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
A, part I		
A, part 2 (i)		X
A, part 2 (ii)		
A, part 2 (iii)		
B (i)		
B (ii)		
C		
D		
E		
F		X
G		X

(Please mark the appropriate box(es) for each measure, with a tick.)

Date: 15 *April 2010*

State Party to the Convention: ***Sweden***

DECLARATION FORM ON NOTHING TO DECLARE OR NOTHING NEW TO DECLARE FOR USE IN THE INFORMATION EXCHANGE

Attachment 1.1

Exchange of data on research centres and laboratories

Background information

Sweden has one containment unit that meets the criteria for a "maximum containment laboratory" as specified in the 1983 WHO Laboratory Biosafety Manual and it is located at the Swedish Centre for Disease Control (SMI) (# 2 in form A, part 1 below). In addition, information is provided regarding two other relevant facilities harbouring laboratories of the second highest containment level: the Swedish Defence Research Agency (FOI) and the National Veterinary Institute (SVA) (#1 and # 3 respectively in Form A, part 1 below)

Form A, part 1

Exchange of data on research centres and laboratories[1] #1

1.	Name(s) of facility[2]	***Swedish Defence Research Agency (FOI)*** ***Division of CBRN Defence and Security***
2.	Responsible public or private organization or company	***Swedish Defence Research Agency***
3.	Location and postal address	***Cementvägen 20, SE-901 82 Umeå, Sweden*** ***www.foi.se***

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

   FOI CBRN Defence and Security receives funding from the Ministry of Defence, the Ministry for Foreign Affairs, the Swedish Civil Contingencies Agency, research grants and contracts from biotech companies.

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

[1]The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately.
[2]For facilities with maximum containment units participating in the national biological defence research and development programme, please fill in name of facility and mark "Declared in accordance with Form A, part 2 (iii)".
[3]In accordance with the WHO Laboratory Biosafety Manual, 3rd ed. 2004 or equivalent

0

6. If no maximum containment unit, indicate highest level of protection

Two separate BSL-3laboratories with a total floor space of 27 and 47 m^2 each including attached autoclaves and air-locks (changing rooms). The laboratory suites are used for basic research concerning bacterial and viral pathogenesis including animal experiments and tissue culture.

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

FOI CBRN Defence and Security provide expert knowledge of biological and toxic agents which is highly relevant to the performance of the Swedish Armed Forces (SAF) and to the civilian community. The division pursues development of identification methods for biothreat agents, maintains reference collections of biothreat agents and related strains and species, investigates the ecology, epidemiology and evolution of model pathogens. On occasion evaluation of novel therapeutics on behalf of external customers is performed. Other activities include detection of BC-agents in order to discover the presence of health threatening levels of BC substances, before they have negative impact on mission effectiveness and provide timely information which will permit forces to adopt an appropriate level of individual and collective protection. The institute is also responsible for building and maintaining competence in the area of biological risk and threat assessments for civilian preparedness.

Exchange of data on research centres and laboratories[4]#2

1.	Name(s) of facility[5]	***SMI:s säkerhetslaboratorium (BSL3-BSL4 Laboratory)***
2.	Responsible public or private organization or company	***Swedish Institute for Infectious Disease Control (SMI)***
3.	Location and postal address	***SMI, SE-171 82 Solna, Sweden*** ***www.smittskyddsinstitutet.se***

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

The activities are funded mainly by the Swedish Civil Contingencies Agency, National Board of Health (SoS), Swedish Research Council, and the European Union.

5. Number of maximum containment units[6] within the research centre and/or laboratory, with an indication of their respective size (m^2)

Three separate units of 20, 24 and 47 m^2 respectively

6. If no maximum containment unit, indicate highest level of protection

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

[4]The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately.

[5]For facilities with maximum containment units participating in the national biological defence research and development program, please fill in name of facility and mark "Declared in accordance with Form A, part 2 (iii)".

[6]In accordance with the WHO Laboratory Biosafety Manual, 3rd ed. 2004 or equivalent

BSL-3 agents

In the BSL-3 containment units diagnostics and research regarding the following bacteria and viruses are performed:

Bacteria: Bacillus anthracis, Brucella spp, Burkholderia spp, Coxiella burnetii, Francisella tularensis, Mycobacterium tuberculosis and Yersinia pestis.

Viruses: Bunyaviruses, Flaviviruses, Arenaviruses, Rabies viruses, Avian Influensa virus.

BSL-4 agents

In the BSL-4 containment units diagnostics and research regarding the following viruses are performed: Bunyaviruses, Flaviviruses, Arenaviruses, Paramyxovirus, Filoviruses, SARS CoV and highly pathogenic Avian influensa virus.

Methods for identification and the evaluation of antibiotic resistance

National and international standard methods are used for identification. Cultivation, staining, ELISA, PCR, Q-PCR and microarrays are examples of methods in use. Development of diagnostic methods for BSL-3 and BSL-4 agents is based on genetic techniques as well as on recombinant technology.

The general goals are to improve laboratory diagnostics and basic knowledge of highly pathogenic agents. This includes the development of efficient and reliable diagnostic methods, studies of virulence and pathogenesis, the establishment and use of animal models and vaccine development.

