/	/	/	/	/	x	x	x	x	x	/	x
	Institute of Immunology and Virology "Torlak" (Belgrad)	no	yes						x		x	x		x	x	x
Slovakia	<i>Nothing to declare</i>	n.a.	n.a.								ND	ND			ND	ND
Slovenia	<i>Nothing to declare</i>	n.a.	n.a.								ND	ND	ND	ND	ND	ND
Sweden	1. Valneva Sweden AB / former Crucell Sweden AB / former SBL Vaccin AB, Solna (Stockholm)	no	yes	x	x	x	NN	NN	x	NN	x	NN	NN	NN	NN	NN
	2. UniTech Biopharma (Matfors)	no	yes	x	x	x	NN	NN	/	NN	/	NN	NN	NN	NN	NN
	3. Cobra Biopharma (Matfors)	no	yes	/	/	/	/	/	x	NN	/	NN	NN	NN	NN	NN
Switzerland	1. Janssen Vaccines, Branch of Cilag International GmbH / former Crucell Switzerland AG (Bern)	no	yes	NN	NN	NN	x	x	x	x	x	/	x	x	x	x
	2. Cytos Biotechnology AG (Schlieren)	no	yes	NN	NN	NN	x	x	x	/	/	/	/	/	/	/
	3. Pevion Biotech Ltd. (Ittingen)	no	yes	NN	NN	NN	/	x	x	x	/	/	/	/	/	/

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
	4. PaxVax Berna GmbH / former Crucell Switzerland AG (Thüringhaus)	no	yes	/	/	/	x	x	x	x	x	x	x	x	x	x
Thailand	1. The Government Pharmaceutical Organisation (Bangkok)	no	yes				x	x	x							
	2. Merieux Biological Products Co., Ltd. (Chachoengsao)	no	yes				/	/	x							
	3. Queen Saovabha Memorial Institute (Bangkok)	no	yes				/	/	x							
	4. BioNet-Asia Co., Ltd. (Bangkok)	no	yes				/	/	x							
Turkey	5. Bureau of Veterinary, Department of Livestock Development (Nakhon Ratchasima)	Anthrax	yes				/	/	x							
	1. Konya Veterinary Control and Research Institute (Meram-Konya)	no	yes					x	NN	NN	/	NN	/	/	/	
	2. Ministry of Food Agriculture and Livestock - Veterinary Control Institute / former Pendik Veterinary Control and Research Institute (Istanbul)	no	yes					x	NN	NN		NN		x	x	
	3. (a) Anthrax Vaccine Production Laboratory and (b) Production of Tuberculin and Mallein Laboratory	Anthrax	no					x	NN	NN	/	NN	/	/	/	
	4. Ministry of Food Agriculture and Livestock - Food and Mouth Disease Institute (Ankara)	no	yes					/	/	/	x	NN	x	x	x	
	5. Ministry of Food Agriculture and Livestock - Veterinary Control Central Research Institute (Ankara)	no	yes					/	/	/	x	NN	x	x	x	
	6. Veterinary Control Institute (Samsun)	no	yes					/	/	/	x	NN	/	/	/	
	7. VETAL Animal Health Products Company (Adiyaman)	no	yes					/	/	/	x	NN	/	x	x	
	8. DOLLVET Veterinary Vaccine, Medicine and Biological Materials Production Company (Sanliurfa)	no	yes					/	/	/	x	NN	/	x	x	
	9. ATAFEN Veterinary Materials Production Company (Ismir)	no	yes					/	/	/	x	NN	/	x	x	
	10. AKUAKIM Medical, Chemical, Pharmaceutical, Feed Additives and Water Products Industry and Trade	no	yes					/	/	/	x	NN	/	/	/	

