UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Confidence Building Measure Return for 2009 (covering data for 2008) for the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction, 10 April 1972

Submitted to the United Nations
on 3 April 2009

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

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

Date: 3 April 2009

State Party to the Convention: United Kingdom of Great Britain and Northern Ireland

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Names(s) of facility**[2]	Defence Science and Technology Laboratory (Dstl), Porton Down. *Declared in accordance with Form A Part 2(iii)*
2.	**Responsible public or private organisation or company**	Ministry of Defence
3.	**Location and postal address**	Dstl Porton Down Salisbury Wiltshire SP4 0JQ

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

   Largely financed by the MOD.

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

   2 BL4 labs, 256 m^2 total

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

   Not Applicable

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

   Research and development into protective measures as defence against the hostile use of micro-organisms and toxins.

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Health Protection Agency, Colindale
2.	**Responsible public or private organization or company**	Health Protection Agency (a non-departmental public body of the UK Department of Health)
3.	**Location and postal address**	61 Colindale Avenue London NW9 5EQ

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 Department of Health funds this activity as part of its finance of the Health Protection Agency's Centre for Infections at Colindale, London NW9

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

1 high containment unit: 30 m^2

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

Not Applicable

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

Laboratory is used to provide diagnostic services for Herpes B; viral haemorrhagic fever infections: Lassa fever, Ebola, Marburg, Congo-Crimean haemorrhagic fever; avian influenza and SARS. To support diagnostic services a programme of applied diagnostic research and development is conducted**.**

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Health Protection Agency, Centre for Emergency Preparedness and Response, Porton Down
2.	**Responsible public or private organization or company**	Health Protection Agency (a non-Department public body of the UK Department of Health)
3.	**Location and postal address**	Porton Down Salisbury Wiltshire SP4 0JG

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 Department of Health funds this activity as part of its finance of the Health Protection Agency's Centre for Emergency Preparedness and Response at Porton Down.

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

2 units: 59 m^2; 46 m^2

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

Not Applicable- the site has CL4 laboratories as in Q5

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

Diagnosis and research into various containment level 4 viruses including Lassa, Ebola, Marburg and other haemorrhagic fever viruses.

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	National Institute for Biological Standards and Control
2.	**Responsible public or private organisation or company**	Non-departmental public body of the UK Department of Health
3.	**Location and postal address**	Blanche Lane South Mimms Potters Bar Herts EN6 3QG

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

UK Government (Department of Health and the Home Office)

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

Two containment level 4 units, each of 59 m^2

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

Not applicable

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

Highly pathogenic influenza virus – reagent development
Smallpox vaccine – developing and testing reagents
Bacillus anthracis – vaccine testing, reagent development, development of in vitro assays to detect anthrax toxin neutralising antibodies
Yersinia pestis – molecular structural work
Botulinum toxins (serotypes A-G) - control, standardisation and assay development for vaccines and anti-toxins

In general, the activities are related to development of assays and testing of reagents.

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	NIMR Containment 4 Building C
2.	**Responsible public or private organisation or company**	National Institute for Medical Research
3.	**Location and postal address**	The Ridgeway Mill Hill London NW7 1AA

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

Medical Research Council

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

1 BL4 containment unit of 298 m^2

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

Not applicable

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

Research and diagnostics on highly pathogenic avian influenza virus

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	Institute for Animal Health, Pirbright Laboratory
2.	**Responsible public or private Organisation or company**	Biotechnology and Biological Sciences Research Council (BBSRC)
3.	**Location and postal address**	Institute for Animal Health Pirbright Woking Surrey GU24 0NF

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

BBSRC, EU, Department for Environment, Food and Rural Affairs (Defra). (Not funded by the Ministry of Defence).

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

No ACDP* Level 4* containment
12 m^2 ACDP Level 3 containment
2,585 m^2 of SAPO** Level 4 ACDP2 laboratory space
3,232 m^2 of SAPO4 ACDP2 animal accommodation

** Advisory Committee on Dangerous Pathogens*
*** Specified Animal Pathogens Order*

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

SAPO4 ACDP2 containment

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

Work on exotic animal virus disease: Foot and mouth disease, bluetongue, swine vesicular disease, African Horse Sickness, Capripox, African Swine Fever, PPR and rinderpest.

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility[2]**	Veterinary Laboratories Agency
2.	**Responsible public or private organisation or company**	Department for Environment, Food and Rural Affairs (Defra)
3.	**Location and postal address**	Woodham Lane Addlestone Surrey, KT15 3NB

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

Most funding is through Defra. None is funded by the Ministry of Defence.

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

SAPO* Level 4 (Defra)
3 x Avian Flu laboratories 1 = each 50 m^2
1 x Classical swine fever laboratory = 15 m^2
1 x Newcastle diseases virus laboratory = 50 m^2
1 x Rabies virus laboratory = 45 m^2
1 suite of Serology laboratories capable of increasing to SAPO level 4 but which usually run at ACDP level 2 = approximately 100 m^2

* Specified Animal Pathogens Order

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

29 CL3 laboratories totalling 2,129 m^2.
Advisory Committee on Dangerous Pathogens (ACDP) level 3. These laboratories cannot be operated at the higher level of containment.

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

Diagnosis and applied research on the epidemiology and pathology of the disease of farmed, domesticated livestock (cattle, sheep, pigs and poultry) and wild animal reservoirs. Bacteria and viruses in ACDP hazard groups 1-4, GM class 1-4 and SAPO groups 1-4.