The activities are mainly funded by the Swedish Civil Contingencies Agency (MSB), the National Board of Health (SoS), the Swedish Research Council, and the European Union.

Form A, part 1

Exchange of data on research centres and laboratories[7] **#3**

1. Name(s) of facility[8] — ***National Veterinary Institute***

2. Responsible public or private organization or company — ***National Veterinary Institute***

3. Location and postal address — ***Ulls väg 2 B, Ultuna Campus***
SE-751 89 Uppsala, Sweden

www.sva.se

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

Ministry of Agriculture and grants from the Swedish Civil Contingencies Agency

5. Number of maximum containment units[9] within the research centre and/or laboratory, with an indication of their respective size (m^2)

0

6. If no maximum containment unit, indicate highest level of protection

4 different containment units are designed according to BSL 3 laboratory work with a total size of 296 m^2

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

[7]The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately.
[8]For facilities with maximum containment units participating in the national biological defence research and development programme, please fill in name of facility and mark "Declared in accordance with Form A, part 2 (iii)".
[9]In accordance with the WHO Laboratory Biosafety Manual, 3rd ed. 2004 or equivalent

General description of activities of the National Veterinary Institute

The National Veterinary Institute (SVA) is a Swedish national authority that strives for good animal and human health, a good environment and sustainable food production. SVA is a national and international reference laboratory for some contagious and other serious infectious diseases of animals that may imply a threat to both animal and human health. SVA's most important task is to be well prepared in dealing with these diseases by rapid and reliable diagnosis in order to establish and limit possible outbreaks, to prevent the spread of infection, and to limit economic losses. Research and development is of the utmost importance for solving the tasks and a publication list of relevant biological research can be obtained from SVA. Grants from the Swedish Cilvil Contingencies Agency are used for preparedness purposes applied to the development of diagnostic methods for an emergency situation such as natural outbreaks, accidents and/or deliberate release of BSL-3 agents.

Work on BSL-3 microorganisms

Containment units (BSL-3, 81 m^2) are used for diagnostic work on bacteria: Bacillus anthracis, Brucella spp, Chlamydophila psittaci, Francisella tularensis, Mycobacterium bovis, Mycobacterium tuberculosis and Yersinia pestis.

Containment units (BSL-3, 155 m^2) are used for diagnostic work on virus: Classical Swine Fever (CSF), Hanta virus, Heptatitis E virus, Lymphocytic choriomeningitis virus (LCM), High Pathogenic Avian Influenza (HPAI) virus, Rabies virus, Transmissible Spongiform Encephalopati (TSE), West Nile virus.

Methods for identification and evaluation of antibiotic resistance

National and international standard methods are used for identification. Cultivation, staining, ELISA and PCR are examples of methods in use. Development of diagnostic methods for BSL-3 agents is based on genetic techniques such as real-time PCR. Development of methods to characterise antibiotic resistance in BSL-3 agents is based on phenotypic micro dilutions methods such as (VETmic™), and genetic methods such as PCR and DNA sequencing.

Form A, part 2 (i)

National biological defence research and development programme Declaration

Is there a national programme to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere? Activities of such a programme would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxicology, 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 the programme.

Form A, part 2 (ii)

National biological defence research and development programme

Description

1. State the objectives and funding of the 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, toxicology, physical protection, decontamination and other related research.

Methods for analysis and detection of potential biological warfare agents

Field trial capacity for outdoor biological detection is established in order to successfully evaluate B-detection instruments using BW-simulants, to educate CBRN units and to verify dispersion models. Methods are developed for detection and identification of bacteria, viruses and toxins using laser-induced fluorescence, chip array, a variety of PCR methods, immunological techniques, genome sequencing and masspectrometric methods.

More specifically:

Analysis of biological agents and toxins

The R&D activities focus on development of identification methods for biothreat agents, and primarily different types of DNA-based method are developed. Also high-resolution genomic forensic analysis of biothreat pathogenic agents for verification purposes is performed. The scientific research focuses on understanding the interaction between the *Francisella tularensis* and its environment (ecology), the movement of the pathogen and associated disease through a population and geography (epidemiology), and the changes associated with the propagation of the pathogen over time (evolution). In addition, analytical methods for analysis of the Ricin toxin and related toxins are developed, with an emphasis on forensic methods.

These activities are funded by the Swedish Armed Forces, the Ministry for Foreign Affairs (MFA) and the Swedish Civil Contingencies Agency (MSB).

Detection of BC-agents

Here the objective is to discover the presence of health threatening levels of BC substances in the air (Alerting), before they have negative impact on mission effectiveness and provide timely information which will permit forces to adopt an appropriate level of individual and collective protection (Warning). The need for close to real-time, automatic measurements excludes the requirement for characterisation of the hazard substances.

A Laser Induced Fluorescence (LIF) based biodetector has been developed and work is initiated on Laser Induced Breakdown Spectroscopy (LIBS). This work is a joint effort together with

Centre d'Etude du Bouchet (CEB) in France and includes further development of LIBS. Also test and evaluation facilities have been developed in order to continuously evaluate the different steps of the biodetector development and also to be able to evaluate commercial biodetectors. Together with the Swedish Armed Forces National CBRN Defence Centre, Umeå, development of a specific outdoor facility suitable for large scale field trials has been performed. In this facility bioaerosols of simulant agents can be studied under field conditions and field trials with participants from many different countries are regularly arranged at this facility.

