Declaration form on Nothing to Declare or Nothing New to Declare for use in the information exchange

Measure	Nothing to declare	Nothing new to declare	Year of last declaration if nothing new to declare
A, part 1			
A, part 2 (i)			
A, part 2 (ii)			
A, part 2 (iii)			
B			
C			
E		X	2012
F		X	1992
G			

(Please mark the appropriate box(es) for each measure with a tick, and fill in the year of last declaration in the last column where applicable.)

Date: 15 April 2015

State Party to the Convention: GERMANY

Date of ratification/accession to the Convention: 07 April 1983

National point of contact: OR12-rl@auswaertiges-amt.de

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:
Bernhard-Nocht-Institut für Tropenmedizin

2. Responsible public or private organization or company:
Free and Hanseatic City of Hamburg

3. Location and postal address:
Bernhard-Nocht-Straße 74
D-20359 Hamburg

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:
- Free and Hanseatic City of Hamburg
- Federal Ministry of Health
- European Commission
- German Research Foundation

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m²):
Two maximum containment units (biosafety level 4), approx. 150 m²

6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate:
Diagnosis of and research on viruses causing hemorrhagic fevers (Lassa, Ebola, Marburg, Crimean-Congo hemorrhagic fever). Research includes basic research on virus replication, immunology, and pathogenesis, as well as applied research on therapy and prophylaxis.

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:
Friedrich-Loeffler-Institut (Federal Research Institute for Animal Health)

2. Responsible public or private organization or company:
Federal Ministry of Food and Agriculture

3. Location and postal address:
Südufer 10
D-17493 Greifswald – Insel Riems

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:
- Federal Ministry of Food and Agriculture

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m²):
Three maximum containment units, approx. 190 m²,
(FMD laboratory with effluent treatment, negative pressure and HEPA filters to protect the environment according to FAO standards, no equipment for the protection of staff, therefore unsuitable for work with human pathogens)

6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate:
Diagnosis of and research on animal diseases
Veterinary medicine: mechanisms of pathogenesis, vaccines, diagnosis of Foot and mouth disease, Bovine spongiform encephalopathy, African swine fever, Classical swine fever and other animal diseases caused by viruses

Form A, part 1

Exchange of data on research centres and laboratories

1. Name(s) of facility:
Institut für Virologie der Philipps Universität Marburg

2. Responsible public or private organization or company:
Philipps-University Marburg

3. Location and postal address:
Hans-Meerwein-Strase 3
D-35043 Marburg

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence:
- State of Hessen
- German Research Foundation (Deutsche Forschungsgemeinschaft)
- Federal Ministry of Education and Research
- European Union

5. Number of maximum containment units within the research centre and/or laboratory, with the indication of their respective size (m^2):
Two maximum containment units, 110 m^2 each

6. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate:
Basic research on Marburg virus, Ebola virus, Lassa virus, Nipah Virus, SARS-Corona Virus, Junin Virus and Crimean-Congo Hemorrhagic Fever Virus. Diagnostic services in surveillance of Class 4 - viruses and smallpox virus. Development and characterization of vaccines.

Form A, part 2(i)

National Biological Defence Research and Development Program Declaration

Are there any national programmes to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere?
Activities of such programmes would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

YES

If the answer is YES, complete Form A, part 2 (ii) which will provide a description of each programme.

Form A, part 2 (ii)

National biological defence research and development programmes

Description

1. State the objectives and funding of each programme and summarize the principal research and development activities conducted in the programme. Areas to be addressed shall include: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

Federal Ministry of Health:
The biological defence research and development activities of the Federal Ministry of Health are exclusively conducted at the Centre for Biological Threats and Special Pathogens (Zentrum für Biologische Gefahren und Spezielle Pathogene, ZBS) of the Robert Koch Institute (RKI).
The Robert Koch Institute is one of the central institutions for health protection in Germany. It serves the Federal Ministry of Health as a central scientific institution in the field of biomedicine. The Institute combines risk research with political advice. Its most important tasks include protection against infectious diseases and the analysis of the health situation in Germany.

The Centre for Biological Threats and Special Pathogens (Zentrum für Biologische Gefahren und Spezielle Pathogene, ZBS) has the mission (1) to identify unusual biological events with highly pathogenic agents that might be used with bioterrorist intent. (2) In addition, ZBS assesses the health implications for the general public and (3) works on preparedness and response for such incidents. This also includes informing decision-makers and professionals on incidents and to advise and support them on measures to be taken accordingly. In summary, in managing biological incidents, the centre's tasks include a) identification, b) preparedness, c) information, d) response.

The centre's work is not limited exclusively to the identification, assessment and handling of possible bioterrorist attacks. Rather the skills already acquired and those to be developed are also used for the investigation of natural outbreaks or those caused by accidents involving special and highly pathogenic agents and toxins.

Federal Ministry of Defence:
The R&D activities of the national program include: prophylaxis, diagnostic techniques, sampling and detection techniques, toxinology, decontamination, and physical protection. Summaries and objectives of all research and development projects in the field of CBRN Medical Defence are accessible via Internet http://www.sanitaetsdienst-bundeswehr.de.

2. State the total funding for each programme and its source.

Federal Ministry of Health:
The total funding for personnel, consumable items and equipment for ZBS in 2014 was approximately 6.3 million EURO.

Federal Ministry of Defence:
The total funding in 2014 was approximately 9.1 million EURO.

3. Are aspects of these programmes conducted under contract with industry, academic institutions, or in other non-defence facilities?

Federal Ministry of Health:
No
(Less than 1 per cent of the budget for biodefence research and development activities is expended in contracted facilities. Contractors address subsidiary aspects of the activities only.)

Federal Ministry of Defence:
Yes

4. If yes, what proportion of the total funds for each programme is expended in these contracted or other facilities?

Federal Ministry of Health:
n.a.

Federal Ministry of Defence:
Approx. 7.0 percent

5. Summarize the objectives and research areas of each programme performed by contractors and in other facilities with the funds identified under paragraph 4.

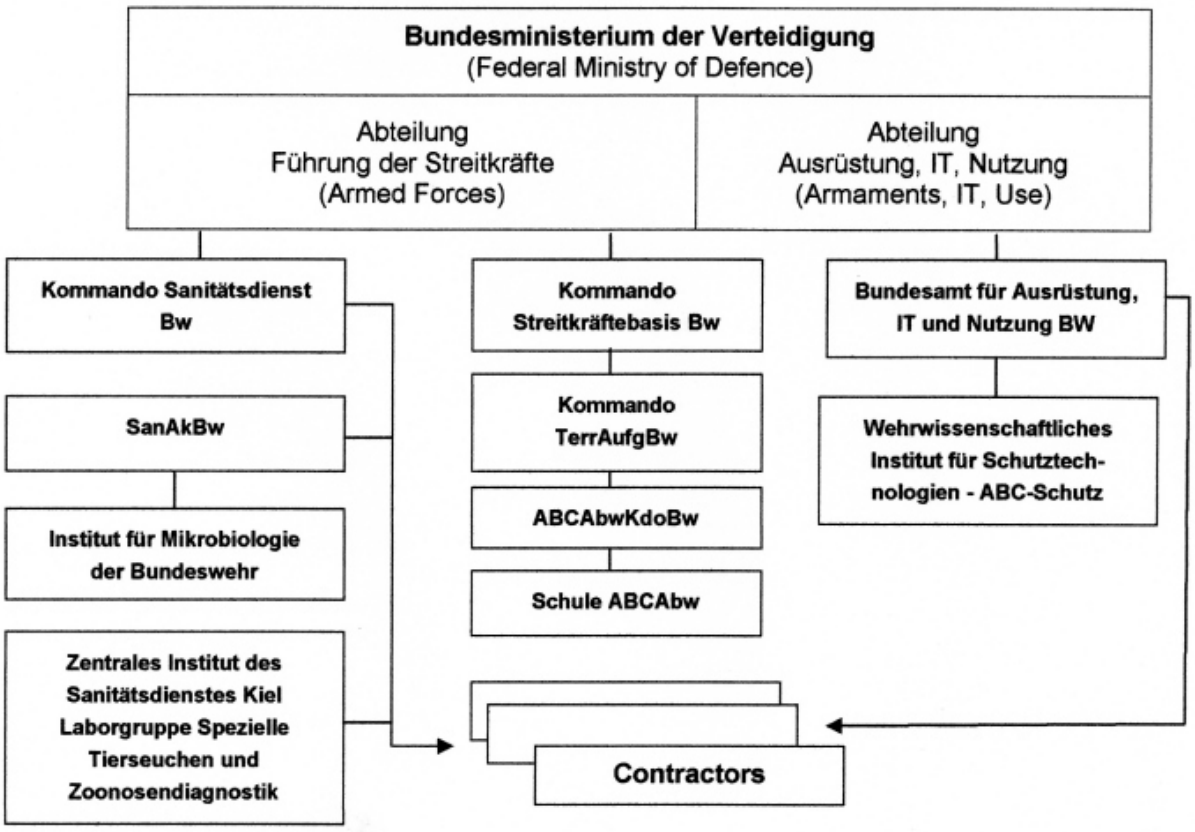
Federal Ministry of Health:
n.a.

Federal Ministry of Defence:
The objectives of the contracted activities is to provide pertinent expertise and hardware to the Federal Ministry of Defence for the improvement of B-defence capabilities. The research areas are the same as mentioned above under #1.

6. Provide a diagram of the organizational structure of each programme and the reporting relationships (include individual facilities participating in the programme).

Federal Ministry of Health:

Federal Ministry of Defence:



7. Provide a declaration in accordance with Form A, part 2 (iii) for each facility, both governmental and non-governmental, which has a substantial proportion of its resources devoted to each national biological defence research and development programme, within the territory of the reporting State, or under its jurisdiction or control anywhere.

Federal Ministry of Health:
Form A, part 2 (iii) is attached for the Centre for Biological Threats and Special Pathogens at the Robert Koch Institute.

Federal Ministry of Defence:
4 Forms A, part 2(iii) are attached.

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).

In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?
   Institut für Mikrobiologie der Bundeswehr (Bundeswehr Institute of Microbiology)

2. Where is it located?
   D-80937 München, Neuherbergstraße 11
   (48°12` north, 11°34` east)

3. Floor area of laboratory areas by containment level:

BL 2	1258 m^2
BL 3	67 m^2
BL 4	-- m^2
Total Laboratory Floor Area	1325 m^2

4. The organisational structure of the facility:
   I) Total number of personnel: 65
   II) Division of personnel:
   Military 41
   Civilian 24
   III) Division of personnel by category:
   Scientists 20
   Technicians 39
   Admin. and support staff 6
   IV) Represented scientific disciplines:
   Medicine, veterinary medicine, microbiology, virology, bacteriology, immunology, molecular biology, epidemiology, laboratory medicine
   V) Contractor staff: 16
   VI) Source of funding: Federal Ministry of Defence
   VII) Funding levels for the following program areas:
   The funding for personnel, consumable items and equipment in 2014 was approx. 5.8 million EURO.

Research	40 %
Development	25 %
Test and Evaluation	25 %
Education and Training	10 %

   VIII) Publication policy:
   Results are published in scientific journals as well as in reports to the Federal Ministry of Defence and will be presented in national and international scientific meetings.
   IX) Lists of public available papers and reports resulting from the work during the previous 12

month:

Publications, „peer-reviewed“

1. J, Ziegler U, Dobler G, Vahlenkamp T (2013). Stechmücken-übertragene Viren in Deutschland. Rundschau für Fleischhygiene und Lebensmittelüberwachung 7/2013, 261-264.

2. Antwerpen M, Georgi E, Zimmermann P, Hoermansdoerfer S, Meyer H, Grass G 2014 Draft Genome Sequence of Strain BF-4, a *Lysinibacillus*-Like *Bacillus* Isolated during an Anthrax Outbreak in Bavaria. Genome Announc: 2.

3. Baggi F, Taybi A, Kurth A, Van HM, Di CA, Wölfel R, Gunther S, Decroo T, Declerck H, Jonckheere S. 2014. Management of pregnant women infected with Ebola virus in a treatment centre in Guinea, June 2014. Euro Surveill: 19.

4. Bleichert P, Espirito Santo C, Hanczaruk M, Meyer H, Grass G. 2014. Inactivation of bacterial and viral biothreat agents on metallic copper surfaces. Biometals: 27:1179-1189.

5. Bleves S, Dunger I, Walter MC, Frangoulidis D, Kastenmüller G, Voulhoux R, Ruepp A. 2014. HoPaCI-DB: host-Pseudomonas and *Coxiella* interaction database. Nucleic Acids Res: 42 (Database issue):D671-6

6. Dobler G, Fingerle V, Hagedorn P, Pfeffer M, Silaghi C, Tomaso H, Henning K, Niedrig M. 2014. Gefahr der Übertragung von Infektionserregern durch Ixodes ricinus in Deutschland. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz: 57(5):541-548.

7. Felder E, Wölfel R. 2014. Development of a versatile and stable internal control system for RT-qPCR Assays. J Virol Methods: 208:33-40.

8. Frangoulidis D, Walter MC, Antwerpen MH, Zimmermann P, Janowetz B, Alex M, Böttcher J, Henning K, Hilbert A, Ganter M, Runge M, Münsterkötter M, Splettstoesser WD, Hanczaruk M. 2014. Molecular analysis of *Coxiella burnetii* in Germany reveals evolution of unique clonal clusters. Int J Med Microbiol: 304(7):868-76

9. Frey S, Essbauer S, Zöller G, Klempa B, Dobler G, Pfeffer M. 2014. Full genome sequences and preliminary molecular characterization of three tick-borne encephalitis virus strains isolated from ticks and a bank vole in Slovak Republic. Virus Genes: 48(1):184-188.

10. Gérôme P, Le Flèche P, Blouin Y, Scholz HC, Thibault FM, Raynaud F, Vergnaud G, Pourcel C. 2014 Yersinia pseudotuberculosis ST42 (O:1) Strain Misidentified as *Yersinia pestis* by Mass Spectrometry Analysis. Genome Announc: 12:2(3). pii: e00435-14. doi: 10.1128/genomeA.00435-14.