[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".
[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A Part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	Merial Animal Health, Pirbright Laboratory
2.	**Responsible public or private organization or company**	Merial Animal Health Ltd.
3.	**Location and postal address**	Ash Road Pirbright Surrey, GU24 ONQ

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

Private finance. (No Ministry of Defence funding)

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

1 x SAPO 4

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

Defra SAPO 4

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

Production of inactivated FMD and Bluetongue vaccines for protection of animals

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[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 program, please fill in name of facility and mark "Declared in accordance with Form A, Part 2(iii)".

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A, part 1

Exchange of data on research centres and laboratories[1]

1.	**Name(s) of facility**[2]	Intervet Schering-Plough
2.	**Responsible public or private organization or company**	Intervet Schering-Plough
3.	**Location and postal address**	Walton Manor Walton Milton Keynes MK7 7AJ

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

   Privately funded

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

   Not applicable (refer to section 7)

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

   Not applicable (refer to section 7)

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

   The original notification by Schering-Plough Animal Health, Breakspear Road South Harefield, Uxbridge, Middlesex, UB9 6LS was for the storage of Newcastle disease virus - a Specified Animal Pathogen Group 4 at that location. When the laboratories of Schering-Plough were relocated to the Milton Keynes premises of Intervet Schering-Plough in November 2008, all stocks of Newcastle disease virus were destroyed by autoclaving and then incineration. The SAPO license to hold Newcastle disease virus has been surrendered.

[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 1983 WHO Laboratory Biosafety Manual, or equivalent

Form A, Part 2 (i)

National Biological Defence Research and Development Programme Declaration

1. **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 program 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 to (1) is Yes, complete Form A, Part 2 (ii) which will provide a description of the program.

Two Forms A, Part 2 (ii) are provided detailing programmes funded by the Ministry of Defence at (a) and the Home Office at (b).

(a) 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, toxinology, physical protection, decontamination and other related research.

The objectives of the UK MOD biological defence research and development programme reflect the Defence Strategic Guidance 2008 (DSG) and the Government's CBRN Defence Policy Framework document which underlines the UK's Policy aspiration to maintain our political and military freedom of action despite the presence, threat or use of biological, chemical or radiological agents.

The Vision of Defence Capability in this area has been defined as the delivery of cross Defence Lines of Development (DLoD), military capability to minimise the impact to operations of the CBRN threat, by managing risk and utilising a coherent basket of CBRN capabilities tailored to suit the context. The keys to success are the economies of resource and synergies that can be exploiting true cross DLoD capability development and Through Life Capability Management (TLCM). This will enable creative and innovative solutions to be delivered to mitigate clearly defined problems.

Hazard Assessment

CBRN Hazard Assessment maintains the ability to provide an effective assessment of the current and developing CBRN hazard and is thus the bedrock on which sound CBRN defence is built. It requires the evaluation of the range of potential biological and toxin agents that might be utilised by a potential aggressor. The information generated helps define defence strategy, concepts and doctrine, as well as identifying the required performance of protective equipment. Therefore Hazard Assessment is an essential enabler to the CBRN capability.

Such studies necessarily involve activities such as consideration of the agents' potency and dissemination characteristics, their aerobiology and the way in which they might be utilised by an aggressor in military and terrorist scenarios. This includes the potential impacts of genomics and proteomics. This work is essential to determine the challenge levels against which detectors, protective equipment and countermeasures must be effective. Current work includes studying the inhalation toxicity of a range of materials and the aerosol survival of pathogenic bacteria and viruses.

Detection and diagnostics

The ability to detect the presence or release of BTW agents across the battlespace is crucial in providing timely warning to military personnel to allow them to adopt the appropriate protective posture and avoid casualties. In 2008 work has focussed on technologies for improved sample collection, non-specific detection (to detect particulate material), generic detection (to distinguish between biological and non-biological materials) and specific identification (to identify the material). The objective is to develop point detection systems that are man portable and impose less logistic burden than current systems.

The Portable Integrated Battlespace Biological Detection Technology is now being developed by industry. Technology options to provide area surveillance for BTW using stand-off detection based on LIDAR technology or networks of point sensors, has continued.

Technologies for the specific identification of BTW currently rely on the use of Biological Recognition Elements, such as antibodies and gene probes. The research programme has continued to develop specific antibodies - recombinant, monoclonal and polyclonal – to extend the range of potential BTW agents than can be identified. Testing is conducted in the laboratory by assessing the binding of the BTW agent to the generally immobilised antibody, monitored either through a linked colour change (e.g. Dipsticks) or electronically (biosensors).

Gene probe-based technology offers highly sensitive and specific assays for the identification of BTW agents like bacteria and viruses. Work is continuing in order to accelerate and simplify the methodology thus rendering it suitable for military use. Rapid PCR systems have been developed so that this technology can be used in field situations. In addition, similar technologies are also being investigated for use in medical diagnostic systems.

The research programme has continued to assess whether biological mass spectrometry technology could offer unambiguous detection and identification of BTW agents with a significant reduction in whole life costs.

Protection

The dissemination of BTW agents by an aggressor is likely to result in the production of particulate aerosols. Effective individual and collective protection (COLPRO) requires the prevention of the inhalation of this particulate challenge or its contact with the skin of personnel. Individual Protective Equipment (IPE) consists of a respirator and suit while collective protection systems provide isolation from a BW agent challenge in the form of whole buildings, rooms, ships or vehicles.

Current research focuses on providing IPE with effective levels of protection but with significantly reduced physiological loading compared with in-service equipment. This involves the development of new materials, integrating the materials into protective suit ensembles, and assessing the performance of the ensembles using non-pathogenic micro-organisms.

COLPRO research aims to design systems that provide the required levels of protection but pose a lower logistical burden on the user. This includes assessing the potential of Commercial off the Shelf (COTS) systems to meet the requirements of UK Armed Forces, including Rapid strike, Light weight and low power requirement as well as incorporating protection into general purpose tentage.