These activities are funded by the SAF and the European Defence Industry, since the concept of BC- alerting and warning has been proclaimed by the European Defence Agency (EDA).

Properties of potential biological warfare agents

A project initiated 2008 investigates the properties of potential biological warfare agents with relevance for virulence, survival and persistence in the environment using *Francisella tularensis* subspecies *holarctica* and subspecies *tularensis* as model organisms. Virulence properties are evaluated in cell and animal infection models. One objective is to increase the understanding of the conditions that are required for establishment of pathogens in new environments, for instance after a deliberate release of a pathogen not normally present in a specific milieu. Such knowledge will in turn provide a basis for related threat and risk assessments for civilian preparedness.

These activities are funded by the Swedish Civil Contingencies Agency.

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

30.3 mSEK

Swedish Armed Forces (14 mSEK), Ministry for Foreign Affairs (4.1 mSEK), Swedish Civil Contingencies Agency (8.6 mSEK), governmental agencies (0.66 mSEK), European Union (1.2 mSEK), research grants (1.2 mSEK) and contracts from civil companies (0.57 mSEK).

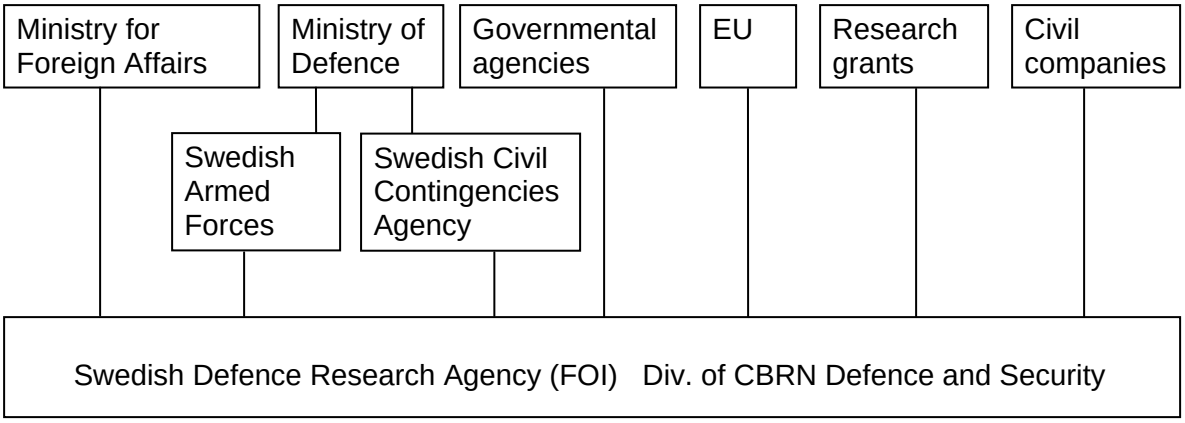
3. Are aspects of this programme conducted under contract with industry, academic institutions, or in other non-defence facilities?

No

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

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

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



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 the national biological defence research and development programme, within the territory of the reporting State, or under its jurisdiction or control anywhere.

The only Swedish facility which has a substantial proportion of its resources devoted to the national biological defence research and development programme is the Swedish Defence Research Agency (FOI), Division for CBRN Defence and Security, for which a declaration is made on Form A Part 2(iii).

Form A, part 2 (iii)

National biological defence research and development programme

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?

Swedish Defence Research Agency (FOI), Division of CBRN Defence and Security

2 Where is it located (include both address and geographical location)?

Cementvägen 20, SE-901 82 UMEÅ, Sweden

Lat: N 63^{o} 50', Long: E 20^{o} 19'

3. Floor area of laboratory areas by containment level:

BL2 515 (sqM)

BL3 74 (sqM)

BL4 0 (sqM)

Total laboratory floor area 589 (sqM)

4. The organizational structure of each facility:

A number of R&D groups are working in the Areas of Operation covering the previously described activities: analysis, detection and properties of putative biological warfare agents. The figures below include all personnel working in/together with the relevant R&D groups.

(i)	Total number of personnel	34
(ii)	Division of personnel:	
	Military	0
	Civilian	34

(iii) Division of personnel by category:

Scientists	19
Engineers	4
Technicians	9
Administrative and support staff	2

(iv) List the scientific disciplines represented in the scientific/engineering staff.

Physics, bacteriology, virology, genetics, immunology, medicine, microbiology, biochemistry, molecular biology, ecology, forensic science, information science, bioinformatics, chemistry, toxicology

(v) Are contractor staff working in the facility? If so, provide an approximate number.

No

(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?

FOI CBRN Defence and Security receives funding from the Ministry of Defence, the Ministry for Foreign Affairs, the Swedish Civil Contingencies Agency, the European Union, research grants and from commercial companies.