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
Ukraine	Company (Manisa)															
	1. Sumy Biofactory (Sumy)	Anthrax	yes					x	x			x	x	x	x	x
	2. Biofabrika Dnepropetrovsk (Dnepropetrovsk)	no	yes					x	x			/	/	/	/	/
	3. Kharkov Biofactory (Kharkov)	no	yes					x	x			x	x	x	x	x
	4. Kherson Biofactory (Kherson)	Anthrax	yes					x	x			x	x	x	x	x
	5. Novogaleshchinsky Biofactory (Kiev)	no	yes					x	x			x	/	/	/	/
	6. LLC "Ukrvetpromsnab" (Brovary)	no	yes					x	x			x	x	x	x	x
	7. Corporation "Ukrvetpromsnab" (Kiev)	no	yes					x	x			/	/	/	/	/
	8. Scientific Center "Institute for Experimental and Clinical Veterinary Medicine" (Kharkov)	no	yes					x	x			x	/	/	/	/
	9. Institute of Veterinary Medicine of the National Academy of Agrarian Science of Ukraine (Kiev)	no	yes					x	x			x	/	/	/	/
	10. PJSC "PHARMSTANDART BIOLEC" (Kharkov)	no	yes					x	/			x	x	x	x	/
	11. LLC "PHARMEX GROUP" (Shevchenko)	no	yes					/	/			/	x	x	x	/
	12. TOV "Pharma Life" (Lviv)	no	yes					x	/			/	x	x	x	/
	13. Laboratory of leptospirosis with a museum of strains of microorganisms of the INM NAAS, laboratory of bacterial animal diseases (Kiev)	no	yes					/	/			/	/	x	x	x
United Kingdom	14. PJSC Farnak (Kiev)	no	yes					x	/			/	x	x	x	/
	1. Seqirus Vaccines Limited / former Novartis Vaccines and Diagnostics Limited (Liverpool)	no	yes	x	x	x	x	x	/		x	x	x	x	x	x
	2. AstraZenecaLiverpool (Liverpool) ¹²	no	yes	/	/	/	/	/	/	/	/	/	/	/	/	x
	3. Porton Biopharma Limited / former Public Health England-Porton /	Anthrax	no	x	x	x	x	x	x	x	x	x	x	x	x	x

¹² Registered in Companies House as MedImmune UK Limited (2019, p. 39).

Country	Name and location of vaccine production facilities declared in CBM Form G	Cat. A diseases ⁶	Other diseases	Decl. 2007	Decl. 2008	Decl. 2009	Decl. 2010	Decl. 2011	Decl. 2012	Decl. 2013	Decl. 2014	Decl. 2015	Decl. 2016	Decl. 2017	Decl. 2018	Decl. 2019
	former Health Protection Agency (Salisbury) ¹³															
	4. Merck BioReliance® Services (Glasgow)	no	yes ¹⁴	/	/	/	/	/	/	/	/	/	/	/	/	x
	5. Valneva Scotland Ltd (Livingston)	no	yes	/	/	/	/	/	/	/	/	/	/	/	/	x
	6. MedImmune UK Ltd (Liverpool)	no	yes	x	x	x	x	x	x	x	x	x	x	x	x	/
	1. Emergent BioDefense Operations Lansing, Inc. (Lansing, MI)	Anthrax, Smallpox	no				x	x	x	x	x	x	x	x	x	x
	2. MassBiologics (Boston, MA)	no	yes				x	x	x	x	x	x	x	x	x	x
USA	3. MedImmune LLC (Gaithersburg, MD)	no	yes				x	x	x	x	x	x	/	/	/	/
	4. Merck Sharp & Dohme Corp (North Wales, PA)	no	yes				x	x	x	x	x	x	x	x	x	x
	5. Organon Teknika Corporation, LLC (Durham, NC)	no	yes				x	x	x	x	x	x	x	x	x	x
	6. MCM Vaccine Company/Sanofi Pasteur, Inc. (Swiftwater, PA)	no	yes				/	/	/	/	/	/	/	/	/	x
	7. Sanofi Pasteur Biologics Co. (Cambridge, MA)	Smallpox	yes				x	x	x	x	x	x	x	x	x	/
	8. Wyeth Pharmaceuticals, Inc (New York, NY)	no	yes				x	x	x	x	x	x	x	x	x	x
	9. Barr Laboratories, Inc. (Forest, VA)	no	yes				/	/	x	x	x	x	x	x	x	x
	10. Protein Sciences Corporation (Meriden, CT)	no	yes				/	/	/	x		x	x	x	x	x
	11. Sanofi Pasteur, Inc (Swiftwater, PA)	no	yes				x	x	x	x	x	x	x	x	x	x

¹³ This facility was formerly managed by Public Health England; it remains a Department of Health facility owned by the UK Government (2019, p. 47).

¹⁴ The facility produces the active viral ingredient for an Adenovirus vaccine Type 4 and Type 7 (2019, p. 40).

Research Group for Biological Arms Control

The aim of the Research Group is to contribute, through innovative research and outreach activities, to the universal prevention of biological weapons development, production and use. The focus of activities is twofold. Firstly, the Research Group contributes to preventing the erosion of the universal bioweapons prohibition by opposing norm-harming activities. Secondly, it develops new concepts and instruments for monitoring bioweapon relevant activities and for verifying and enforcing compliance with the norm against bioweapons.

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