Medical Countermeasures

The medical countermeasures (MedCM) programme seeks to determine the efficacy of vaccines, antibiotics, antivirals and antitoxins for the prevention of disease caused by BW agents.

The current suite of in-service MedCM offers a capability which does not protect against all BW agents. In some cases, no licensed MedCM are available and in others the in-service provision provides protection against lethality, but not incapacitation. Opportunities for using commercial-off-the-shelf (COTS) MedCM are extremely limited. Where no COTS solutions exist, and there is a realistic prospect of identifying feasible candidate MedCM, additional research has been performed to establish ‘proof-of-principle’ for potential interventions. Before COTS products or other medical interventions can be recommended, evidence base for their use in the treatment of personnel exposed to CBR agents has been assessed.

Programmes have continued to devise improved vaccines against tularemia (caused by *Francisella tularensis*) and melioidosis/glanders (caused by *Burkholderia pseudomallei /mallei*). In the case of *Francisella tularensis* the programme has been reduced through reliance on a major US NIH programme on attenuated mutant vaccine candidates. A small risk-mitigation programme has continued at Dstl to assess Lipopolysaccharide subunit vaccines in collaboration with academia and industry. For *Burkholderia pseudomallei / mallei* the focus is to devise a sub-unit vaccine. Polysaccharides and proteins are currently being evaluated to test the optimal combination. Attenuated mutants of *Burkholderia pseudomallei* are not considered to be good vaccine candidates, but are valuable for investigating the nature of the protective immune response. These vaccines will be tested using inhalation challenge models of disease.
Assessment of candidate anti-toxins against ricin and SEB have continued, assessing efficacy, safety and acceptability. Ricin anti-toxin is approaching Clinical Trials and has attracted Home Office support.

The programme to explore the development of broad-spectrum BW countermeasures has continued, including therapies against *Brucella,* VEEV and Filoviruses. It has three broad elements: to investigate the up-regulation of the innate immune system, for example through immunomodulator stimulation; to determine whether there are cross-protective antigens or common mechanisms of virulence shared by different BW agents; and, to identify broad spectrum antimicrobials. Antibiotics and antivirals, which are newly emerging from industry, are being tested to investigate whether they are effective against a wide range of candidate BW agents.

Projects to identify how animal models of disease can be replaced with in vitro assays, cell or organ culture systems are continuing.

Hazard Management

The ability to decontaminate personnel, materiel and infrastructure once an aggressor has dispersed BTW agents is a key element to hazard management and restoring operational tempo. Research aims to develop low logistic burden approaches for decontamination of BTW agents based on liquid formulations, strippable coatings, and reactive gases. Validated test methodologies for determining the efficacy of these decontamination processes are also being developed in parallel.

Arms Control

Dstl staff at Porton Down provide technical advice on CBW non-proliferation to the Ministry of Defence and the Foreign and Commonwealth Office as well as to other Government Departments involved in formulating and implementing UK policy on non-proliferation matters. This has included working towards and participating in: the Review Conferences of the BTWC; the Ad Hoc Group of Governmental experts tasked with identifying and examining potential verification measures; the Special Conference of States Parties held in September 1994; the BTWC Ad Hoc Group; and, the annual Meetings of Technical Experts and of States Parties during the intersessional programmes of work following the 5th and 6th Review Conferences.

Dstl staff assist in collating data for the UK Confidence Building Measures returns and provide technical advice towards the formulation and execution of policy on export control legislation, covering items related to biological weapons proliferation in foreign countries.

Dstl staff also assist the Department of Energy and Climate Change (DECC) in its role as the UK National Authority for the Chemical Weapons Convention, providing technical support over declarations, licensing, and inspections. Dstl operates the UK's Single Small Scale Facility at Porton Down, which has been declared under the CWC.

Dstl staff are also involved in the Ministry of Defence Counter-Proliferation and Security Cooperation Section's non-proliferation programme which seeks to redirect foreign former weapons scientists into sustainable employment and peaceful science.

2. **State the total funding for the program and its source.**

The UK national biological defence research and development programme is concerned with the provision of effective measures for the UK and its Armed Forces against the threat that chemical and biological weapons may be used against them. The total UK expenditure on research and development on biological defence for the protection of the UK and its armed forces against micro-organisms and toxins in the fiscal year, April 1st 2008 - March 31st 2009, is forecast to be £57M. This includes £10.1 for work as project support to the procurement of armed forces biological defence equipment.

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

Yes.

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

During the fiscal year April 1st 2008 to March 31st 2009, a total of 100 extramural contracts were placed. Of these 45 extramural contracts on research and development aspects relating to biological defence were in place with universities and other academic institutions, and 55 extramural contracts with other bodies, which are either government funded or industrial companies. Funding for these extramural contracts during the fiscal year totalled approximately £11.6M. This represents 20% of the total UK expenditure in the fiscal year on research and development on biological defence. The duration of individual contracts varies from a few months to three or four years, and in a few cases they include periods of work at Dstl. The precise institutions and companies are constantly varying as they are selected according to the needs of the defence programme and the availability of the necessary specialist skills.

5. **Summarise the objectives and research areas of the program performed by contractors and in other facilities with the funds identified under para 4.**

Contracts are let on specific research topics in support of the main research programme carried out at Dstl.