(vii) What are the funding levels for the following programme areas:

Research	29.6 mSEK
Development	0
Test and evaluation	0.7 mSEK

(viii) Briefly describe the publication policy of the facility:

The recommendation for publication at the Swedish Defence Research Agency, is to publish results of biological research in international peer review journals. Some results are published as publicly available FOI-reports, abstracts of which are submitted to the National Technical Information Service database. Reprints of scientific papers and FOI-reports can be requested from: Swedish Defence Research Agency, SE-901 82 Umeå, Sweden.

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

Relevant list of publications, please note that publications indicated with * are related to research conducted prior to 2009.

Larsson Pär, Elfsmark Daniel, Svensson Kerstin, Wikström Per, Forsman Mats, Brettin Thomas, Keim Paul, Johansson Anders. Molecular evolutionary consequences of niche restriction in Francisella tularensis, a facultative intracellular pathogen.
(PLOS Pathogens, 5(2009):6, 1-15)

Salomonsson Emelie, Forsberg Åke, Roos Norbert, Holz Claudia, Maier Berenike, Koomey Michael, Winther-Larsen Hanne C. Functional analyses of pilin-like proteins from Francisella tularensis : complementation of typeIV pilus phenotypes in Neisseria gonorrhoeae.
(Microbiology, 155(2009):8, 2546-2559)

Salomonsson Emelie, Kuoppa Kerstin, Forslund Anna-Lena, Zingmark Carl, Golovliov Igor, Sjöstedt Anders, Noppa Laila, Forsberg Åke. Reintroduction of two deleted virulence loci restores full virulence to the live vaccine strain of Francisella tularensis.
(Infect Immun, 77(2009):8, 3424-3431)

Lagerqvist Nina, Näslund Jonas, Lundkvist Åke, Bouloy Michèle, Ahlm Clas, Bucht Göran Characterisation of immune responses and protective efficacy in mice after immunisation with Rift Valley Fever virus cDNA constructs.
(Virol J, 6(2009):6, 1-10)

Meibom Karin L, Forslund Anna-Lena, Kuoppa Kerstin, Alkhuder Khaled, Dubail Iharilalao, Dupuis Marion, Forsberg Åke, Charbit Alain. Hfq, a novel pleiotropic regulator of virulence-associated genesin Francisella tularensis.
(Infect Immun, 77(2009):5, 1866-1880)

Svensson Kerstin, Bäck Erik, Eliasson Henrik, Berglund Lennart, Granberg Malin, Karlsson Linda, Larsson Pär, Forsman Mats, Johansson Anders. Landscape epidemiology of tularemia outbreaks in Sweden.
(Emerg Infect Dis, 15(2009):12, 1937-1947)

Svensson Kerstin, Granberg Malin, Neubaurerova V, Johansson Anders
Real-time PCR array for hierarchial identification of Francisella isolates.
(PLOSOne, 2009)

Champion Mia D, Zeng Qiandong, Nix Eli B, Nano Francis E, Keim Paul, Kodira Chinnappa D, Borowsky Mark, Young Sarah, Koehrsen Michael, Engels Reinhard, Pearson Matthew, Howarth Clint, Larson Lisa, White Jared, Alvarado Lucia, Forsman Mats, Bearden Scott W, Sjöstedt Anders, Titball Richard, Michell Stephen L, Birren Bruce, Galagan James
Comparative genomic characterization of Francisella tularensis strains belonging to low and high virulence subspecies.
(PLoS Path, 5(2009):5)

Tjärnhage Torbjörn
Trial Plan and risk assessment : TRIBALS biodetection field trial, Umeå, Sweden. (2009)
FOI-R—2850—SE

Wästerby Pär, Smedh Hanna, Tjärnhage Torbjörn, Semler Diana, Ho Jim, Kieboom Jasper
Determination of C-FLAPS limit of detection - evaluation in an aerosol chamber. (2009)
FOI-D—0345—SE

Ovenden S P, Fredriksson S-Å, Bagas C K, Bergström T, Thomson S A, NilssonC, Bourne D J.
De novo sequencing of RCB-1 to -3 : peptide biomarkers from the Castor bean plant Ricinus communis.
Anal Chem, 81(2009):10, 3986-3996.

Björnfot AC, Lavander M, Forsberg Å, Wolf-Watz H. 2009. Autoproteolysis of YscU of *Yersinia pseudotuberculosis* is important for regulation of expression and secretion of Yop proteins.
J Bacteriol. 191:4259-67. *

Hill J, Leary S, Smither S, Best A, Pettersson J, Forsberg A, Lingard B, Lipka A, Brown KA, Williamson ED, Titball RW 2009. N255 is a key residue for recognition by a monoclonal antibody which protects against *Yersinia pestis* infection.
Vaccine. 50:7073-9. *

Form A, part 2 (iii)

National biological defence research and development programme #2

Information under paragraph IX for year 2009 (list of publicly-available papers and reports resulting from the work during the previous 12 months)

Publication of relevant biological research at Swedish Institute for Infectious Disease Control (SMI)

The recommendation for publication, at the Swedish Institute for Infectious Disease Control, is to publish results of biological research in international journals. Reprints of scientific papers can be ordered by writing to:

Centre for microbiological preparedness and Swedish Institute for Infectious Diseases Control, SE-171 82 Solna, Sweden.