11. Hanczaruk M, Reischl U, Holzmann T, Frangoulidis D, Wagner DM, Keim PS, Antwerpen MH, Meyer H, Grass G. 2014. Injectional anthrax in heroin users, Europe, 2000-2012. Emerg Infect Dis: 20(2):322-3

12. Ibrahim SM, Antwerpen M, Georgi E, Vette P, Zoeller G, and H Meyer. 2014. Complete Genome Sequence of the Embu Virus Strain SPAn880. Genome Announc: 2 (6)

13. Karlsson E, Macellaro A, Byström M, Forsman M, Frangoulidis D, Janse I, Larsson P, Lindgren P, Ohrman C, van Rotterdam B, Sjödin A, Myrtennäs K. 2014. Eight new genomes and synthetic controls increase the accessibility of rapid melt-MAMA SNP typing of *Coxiella burnetii*. PLoS One: 21:9(1):e85417.

14. Kuchuloria T, Imnadze P, Chokheli M, Tsertsvadze T, Endeladze M, Mshvidobadze K, Clark DV, Bautista CT, Abdel FM, Pimentel G, House B, Hepburn MJ, Wölfel S, Wölfel R, Rivard RG. 2014. Viral hemorrhagic fever cases in the country of Georgia: Acute Febrile Illness Surveillance Study results. Am J Trop Med Hyg: 91:246-248.

15. Mayer-Scholl A, Hammerl JA, Schmidt S, Ulrich RG, Pfeffer M, Woll D, Scholz HC, Thomas A, Nöckler K. 2014. Leptospira spp. in rodents and shrews in Germany. Int J Environ Res Public Health: 24:11(8):7562-74. doi: 10.3390/ijerph110807562.

16. Müller J, Bässler C, Essbauer S, Schex S, Müller DWH, Opgenoorth L, Brandl R. 2014. Relative heart size in two rodent species increases with elevation: reviving Hesse's rule. Journal of Biogeography: doi: 10.1111/jbi.12365

17. Olsen JS, Scholz H, Fillo S, Ramisse V, Lista F, Trømborg AK, Aarskaug T, Thrane I, Blatny JM. 2014. Analysis of the genetic distribution among members of Clostridium botulinum group I using a novel multilocus sequence typing (MLST) assay. J Microbiol Methods: 96:84-91. doi: 10.1016/j.mimet.2013.11.003.

18. Reuter S, Connor TR, Barquist L, Walker D, Feltwell T, Harris SR, Fookes M, Hall ME, Fuchs TM, Corander J, Dufour M, Ringwood T, Savin C, Bouchier C, Martin L, Miettinen M, Shubin M, Riehm JM, Laukkanen-Ninios R, Sihvonen LM, Siitonen A, Skurnik M, Falcão JP, Fukushima H, Scholz HC, Prentice MB, Wren BW, Parkhill J, Carniel E, Achtman M, McNally A, Thomson NR. 2014. Parallel independent evolution of pathogenicity within the genus *Yersinia.* PNAS www.pnas.org/cgi/doi/10.1073/pnas.1317161111.

19. Savin C, Martin L, Bouchier C, Filali S, Chenau J, Zhou Z, Becher F, Fukushima H, Thomson NR, Scholz HC, Carniel E. 2014. The Yersinia pseudotuberculosis complex: characterization and delineation of a new species, Yersinia wautersii. Int J Med Microbiol: 304(3-4):452-63. doi: 10.1016/j.ijmm..02.002. Epub 2014 Feb 18.

20. Schack M, Sachse S, Rödel J, Frangoulidis D, Pletz MW, Rohde GU, Straube E, Boden K. 2014. *Coxiella burnetii* (Q fever) as a cause of community-acquired pneumonia during the warm season in Germany. Epidemiol Infect: 142(9):1905-10.

21. Schmidt S, Essbauer S, Mayer-Scholl A, Poppert S, Schmidt-Chanasit J, Klempa B, Henning K, Schares G, Groschup M, Spitzenberger F, Heckel G, Richter D, and Ulrich R. 2014. Multiple infections of rodents with zoonotic pathogens in Austria. Vector-Borne and Zoonotic Diseases: 14(7): 467-475.

22. Scholz HC, Pearson T, Hornstra H, Projahn M, Terzioglu R, Wernery R, Georgi E, Riehm JM, Wagner DM, Keim PS, Joseph M, Johnson B, Kinne J, Jose C, Hepp CM, Witte A, Wernery U. 2014. Genotyping of *B. mallei* from an outbreak of glanders in Bahrain suggests multiple introduction events. Plos Negl Trop Dis. 10.1371/journal.pntd.0003195.

23. Sharma A, Heijenberg N, Peter C, Bolongei J, Reeder B, Alpha T, Sterk E, Robert H, Kurth A, Cannas A, Bocquin A, Strecker T, Logue C, Caro AD, Pottage T, Yue C, Stoecker K, Wölfel R, Gabriel M, Gunther S, and Damon I. 2014. Evidence for a decrease in transmission of ebola virus - lofa county, Liberia, June 8-November 1, 2014. Morb Mortal Wkly Rep: 63:1067-1071.

24. Starke M, and Fuchs TM. 2014. YmoA negatively controls the expression of insecticidal genes in *Yersinia enterocolitica*. Mol. Microbiol: 92(2):287-30.

25. Svoboda P, Dobler G, Markotić A, Kurolt I-C, Speck S, Habuš J, Vucelja M, Krajinović LC, Tadin A, and Essbauer S. 2014. Hantaviruses, tick-borne encephalitis virus and *Rickettsia* spp. in small rodents, Croatia. Vector borne Zoonotic Dis: 14(7):523-530.

26. Thoma B.R, Müller J, Bässler C, Georgi E, Osterberg A, Schex S, Bottomley C, Essbauer SS. 2014. Identification of factors influencing the Puumala virus seroprevalence within its reservoir in a montane Forest Environment. Viruses: 6(10):3944-3967.

27. Tkachev S, Panov V, Dobler G, Tikunova N. 2014. First detection of Kemerovo virus in Ixodes pavlovskyi and Ixodes persulcatus ticks collected in Novosibirsk Region. Ticks Tick Borne Dis: 5(5): 494-496.

28. Upadhyay AS, Vonderstein K, Pichlmair A, Stehling O, Bennett KL, Dobler G, Guo JT, Superti-Furga G, Lill R, Överby AK, Weber F. 2014. Viperin is an iron-sulfur protein that inhibits genome synthesis of tick-borne encephalitis virus via radical SAM domain activity. Cell Microbiol: 16(6):834-48.

29. Vollmar P, Schmoldt S, Fieser N, Riehm JM, Mendel N, Zöller L, Thoma B. 2014. Osteomyelitis caused by Burkholderia pseudomallei. Clin. Lab: 60:1-3.

30. Wagner DM, Keim PS, Scholz HC, Holmes EC, Poinar H. 2014. Yersinia pestis and the three plague pandemics--authors' reply. Lancet Infect Dis: 14(10):919. doi: 10.1016/S1473-3099(14)70923-5.

31. Wagner DM, Klunk J, Harbeck M, Devault A, Waglechner N, Sahl JW, Enk J, Birdsell DN, Kuch M, Lumibao C, Poinar D, Pearson T, Fourment M, Golding B, Riehm JM, Earn DJ, Dewitte S, Rouillard JM, Grupe G, Wiechmann I, Bliska JB, Keim PS, Scholz HC, Holmes EC, Poinar H. 2014. Yersinia pestis and the plague of Justinian 541-543 AD: a genomic analysis. Lancet Infect Dis: 14(4):319-26. doi: 10.1016/S1473-3099(13)70323-2. Epub 2014 Jan 28.

32. Walter MC, Vincent GA, Stenos J, Graves S, Frangoulidis D. 2014. Genome Sequence of *Coxiella burnetii* Strain AuQ01 (Arandale) from an Australian Patient with Acute Q Fever. Genome Announc: 2:2(5)

33. Weller N, Clowes P, Dobler G, Saathoff E, Kroidl I, Ntinginya NE, Mabolko L, Löscher T, Hölscher M, Heinrich N. 2014. Seroprevalence of alphavirus antibodies in a cross-sectional study in southwestern Tanzania suggests endemic circulation of chikungunya. PLoS Negl Trop Dis: 8(7): e2979.

34. Whatmore AM, Davison N, Cloeckaert A, Al Dahouk S, Zygmunt MS, Brew SD, Perrett LL, Koylass MS, Vergnaud G, Quance C, Scholz HC, Dick EJ Jr, Hubbard G, Schlabritz-Loutsevitch NE. 2014. Brucella papionis sp. nov. isolated from baboons (Papio spp.). Int J Syst Evol Microbiol: Sep 21. pii: ijs.0.065482-0. doi: 10.1099/ijs.0.065482-0.

Publications, not „peer-reviewed“

1. Antwerpen MH (2013). Das Portfolio wird größer – MLVA für *F. tularensis* etabliert. Wehrwissenschaftliche Forschung, Jahresbericht 2012.

2. Bleichert P, Speck S, Schex S, Müller J, Bässler C, Dobler G, Essbauer S (2013). Detection of *Ricketsia felis, Rickettsia helvetica* and an Asiatic rickettsia in Rodents, Germany. CBRN Medical Defense International Challenge 2, 15-16.

3. Dobler G, Chitimia L (2013). A survey of canine vector-borne diseases in Romania. Proc. 8th Canine Vector-borne Diseases Symposium. pp. 24-27. St. Peterburg, Russland.

4. Dobler G (2013). Zweimal ein Sechser im Flavivirus-Lotto. Ärztliches Journal Reise & Medizin 2913, Sept 9/2013, 44-45.

5. Essbauer S, Moßbrugger I, 2013: Bericht vom Workshop des Netzwerks „Nagetier-übertragene Pathogene“. Wehrmed. Monatschrift. 420.

6. Hanczaruk M, Thoma B, Schmoldt S, Antwerpen MH, Tiemann C, Knoop D, Hartmann A, Zöller L, Grass G. (2013). PLEX-ID™ Biothreat Assay, MCI Challenge 2/2013.

7. Pfeffer M, Schmidt-Chanasit
8. Reischl U, Straube E, Maaß M, Jacobs E, Schneider W, Fingerle V, Busch U, Frangoulidis D, Splettstösser W, Grass G, Reiter-Owona I (2013). Bakterien- und Pilzgenom-Nachweis PCR/NAT: Auswertung des Ringversuchs Mai 2013 von INSTAND e.V. zur externen Qualitätskontrolle molekularbiologischer Nachweisverfahren in der bakteriologischen Diagnostik. GMS Z Forder Qualitaetssich Med Lab 2013;4:Doc03.

9. Riehm JM, Georgi E, Scholz HC (2013). Neue Methode zur molekulargenetischen Typisierung von *Clostridium botulinum* Stämmen mittels Multilocus-VNTR-Analyse. Wehrwissenschaftliche Forschung, Jahresbericht 2012.

10. Riehm JM, Seifert L, Zöller L, Harbeck M, Scholz HC (2013) Discovery and Characterization of an Early Me-dieval Plague Pathogen in the Neighborhood of Munich. Challenge, CBRN medical defense international 2/2013 S. 18-19.

11. Schmoldt S. (2013). Rezension: Zoonosen. Zwischen Tier und Mensch übertragbare Infektionskrankheiten. Wehrmedizinsche Monatsschrift, Ausgabe 2013.

12. Schmoldt S. (2013). Wissenschaftsbasierte Diagnostik hochpathogener Erreger. Management & Krankenhaus. Ausgabe 10/2013 Supplement, S10.

13. Seifert L, Wiechmann I, Gruppe G, Thomas A, Riehm JM, Scholz HC, Harbeck M (2013). Das Rätsel der Justinianischen Pest: Nachweis von Yersinia pestis in Individuen aus Aschheim. Archäologische Informationen 2013

14. Ulrich RG, Essbauer SS, Krüger DH, Pfeffer M, Nöckler K (2013). Nagetier-übertragene Zoonoseerreger in Deutschland. Internistische Praxis 2013; 53(1):207-232.

15. Ulrich RG, Imholt C, Krüger DH, Krautkrämer E, Scheibe T, Essbauer SS, Pfeffer M (2013). Hantaviren in Deutschland: Gefahren für Zoo-, Heim-, Haus- und Nutztier? Berl Münch Tierärztl Wochenschr 2013,126:514–526.

Publications in books

1. Dobler G, Heininger U, Löscher T, Müller T. Tollwut. In: DGPI Handbuch Infektionen bei Kindern und Jugendlichen. 6. Aufl. 2013. pp. 532-537. Thieme-Verlag, Stuttgart.

2. Dobler G, Hufert H. Kyasanur forest disease. In: Singh SK, Ruzek D (eds.). Viral Hemorrhagic Fevers. pp 525-539. CRC Press, Boca Raton.

3. Kämpfer P, Scholz HC. The Genus Brucella. In: „The Prokaryotes", 4th ed. Springer Verlag, in press.

4. Splettstoesser W, Scholz D: Tularämie. In: „Handbuch Infektionen bei Kindern und Jugendlichen (DGPI)". Thieme, Stuttgart; Auflage: 6., vollständig überarbeitete Auflage (18. September 2013).

5. Thiermann H, Kehe K, Riehm J, Zöller L: Chemical and Biological Weapons. In: „Regulatory Toxicology". Springer Verlag 2013.

Patents

1. Dienst N, Haager V, Wölfel R (2013). RCK 03 - Rapid Containment Kit 03, faltbarer Handschuhkasten zur Bearbeitung biologischer Proben. Unbeschränkte Inanspruchnahme durch die Bundesrepublik Deutschland, Bundesamt für Ausrüstung, Informationstechnik und Nutzung der Bundeswehr, Januar 2013.