6. **Provide a diagram of the organisational structure of the program and the reporting relationships (include individual facilities participating in the program).**

Policy for biological and chemical defence is determined by the Ministry of Defence with the Director of Chemical, Biological, Radiological and Nuclear Policy (CBRN Pol) as the focus. The Counter-Proliferation and Security Cooperation (CPSC) section determines policy on CB arms control. The goals and individual objectives of the research programme are determined by the Ministry of Defence (MOD), with the Programme Leader CBRN (PL CBRN) within the Defence Technology & Innovation Centre (DTIC) of the MOD Science Innovation and Technology (SIT) branch being responsible for managing the planning, contracting and delivery of the research programme. The Director Equipment Capability CBRN (DEC CBRN) is responsible for the development of CBRN Defence capability and is the customer focus for the output from the research programme. Acquisition of tri-service CBRN protective equipment is carried out by the CBRN Integrated Project Team (CBRN IPT) and the Medical and General Supplies IPT is responsible for the acquisition of CBRN medical countermeasures. Research at Dstl, Porton

Down, is undertaken in response to the requirements of these customers within MOD, and Dstl provides technical and policy advice as appropriate.

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 research and development program, within the territory of the reporting State, or under its jurisdiction or control anywhere.**

The only UK facility which has a substantial proportion of its resources devoted to the national biological defence research and development programme is Dstl, for which a declaration is made on Form A Part 2(iii).

(b) 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, toxinology, physical protection, decontamination and other related research.

The Home Office programme is aimed at enhancing the UK's capability to minimise the risk of a CBRN terrorist incident.

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

£7.0M – Home Office funding

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

Yes

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

80%

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

The work is aimed at:

- Detection and analysis of biological materials
- Medical countermeasures to biological agents
- Development and assessment of protective equipment against biological materials
- Hazard assessment and decontamination of biological agents
- Developing an understanding of the impact and spread of biological materials

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

Contractors report through controlling Government departments to the HO-led CBRN Delivery Board

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 facility that falls into this category is Dstl, 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 on 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?**

   Defence Science and Technology Laboratory, Porton Down.

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

   Dstl,
   Porton Down,
   Salisbury,
   Wiltshire,
   SP4 0JQ

The geographical location is shown in the attached map (Figure 2). G13 Access Road, centre of south boundary, Latitude 50° 07-N, Longitude 01° 40-W.

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

BL2 1200 m^2	)	
	)	Biological defence research and development
BL3 1191 m^2	)	element
	)	
BL4 256 m^2	)	

4. **The organisational structure of each facility:**

The organisational structure of Dstl Porton Down is shown in Figure 1. The facility provides research for all aspects of defence, including CBRN. The total number of Dstl staff at Porton Down on 12th February 2009 was 1726 civilians (1312 permanent and 414 temporary) and 16 military. The permanent staff fall into the following categories:

Scientists and Engineers	782
Science support staff	258
Administration staff	179
Administration support staff	93
TOTAL	1312
Military personnel	16

For the biological defence research and development element, the numbers are as follows:

I.	Total number of personnel	225
II.	Division of personnel	
	Civilian	221
	Military	4
III.	Division of civilian personnel by category:	
	Scientists and Engineers	176
	Science support staff	32
	Administration staff	14
	Administration support staff	3

IV. **List the scientific disciplines represented in the scientific/engineering staff.**

Aerobiology, aerosol physics, mathematics, chemistry, chemical engineering, physics, bacteriology, biology, biophysics, bioinformatics, virology, genetics, immunology, medicine, veterinary science, microbiology, biochemistry, molecular biology, physiology, pharmacology, neuropharmacology, psychology, toxicology, engineering, electronics, ergonomics, hydrodynamics, information science, materials science, operational analysis, operational research, information technology, CB defence science.

V. **Are contractor staff working in the facility? If so, provide an approximate number.**

A small number of contractors work on the programme from time to time. Other contractor staff carry out building and maintenance work and some administrative functions.

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?**

Porton Down is one of the sites of the Defence Science and Technology Laboratory (Dstl), which is part of the Ministry of Defence. Some work, approximately 30%, is carried out for other governmental and commercial customers.

VII. **What are the funding levels for the following programme areas:**

Research	£48M
Development	£10M
Test and Evaluation	This is carried out as required to support research and development. Not separately funded in UK.

VIII. **Briefly describe the publication policy of the facility:**

Staff at Dstl are encouraged to publish their work in the scientific literature.

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).**

Attached as Annex below on pages 23-24.

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

The work of Dstl, Porton Down has been reported under Question 1 of Form A Part 2 (ii). Projects currently underway include:

a. The assessment of the hazard posed by micro-organisms and toxins when used by an aggressor as a BW.

b. Research into systems to facilitate collection, detection, warning, and identification of BW agents. This work includes the evaluation of collection and detection systems in outdoor studies using microbiological simulants and research into the composition of naturally occurring biological aerosols.

c. Research to establish the protection afforded by materials and CBRN defence equipment against BW agents. This work includes the evaluation of military equipment both in the laboratory and in outdoor studies using microbiological simulants.

d. Research into formulations and techniques for decontaminating microbiologically contaminated equipment using suitable simulants.

e. Rapid identification of micro-organisms and toxins by the use of monoclonal antibodies and gene probes.

f. Studies on the mechanism of action and treatment of toxins.

g. Therapies for bacterial and viral infections.

h. Studies on the mechanisms of pathogenicity of viruses and bacteria and the development of improved vaccines.

ANNEX to Form A Part 2 (iii)

BIOLOGICAL DEFENCE RESEARCH PUBLICATIONS FOR Dstl PORTON DOWN 2008

Book Chapters

RW Titball & PCF Oyston (2008). Plague. In, *"Bioterror : The Weaponization of Infectious Diseases"*. LI Lutwick and SM Lutwick (Eds). Humana Press Inc., New Jersey, US.