1. Karlberg, H, Lindegren G and Mirazimi, A, Compression of antiviral activity of recombinant and natural interferons against Crimean- Congo Hemorrhagic Fever Virus, Virol. J in press

2. Zhihao Tan, Sara Akerstrom, Boon Yu Wee, Sunil K. Lal, Ali Mirazimi, Yee- Joo Tan. A new panel of NS1 antibodies for easy detection and titration of influenza A virus, J. M. virol

3. Ippolito G, Nisii C, Caro AD, Brown D, Gopal R, Hewson R, Lloyd G, Gunther S, Eickmann M, Mirazimi A, Koivula T, Georges Courbot MC, Raoul H, Capobianchi MR. European perspective of 2-person rule for biosafety level 4 laboratories. Emerg Infect Dis. 2009 Nov;15(11):1858

4.Mattias Mild, Simon,M., Albert,J. and Mirazimi, A. Towards an Understanding of the Migration of Crimean-Congo Hemorrhagic Fever Virus. J Gen Virol. 2009 Oct 7.

5. Akerström S, Gunalan V, Keng CT, Tan YJ, Mirazimi A. Dual effect of nitric oxide on SARS-CoV replication: Viral RNA production and palmitoylation of the S protein are affected. Virology. 2009 Dec 5;395(1):1-9.

6. AM, Douagi I, Kraus AA, Mirazimi A. Crimean Congo hemorrhagic fever virus infects human monocyte-derived dendritic cells. Virology. 2009 Aug 1;390(2):157-62.

7. Weidmann M, Hufert F, Elschner M, Silman N, Mirazimi A, de Girón FM, Butaye PNetworking for BSL-3/4 laboratory scientist training. Nat Rev Microbiol. 2009 Oct;7(10):756.

8. Melinda Simon, Cecilia Johansson, Åke Lundkvist and Ali Mirazimi Microtubule-dependent and microtubule-independent steps in Crimean-Congo hemorrhagic fever virus replication cycle. Virology. 2009 Mar 15;385(2):313-22.

9. Melinda Simon, Cecilia Johansson, and Ali Mirazimi, Crimean-Congo hemorrhagic fever virus entry and replication is clathrin, pH and cholesterol dependent. J Gen Virol. 2009 Jan;90(Pt 1):210-5.

10. Ahmed J, Bouloy M, Ergonul O, Fooks A, Paweska J, Chevalier V, Drosten C, Moormann R, Tordo N, Vatansever Z, Calistri P, Estrada-Pena A, Mirazimi A, Unger H, Yin H, Seitzer International network for capacity building for the control of emerging viral vector-borne zoonotic diseases: ARBO-ZOONET. Euro Surveill. 2009 Mar 26;14(12). pii: 19160.

11. Tuiskunen A, Leparc-Goffart I, Boubis L, Monteil V, Klingstrom J, Tolou HJ, Lundkvist A, Plumet S. Self-priming of reverse transcriptase impairs strand specific detection of dengue virus RNA. J Gen Virol. 2009 Nov 25.

12 Hardestam J, Lundkvist A, Klingström J. Sensitivity of Andes hantavirus to antiviral effect of human saliva. Emerg Infect Dis. 2009 Jul;15(7):1140-2.

13- J Clin Microbiol. 2009 Nov 25. [Epub ahead of print]. Wahab T, Edvinsson B, Palm D, Lindh J. Comparison of two real-time PCR targets used for detection of Toxoplasma gondii; the AF146527 and B1 repeated elements

14. Carlsson B. Lindberg AM. Rodrigues-Diaz J. Hedlund KO. Persson B. Svensson L. Quasispecies dynamics and molecular evolution of human norovirus capsid P region during chronic infection. Journal of General Virology. 90:432-41, 2009

15. Lysen M. Thorhagen M. Brytting M. Hjertqvist M. Andersson Y. Hedlund KO. Genetic diversity among food-borne and waterborne norovirus strains causing outbreaks in Sweden. Journal of Clinical Microbiology. 47(8):2411-8, 2009

16. Hjertqvist, M., C. Ahlm, and J. Klingström.
Sex patterns in diagnoses of tularaemia, Sweden 1997-2008. Journal of Infection, in press. 2009.
17. Amir Saeed, Hadi Abd, Benjamin Edvinsson and Gunnar Sandström 2009. *Acanthamoeba castellanii* an environmental host for *Shigella dysenteriae* and *Shigella sonnei*. Arch Microbiol.191:83-88

18. Hadi Abd, Amir Saeed, Andrej Weintraub, and Gunnar Sandström. 2009. *Vibrio cholerae* O139 requires neither capsule nor lipopolysaccharide O side chain to grow inside *Acanthamoeba castellanii*. J. Med. Microbiol. 58: 125-131.