Posters

1. Antwerpen MH, Georgi E, Zimmermann P, Hörmansdorfer S, Meyer H, Grass G (2013). Genome Sequence of a Novel *Lysinibacillus*-like Bacillus Strain (BF-4) Isolated During an Anthrax Outbreak 2009 in Germany. Medical Biodefense Conference, 22.-25.10.2013, München.

2. Bleichert P, Hanczaruk M, Meyer H, Grass G (2013) Inactivation of orthopoxviruses via contact to metallic copper surfaces. VAAM Congress, 10.-13.3.2013, Bremen.

3. Bleichert P, Hanczaruk M, Meyer H, Grass G (2013) Metallic copper surfaces kill bacterial and viral biothreat agents. FEMS Congress, 21.-25.07.2013, Leipzig.

4. Borde JP, Ruhnke M, Offensperger W-B, Schmoldt, S, Kern WV. A rare case of imported murine typhus to Germany from Crete – *Rickettsia typhi* infection. ECCMID 2013, 27.-29.04.2013, Berlin.

5. Brauer K., Vollmar P., Frey S. Dobler G., Essbauer S. Establishment of PCR microarrays for the investigation of cell death in different cell lines infected with tick-borne encephalitis virus. Medical Biodefense Conference, 22.-25.10.2013, München.

6. Chitimia L, Speck S, Nicolae S, Essbauer S, Dobler G. First detection of rickettsiae in ticks from Romania. XII. International Jena Symposium on Tick-borne Diseases, 21.-23.03.2013, Weimar.

7. Dobler G, Frey S, Essbauer S (2013). Periodicity of tick-borne encephalitisvirus: are we looking in the right host? XII. International Jena Symposium on Tick-borne Diseases, 21.-23.03.2013, Weimar.

8. Duraffour S, Andrei G, Zöller G, Rector A, Hruby DE, Grosenbach D, Snoeck R and Meyer H (2013). Mutations associated with ST-246 resistance are not found as inter-strain polymorphisms among a total of 164 orthopoxviruses. International conference for Antiviral research (ICAR), 11.05.-15.05.2013, San Francisco, USA.

9. Essbauer S, Dmitrovsky AM, Frey S, Dobler G, Yegemberdiyeva RA, Shapiyeva Z (2913) Establishment of a German/Kazakhstan Network for the Diagnostic of Infectious Diseases Caused by Potential B-Agents. Medical Biodefense Conference, 22.-25.10.2013, München.

10. Essbauer S, Dobler G, Frey S (2013) Installation of a German/Kazakhstan network to the diagnostic of infectious diseases caused by potential B-Agents. National Symposium on Zoonoses Research, 19.-20.09.2013, Berlin.

11. Frey S, Höper D, Beer M, Dobler G, Essbauer S (2013): Next generation sequencing of a longitudinal tick-borne encephalitis virus study in a micro-focus in Central Europe. 23rd Annual Meeting of the Society for Virology, 06.-09.03.2013, Kiel, sowie 5th European Congress of Virology, 11.-14.09.2013, Lyon, Frankreich.

12. Gentile B, Ciammaruconi A, Hilss K, Haumacher R, Pittiglio V, Antwerpen M, Grass G, Hanczaruk M, Lista F, Beyer W (2013) Towards a Unified *Bacillus anthracis* MLVA-Typing System: Characterization of Repeat Number and Consensus Sequences of MLVA31 loci. Medical Biodefense Conference, 22.-25.10.2013, München.

13. Genzel GH, Georgi E, Vente A, Schaumann R, and Scholz HC. In vitro Antimicrobial Activity of Finafloxacin against Yersinia spp. Medical Biodefense Conference, 22.-25.10.2013, München.

14. Georgi E, Stock RN, Genzel GH, Schmoldt S, and Scholz HC. A Hierarchical Approach to MALDI-TOF Mass Spectra Analysis is Resolving Strains of a Glanders Outbreak beyond the Species Level. Medical Biodefense Conference, 22.-25.10.2013, München.

15. Hanczaruk M, Hübner A, Grass G (2013). Rapid Detection of Resistance against Ciprofloxacin in *Bacillus anthracis* via Real Time PCR Assays. Medical Biodefense Conference, 22.-25.10.2013, München.

16. Herzberg M, Bauer L, Bleichert P, Grass G, Riemschneider S, Dobritzsch D, Nies DH (2013) Cellular Biometal Contents of Highly Pathogenic Biothreat Agents Do Not Differ from Non-Pathogenic Organisms. Medical Biodefense Conference, 22.-25.10.2013, München.

17. Keeren K, Panning M, Derakshani N, Hermann-Pietsch M, Elschner M, Eiden M, Schmidt-Chanasit J, Eickmann M, Monazahian M, Hülseweh B, Schmoldt S, Hörmansdorfer S, Oehme R, Nitsche A (2013). Establishment of a National Laboratory Network to ensure diagnostics of bioterrorism-relevant agents (NaLaDiBA). 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock, sowie Medical Biodefense Conference, 22.10.-25.10.2013, München.

18. Kratzmann N., Schmidt S., Rosenfeld U.M., Nöckler K., Reil D., Jacob J., Groschup M.H., Mayer-Scholl A., Kling C., Essbauer S., Ulrich R.G (2013). Molecular detection of Leptospira and Rickettsia infections in rodents during a monitoring study in Germany 2010-2012. National Symposium on Zoonoses Research, 19.-20. September 2013, Berlin, sowie Medical Biodefense Conference, 22.-25.10.2013, München.

19. Maksyutov RA, Gavrilova EV, Meyer H, Shchelkunov SN (2013). Updated Real-Time PCR Assay for Specific Detection of Cowpox Virus. Medical Biodefense Conference, 22.-25.10.2013, München.

20. Pajer P, Dresler J, Kabíčková H, Vítězslav K, Velemínský P, Klimentova J, Stulík J, Pejchal J, Elleder D, Beneš V, Meyer H, Dundr P, Hubálek M, Píša L (2013). Variola Virus in Historical Samples from the National Museum of Prague. Medical Biodefense Conference, 22.-25.10.2013, München.

21. Reis S, M Walter, C Kahlhofer and D Frangoulidis (2013). Whole Genome Amplification (WGA) in Coxiella diagnostics and typing. Medical Biodefense Conference, 22.-25.10.2013, München.

22. Sahavi-Ouriaghi Z, Bolz C, Meyer H, Antwerpen MH, Splettstößer WD, Gerhard M (2013) Gamma-Glutamyl Transpeptidase of *Francisella tularensis* as Drug Target for the Development of a New Class of Anti-Infectives. Medical Biodefense Conference, 22.-25.10.2013, München.

23. Sheikh Ali H., Wanka K., Drewes S., Freise J., Mertens M., Schmidt-Chanasit J., Groschup M.H., Heckel G., Essbauer S.S., Schlegel M., Ulrich R.G., 2013: Molecular evolution of Puumala hantavirus in an endemic region in Lower Saxony. IX International conference on HFRS, HPS and Hantaviruses, 05.-07.06.2013, Beijing, China.

24. Splettstoesser W, Ehrle M (2013). Humoral immune response to recombinant proteins of the zoonotic pathogen Francisella tularensis. 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

25. Vollmar P, Borde J, Ruhnke M, Thoma BR, Wölfel S, Schmoldt S (2013). Reactivation of IgM Antibodies against Yellow Fever Virus in a Vaccinated Traveler Following Secondary Dengue Virus Infection. Medical Biodefense Conference 2013, 22.10.-25.10.2013, München.

26. Vollmar P, Fieser N, Mendel N, Riehm JM, Schmoldt S, Zöller L, Thoma BR (2013). Time Bomb Melioidosis: Relapse Six Years after Pulmonary Infection. Medical Biodefense Conference 2013, 22.10.-25.10.2013, München.

27. Vollmar P, Fieser N, Riehm J, Schmoldt S, Zöller L, Thoma BR (2013). Time-bomb melioidosis: relapse six years after pulmonary infection. ECCMID 2013, 27.-29.04.2013, Berlin.

28. Vollmar P, Scholz H, Heesemann J, von Loewenich F, Zöller L, Schmoldt S (2013). Cross-reactive antibodies as a cause of false-positive results in Brucella serodiagnosis in non-endemic regions. 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

29. Wölfel S, Vollmar P, Schmoldt S, Dobler G, Poluda D, Löscher T (2013). First report of acute Chikungunya Fever imported from Bali to Germany. Medical Biodefense Conference, 22.10.-25.10.2013, München.

Lectures (*lecturer)

1. Antwerpen* MH (2013). New Insights into Metagenomics; Biological threats an new insights ofwhole-genome sequences: from metagenomics to post-genomic era bei Centro Studie Recerche di Sanita'e Veterinaria il Reparto, Rom, Italien.

2. Antwerpen* MH, Prior K, Höppner S, Harmsen D, Splettstößer WD (2013). Bacterial Whole Genome Sequencing and Core Genome MLST Analysis – The Next Step towards a Standardized Typing Method for *Francisella tularensis*; Medical Biodefense Conference, 22.-25.10.2013, München.

3. Bleichert* P (2013). Antimikrobielle Wirkung von Kupferoberflächen auf bakterielle und virale B-Agenzien, 10. Ulmer Symposium Krankenhausinfektionen, 19.-22.03.2013, Ulm.

4. Bleichert* P (2013). Inaktivierung bakterieller und viraler B-Kampfstofferreger durch metallische Kupferoberflächen, 44. Kongress der Deutschen Gesellschaft für Wehrmedizin und Wehrpharmazie e. V., 10.-12.10.2013, Rostock-Warnemünde.

5. Bleichert* P, Grass G (2013). Kill 'em All - Biothreat Agents Succumb to Metallic Copper Surfaces. Medical Biodefense Conference, 22.-25.10.2013, München.

6. Bryan TR, Müller J, Bässler C, Essbauer* S (2013). Puumala virus in the Bohemian Forest National Park: Epidemiology and search for risk factors. 23rd Annual Meeting of the Society for Virology 2013, 06.-09.03.2013, Kiel.

7. Bryan* TR, Müller J, Bässler C, Osterberg A, Schex S, Bottomley C, Georgi E, Essbauer S (2013). Predicting the risk for hantavirus disease in a montane forest environment. Medical Biodefense Conference, 22.-25.10.2013, München.

8. Dieckmann* S, Thoma BR, Steiner F, Vollmar P, Barreto-Miranda I, Schmoldt S (2013). A Case of Peripheral Lymphadenopathy. Medical Biodefense Conference, 22.-25.10.2013, München.

9. Dobler* G (2013). Flavivirus Update 2013. Symposium der Bayerischen Gesellschaft für Immun-, Tropenmedizin und Impfwesen, 28.09.2013, München.

10. Dobler* G (2013). Frühsommer-Meningoenzephalitis (FSME): Neues über eine „altbekannte" Erkrankung. Münchner Impftag. 05.12.2013, München.

11. Dobler* G (2013). Monitoring von Zecken auf exotische Tierseuchenerreger/Zoonoseerreger. Jahrestagung der Deutschen Veterinärmedizinischen Gesellschaft, Arbeitsgruppe Tierseuchen. 28.-29.05.2013, Berlin.

12. Dobler* G (2013). Phylogeny of TBE virus in Central Europe. Symposium Zecken-übertragener Erkrankungen. Friedrich-Löffler-Institut, 20.08.2013, Jena.

13. Dobler* G (2013). Risk of introduction and spread of flaviviruses other than Dengue, West Nile and Usutu virus. 09.-10.05.2013, Brescia, Italien.

14. Dobler* G (2013). Tick-borne encephalitis: Etiology – Pathogenesis – Diagnosis – Prevention. DAAD-Kurs Veterinärmedizin, 02.12.2013, München.

15. Dobler* G (2013). TTU „Emerging Infections“: Ausbreitung Zecken-übertragener Virusinfektionen. Treffen der TTU Emerging Infections. 28.08.2013, Marburg.

16. Dobler* G (2013). TTU „Emerging Infections“: Ausbreitung Zecken-übertragener Virusinfektionen. Treffen des DZIF München. 25.06.2013, München.

17. Dobler* G (2013). Zoonosen in der Arbeitsmedizin. Symposium für Arbeits- und Reisemedizin. 03.12.2013, München.

18. Dobler* G, Chitimia L (2013). Canine vector-borne diseases in Romania. 8th Canive Vector-borne Diseases Symposioum. 15.-17.04.2013. St. Petersburg, Russland.

19. Dobler* G, Essbauer S, Frey S, Hufert FT, Zanotto PM, Cernanska D, Vögele M, Ruzek D, Klempa B, Krivanec K, Pfeffer M, Weidmann M (2013). Biogeography of TBE virus in Eastern Bavaria. XII International Jena Symposium on Tick-borne Diseases. 21.-23.03.2013, Weimar.

20. Dobler* G, Essbauer S, Frey S, Hufert FT, Zanotto PM, Cernanska D, Vögele M, Ruzek D, Klempa B, Krivanec K, Pfeffer M, Weidmann M (2013). Biogeography of TBE virus in Eastern Bavaria. 15th ISW-TBE 2013, 31.01.-01.02.2013, Wien, Österreich.

21. Dobler* G, Frey S, Essbauer S (2013). Risk of introduction of pathogenic Flaviviruses. Workshop Epizone ERG 2013, 09.-10.05.2013, Brescia, Italien.

22. Dobler* G. Frey S, Eßbauer S, Pfeffer M, Hufert F, Weidmann M (2013). Phylogeny and geographical spread of TBE virus in Central Europe. International Scientific Working Group on Tick-borne Encephalitis, 30.01.-01.02.2013, Wien, Österreich.

23. Dobler* G. Frey S, Eßbauer S, Pfeffer M, Hufert F, Weidmann M (2013). Phylogeny of TBE virus in Central Europe. SNÄFF-Tagung, 13.-15.05.2013, Söderköpings, Schweden.

24. Dobler* G. Frey S, Eßbauer S, Pfeffer M, Hufert F, Weidmann M (2013). Phylogeny and geographical spread of TBE virus in Central Europe. 12th International Jena Symposium on Tick-borne Diseases, 21.-23.03. 2013, Weimar.