ED Williamson, AJ Simpson and RW Titball. Plague. In, "*Vaccines"*. 5th Edition. SA Plotkin and WA Orenstein (Eds). WB Saunders & Co., Philadelphia, US.

M Sarkar-Tyson and RW Titball. *Burkholderia mallei* and *Burkholderia pseudomallei.* In: Vaccines for Biodefense and Emerging and Neglected Diseases. Eds : L.Stanberry and ADT Barrett. Elsevier Ltd, 2008.

Williamson ED. *Plague.* In : Vaccines Against Bioterrorism and Emerging Infectious Diseases. Eds : L.Stanberry and ADT Barrett. Elsevier Ltd, 2008.

J Michael Lord and GD. Griffiths. *Ricin : Chemistry, Sources, Exposures, Toxicology and Medical Aspects*. In : General and Applied Toxicology, Third Edition edited by Professors Bryan Ballantyne, Timothy Marrs and Tore Syversen.

Peer Reviewed Papers

JE Eyles, MG Hartley, TR Laws, PCF Oyston, KF Griffin & RW Titball (2008). Protection afforded against aerosol challenge by systemic immunisation with inactivated *Francisella tularensis* live vaccine strain (LVS). *Microbial Pathogenesis*. **44 :** 164-168.

MS Lever, AJ Stagg, M Nelson, P Pearce, DJ Stevens, EAM Scott, AJH Simpson & MJ Fulop (2008). Experimental respiratory anthrax infection in the common marmoset (Callithrix jacchus). *International Journal of Experimental Pathology.* **89(3):** 171-179.

RA Lukaszewski, AM Yates, MC Jackson, K Swingler, JM Scherer, AJ Simpson, P Sadler, P McQuillan, RW Titball, TJG Brooks & MJ Pearce (2008). The pre-symptomatic prediction of sepsis in intensive care unit patients : a pilot study. *Clinical & Vaccine Immunology. Published Ahead of Print on 14 May 2008, doi :10.1128/CVI.00486-07.*

MS Lever, JL Howells, AM Bennett, S Parks and M Broster (2008). The Microbiological Validation of a New Containment Level 4 Cabinet Line. *Journal of Applied Biosafety*. **13:** 98-104 2008.

PCF Oyston. Francisella tularensis : Unravelling the Secrets of an Intracellular Pathogen. *Journal of Medical Microbiology*. **57(8) :** 921-930, 2008.

GD Griffiths, A Brown, DSW Hooi, P Pearce, RJ Hornby EAH Scott and DI Pritchard. Authentication of a Model of Hookworm Infection Exhibiting Salient Characteristics of Human Infection. *American Journal of Hygiene &Tropical Medicine.* **78 :** 936-945, 2008.

MA Fox, R Karunakaran, ME Leonard, B Mouhsine, A Williams, AK East, JA Downie and PS Poole. Characterization of the Quaternary Amine Transporters of *Rhizobium leguminosarum* bv. *viciae* 3841. *FEMS Microbiology Letters*. **287(2) :** 212-220, 2008.

Stabler RA, Dawson LF, Oyston PC, Titball RW, Wade J, Hinds J, Witney AA, Wren BW.

Development and application of the active surveillance of pathogens microarray to monitor bacterial gene flux. *BMC Microbiology*. **8(1) :**177, 2008.

Richards MI, Michell SL, Oyston PC. An intracellularly inducible gene involved in virulence and polyphosphate production in Francisella. *Journal of Medical Microbiology*. **57(10) :**1183-1192, 2008.

Love TE, Redmond C amd Mayer CN. Real Time Detection of Anthrax Spores Using Highly Specific anti-EA1 Recombinant Antibodies Produced by Competitive Panning. *Journal of Immunological Methods*. **334 :**1-10, 2008

Baillie LWJ, Rodriguez AL, Moore S, Atkins HS, Feng C, Nataro JP, Pasetti MF. Towards a Human Oral Vaccine for Anthrax : The Utility of a *Salmonella typhi* Ty21a-Based Prime-Boost Immunization Strategy. *Vaccine*. **26 :** 6083-6091, 2008.

SD Perkins, AJ Williams, LM O'Brien, TR Laws and RJ Phillpotts. CpG Used as an Adjuvant for an Adenovirus-Based Venezuelan Equine Encephalitis Virus Vaccine Increases the Immune Response to the Vector But Not the Transgene Product. *Viral Immunology*. **21(4) :** 451-7, 2008

SE Maddocks and PCF Oyston. Structure and function of the LysR-type transcriptional regulator (LTTR) family proteins. *Microbiology.* **154 :** 3609-3623, 2008

DB Thompson, K Crandall, SV Harding, SJ Smither, GB Kitto, RW Titball and KA Brown. *In silico* analysis of potential diagnostic targets from *Burkholderia pseudomallei*. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* **102(S1)**: S3-S7, 2008.

TH Hoang, HA Hong, GC Clark, RW Titball and SM Cutting. Recombinant *Bacillus subtilis* Expressing the *Clostridium perfringens* Alpha Toxoid Is a Candidate Orally Delivered Vaccine against Necrotic Enteritis. *Infection and Immunity.* **76 :** 5257-5265, 2008.

AJ Gnanam, B Hall, X Shen, S Piasecki, A Vernados, EE Galyov, SJ Smither, GB Kitto, RW Titball, AD Ellington and KA Brown. Development of aptamers specific for potential diagnostic targets in Burkholderia pseudomallei. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* **102(S1) :** S55-57, 2008.

O Qazi, JL Prior, BM Judy, GC Whitlock, GB Kitto, AG Torres, DM Estes and KA Brown. Sero-characterisation of LPS from *Burkholderia thailandensis*. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* **102 (S1) :** S28-30, 2008.