19. Hadi Abd, Amir Saeed, Shah Jalal, Albert N. Bekassy, and Gunnar Sandström, 2009. Ante mortem diagnosis of amoebic encephalitis in a haematopoietic stem cell transplanted patient, Scandinavian Journal of Infectious Diseases, 1-4; 99999:1, DOI: 10.1080/00365540903015117

20. Gunnar Sandström, Amir Saeed and Hadi Abd. 2009. *Acanthamoeba polyphaga* is a possible host for *Vibrio cholerae* in aquatic environments. Exp Parasitol doi:10.1016/j.exppara.2009.09.021

21. Asiimwe, BB, Asiimwe J, Kallenius G, Ashaba FK, Ghebremichael S, Joloba ML, and Koivula T. Molecular characterization of Mycobacterium bovis isolates from cattle carcasses at a city slaughterhouse in Kampala, Uganda. Veterinary records. (2009) 164, 655-658.

22. Asiimwe BB, Joloba ML, Ghebremichael S, Koivula T, Kateete DP, Ashaba FK, Pennhag A, Petersson R, and Kallenius G. DNA Restriction Fragment Length Polymorphism Analysis of Mycobacterium tuberculosis Isolates from Human Immunodeficiency Virus (HIV)-Seropositive and HIV seronegative Patients in Kampala, Uganda. BMC Infect Dis. 2009 Feb 5;9:12

23. Ippolito G, Nisii C, Caro AD, Brown D, Gopal R, Hewson R, Lloyd G, Gunther S, Eickmann M, Mirazimi A, Koivula T, Georges Courbot MC, Raoul H, Capobianchi MR. European perspective of 2-person rule for biosafety level 4 laboratories. Emerg Infect Dis. 2009 Nov;15(11):1858.

24. Oscar Franzén1, Jon Jerlström-Hultqvist2, Elsie Castro3, Ellen Sherwood1, Johan Ankarklev2, David S.Reiner4, Daniel Palm3, Jan O. Andersson5, Björn Andersson1, Staffan G. Svärd2*. Draft Genome Sequencing of Giardia intestinalis. Assemblage B Isolate GS: Is Human Giardiasis Caused by Two Different Species?

25. Edvinsson B, Lappalainen M, Anttila VJ, Paetau A, Evengård B. Toxoplasmosis in immunocompromized patients. Scand J Infect Dis. 2009;41(5):368-71.

Detection of Highly Dangerous Pathogens, ed. By Tanja Kostic, Patric Butaye, Jacques Schrenzel, 2009 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim. Kap. 8. DNA Microarray Technique for Detection and Identification of Viruses Causing Encephalitis and Hemorrhagic Fever. Henrik Nordström, Kerstin I. Falk, Peter Nilsson and Åke Lundkvist

Form A, part 2 (iii)

National biological defence research and development programme #3

Information under paragraph IX for year 2009 (list of publicly-available papers and reports resulting from the work during the previous 12 months)

Publication of relevant biological research at the National Veterinary Institute:

A list of relevant publications 2009 at the National Veterinary Institute is available for downloading at: http://www.sva.se/sv/navigera/Forskning/Publikationer/

Form B (i)

Background information on outbreaks of reportable infectious human diseases

Disease	2009	2008	2007	2002	2003	2004	2005	2006
Population	*9 345 135*	*9256347*	*9182927*	*8940788*	*8975670*	*9011392*	*9047752*	*9113257*
Amoeba infection	184	266	321	419	416	416	304	259
Atypical mycobacteria	410	398	388	250	269	269	348	348
Botulism	1	0	0	0	2	2	1	2
Campylobacter infection	7179	7692	7106	7137	7149	7149	6796	6078
Diphteria	1	1	o	0	0	0	0	0
EHEC	228	304	263	129	73	73	368	265
Giardiosis	1211	1529	1419	1436	1360	1360	1151	1282
Gonorrhoea	611	724	642	505	596	596	691	677
Yellow fever	0	0	0	0	0	0	0	0
Haemophilus infl. type b	-	-	-	21	23	23	34	123
Hepatitis A	154	78	69	76	122	122	93	80
Hepatitis B	1534	1525	1465	1734	1940	1940	1438	1208
Hepatitis C	2213	2523	2134	3382	3222	3222	2610	1976
Hepatitis D	32	33	23	12	6	6	11	22
Hepatitis E	10	7	8	5	3	3	10	5
HIV infection	450	448	576	287	379	379	392	390

HTLV	4	6	10	7	6	6	7	5
Pertussis	281	459	689	1350	664	664	1360	795
Chlamydia	37788	42001	47101	24692	26803	26803	33060	32518
Cholera	1	0	0	0	1	1	1	1
Legionellosis	126	153	130	94	80	80	107	105
Listeriosis	73	60	56	40	48	48	40	42
Malaria	81	91	88	140	113	113	114	93
Meningococcal infection	65	49	49	47	56	56	58	52
MRSA	1480	1306	1128	442	549	549	975	1057
Anthrax	0	0	0	0	0	0	0	0
Measels	3	25	1	9	3	3	13	20
Puumala virus infection (HFRS)	53	569	2195	262	180	180	329	213
Ornithosis	10	11	9	13	12	12	5	2
Paratyphoid	21	17	27	25	16	16	21	31
Plague	0	0	0	0	0	0	0	0
Pc-resist. Pneumococci	446	565	672	525	562	562	664	631
Polio	0	0	0	0	0	0	0	0
Mumps	32	51	46	15	8	8	81	60
Rabies	0	0	0	0	0	0	0	0
Rubella	1	0	2	1	0	0	0	3
Salmonellosis (total)	3055	4182	3933	3894	3794	3794	3571	4056
Salmonellosis (domestic)	594	669	944	819	805	805	655	1010