25. Dresler J*, Riehm JM, P Pajer, H Martin, J Klimentova, A Fucikova, J Matejkova, HC Scholz, L Pisa (2013). Detection and Differentiation of BoNT by Mass Spectrometry (2013) Medical Biodefense Conference, 22.-25.10.2013, München.

26. Duraffour* S, G Zöller, MM Lorenzo, DE Hruby, D Topalis, DW Grosenbach, G Andrei, R Snoeck, R Blasco, and H Meyer (2013). Lessons from *In vitro* Selection and Characterization of Orthopoxviruses Resistant to ST-246: ST-246 is the Key and F13L the Lock. Medical Biodefense Conference, 22.-25.10.2013, München.

27. Essbauer* S (2013). Auszüge aus einer ungewöhnlichen Biologenkarriere - Motivationsvortrag als Senior Scientist. Junior Scientists Meeting der Nationalen Zoonosenplattform, 04.06.2013, Leipzig.

28. Essbauer* S (2013). Felduntersuchungen zu Hantaviren und resultierende mögliche Empfehlungen für den Public Health Bereich "Workshop zu Hantavirus Infektionen in Risikogebieten", EDEN next Hantavirus-Workshop, 08.07.2013, Landesgesundheitsamt Stuttgart.

29. Essbauer* S (2013). Neues zu Nagetier-assoziierten Erregern. VFOES Schadnager-Seminar, 26.01.2013, Kempten.

30. Essbauer* S (2013). Recent TBEV research. NATO HFM RTG-230, 3rd MEETING, 30.09.-05.10.2013, Ljubliana, Slowenien.

31. Essbauer* S, Frey S, Brauer K, Vollmar P, Höper D, Beer M, Dobler G (2013). Genetic and cell-biological studies on different TBEV strains. 22nd meeting of the European Network for Diagnostics of "Imported" Viral Diseases (ENIVD), 04.-06.11.2013, Venedig, Italien.

32. Ettinger* J, Hofmann J, Enders M, Essbauer S, Ulrich R, Klempa B, Kruger DH (2013). The molecular signature of patient-derived PUUV strains allows their assignment to particular outbreak regions. Abstr. IX International Conference on HFRS, HPS & Hantaviruses, Beijing, China, June 5-7, 2013, p. 67.

33. Felder* E and Wölfel R (2013). Development of a Versatile and Stable Internal Control System for RT- qPCR Assays. Medical Biodefense Conference 2013, 22.-25.10.2013, München.

34. Frangoulidis* D (2013). Genetische Vielfalt von *Coxiella burnetii* in Deutschland. Tagung der DVG-Fachgruppe Krankheiten kleiner Wiederkäuer, 06.-07.11.2013, Berlin.

35. Frangoulidis* D (2013). Isolation units for highly contagious patients in Germany. 31th BioMedAC, 21.-24.05.2013, Winterbourne Gunner, UK.

36. Frangoulidis* D (2013). Typing of *Coxiella burnetii* - status quo and way ahead. 11th International Symposium on Protection against Chemical and Biological Warfare Agents, 03.-05.06.2013, Stockholm, Schweden.

37. Frey* S, Dobler G (2013). Gesamtgenomsequenzierung von RSSE-Virusisolaten aus Sibirien und dem Fernen Osten Russlands: ein Beitrag zur Forensischen Virologie. Forschungskonferenz des Sanitätsdienstes der Bundeswehr, 24.06.2013, München.

38. Frey* S, Höper D, Beer M, Dobler G, Eßbauer S (2013). Next generation sequencing of a longitudinal tick-borne encephalitis virus study in a micro-focus in Central Europe. Medical Biodefense Conference, 22.-25.10.2013, München.

39. Frey* S, Höper D, Beer M, Dobler G, Eßbauer S (2013). Next generation sequencing of a longitudinal tick-borne encephalitis virus study in a micro-focus in Central Europe. National Symposium on Zoonoses Research, 19.-20.09.2013, Berlin.

40. Gentile* B, Ciammaruconi A, Hilss K, Haumacher R, Pittiglio V, Antwerpen MH, Grass G, Hanczaruk M, Lista F, Beyer W (2013). Towards a Unified *Bacillus anthracis* MLVA Typing System: Characterization of Repeat Number and Consensus Sequences of MLVA31 loci. Medical Biodefense Conference, 22.-25.10.2013, München.

41. Genzel* GH, Georgi E, Vente A, Schmoldt S, Schaumann R, and Scholz HC (2013). Yes, S I R! Susceptibility Testing of a New Substance Requires Strict Rules. Medical Biodefense Conference 2013, 22.-25.10.2013, München.

42. Gerhard* M, Antwerpen MH (2013). Francisella vor dem „Tantalos"-Dilemma ? Festvortrag anlässlich der Unterzeichnung Kooperationsvertrag TU München – InstMikroBioBw, 21.02.2013, München.

43. Grass* G (2013). Antimicrobial copper vs. nosocomial infections (2013) Microbiology Seminar, 11.11.2013, University of Coimbra, Portugal.

44. Grass* G (2013). Bioforensic molecular genetic reconnaissance in a drug-related anthrax outbreak. Graduate Course Microbiology Section Seminar, 09.09.2013, University of Nebraska-Lincoln, USA.

45. Grass* G (2013). Kupfer in der Infektionsprävention – Übersicht biomedizinisch relevanter Forschung. Medica, 20.11.2013, Düsseldorf.

46. Grass* G (2013). Massive metallische Kupferlegierungen als Teil des Multi-Barriere-Systems gegen pathogene Mikroorganismen im Krankenhaus. 12. Bad Kissinger Akademiekongress

Hygiene-Wunde-Pflege, 07.11.2013, Bad Kissingen.

47. Grass* G, S.R. Klee, W. Beyer, D.M. Wagner, T. Pearson, R. Grunow, U. Reischl, M. Hanczaruk, P. Keim (2013). Genotyping and Trace-Back-Analysis of *Bacillus anthracis* Isolates Related to Injectional Anthrax. 11th Annual ASM Biodefense and Emerging Diseases Research Meeting, 25-27.02. 2013, Washington (DC), USA.

48. Grass* G, SR. Klee, W. Beyer, D.M. Wagner, T. Pearson, R. Grunow, U. Reischl, M. Hanczaruk, P. Keim (2013). Thirteen Years of Injectional Anthrax in Drug Consumers - Genotyping of *Bacillus anthracis* Strains from an Ongoing Outbreak. Bacillus ACT-Conference, 01.-05.09.2013, Victoria, Kanada.

49. Grass* G, SR. Klee, W. Beyer, DM. Wagner, T. Pearson, U. Reischl, P. Sandven, A. Kjerulf, M. Hanczaruk, P. Keim, and R. Grunow (2013). Genotyping of *Bacillus anthracis* Strains from an Extended Outbreak of Injectional Anthrax in Drug Consumers. Medical Biodefense Conference, 22.-25.10.2013, München.

50. Kling* C, Kratzmann N., Schmidt S., Rosenfeld U.M., Reil D., Jacob J., Ulrich R.G., Essbauer S (2013). NaÜPaNet: Untersuchung zu Rickettsien in Kleinsäugern in Deutschland. AK Wirbeltier, Mäuse Workshop, 21.11.2013, Freising.

51. Meyer* H (2013). The Dirty Dozen – are we aware and well prepared? Viertes Regensburger Meeting für Molekulare Diagnostik (REMMDI). 21.03.-23.03.2013, Regensburg.

52. Pfeffer M, Dobler* G (2013). Rickettsiae: Classification and Pathogenesis. DAAD-Kurs Veterinärmedizin, 02.12.2013, München.

53. Reis S, Walter M, Kahlhofer C and Frangoulidis D* (2013). Whole Genome Amplification (WGA) in Coxiella diagnostics and typing. 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

54. Riehm* JM (2013). Pest – State of the Art 2013. 11. Symposium Infektionsmedizin in Tübingen: Neue Entwicklungen in der Infektionsmedizin, Comprehensive Infectious Disease Center, 01.03.2013, Tübingen.

55. Riehm* JM, M Rajerison, M Projahn, CM Hall, G Andersen, M Lummis, J Walker, R Nottingham, AJ Vogler, P Keim, DM Wagner, HC Scholz (2013). Typing of *Yersinia pestis* from Clinical Plague Specimens from Madagascar. Medical Biodefense Conference, 22.-25.10.2013, München

56. Riehm* JM, Seifert L, Hänsch S, Wagner DM, Birdsell D, Parise KL, Wiechmann I, Grupe G, Thomas A, Keim P, Zöller L, Bramanti B, Harbeck M, Scholz HC (2013). *Yersinia pestis* DNA from Skeletal Remains from the 6th Century AD Reveals Insights into Justinianic Plague. 66. Jahrestagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

57. Schlegel* M, K Baumann, A Breithaupt, A Binder, U Schotte, S Ruhl, C Krohmann, SS Essbauer, D Frangoulidis, P Kayßer, H Meyer, JM Riehm, R Wölfel, M Faulde, J Lewitzki, S Sauer, JP Teifke, and RG Ulrich (2013). Are Rodents Carriers of Zoonotic Pathogens in Military Camps in Afghanistan? Medical Biodefense Conference, 22.-25.10.2013, München.

58. Schmoldt* S (2013). Fallberichte. 11. Symposium des CIDIC - "Neue Entwicklungen in der Infektionsmedizin", 01.-02.03.2013, Tübingen.

59. Scholz HC*, L Seifert, S Hänsch, DM Wagner, D Birdsell, KL Parise, I Wiechmann, G Grupe, A Thomas, P Keim, L Zöller, B Bramanti, JM Riehm, M Harbeck (2013). *Yersinia pestis* DNA from skeletal remains from the 6th century AD reveals insights into Justinianic Plague. 11th International Symposium on Yersinia, June 2013, Suzhou, China.

60. Scholz HC*, Seifert L, Hänsch S, Wagner DM, Birdsell D, Parise KL, Wiechmann I, Grupe G, Thomas A, Keim P, Zöller L, Bramanti B, Riehm JM, Harbeck M (2013). *Yersinia pestis* DNA

from Skeletal Remains from the 6th Century AD Reveals Insights into Justinianic Plague; Medical Biodefense Conference, 22.-25.10.2013, München.

61. Splettstoesser* W (2013). 100 Jahre Tularämie: Epidemiologie, Diagnostik und Klinik. 11. Symposium des CIDIC - "Neue Entwicklungen in der Infektionsmedizin", 01.-02.03.2013, Tübingen.

62. Splettstoesser* W (2013). Microbiological characteristics and genetic structure of *Francisella tularensis*. International Symposium on *Francisella tularensis* and Tularemia, 19.06.-22.06.2013, Nevsehir, Turkey.

63. Splettstoesser* W (2013). PCR: A milestone in the laboratory diagnosis of tularemia. International Symposium on *Francisella tularensis* and Tularemia, 19.06.-22.06.2013, Nevsehir, Turkey.

64. Splettstoesser* W, Ehrle M, Kühn R, Schmoldt S (2013). Evaluation of a new commercially available immunochromatographic test for the serodiagnosis of human tularemia, 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

65. Splettstoesser* WD, Kaysser P, Antwerpen MH (2013). PCR: A milestone in the laboratory diagnosis of tularemia. 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

66. Stoecker* K, Gabriel M, Fleischmann E, Schmidt-Chanasit J, Dicaro A, Meschi S, Ippolito G, Günther S, and Wölfel R (2013). Establishment of Mobile Laboratories up to Risk Group 4 in Combina- tion with CBRN Capacity Building in Sub-Saharan Africa. Medical Biodefense Conference 2013, 22.-25.10.2013, München.

67. Thoma* BR, Müller J, Bässler C, Osterberg A, Schex S, Bottomley C, Georgi E, and Essbauer SS (2013). Predicting the Risk for Hantavirus Disease in a Montane Forest Environment. Medical Biodefense Conference 2013, 22.-25.10.2013, München.

68. Ulrich* R.G. & network “Rodent-borne pathogens” (2013). Pathogen hunting in Germany: The network “Rodent-borne pathogens”. Medical Biodefense Conference, 22.-25.10.2013, München.

69. Wagner D*, CM Hall, JM Riehm, D Kiefer, T Damdindorj, O Dashdavaa, G Dalantai, J Sahl, R Nottingham, AJ Vogler, P Keim, HC Scholz (2013). Diverse Lineages of *Yersinia pestis* are present in Mongolia; Medical Biodefense Conference, 22.-25.10.2013, München

70. Wagner DM*, CM Hall, JM Riehm, D Kiefer, T Damdindorj, O Dashdavaa, G Dalantai, J Sahl, R Nottingham, AJ Vogler, P Keim, HC Scholz (2013). Diverse lineages of *Y. pestis* in Mongolia. 11th International Symposium on Yersinia, June 2013, Suzhou, China.

71. Walter* M and Frangoulidis D (2013).The Art of (Coxiella) Genome Sequencing. 65. Tagung der Deutschen Gesellschaft für Hygiene und Mikrobiologie, 22.-25.09.2013, Rostock.

72. Wölfel* R (2013). A Southwest-Asian network for biosecurity and diagnosis of dangerous infectious diseases, National Center for Disease Control and Public Health of Georgia, 10.12.2013, Tbilisi, Georgia.

73. Wölfel* R (2013). Bioforensics and Medical Bio Defense, 31th NATO BioMedAC, 22.05.2013, Winterbourne Gunner, UK.

74. Wölfel* R (2013). Biological Reconnaissance - Team Approach, United Nations Office for Disarmament Affairs, UNSGM Workshop, 28.05.2013, Copenhagen, Denmark.

75. Wölfel* R (2013). Biologische Kampfstoffe – Eine dunkle Seite der Mikrobiologie, Vorlesungsreihe, 17.-27.07.2013, Universitätsklinikum Leipzig.

76. Wölfel* R (2013). Biosecurity – Biosafety, NATO Bio Warfare Defence Awareness Course, 03.10.2013, NATO School Oberammergau.