RW Titball, P Russell, J Cuccui, A Easton, A Haque, T Atkins, M Sarkar-Tyson, V Harley, B Wren and GJ Bancroft. *Burkholderia pseudomallei* : animal models of infection. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* **102 (S1) :** S111-116, 2008.

MS Lever, M Nelson, AJ Stagg, RJ Beedham and AJ Simpson. Experimental acute respiratory *Burkholderia pseudomallei* infection in BALB/c mice. *International Journal of Experimental Pathology.* **90 :** 16-25, 2009.

Schofield, C. L., Mukhopadhyay, B., Hardy, S. M., McDonnell, M. B., Field, R. A. & Russell, D. A. Colorimetric detection of *Ricinus communis* Agglutinin 120 using optimally presented carbohydrate-stabilised gold nanoparticles. Analyst, 2008, 133(5), 626-634

Maljaars, C. E. P., de Souza, A. C., Halkes, K. M., Upton, P. J, Reeman, S. M., Andre, S., Gabius, H-J., McDonnell, M. B. & Kamerling, J. P. The application of neoglycopeptides in the development of sensitive surface plasmon resonance-based biosensors. Biosensors and Bioelectronics, 2008, 24 (1), 60-65

Figure 1: Organisational Structure of Dstl Porton Down. (Departments contributing to the Biological Defence Programme are shown in grey)

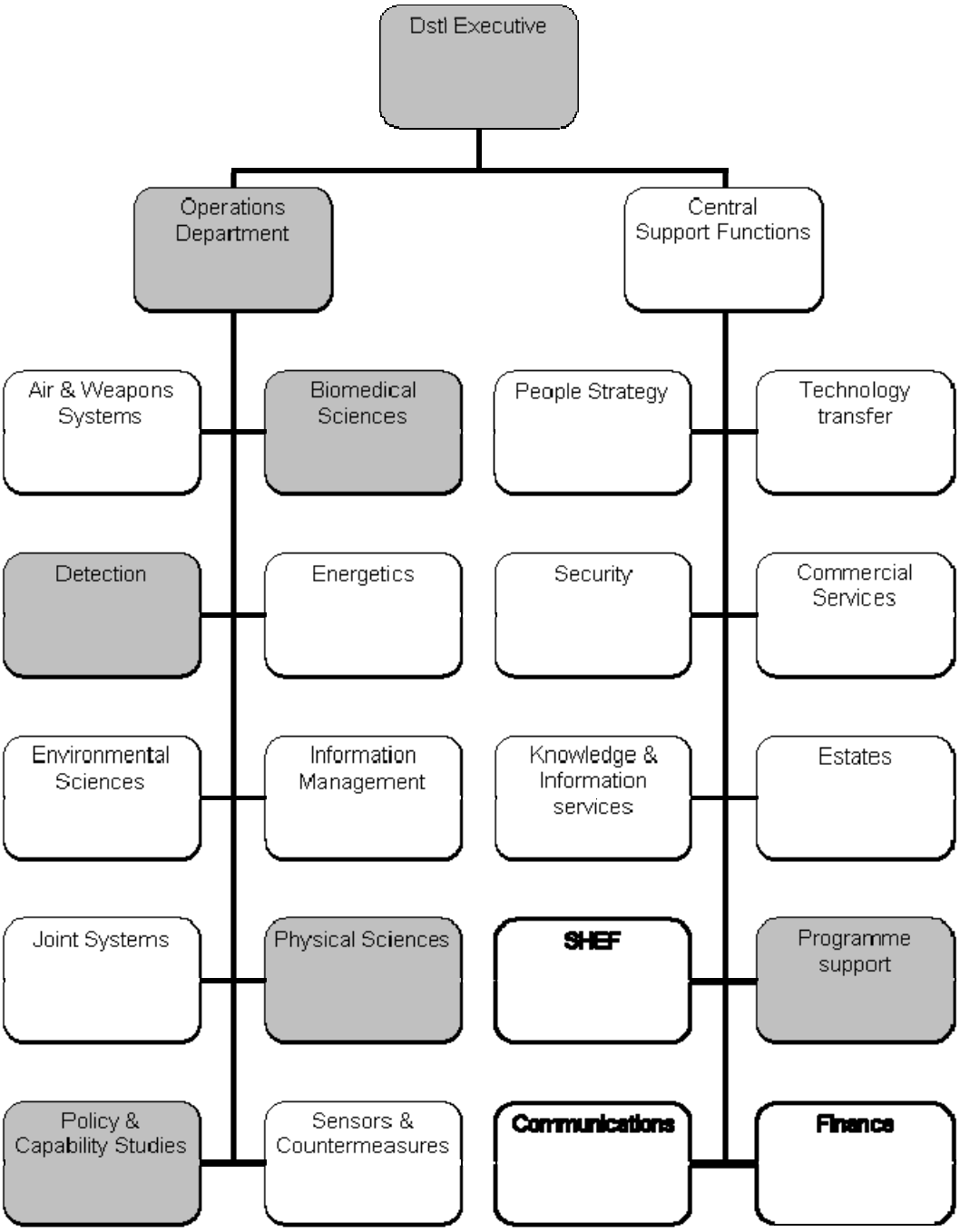
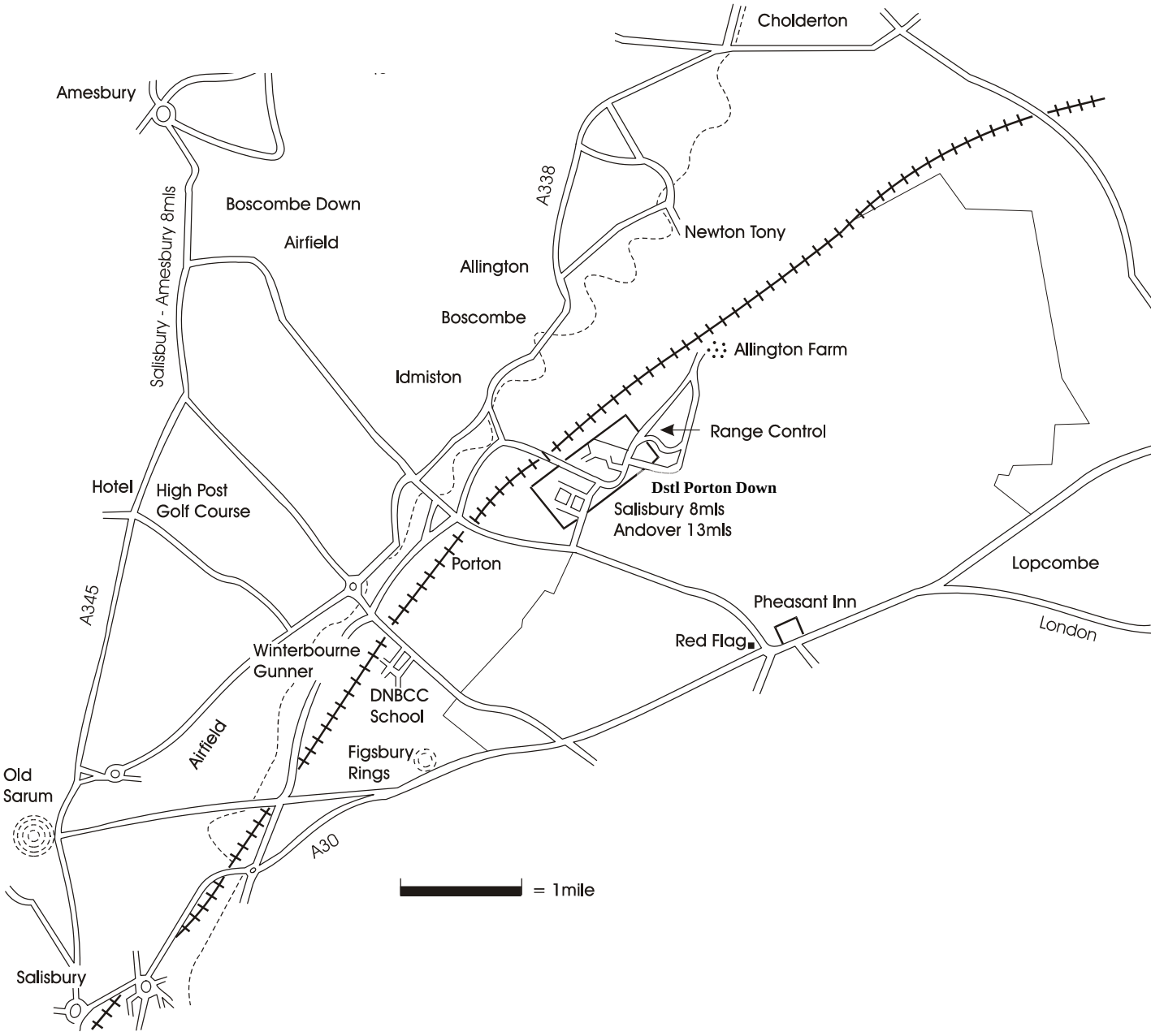