Shigellosis	469	596	470	379	372	372	571	429
Tetanus	3	0	0	0	0	0	1	1
Syphilis	181	172	239	128	179	179	99	172
Toxoplasmosis	-	-	-	10	17	17	-	-
Trichinosis	0	0	1	0	0	0	0	0
Tuberculosis	643	554	508	418	445	445	575	498
Tularemia	244	382	174	160	698	698	246	241
Typhoid	18	32	19	12	14	14	8	12
Ulcus molle	-	0	0	1	0	0	2	0
VRE	402	618	53	19	46	46	33	24
Viral hemorragic fevers	0	0	0	0	0	0	0	0
Yersiniosis	398	546	567	610	714	714	742	558
Relapsing fever	-	0	0	0	0	0	0	0

Brucellosis	7	8	8	-	-	3	10	4
Cryptosporidiosis	159	148	110	-	-	47	69	103
Dengue fever	100	73	59	-	-	24	62	54
Echinococcosis	15	13	24	-	-	9	12	7
Entamoeba histolytica	184	266	319	417	416	360	303	253
Streptococcal infection, group A	442	461	410	-	-	119	252	321
Haemophilius influenzae invasive	146	163	144	22	23	80	118	120
Leptospiriosis	4	6	1	-	-	2	3	2
Pneumococcal infection, invasive	1618	1789	1441	-	-	420	1419	1331

Q fever	7	7	3	-	-	1	3	1
Total	62778	71576	76044	49944	52184	52810	59836	57540

Form B (ii)

Information on outbreaks of infectious human diseases and similar occurrences, that seem to deviate from the normal pattern

There are no cases for the reporting period on outbreaks of infectious human diseases and similar occurrences that seem to deviate from the normal pattern in any significant way. The relative increase in the total number of reported cases of infectious disease between 2006 and 2007 is largely explained by an increase in Chlamydia infection in the younger population (15-24 years) and a new diagnostic method - introduced in 2006 - that made it possible to detect a new clone of the bacterium.

Hantavirus infections that showed a dramatic increase (913%) between 2006 (213 cases) and 2007 (2195 cases). Global warming has affected the prevalence and distribution of insect-borne diseases world-wide and this is seen in Sweden for a number of zoonotic and/or arthropod-borne infectious diseases. It is believed that special climatic circumstances during the spring of 2007 led to the marked increase in Hantavirus infections (Puumala) observed that year. Through 2008 and 2009, however, there has been an apparent decline in Hantavirus infections.

Furthermore, it is worthwhile mentioning the emergence of antibiotic resistant bacteria as an important growing health risk. While Extended Spectrum Beta-Lactamase (ESBL) bacteria have only been observed in Sweden since 1 February 2007, they are seen as an important health care problem. The number of reported ESBLs has increased from 2957 in 2008 to 3755 in 2009.

Form B (i)

Background information on outbreaks of notifiable animal diseases in Sweden Jan - Dec 2009[10]

	2009	2008
MULTIPLE SPECIES DISEASES		
Anthrax (Cattle)	-	1
Botulism (Poultry)	4	16
Blackleg (Cattle)	16	10
Bovine malignant catarrhal fever (MCF) (Cattle)	1	6
Bluetongue, BTV (Cattle)	-	25
Bluetongue, BTV (Sheep)	-	3
Enterohaemorrhagic E. Coli (EHEC) (Cattle)	-	3
Leptospirosis (Dog)	12	10
Leptospirosis (Horse)	-	5
Leptospirosis (Pig)	2	-
Listeriosis (Cattle)	6	39
Listeriosis (Sheep)	31	-
Lymphoma other than EBL (Cattle)	22	127
Lymphoma other than FeLV (Cat)	25	-
Lymphoma (Dog)	50	-
Lymphoma (Horse)	9	-
Lymphoma (Sheep)	2	-
Lymphoma (Pig)	47	-
Lymphoma (Polecat)	4	-
Lymphoma (Squirrel)	1	-
Q fever (Cattle	29	-
Trichinellosis (Fox)	1	10
Trichinellosis (Bear)	1	-
Trichinellosis (Wolf)	2	-
Trichinellosis (Boar)	1	-
VTEC (Elk)	-	2
MRSA (Dog)	2	3
MRSA (Cat)	2	-
MRSA (Horse)	2	7
MRSP/I (Dog)	122	73
MRSP/I (Cat)	7	5
MRSP/I (Horse)	1	1
Salmonellosis (poultry)	14	-
Salmonellosis (sheep)	1	-
Salmonellosis (pig)	3	-

[10] Only the first confirmed case of a disease in a herd, flock or corresponding is reported (index case). The diagnosis may be based on serological, microbiological, parasitological or histo-pathological examination.