77. Wölfel* R (2013). Bundeswehr Medical Bio Reconnaissance Capabilities, Concepts & Experience, NATO Bio Warfare Defence Awareness Course, 03.10.2013, NATO School Oberammergau.

78. Wölfel* R (2013). Dangerous Infectious Diseases and Biological Warfare Agents, 2nd Tactical Combat Casualty Care Symposium, 12.06.2013, Pfuhlendorf.

79. Wölfel* R (2013). Deutsches Partnerschaftsprogramm für biologische Sicherheit und Gesundheitssicherstellung, Projekte des Instituts für Mikrobiologie der Bundeswehr, 14.10.2013, Auswärtiges Amt, Berlin.

80. Wölfel* R (2013). Forensische Aspekte in der B-Aufklärung, Fachtagung Biologische Kampfstoffe, 05.03.2013, Berlin.

81. Wölfel* R (2013). Medical Biodefense in Germany, MARCE CHHS Public Health Preparedness Conference, University of Maryland, 28.01.2013, Ellicott City, USA.

82. Wölfel* R (2013). Medical Countermeasures against Biological Attacks, NATO Bio Warfare Defence Awareness Course, 03.10.2013, NATO School Oberammergau.

83. Wölfel* R (2013). RDOIT - Eine Fähigkeit des Med. B-Schutzes, Konsiliargruppentagung Labormedizin/Mikrobiologie, 15.02.2013, München.

84. Wölfel* R (2013). The Bundeswehr Institute of Microbiology - Applied Research on Emerging Infectious Diseases, DZIF Autumn School, 26.09.2013, Bad Malente.

85. Wölfel* S; Schaper, SR; Dobler, G; Speck, S; Wölfel, R (2013). Development of a *Rickettsia helvetica* specific real-time polymerase chain reaction assay. Medical Biodefense Conference, 22.-25.10.2013, München.

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
   a. Research, development and evaluation of approaches for the rapid detection, identification and differentiation and typing of *Orthopoxviruses, Alpha-, Flavi-, Bunya- and Filoviruses* as well as *Coxiella, Burkholderia, Yersinia, Brucella, Bacillus* and *Francisella spp.* using state of the art techiques
   b. Establishment of sequence data banks and tools for a forensic typing
   c. Evaluation and production of test kits for the immunodiagnosis of relevant infections
   d. Studies of the epidemiology, immunopathogenesis and immune response against Francisella tularensis, Bacillus spp., Burkholderia spp., Brucella spp. and Yersinia spp., resp. The current program covers pathogen R II and R III organisms.

No outdoor studies of biological aerosols have been conducted.

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).

In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?
   Wehrwissenschaftliches Institut für Schutztechnologien – ABC-Schutz
   (Bundeswehr Research Institute for Protective Technologies and NBC-Protection)

2. Where is it located?
   D-29633 Munster/Oertze, Humboldtstrasse 100, Germany
   (53°00 North, 10°08 East)

3. Floor area of microbiological laboratory areas by containment level:

BSL 2	520 m²
BSL 3 stationary laboratories	360 m²
BSL 3 containment (vehicle bound)	6 m²
BSL 4	----- m²
Total Laboratory Floor Area	886 m²

4. The organisational structure of the Biological Departments:
   The workload of the Biological Departments of the facility is approx. 90 percent in B-defence and approx. 10 percent in bio-analytics. The following detailed personnel list covers the total strength for both working areas because of the engagement of some of the personnel in both areas.

I)	Total Number of personnel:	36
II)	Division of personnel civilian	36
III)	Division of personnel by category	
	Scientists	10
	Engineers	06
	Technicians	18
	Admin. and support staff	02

   IV) Represented scientific disciplines:
   Biology, biochemistry, immunology, molecular biology, bacteriology, mycology, virology, toxicology, toxinology, biotechnology, environmental toxicology, aerosol biology, disinfection, drinking water treatment

   V) Contractor staff: 03 (of 36 total number of personnel)

   VI) Source of funding:
   - Federal Ministry of Defence
   - EU FP 7 (European Union, Seventh Framework Programme)
   - EDA (European Defense Agency)

   VII) Funding levels for the following program areas:

The funding for the 90 percent share for personnel, consumable items and equipment in 2014 was approx. 2.4 Mio EURO.

Research	40 %
Development	30 %
Test and Evaluation	30 %

VIII) Publication policy
Results will be published in reports to the Federal office for Military Technology and Procurement and to the Federal Ministry of Defense. They also will be presented in public scientific journals and in national and international scientific meetings and symposiums.

IX) Lists of public available books, papers and reports resulting from the work during the previous 12 months: (not included posters and other presentations)

- Hülseweh, B., T. Rülker, T. Pelat, C. Langermann, A. Frenzel, T. Schirrmann, S. Dübel, P. Thullier, M. Hust: Human like antibodies neutralizing Western equine encephalitits virus. MAbs, pp. 718-727, Vol. 6 (3), Feb. 2014
- Köhne, S.: Mobile feldfähige B-Laborinfrastruktur, CPM forum, cpm communication press marketing gmbh, pp. 66-68, Vol. 26, 2014

5. Brief description of the biological defence work carried out at the facility, including studies using types of micro-organisms and/or toxins in the laboratories as well as outdoor studies e.g. of biological aerosols.

For these purposes microbiological safety laboratories of biosafety levels BSL 1- 3 and biosafety S 1 laboratories for genetically engineered agents are operated, which allow development and research in all areas of the B-protection and the investigation of suspect samples in case of CBRN scenarios.
The mission is to close capability gaps in the B-defense of the Bundeswehr. Development and optimization of the rapid identification/detection of biowarfare agents, development of the elemental basics for the generation and verification of protection factors and both outline and establishment of new and pioneering approaches in decontamination are the primary focus of the biological laboratories and B-detection.

a. Development of early-warning systems permitting non-specific identification of toxins, bacteria and viruses,
b. Optimization of the properties of the available, previously generated detection molecules in their specificity, affinity and avidity for use in the immunological detection and identification systems, which inevitably must be suitable also for field-use. Using new technologies (e.g. development and identification of recombinant antibodies), the repertoire of antibodies and detection molecules for biological agents is constantly expanded.
c. Optimization and automation of immunological and molecular genetical identification methods.
d. Development of equipment and procedures for sampling and rapid and accurate identification of toxins and pathogenic agents in samples from air, water, soil, vegetation (sensor-equipment, collectors, detection kits, automation).
e. Sample concentration and preparation incl. inactivation for identification in different matrices.
f. Efficient sample processing and risk mitigation method for both ensuring safe handling and preparation of the mixed CBRN samples for the following identification analysis of the CBRN agents. Aim is to develop a set of validated procedures for the separation and preparation of

a potential mixture of CBRN agents into distinct C, B, RN aliquots and to obtain to be further prepared for simultaneously, parallel and/or successively identification analyses, independent of sample matrix, without an impact on each CBRN compound and reducing the turn-around-time for analysis.

g. Stability-tests for B-agents in different matrices.
h. Development of procedures for disinfection, decontamination and detoxification.
i. B-Agents and toxin laboratory analysis with suspect samples.
j. Toxin preparation and analytics.
k. Participation in round-robin excercises, organization of exercises, etc.
l. Nanotechnology for materials like clothes, paints, etc.

The current programme covers non-human/non-animal pathogen biosafety level 1 and pathogenic biosafety level 2 and 3 organisms as well as low-molecular weight toxins.

Outdoor studies were performed for water-purification tests using Bacillus atrophaeus spores and *E. coli* phages as simulants outside the laboratories.

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).
In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?
   Zentrales Institut des Sanitätsdienstes der Bundeswehr Kiel, Abteilung II – Veterinärmedizin, Laborgruppe Spezielle Tierseuchen- und Zoonosendiagnostik (Central Institute of the Bundeswehr Medical Service Kiel, Laboratory for Infectious Animal Diseases and Zoonosis).

2. Where is it located?
   D-24119 Kronshagen, Kopperpahler Allee 120.
   (54°20´24´´ N, 10°05´37´´ E)

3. Floor area of laboratory areas by containment level:

BL 2	274 m^2
BL 3	47 m^2
BL 4	--
Total Laboratory Floor Area	321 m^2

4. The organisational structure of the facility:
   The workload is 75 per cent in the diagnosis of infectious animal diseases and zoonosis and 25 per cent in B-defence.

I)	Total Number of personnel:	6
II)	Division of personnel	
	Military	3
	Civilian	3
III)	Division of personnel by category	
	Scientists	3
	Technicians	3
IV)	Represented scientific disciplines:	
	Veterinary medicine, microbiology, virology, bacteriology, parasitology, molecular biology, immunology	
V)	Contractor staff:	1
VI)	Source of funding:	Federal Ministry of Defence
VII)	Funding levels for the following program areas:	
	The funding for consumable items and equipment in 2014 was approx. 0.63 million EURO.	
	Development	30 %
	Test and Evaluation	25 %
	Diagnosis	40 %
	Education and Training	5 %
VIII)	Publication Policy	
	Results will be published primarily in reports to the Federal Ministry of Defence and in	

journals for military medicine or technology. Additional presentations occur in public scientific journals as well as national and international scientific meetings and symposiums.

IX) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

1. Petrov, A., Schotte, U., Pietschmann, J., Dräger, C., Beer, M., Anheyer-Behmenburg, H., Goller, K.V., Blome, S.: Alternative sampling strategies for passive classical and African swine fever surveillance in wild boar.
   Vet Microbiol 2014 Oct 10; 173 (3-4):360-365. doi: 10.1016/j.vetmic.2014.07.030.
2. Szabo, K., Trojnar, E., Johne, R., Binder, A., Anheyer-Behmenburg, H., Schotte, U., Ellerbroek, L., Klein, G.; Entwicklung eines sensitiven Nachweisverfahrens für Hepatitis E-Viren in Mineralwasser
   55. Arbeitstagung des Arbeitsgebietes Lebensmittelhygiene der DVG, 23.-26. September 2014, Garmisch-Patenkirchen
3. Schotte, U., Anheyer-Behmenburg, H., Klein, G., Tandler, H., Binder, A.: Epidemiologieund Diagnostik von lebensmittelübertragenen Viren.
   Wehrmedizin und Wehrpharmazie 3/2014, 40-42
4. Stephan, S., Guerra, D., Pospischil, A., Hilbe, M., Weissenböck, H., Novotny, L. , Greub, G., Croxatto, A., Teifke, J., Ulrich, R., Schlegel, M., Ruhl, S., Schotte, U., Binder, A., Sauer, S., Borel, N.: *Chlamydiaceae* and *Chlamydia*-like organisms in free-living small mammals in Europe and Afghanistan.
   J Wildl Dis, 50(2), 2014, DOI: 10.7589/2013-08-194
5. Binder, A., Tandler, H., Pöllein, W., Schotte, U.: Epidemiology and Detection of Norovirus in Military Facilities in Germany and in Kosovo, Medical Biodefense Conference 2013, Institut für Mikrobiologie der Bundeswehr München, 22 bis 25 Oktober 2013.
6. Frickmann, H., Schwarz, N.G., Wiemer, D.F., Fischer, M., Tannich, E., Scheid, P.L., Müller, M., Schotte, U., Bock, W., Hagen, R.M.: Food and Drinking Water Hygiene and Intestinal Protozoa in Deployed German Soldiers.
   Europ J Microbiol Immunol. 2013 3 (1), 53-60

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
   a. Development and evaluation of diagnostic systems permitting specific identification of microorganisms, parasites, viruses and toxins
   b. Development of test kits for use in a deployable containerised field laboratory
   c. Diagnosis of zoonoses i.e. Q-fever, anthrax, rabies, leishmaniasis, avian influenza and other influenza viruses, Hepatitis E-Virus, Anaplasma sp.
   d. Diagnosis of infectious animal diseases, especially swine fever and babesiosis, bovine viral Diarrhea Virus, Schmallenberg-Virus
   e. Diagnosis of food and waterborne threats, i.e. Vibrio cholerae and Norovirus, Hepatitis E-virus
   f. Evaluation of test kits for the detection of Clostridium botulinum and Clostridium perfringens toxins

   The current program covers RG I, II and III organisms.
   No outdoor studies of biological aerosols.

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).
In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?
   Schule ABC-Abwehr und gesetzliche Schutzaufgaben der Bundeswehr (CBRN Defence, Safety and Environmental Protection School)

2. Where is it located?
   D-87527 Sonthofen/Allgäu, Mühlenweg 12
   (47°31' N, 10°17' E)

3. Floor area of laboratory areas by containment level:

BL 2	270 m^2
BL 3	--
BL 4	--
Total Laboratory Floor Area	270 m^2

4. The organisational structure of the facility:
   The workload of the Biology Section of the facility is approx. 95 per cent in B-defence and 5 per cent in environmental protection. The following personnel figures cover the total strength for both working areas because of the engagement of some of the personnel in both areas.
   I) Total Number of personnel: 14
   II) Division of personnel
      Civilian 3
      Military 11
   III) Division of personnel by category
      Scientists 4
      Engineers 2
      Technicians 4
      Admin. and support staff 4
   IV) Represented scientific disciplines:
      Molecular biology, toxicology, serology, microbiology, entomology
   V) Contractor staff: 0
   VI) Source of funding:
      Federal Ministry of Defence
   VII) Funding levels for the following program areas:
      The funding for the 95 percent share for consumable items and equipment in 2014 was approx. 0.2 Mio EURO.