Figure 2: Routes to Dstl Porton Down



Form B (i)

Background information on outbreaks of reportable infectious diseases in humans – England and Wales

Data from Statutory Notifications of Infectious Diseases (England and Wales)

Disease	Number of cases per year				
	2004	**2005**	**2006**	**2007‡**	**2008†**
Acute encephalitis	20	19	19	18	24
Acute poliomyelitis	0	0	0	0	0
Anthrax	0	0	1	0	1
Cholera	31	34	37	41	40
Diphtheria**	10	9	10	9	5
Dysentery	1,203	1,237	1,122	1,217	1,161
Food poisoning	70,311	70,407	70,603	72,382	69,111
Leptospirosis	14	31	24	37	44
Malaria	609	679	613	426	386
Measles**	2,356	2,089	3,705	3,670	5,130
Meningitis	1,267	1,381	1,494	1,251	1,190
Meningococcal septicaemia	691	721	657	673	529
Mumps**	16,367	56,256	12,841	7,196	7,892
Ophthalmia neonatorum	85	87	100	83	76
Paratyphoid fever	134	119	185	126	168
Plague	0	0	0	0	0
Rabies	0	0	0	0	0
Relapsing fever	0	0	0	0	0
Rubella**	1,287	1,155	1,221	1,082	1,107
Scarlet fever	2,201	1,678	2,166	1,948	2,913
Smallpox	0	0	0	0	0
Tetanus	12	3	0	4	7
Tuberculosis	6,723	7,628	7,621	6,989	7,155
Typhoid fever	146	179	201	208	238
Typhus fever	1	1	6	0	5
Viral haemorrhagic fever	0	0	5	1	0
Viral hepatitis	3,932	4,109	4,007	3,857	4,780
Hepatitis A	784	513	433	333	381
Hepatitis B	1,215	1,325	1,165	1,265	1,594
Hepatitis C	1,851	2,120	2,194	2,040	2,545
Other and unknown	82	151	215	219	260

Whooping cough	504	594	550	1,089	1,526
Yellow fever	0	2	0	0	0

‡ Adjusted (confirmed) annual totals
† Provisional annual totals
** Note: In recent years a substantial proportion of notified cases of these diseases are shown subsequently not to be the implicated infection but do not get de-notified

Full information on Statutory Notifications of Infectious Diseases in England and Wales can be obtained via:

http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172956?p=1191942172956
http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListNameDesc/Page/1233906822114?p=1233906822114
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733756346?p=1191942172956
http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1233822588667

Form B (i)

Background information on outbreaks of reportable infectious diseases in humans - Northern Ireland

Data from statutory Notifications of Infectious Diseases (Northern Ireland).