Salmonellosis (horse)	8	-
Salmonellosis (cattle)	19	-
Salmonellosis (pet birds)	5	-
Salmonellosis (dog)	4	-
Salmonellosis (polecat)	1	-
Salmonellosis (cat)	115	-
Salmonellosis (reptile)	5	-
Salmonellosis (wild mammals)	3	-
Salmonellosis (wild birds)	18	-
Salmonellosis (other)	3	-

CATTLE DISEASES

Bovine viral diarrhoea (BVD)	4	4
Cysticerosis (C.Bovis)	1	

EQUINE DISEASES

Contagious eguine metritis	4	-
Equine influenza (virus type A)	8	41
EHV-1-associated abortion	22	21
Infectious arteritis of horses	3	2
Strangles	28	79

POULTRY AND OTHER BIRD DISEASES

Avian chlamydiosis (Psittacosis)	2	3
Avian infectious bronchitis	-	2
Avian tuberculosis (M.avium)	1	2
Infectious laryngotracheitis (ILT)	10	8
Mycoplasma gallisepticum	1	-
Newcastle disease (poultry)	1	1
Fowl cholera	2	-
Marek's disease	1	-

PIG DISEASES

Influenza	1	-
Pasteurela multocida	2	-

SHEEP AND GOAT DISEASES

Caprine arthritis encephalitis	5	6
Dichelobacter nodosus	65	62
Nematodirosis	1	-

PET AND FURRED ANIMAL DISEASES

Canine distemper (Dog)	1	1
FeLV (Cat)	2	22
FIV (Cat)	8	6
Babesiosis (dog)	2	1
Brucella Canis	-	1
Hepatitis contagiosa canis (HCC) (Dog)	5	3
Leishmaniosis (Dog)	32	24
Canine monocytic ehrlichiosis (Dog)	1	1
Tritrichomonas foetus (cat)	1	-

OTHER DISEASES

Dirofilariosis (Dog)	3	1
Angiostrongylus vasorum (fox)	1	-
Aelurostrongylus falciformis (badger)	1	-
Viral haemorrhagic disease (Rabbit)	1	-
Enzootic bovine leukosia (EBL)	-	1
Furunculosis	-	1

FISH AND OTHER MOLLUCS DISEASES

Koi Herpes Virus	1	1
Proliferative kidney disease (PKD)	2	-
Renibacteriosis (BKD)	4	1
Yersiniosis (ERM)	1	5

NATIONAL CONTROL PROGRAMMES11

Bovine viral diarrhoea (BVD)	9	4
Maedi-Visna	28	20

[11] Detected cases within the framework of a national control programme

Form B (ii)

Information on outbreaks of infectious animal diseases and similar occurrences, that seem to deviate from the normal pattern

There are no cases for the reporting period on outbreaks of infectious animal diseases and similar occurrences that seem to deviate from the normal pattern.

4. **CONFIDENCE-BUILDING MEASURE "C":**

- **<u>Encouragement of publication of results and promotion of use of knowledge</u>**

See under Form A, part 2 (iii), information provided under paragraph IX.

Form D

Active promotion of contacts #1

1. Planned international conferences, symposia, seminars, and other similar forums for exchange

   For each such event, the following information should be provided:

   - name of the conference, etc.
   - arranging organization(s), etc.
   - time

   - place
   - main subject(s) for the conference, etc.
   - conditions for participation

   - point of contact for further information, registration, etc.

   10th International Symposium on Protection Against Chemical and Biological Warfare Agents (Stockholm, Sweden, June 8-11, 2010)

   http://www.cbwsymp.foi.se/

   POC : Lena Norlander +46 90 106661 (lena.norlander@foi.se)

Form E

Declaration of legislation, regulations and other measures

Relating to		Legislation	Regulations	Other measures	Amended since last year
(a)	Development, production stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery specified in Article I	***YES***	***YES***	***YES***	***NO***
(b)	Exports of micro-organisms* and toxins	***YES***	***YES***	***YES***	***NO***
(c)	Imports of micro-organisms* and toxins	***YES***	***YES***	***YES***	***NO***

Comments: A list of Swedish laws and regulations can be found in BTWC National Implementation Database, NID:

http://www.unog.ch/80256EDD006B8954/(httpAssets)/BBCCCC514AA386A3C1257355003AA13D/$file/BWC_NID_Report-070912.htm#swe

* Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

Form F

Declaration of past activities in offensive and/or defensive biological research and development programmes

1. Date of entry into force of the Convention for the State party.

   5 February 1976

   (The Convention was signed by Sweden on 27 February 1975. The Convention was ratified by Sweden on 5 February 1976 and entered into force for Sweden the same date. The text of the Convention is published in the Swedish Treaty Series, SÖ 1976:18)

2. Past offensive biological research and development programmes:

   - ***NO***

3. Past defensive biological research and development programmes:

   - ***NO***

Form G

Declaration of vaccine production facilities#1

1. Name of facility:

SBL Vaccin AB (Solna)

2. Location (mailing address):

SE-105 21 Stockholm, Sweden

3. General description of the types of diseases covered:

Diarrhoea, ETEC/Cholerae (one vaccine component for pooling with other components)

Form G

Declaration of vaccine production facilities#2

1. Name of facility:

UniTech Biopharma

2. Location (mailing address):

Box 219, SE-864 31 Matfors, Sweden

3. General description of the types of diseases covered:

Diarrhoea, ETEC/Cholerae (culturing on commission)