Development	30 %
Test and Evaluation	20 %
Education and Training	50 %

   VIII) Publication policy
      Results will be published published primarily in reports to the Federal Office for Military

Technology and Procurement and to the Federal Ministry of Defence and will be presented in scientific meetings

IX) Provide a list of publicly- available papers and reports resulting from the work published during the previous 12 month (To include authors, titles and full references):

None

5. Brief description of the biological defence work carried out at the facility, including types of micro-organisms and/or toxins studied, as well as outdoor studies of biological aerosols:
   a. Conceptual development of biological defence in the Bundeswehr
   b. Initiation of and participation in the development of biological defence material and equipment; drafting of operational requirements
   c. Review and establishment of detection methods for pathogens and toxins suitable for military use
   d. Development of identification methods for the detection of low molecular toxins
   e. Training of NBC defence personnel (theory and practice) including familiarization with the handling of vectors, microorganisms and toxins
   f. Training support for non-military government authorities
   g. Training support for military personnel of other states
   h. Initiation and expert monitoring of studies in the field of biological defence
   i. Drafting of joint publications for biological defence

   The current program covers RG I and II organisms, inactivated material of pathogens RG III and IV, insects and ticks as well as high and low-molecular toxins; no work has been done with active viruses.

   No outdoor studies of biological aerosols.

Form A, part 2 (iii)

National biological defence research and development programmes

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).
In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?
   Centre for Biological Threats and Special Pathogens (Zentrum für Biologische Gefahren und Spezielle Pathogene, ZBS) at the Robert Koch Institute (RKI)

2. Where is it located (include both address and geographical location)?
   Nordufer 20, 13353 Berlin, Germany (52°32' N 13°20' E)
   Seestraße 10, 13353 Berlin, Germany (52°32' N 13°20' E)

3. Floor area of laboratory areas by containment level:

BL2	3350 sqm
BL3	130 sqm
BL4	0 sqm
Total laboratory floor area	3480 sqm

   (In February 2015 a new laboratory building – including BSL4-laboratory space – was inaugurated. Technical evaluations will be carried out in 2015; work on pathogenes – including risk group 4 pathogens – is expected to start later in 2015.)

4. The organizational structure of each facility.

(i)	Total number of personnel	117
(ii)	Division of personnel:	
	Military	0
	Civilian	117
(iii)	Division of personnel by category:	
	Scientists	70
	Engineers	1
	Technicians	41
	Administrative and support staff	5

   (iv) List the scientific disciplines represented in the scientific/engineering staff.
   - Bacteriology
   - Biology
   - Biochemistry
   - Bioinformatics
   - Biotechnology
   - Cell biology
   - Chemistry
   - Chemometrics
   - Genomics
   - Human biology

- Immunology
- Laboratory medicine
- Medicine
- Microbiology
- Molecular biology
- Molecular medicine
- Proteomics
- Spectroscopy
- Toxicology
- Veterinary medicine
- Virology
- Zoology

(v) Are contractor staff working in the facility? If so, provide an approximate number.
46 of the 117 staff are contractor staff. The sources of funding for the contractors are listed under 4 (vi).

(vi) What is (are) the source(s) of funding for the work conducted in the facility, including indication if activity is wholly or partly financed by the Ministry of Defence?
Bernhard Nocht Institute for Tropical Medicine Hamburg (Germany), Federal Chancellery, Federal Foreign Office, Federal Ministry for Economic Affairs and Energy, Federal Ministry of Health, Federal Ministry for Education and Research, Federal Office of Civil Protection and Disaster Assistance, German Academic Exchange Service (DAAD), State of Bavaria, State of Berlin, European Centre for Disease Prevention and Control, European Commission, foreign governmental agencies, World Health Organisation (WHO), industry, non-governmental organisations.
There is no funding by the Ministry of Defence.

(vii) What are the funding levels for the following programme areas:
The total funding of the Federal Ministry of Health for personnel, consumable items and equipment for ZBS in 2014 was approximately 6.3 million EURO.
- Research and development 85 percent
- Test and evaluation 15 percent

(viii) Briefly describe the publication policy of the facility:
Scientists are encouraged to publish their results in peer reviewed scientific journals as well as present their work at national and international professional meetings.
The Robert Koch Institute signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, available at http://oa.mpg.de/lang/en-uk/berlin-prozess/berliner-erklarung/.
Under the Dual Use Regulations of the Robert Koch Institute scientists are required to assess the dual use potential of their research before a project is started, during the project period and before results are published.

(ix) Provide a list of publicly-available papers and reports resulting from the work published during the previous 12 months. (To include authors, titles and full references.)

1. Adini B, Verbeek L, Trapp S, Schilling S, Sasse J, Pientka K, Böddinghaus B, Schaefer H, Schempf J, Brodt R, Wegner C, Lev B, Laor D, Gottschalk R, Biederbick W (2014): Continued vigilance – development of an online

evaluation tool for assessing preparedness of medical facilities for biological events. Front. Public Health 2: 35. Epub Apr 14. doi: 10.3389/fpubh.2014.00035.

2. Aghaie A, Aaskov J, Chinikar S, Niedrig M, et al. (2014): Frequency of dengue virus infection in blood donors in Sistan and Baluchestan province in Iran. Transfus. Apher. Sci. 50 (1): 59-62. Epub 2013 Nov 27. doi: 10.1016/j.transci.2013.07.034.
3. Al Baqlani SA, Sy BT, Ratsch BA, Al Naamani K, Al Awaidy S, Al Busaidy S, Pauli G, Bock CT (2014): Molecular epidemiology and genotyping of hepatitis B virus of HBsAg-positive patients in Oman. PLoS ONE 9 (5): e97759. Epub May 16. doi: 10.1371/journal.pone.0097759.
4. Andernach IE, Leiss LV, et al. (2014): Characterization of hepatitis delta virus in sub-Saharan Africa. J. Clin. Microbiol. 52 (5): 1629-1636. Epub Mar 5. doi: 10.1128/JCM.02297-13.
5. Baggi F, Taybi A, Kurth A, et al. (2014): Management of pregnant women infected with Ebola virus in a treatment centre in Guinea, June 2014. Euro Surveill. 19 (49): pii: 20983. Epub Dec 11.
6. Baker MJ, Trevisan J, Bassan P, Bhargava R, Butler HJ, Dorling KM, Fielden PR, Fogarty SW, Fullwood NJ, Heys KA, Hughes C, Lasch P, et al. (2014): Using Fourier transform IR spectroscopy to analyze biological materials. Nat. Protoc. 9 (8): 1771–1791. Epub Jul 3. doi: 10.1038/nprot.2014.110.
7. Banhart S, Saied EM, Martini A, Koch S, Aeberhard L, Madela K, Arenz C, Heuer D (2014): Improved plaque assay identifies a novel anti-Chlamydia ceramide derivative with altered intracellular localization. Antimicrob. Agents Chemother. 58 (9): 5537-5546. Epub Jul 7. doi: 10.1128/AAC.03457-14.
8. Beekes M, Thomzig A, Schulz-Schaeffer WJ, Burger R (2014): Is there a risk of prion-like disease transmission by Alzheimer- or Parkinson-associated protein particles?. Acta Neuropathol. 128 (4): 463-476. Epub Jul 30. doi: 10.1007/s00401-014-1324-9.
9. Chabierski S, Barzon L, Papa A, Niedrig M, et al. (2014): Distinguishing West Nile virus infection using a recombinant envelope protein with mutations in the conserved fusion-loop. BMC Infect. Dis. 14: 246. Epub May 9. doi: 10.1186/1471-2334-14-246.
10. Chai W, Zakrzewski SS, Günzel D, Pieper R, Wang Z, Twardziok S, Janczyk P, Osterrieder N, Burwinkel M (2014): High-dose dietary zinc oxide mitigates infection with transmissible gastroenteritis virus in piglets. BMC Vet. Res. 10 (1): 75. Epub Mar 28. doi: 10.1186/1746-6148-10-75.
11. Chai W, Wang Z, Janczyk P, Twardziok S, Blohm U, Osterrieder N, Burwinkel M (2014): Elevated dietary zinc oxide levels do not have a substantial effect on porcine reproductive and respiratory syndrome virus (PPRSV) vaccination and infection. Virol. J. 11: 140. Epub Aug 8. doi: 10.1186/1743-422X-11-140.
12. Chenau J, Fenaille F, Caro V, Haustant M, Diancourt L, Klee SR, et al. (2014): Identification and validation of specific markers of Bacillus anthracis spores by proteomics and genomics approaches. Mol. Cell.

Proteomics 13 (3): 716–732. Epub 2013 Dec 29. doi: 10.1074/mcp.M113.032946.

13. Daus ML, Beekes M, Lasch P (2014): Infrarotspektroskopie zur Strukturuntersuchung von Prionen. BIOspektrum 20 (1): 36–38.

14. Dobler G, Fingerle V, Hagedorn P, Pfeffer M, Silaghi C, Tomaso H, Henning K, Niedrig M (2014): Gefahren der Übertragung von Krankheitserregern durch Schildzecken in Deutschland. Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz 57 (5): 541–548. Epub Apr 25. doi: 10.1007/s00103-013-1921-0.

15. Dorner BG, Werber D, Dorner MB, Stark K, Glasmacher S, Schaade L, Burger R, Schmutzhard E (2014): „Chronischer Botulismus“ – Als neue Krankheit nicht belegt. Dtsch. Arztebl. 111 (35–36): A1468–1470.

16. Ebner F, Rausch S, Scharek-Tedin L, Pieper R, Burwinkel M, et al. (2014): A novel lineage transcription factor based analysis reveals differences in T helper cell subpopulation development in infected and intrauterine growth restricted (IUGR) piglets. Dev. Comp. Immunol. 46 (2): 333-40. Epub May 21. doi: 10.1016/j.dci.2014.05.005.

17. Embarek Mohamed MS, Reiche J, Jacobsen S, Thabit AG, Badary MS, Brune W, Schweiger B, et al. (2014): Molecular Analysis of Human Metapneumovirus Detected in Patients with Lower Respiratory Tract Infection in Upper Egypt. Int. J. Microbiol. 2014: Article ID 290793. Epub Jan 30. doi: 10.1155/2014/290793.

18. Escadafal C, Faye O, Sall AA, Faye O, Weidmann M, Strohmeier O, von Stetten F, Drexler J, Eberhard M, Niedrig M, Patel P (2014): Rapid molecular assays for the detection of yellow fever virus in low-resource settings. PLoS Negl. Trop. Dis. 8 (3): e2730. Epub Mar 6. doi: 10.1371/journal.pntd.0002730.

19. Fernandez-García M, Negredo A, Papa A, Donoso-Mantke O, Niedrig M, et al. (2014): European survey on laboratory preparedness, response and diagnostic capacity for Crimean-Congo haemorrhagic fever, 2012. Euro Surveill. 19 (26): pii: 20844. Epub Jul 3.

20. Gelderblom HR, Krüger DH (2014): Helmut Ruska (1908–1973): His role in the evolution of electron microscopy in the life sciences, and especially virology. In: Peter Hawkes (Hrsg), Advances in Imaging and Electron Physics, Vol. 182. San Diego/London: Academic Press/Elsevier Inc., pp. 1–94. Epub Jan 31. doi: 10.1016/B978-0-12-800146-2.00001-1.

21. Gelderblom HR, Krüger DH, Hawkes PW (2014): Publications from the Düsseldorf University Institute for Biophysics and Electron Microscopy: (Institut für Biophysik und Elektronenmikroskopie der Universität Düsseldorf) 1958–1973. In: Peter Hawkes (Hrsg), Advances in Imaging and Electron Physics, Vol. 182. San Diego/London: Academic Press/Elsevier Inc., pp. 95–122. Epub Jan 31. doi: 10.1016/B978-0-12-800146-2.00002-3.

22. Goessweiner-Mohr N, Fercher C, Arends K, et al. (2014): The type IV secretion protein TraK from the Enterococcus conjugative plasmid pIP501 exhibits a novel fold. Acta Crystallogr. D Biol. Crystallogr. 70 (4): 1124–1135. Epub Mar 21. doi: 10.1107/S1399004714001606.

23. Goessweiner-Mohr N, Arends K, et al. (2014): Conjugation in Gram-positive bacteria. Microbiol. Spectrum 2 (3): PLAS-0004-2013. doi: 10.1128/microbiolspec.PLAS-0004-2013.

24. Goessweiner-Mohr N, Arends K, et al. (2014): Conjugation in Gram positive bacteria. In: M.E. Tolmasky, J.C. Alonso (Hrsg), Plasmids: Biology and Impact in Biotechnology and Discovery. Washington, DC: ASM Press.

25. Goessweiner-Mohr N, Eder M, Hofer G, Fercher C, Arends K, et al. (2014): Structure of the double-stranded DNA binding type IV secretion protein TraN from Enterococcus. Acta Crystallogr. D Biol. Crystallogr. D 70: 2376–2389. Epub Aug 29. doi: 10.1107/s1399004714014187.

26. Gomez-Valero L, Rusniok C, Rolando M, Neou M, Dervins-Ravault D, Demirtas J, Rouy Z, Moore RJ, Chen H, Petty NK, Jarraud S, Etienne J, Steinert M, Heuner K, et al. (2014): Comparative analyses of Legionella species identifies genetic features of strains causing Legionnaires' disease. Genome Biol. 15 (11): 505. Epub Nov 3. doi: 10.1186/s13059-014-0505-0.

27. Grunow R, Ippolito G, Jacob D, Sauer U, Rohleder A, et al. (2014): Benefits of a European project on diagnostics of highly pathogenic agents and assessment of potential "dual use" issues. Front. Public Health 2: 199. Epub Nov 11. doi: 10.3389/fpubh.2014.00199.

28. Gürtler L, Bauerfeind U, Blümel J, Burger R, Drosten C, Gröner A, Heiden M, Hildebrandt M, Jansen B, Offergeld R, Pauli G, et al. (2014): Coxiella burnetii – Pathogenic Agent of Q (Query) Fever. Transfus. Med. Hemother. 41 (1): 60–72. Epub 2013 Dec 23. doi: 10.1159/000357107.

29. Hagedorn P, Imhoff M, Fischer C, Domingo C, Niedrig M (2014): Human granulocytic anaplasmosis acquired in Scotland, 2013. Emerg. Infect. Dis. 20 (6): 1079-1081. doi: 10.3201/eid2006.131849.

30. Harries M, Monazahian M, et al. (2014): Foodborne hepatitis A outbreak associated with bakery products in northern Germany, 2012. Euro Surveill. 19 (50): pii=20992.

31. Hermann P, Hoehl A, Ulrich G, Fleischmann C, Hermelink A, et al. (2014): Characterization of semiconductor materials using synchrotron radiation-based near-field infrared microscopy and nano-FTIR spectroscopy. Opt. Express. 22 (15): 17948-17958. Epub Jul 28. doi: 10.1364/OE.22.017948.

32. Hermanns K, Zirkel F, Kurth A, et al. (2014): Cimodo virus belongs to a novel lineage of reoviruses isolated from African mosquitoes. J. Gen. Virol. 95 (4): 905-909. Epub Jan 17. doi: 10.1099/vir.0.062349-0.

33. Hunger I (2014): Global Forum: Winning the battle against emerging pathogens: A German response. Bull. At. Sci. 70 (4): 22–25. Epub Jun 17. doi: 10.1177/0096340214539133.

34. Ivanusic D, Madela K, Laue M, Denner J (2014): Visualization of HIV-1 budding structures. AIDS Res. Hum. Retroviruses 30 (10): 945-946. Epub Aug 29. doi:10.1089/AID.2014.0228.

35. Jääskeläinen AJ, Huhtamo E, Kivioja R, Domingo C, Vene S, Kallio-Kokko H, Niedrig M, et al. (2014): Suspected YF-AND after yellow fever

vaccination in Finland. J. Clin. Virol. 61 (3): 444–447. Epub Sep 3. doi: 10.1016/j.jcv.2014.08.022.

36. Kaspari O, Lemmer K, Becker S, Lochau P, Howaldt S, Nattermann H, Grunow R (2014): Decontamination of a BSL3 laboratory by hydrogen peroxide fumigation using three different surrogates for Bacillus anthracis spores. J. Appl. Microbiol. 117 (4): 1095-1103. Epub Aug 5, doi: 10.1111/jam.12601.

37. Kohl C, Kurth A (2014): European bats as carriers of viruses with zoonotic potential. Viruses 6 (8): 3110–3128. Epub Aug 13. doi: 10.3390/v6083110.

38. Kuhle K, Krausze J, Curth U, Rössle M, Heuner K, Lang C, Flieger A (2014): Oligomerization inhibits Legionella pneumophila PlaB phospholipase A activity. J. Biol. Chem. 289 (27): 18657-18666. Epub May 8. doi: 10.1074/jbc.M114.573196.

39. Lasch P, Fleige C, Stämmler M, Layer F, Nübel U, Witte W, Werner G (2014): Insufficient discriminatory power of MALDI-TOF mass spectrometry for typing of Enterococcus faecium and Staphylococcus aureus isolates. J. Microbiol. Methods 100 (1): 58-69. Epub Mar 7. doi: 10.1016/j.mimet.2014.02.015.

40. Lausch V, Hermann P, Laue M, Bannert N (2014): Silicon nitride grids are compatible with correlative negative staining electron microscopy and tip-enhanced Raman spectroscopy for use in the detection of micro-organisms. J. Appl. Microbiol. 116 (6): 1521-1530. Epub Mar 31. doi: 10.1111/jam.12492.

41. Lee K, Zhong X, Gu S, Kruel AM, Dorner MB, et al. (2014): Molecular basis for disruption of E-cadherin adhesion by botulinum neurotoxin A complex. Science 344 (6190): 1405–1410. doi: 10.1126/science.1253823.

42. Lees JG, Lee D, Studer RA, Dawson NL, Sillitoe I, Das S, Yeats C, Dessailly BH, Rentzsch R, et al. (2014): Gene3D: Multi-domain annotations for protein sequence and comparative genome analysis. Nucl. Acids Res. 42 (D1): D240–D245. Epub 2013 Nov 21. doi: 10.1093/nar/gkt1205.

43. Leidig-Bruckner G, Grobholz S, Bruckner T, Scheidt-Nave C, et al. (2014): Prevalence and determinants of osteoporosis in patients with type 1 and type 2 diabetes mellitus. BMC Endocr. Disord. 14 (1): 33. Epub Apr 11. doi: 10.1186/1472-6823-14-33.

44. Leistner R, Sakellariou C, Gürntke S, Kola A, Steinmetz I, Kohler C, Pfeifer Y, Eller C, et al. (2014): Mortality and molecular epidemiology associated with extended-spectrum β-lactamase production in Escherichia coli from bloodstream infection. Infect. Drug Resist. 7: 57–62. Epub Mar 13. doi: 10.2147/IDR.S56984.

45. Lemey P, Rambaut A, Bedford T, Faria N, Bielejec F, Baele G, Russell CA, Smith DJ, Pybus OG, Brockmann D, et al. (2014): Unifying viral genetics and human transportation data to predict the global transmission dynamics of human influenza H3N2. PLoS Pathog. 10 (2): e1003932. Epub Feb 20. doi: 10.1371/journal.ppat.1003932.

46. Litzba N, Zelená H, Kreil TR, Niklasson B, Kühlmann-Rabens I, Remoli ME, Niedrig M (2014): Evaluation of different serological diagnostic methods

for tick-borne encephalitis virus: Enzyme-linked immunosorbent, immunofluorescence, and neutralization assay. Vector Borne Zoonotic Dis. 14 (2): 149-159. Epub 2013 Dec 20. doi: 10.1089/vbz.2012.1287.

47. Losensky L, Chantia S, Holland G, Laue M, et al. (2014): Self-assembly of a cholesteryl-modified nucleoside into tubular structures from giant unilamellar vesicles. RSC Adv.: Epub Dec 5. doi: 10.1039/C4RA11289J.

48. Madela K, Banhart S, Zimmermann A, Piesker J, Bannert N, Laue M (2014): A simple procedure to analyze positions of interest in infectious cell cultures by correlative light and electron microscopy. Methods Cell Biol. 124: 93–110. Epub Oct 3. doi: 10.1016/B978-0-12-801075-4.00005-7.

49. Marí Saéz A, Weiss S, Nowak K, Lapeyre V, Zimmermann F, Düx A, Kühl HS, Kaba M, Regnaut S, Merkel K, Sachse A, Thiesen U, Villányi L, Boesch C, Dabrowski PW, Radonić A, Nitsche A, Leendertz SA, Petterson S, Becker S, Krähling V, Couacy-Hymann E, Akoua-Koffi C, Weber N, Schaade L, Fahr J, Borchert M, Gogarten JF, Calvignac-Spencer S, Leendertz FH (2014): Investigating the zoonotic origin of the West African Ebola epidemic. EMBO Mol. Med. 7 (1): 17–23. Epub Dec 30. doi: 10.15252/emmm.201404792.

50. McClenahan SD, Uhlenhaut C, Krause PR (2014): Optimization of virus detection in cells using massively parallel sequencing. Biologicals 42 (1): 34-41. Epub 2013 Dec 3. doi: 10.1016/j.biologicals.2013.11.002.

51. Miller L, Michel J, Vogt G, Döllinger J, Stern D, Piesker J, Nitsche A (2014): Identification and characterization of a phage display-derived peptide for orthopoxvirus detection. Anal. Bioanal. Chem. 406 (29): 7611-7621. Epub Oct 14. doi: 10.1007/s00216-014-8150-8.

52. Niedrig M, Klaus C (2014): Der Frühsommer-Meningoenzephalitis (FSME) kann durch Impfung vorgebeugt werden. Public Health Forum 22 (3): 25.e1–25.e3. Epub Jul 5. doi: 10.1016/j.phf.2014.07.015.

53. Ocal M, Orsten S, Inkaya AC, Yetim E, Acar NP, Alp S, Erisoz Kasap O, Gunay F, Arsava EM, Alten B, Ozkul A, Us D, Niedrig M, Ergunay K (2014): Ongoing activity of Toscana virus genotype A and West Nile virus lineage 1 strains in Turkey: a clinical and field survey. Zoonoses Public Health 61 (7): 480–491. Epub 2013 Dec 19. doi: 10.1111/zph.12096.

54. Pauli G, Bauerfeind U, Blümel J, Burger R, Drosten C, Gröner A, Gürtler L, Heiden M, Hildebrandt M, Jansen B, Offergeld R, et al. (2014): Usutu virus. Transfus. Med. Hemother. 41 (1): 73–82. Epub 2013 Dec 23. doi: 10.1159/000357106.

55. Penzlin A, Lindner MS, Doellinger J, Dabrowski PW, Nitsche A, Renard BY (2014): Pipasic: similarity and expression correction for strain-level identification and quantification in metaproteomics. Bioinformatics 30 (12): i149–i156. Epub Jun 15. doi: 10.1093/bioinformatics/btu267.

56. Radonić A, Metzger S, Dabrowski PW, Couacy-Hymann E, Schuenadel L, Kurth A, Mätz-Rensing K, Boesch C, Leendertz FH, Nitsche A (2014): Fatal monkeypox in wild-living sooty mangabey, Côte d'Ivoire, 2012. Emerg. Infect. Dis. 20 (6): 1009-1011. doi: 10.3201/eid2006.13-1329.

57. Reiche J, Jacobsen S, Neubauer K, Hafemann S, Nitsche A, Milde J, Wolff T, Schweiger B (2014): Human metapneumovirus: insights from a ten-year molecular and epidemiological analysis in Germany. PLoS One 9 (2): e88342. Epub Feb 5. doi: 10.1371/journal.pone.0088342.

58. Reusken C, Niedrig M, et al. (2014): Identification of essential outstanding questions for an adequate European laboratory response to Ebolavirus Zaire West Africa 2014. J. Clin. Virol.: Epub Nov 15. doi: 10.1016/j.jcv.2014.11.007.

59. Reuss A, Litterst A, Drosten C, Seilmaier M, Böhmer M, Graf P, Gold H, Wendtner CM, Zanuzdana A, Schaade L, Haas W, Buchholz U (2014): Contact investigation for imported case of Middle East Respiratory Syndrome, Germany. Emerg. Infect. Dis. 20 (4): 620-625. doi: 10.3201/eid2004.131375.

60. Ringe H, Schuelke M, Weber S, Dorner BG, Kirchner S, Dorner MB (2014): Infant botulism: Is there an association with thiamine deficiency?. Pediatrics 134 (5): e1436-1440. Epub Oct 13. doi: 10.1542/peds.2013-3378.

61. Robert Koch-Institut (2014): Framework Ebola Virus Disease – Intervention Preparedness in Germany. Robert Koch-Institut (Hrsg),. Berlin: Robert Koch-Institut.

62. Robert Koch-Institut (2014): Rahmenkonzept Ebolafieber – Vorbereitungen auf Maßnahmen in Deutschland. Robert Koch-Institut (Hrsg),. Berlin: Robert Koch-Institut.

63. Rosenstierne MW, McLoughlin KS, Olesen ML, Papa A, Gardner SN, Engler O, Plumet S, Mirazimi A, Weidmann M, Niedrig M, et al. (2014): The microbial detection array for detection of emerging viruses in clinical samples – a useful panmicrobial diagnostic tool. PLoS One 9 (6): e100813. Epub Jun 25. doi: 10.1371/journal.pone.0100813.

64. Rydzewski K, Schulz T, Brzuszkiewicz E, Holland G, Lück C, Fleischer J, Grunow R, Heuner K (2014): Genome sequence and phenotypic analysis of a first German Francisella sp. isolate (W12-1067) not belonging to the species Francisella tularensis. BMC Microbiol. 14 (1): 169. Epub Jun 25. doi: 10.1186/1471-2180-14-169.

65. Schaudinn C, Stoodley P, et al. (2014): Death and transfiguration in static Staphylococcus epidermidis cultures. PLoS One 9 (6): e100002. Epub Jun 25. doi: 10.1371/journal.pone.0100002.

66. Schmitz M, Lüllmann K, Zafar S, Ebert E, Wohlhage M, Oikonomou P, Schlomm M, Mitrova E, Beekes M, Zerr I (2014): Association of prion protein genotype and scrapie prion protein type with cellular prion protein charge isoform profiles in cerebrospinal fluid of humans with sporadic or familial prion diseases. Neurobiol. Aging 35 (5): 1177–1188. Epub 2013 Nov 16. doi: 10.1016/j.neurobiolaging.2013.11.010.

67. Scholz R, Vater J, Budiharjo A, Wang Z, He Y, Dietel K, Schwecke T, Herfort S, Lasch P, Borriss R (2014): Amylocyclicin, a novel circular bacteriocin produced by Bacillus amyloliquefaciens FZB42. J. Bacteriol. 196 (10): 1842-1852. Epub Mar 7. doi: 10.1128/JB.01474-14.

68. Schunder E, Gillmaier N, Kutzner E, Herrmann V, Lautner M, Heuner K, Eisenreich W (2014): Amino acid uptake and metabolism of Legionella pneumophila hosted by Acanthamoeba castellanii. J. Biol. Chem. 289: 21040–21054. Epub June 5. doi: 10.1074/jbc.M114.570085.

69. Schuster S, Zirkel F, Kurth A, et al. (2014): A unique Nodavirus with novel features: Mosinovirus expresses two subgenomic RNAs, a capsid gene of unknown origin, and a suppressor of the antiviral RNAi pathway. J. Virol. 88 (22): 13447-13459 . Epub Sep 10. doi: 10.1128/JVI.02144-14.

70. Serrano P, Wagner D, Böttger U, de Vera JP, Lasch P, Hermelink A (2014): Single-cell analysis of the methanogenic archaeon Methanosarcina soligelidi from Siberian permafrost by means of confocal Raman microspectrocopy for astrobiological research. Planet. Space Sci. 98: 191-197. Epub 2013 Oct 22. doi: 10.1016/j.pss.2013.10.002.

71. Sharma A, Heijenberg N, Peter C, Bolongei J, Reeder B, Alpha T, Sterk E, Robert H, Kurth A, Cannas A, Bocquin A, Strecker T, Logue C, Di Caro A, Pottage T, Yue C, et al. (2014): Evidence for a decrease in transmission of Ebola virus--Lofa County, Liberia, June 8-November 1, 2014. MMWR Morb Mortal Wkly Rep. 63 (46): 1067-1071. Epub Nov 21.

72. Simen BB, Braverman MS, Abbate I, Aerssens J, Bidet Y, Bouchez O, Gabriel C, Izopet J, Kessler HH, Stelzl E, Di Giallonardo F, Schlapbach R, Radonić A, et al.; 454 HIV Alphastudy Group (for RKI, Kücherer C, Meixenberger K, Nitsche A, Radonić A, Dabrowski PW) (2014): An international multicenter study on HIV-1 drug resistance testing by 454 ultra-deep pyrosequencing. J. Virol. Methods 204C (2014): 31–37. Epub Apr 13. doi: 10.1016/j.jviromet.2014.04.007.

73. Szkola A, Linares EM, Worbs S, Dorner BG, et al. (2014): Rapid and simultaneous detection of ricin, staphylococcal enterotoxin B and saxitoxin by chemiluminescence-based microarray immunoassay. Analyst 139 (22): 5885-5892. Epub Sep 19. doi: 10.1039/C4AN00345D.

74. Tezcan S, Kızıldamar S, Ulger M, Aslan G, Tiftik N, Ozkul A, Emekdaş G, Niedrig M, Ergünay K (2014): [Flavivirus seroepidemiology in blood donors in Mersin province, Turkey]. Mikrobiyol. Bul. 48 (4): 606–617. In Turkish.

75. Thomzig A, Wagenführ K, Daus ML, Joncic M, Schulz-Schaeffer WJ, Thanheiser M, Mielke M, Beekes M (2014): Decontamination of medical devices from pathological amyloid-β-, tau- and α-synuclein aggregates. Acta Neuropathol. Commun. 2 (1): 151. Epub Oct 25. doi: 10.1186/s40478-014-0151-5.

76. Van den Bossche D, Cnops L, Meersman K, Domingo C, et al. (2014): Chikungunya virus and West Nile virus infections imported into Belgium, 2007–2012. Epidemiol. Infect.: Epub Apr 2. doi: 10.1017/S0950268814000685.

77. Wang Z, Burwinkel M, et al. (2014): Dietary Enterococcus faecium NCIMB 10415 and zinc oxide stimulate immune reactions to trivalent influenza vaccination in pigs but do not affect virological response upon challenge infection. PLoS One 9 (1): e87007. Epub Jan 28. doi: 10.1371/journal.pone.0087007.

78. Weber C, König R, Niedrig M, et al. (2014): A neutralization assay for chikungunya virus infections in a multiplex format. J. Virol. Methods 201: 7-12. Epub Feb 16. doi: 10.1016/j.jviromet.2014.02.001.

79. Wu S, Baum MM, Kerwin J, Guerrero D, Webster S, Schaudinn C, et al. (2014): Biofilm-specific extracellular matrix proteins of non-typeable Haemophilus influenzae. Pathog. Dis. 72 (3): 143–160. Epub Jun 19. doi: 10.1111/2049-632X.12195.

80. Wu S, Li X, Gunawardana M, Maguire K, Guerrero-Given D, Schaudinn C, et al. (2014): Beta-lactam antibiotics stimulate biofilm formation in non-typeable Haemophilus influenzae by up-regulating carbohydrate metabolism. PLoS ONE 9 (7): e99204. Epub Jul 9. doi: 10.1371/journal.pone.0099204.

81. Yu C, Achazi K, Möller L, Schulzke JD, Niedrig M, Bücker R (2014): Tick-borne encephalitis virus replication, intracellular trafficking, and pathogenicity in human intestinal caco-2 cell monolayers. PLoS One 9 (5): e96957. Epub May 12. doi: 10.1371/journal.pone.0096957.

5. Briefly describe the biological defence work carried out at the facility, including type(s) of micro-organisms[1] and/or toxins studied, as well as outdoor studies of biological aerosols:

The Centre for Biological Threats and Special Pathogens is divided into a Federal Information Centre for Biological Threats and Special Pathogens (Informationsstelle des Bundes für Biologische Gefahren und Spezielle Pathogene, IBBS) and six departments (ZBS 1-6). The departments are briefly described below. More information can be obtained on the RKI homepage: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/CenterBioSafety_node.html.

The responsibility of the Federal Information Centre for Biological Threats and Special Pathogens (IBBS) is to strengthen national public health preparedness and response capabilities to biological threats caused by highly pathogenic or bioterrorism-related agents (“special pathogens”). IBBS provides support for the public health sector regarding recognition, situation assessment and response to unusual biological incidents related to bioterrorism or any natural occurrence or accidental release of highly pathogenic agents. Tasks include in particular preparedness and response planning for incidents related to special pathogens and response to bioterrorism or any unusual biological incident caused by special pathogens. In addition, the Office of the Permanent Working Group of Medical Competence and Treatment Centers (STAKOB) is located in IBBS. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/ibbs/ibbs_node.html.

ZBS 1, the Department for Highly Pathogenic Viruses, is responsible for the establishment of diagnostic methods to detect high-risk pathogens, in particular imported viruses and viruses that could be used for bioterrorist attacks, for the establishment of methods to detect genetically modified viruses, for the development of antigen-based detection methods for risk category 3 pathogens

[1] Including viruses and prions.

(eventually, risk category 4 pathogens), for the development of rapid and sensitive nucleic acid-based detection methods for the identification, characterisation and differentiation of pathogens of high-risk groups, for the development of strategies for the combat and prevention of infections with highly pathogenic viruses, for research on these pathogens in order to improve both therapy and prophylactics, for research on mechanisms of pathogenesis of both wild-type viruses and genetically modified viruses that could be used as bioweapons, for the development of SOPs (standard operating procedures) for diagnostics, for the provision of reference samples, standards and materials for diagnostics, for quality management and further development of detection methods based on serologic or virologic parameters or the pathogen's molecular biology; interlaboratory experiments, and for the organisation of collaborations with European and international high level disease safety laboratories (including ENIVD). In addition, the central sequencing laboratory of the RKI is located in ZBS 1, and the national Consultant Laboratory for pox viruses is affiliated to ZBS1. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs1/zbs1_node.html.

ZBS2, the Department for Highly Pathogenic Microorganisms, is responsible for the organisation of the diagnostics of samples with bioterrorism suspicion within ZBS, for the development and optimisation of microbiological, molecular biological and immunological detection systems for the identification, characterisation and differentiation of highly pathogenic microorganisms, for the management of a culture collection with highly pathogenic and other relevant microorganisms, for the supply of reference materials for diagnostics of relevant microbial pathogens within the framework of cooperative projects, for quality assurance measures in the field of diagnostics (QUANDHIP project), for research in the field of epidemiology, pathogenesis and genetics of selected highly pathogenic bacteria with a focus on B. anthracis and F. tularensis, for the Working Group "Cellular interactions of bacterial pathogens" with a focus on F. tularensis and amoebae as a reservoir for bacterial pathogens, for the development and testing of decontamination and disinfection processes in particular for bioterrorist attacks, and for studies on the evidence and tenacity of highly pathogenic microorganisms under different environmental conditions. For these activities, the department is running a BSL 3 laboratory. In addition, ZBS2 is involved in UNSGM training activities. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs2/zbs2_node.html.

ZBS3, the Department for Biological Toxins, is responsible for the diagnostics of microbial and plant toxins that could be used for bioterrorist attacks using techniques based on cell biological, genetical and serological parameters, as well as chromatographic methods and mass spectroscopy, for the development of SOPs for diagnostics, for the provision of reference samples, reference bacterial strains and standards, storage of diagnostic material, for the adaptation of the diagnostic materials to the expected sample material, for the development of strategies for the detection of novel and modified toxins and agents, for research on the pathogenesis of the diseases induced, for inter-laboratory experiments to assure the quality of diagnostics (EU project EQuATox), and for contribution to the development of standard therapies. More information can be obtained using the following link:

http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs3/zbs3_node.html.

ZBS4, the Department for Advanced Light and Electron Microscopy, is responsible for the rapid diagnostic electron microscopy (EM) of pathogens: primary diagnostics, identification and differentiation of bacterial and viral pathogens in environmental and patient samples, for the morphological characterisation and classification of both novel and rare pathogens by EM, for the development, testing and standardisation of preparation methods for diagnostic EM of pathogens, and for the organisation of an international quality assurance testing scheme and of advanced training courses to preserve and improve quality standards in diagnostic EM light and electron microscopy investigations of pathogens and mechanisms of their infectivity, pathogenicity or tenacity. ZBS 4 is the core facility for digital photography, image documentation and for light and electron microscopy at the RKI. Affiliated to it is the Consultant Laboratory for Diagnostic Electron Microscopy of Infectious Pathogens. More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs4/zbs4_node.html.

ZBS5, the Department for Biosafety Level 4 Laboratory, is responsible for the planning, setting up and operating a biosafety level 4 (BSL-4) laboratory within the Robert Koch Institute, for the establishment of diagnostic methods and diagnostic of pathogens in biosafety level 4, for the development of strategies for the prevention, decontamination and control of highly pathogenic viruses together with the Federal Information Centre for Biological Threats and Special Pathogens and ZBS 1, for the development of decontamination and disinfection measures for BSL-4 pathogens, for investigating the ability of BSL-4 pathogens to survive in biological and environmental samples, for participation in / organisation of inter-laboratory tests for quality assurance of diagnostics (national and international). More information can be obtained using the following link: http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs5/zbs5_node.html.

ZBS6, the Department for Proteomics and Spectroscopy, is responsible for the characterisation of highly pathogenic microorganisms by means of proteomic techniques (MALDI-TOF and ESI-MS, 2D-PAGE) and bioinformatics, for research on the molecular and structural bases underlying the proteinaceous seeding activity of prions and other self-replicating protein particles (“prionoids”) in transmissible and non-transmissible proteinopathies, for proteomics and molecular biology of proteinopathies and neurodegenerative diseases, for rapid detection of pathogens by vibrational (infrared and Raman) spectroscopy and microspectroscopy, for the development of methods for the characterisation of agents with bioterrorism potential based on surface-enhanced and tip-enhanced Raman spectroscopy (SERS, TERS), for the characterisation of cells, cell clusters and tissue structures for pathologically and/or chronically degenerative processes by means of microspectroscopic techniques (Raman, infrared and MALDI microspectroscopy and imaging) in combination with modern methods of bioinformatics. Two research groups are located in ZBS 6, the Research Group Prions and Prionoids and the Research Group Proteinopathies / Neurodegenerative Diseases. More information can be obtained using the following link:

http://www.rki.de/EN/Content/Institute/DepartmentsUnits/CenterBioSafety/zbs6/zbs6_node.html.

A list of highly pathogenic biological agents and toxins for which detection methods are established at the RKI can be obtained using the following link: http://www.rki.de/EN/Content/Prevention/Bioterrism/Diagnostik/diagnostics-detection_node_en.html.

The list contains abrin, Bacillus anthracis, Brucella melitensis, abortus and spp., Burkholderia mallei and pseudomallei, Clostridium botulinum toxins, Coxiella burnetii, Francisella tularensis, ricin, staphylococcal enterotoxins / Staphylococcus aureus, Variola major, Venezuelan equine encephalomyelitis virus, haemorrhagic fever viruses, and Yersinia pestis. Please note that for several of the agents listed only diagnostics are developed while no research on the pathogen itself is carried out, e.g. smallpox virus.

Outdoor studies of biological aerosols have not been conducted.

Form B

Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins

Data and information on infectious diseases and public health are published weekly by the Robert Koch Institut in “Epidemiologisches Bulletin”. The Bulletin is available on the following RKI homepage: http://www.rki.de/DE/Content/Infekt/EpidBull/epid_bull_node.html

Under the OIE WAHIS/WAHID reporting system Germany in 2014 provided information about exceptional animal disease events regarding four outbreaks of low pathogen avian influenza in poultry. Information can be obtained by using the following link: www.oie.int/wahis_2/public/wahid.php/Countryinformation/Countryreports

Form C

Encouragement of publication of results and promotion of use of knowledge

Germany encourages scientist and scientific institutions to publish the results of research without any restrictions in scientific journals as well as presenting their work at national and international professional meetings. In sensitive research and development areas scientist and scientific institutions are advised to publish under peer review procedures.

The Robert Koch Institute as well as other German scientific and professional institutions signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, available at http://oa.mpg.de/lang/en-uk/berlin-prozess/berliner-erklarung/

Form G

Declaration of vaccine production facilities

A.1. Name of Facility
Novartis Vaccines and Diagnostics GmbH
2. Location (mailing address):
Postfach 1630
D-35006 Marburg
3. General description of the types of diseases covered:
Botulism (toxin, toxoid), diphtheria, influenza, pertussis, rabies, tetanus, tick-borne encephalitis and meningococcal meningitis A, B, C, W, Y

B.1. Name of Facility
Rhein Biotech GmbH (Dynavax Europe)
2. Location (mailing address):
Eichsfelder Str. 11
D-40595 Düsseldorf
3. General description of the types of diseases covered:
Hepatitis B (commissioned production, no own licence for marketing)

C.1. Name of Facility
Vibalogics GmbH
2. Location (mailing address):
Zeppelinstr. 2
D-27472 Cuxhaven
3. General description of the types of diseases covered:
Prophylactic and therapeutic bacterial and viral vaccines (commissioned production for clinical trials, no own license for marketing)

D.1. Name of Facility
IDT Biologika GmbH
2. Location (mailing address):
Postfach 400214
D-06861 Dessau-Roßlau
3. General description of the types of diseases covered:
Smallpox (modified vaccinia virus vaccines), recombinant HIV vaccines (Investigational Medicinal Products), recombinant malaria vaccines (Investigational Medicinal Products), Ebola Virus and other Filovirus vaccines (Investigational Medicinal Products)

E.1. Name of Facility
GlaxoSmithKline Biologicals (Branch of SB Pharma GmbH & Co KG)
2. Location (mailing address):
Zirkusstr. 40
D-01069 Dresden
3. General description of the types of diseases covered:
Influenza virus vaccine for human immunization purposes