Please note: these figures are not classified as outbreaks and are only suspected cases reported by General Practitioners.

Disease	Number of cases per year				
	2004	2005	2006	2007	2008 †
Acute Encephalitis/Meningitis: Bacterial	59	48	46	33	41
Acute Encephalitis/Meningitis: Viral	5	18	12	3	2
Anthrax	0	0	0	0	0
Chickenpox	3768	3227	3034	2823	1937
Cholera	0	1	1	0	0
Diphtheria	0	0	0	0	1 ††
Dysentery	8	7	7	10	15
Food Poisoning	1666	1409	1469	1321	1262
Gastro-enteritis (persons under 2)	697	736	718	762	730
Hepatitis A	12	4	4	1	15
Hepatitis B	45	41	42	50	50
Hepatitis Unspecified: Viral	2	29	2	1	0
Legionnaires Disease	4	6	5	10	5
Leptospirosis	0	1	1	1	0
Malaria	5	2	6	4	2
Measles	90	56	52	31	24
Meningococcal Septicaemia	82	66	75	42	33
Mumps	780	4556	205	164	134
Paratyphoid Fever	0	0	0	0	1
Plague	0	0	0	0	0
Polio (paralytic)	0	0	0	0	0
Polio (acute)	0	0	0	0	0
Rabies	0	0	0	0	1
Relapsing Fever	0	0	0	0	0
Rubella	39	31	33	26	28
Scarlet Fever	228	186	213	214	173
Smallpox	0	0	0	0	0
Tetanus	0	0	0	0	0
Tuberculosis (Pulmonary)	59	37	34	44	27
Tuberculosis (Non Pulmonary)	14	31	14	19	28
Typhoid	0	1	1	3	0
Typhus	0	0	0	0	0

Viral Haemorrhagic Fever	0	0	0	0	0
Whooping Cough	28	28	28	16	30
Yellow Fever	0	0	0	0	0

† Provisional figures for 2008
†† Non-toxigenic

Further information on Notifications of Infectious Diseases in Northern Ireland can be obtained via:
http://www.cdscni.org.uk/
http://www.cdscni.org.uk/surveillance/NOIDS/officedocs/NOIDS_Annual_Totals.xls

Form B (i)

Background information on outbreaks of reportable infectious diseases in humans – Scotland

Data from Statutory Notification of Infectious Diseases, Health Protection Service, Scotland.

Disease	Number of cases per year				
	2004	2005	2006	2007*	2008**
Anthrax	0	0	1	0	0
Dysentery	90	103	112	156	107
Cholera	1	6	3	8	3
Diphtheria	0	0	0	1	0
Food poisoning	6804	6918	7335	7186	7612
Leptospirosis	1	5	2	2	6
Malaria	20	20	18	15	15
Measles	257	186	259	168	221
Meningococcal infection	147	139	140	150	113
Mumps	3595	5698	2917	2741	725
Paratyphoid fever	0	0	0	1	4
Plague	0	0	0	0	0
Rabies	0	0	0	0	0
Relapsing fever	0	0	0	0	0
Rubella	222	141	153	146	106
Scarlet fever	213	208	274	315	889
Smallpox	0	0	0	0	0
Tetanus	1	0	0	0	0
Tuberculosis	463	389	414	409	379
Typhoid fever	2	1	3	3	3
Typhus fever	1	0	0	0	0
Viral haemorrhagic fevers	0	0	0	0	0
Viral hepatitis***	1063	1002	1235	13397	1658
Whooping cough	87	51	67	98	134

* *Confirmed figures*

** 2008 *Provisional figures*

*** It should be noted that the accuracy and comprehensiveness of viral hepatitis data is limited as it is based on notifications submitted by the National Health Service Boards. Notifications are a clinical suspicion of an infection and can differ from the number of laboratory confirmed cases. Health Protection Scotland (HPS), in association with hepatitis testing laboratories in Scotland, manages a laboratory based surveillance system, which generates accurate and comprehensive information on viral hepatitis, particularly that associated with Hepatitis C. The data generated from this surveillance system is published regularly on the HPS website: http://www.hps.scot.nhs.uk/.

Further information on Notifiable Infectious Diseases in Scotland can be obtained via:

http://www.hps.scot.nhs.uk/surveillance/NotifiableInfectiousDiseaseData.aspx
http://www.documents.hps.scot.nhs.uk/ewr/pdf2009/0901.pdf

Form B (i)

Background information on outbreaks of reportable infectious diseases in animals – United Kingdom*

Disease	Number of confirmed cases per year				
	2004	2005	2006	2007	2008
African Horse Sickness					
African Swine Fever					
Anthrax			1		
Aujeszky's Disease					
Notifiable Avian Disease			3	5	2
Bat Rabies	1		1	1	1
Bovine Spongiform Encephalopathy					
Bluetongue				66	71
Brucellosis (Brucella abortus)					
Brucellosis (Brucella melitensis)					
Classical Swine Fever					
Contagious agalactia					
Contagious Bovine Pleuro-pneumonia					
Contagious Epididymitis (Brucella ovis)					
Contagious Equine Metritis Organism (CEMO)		1	1	1	2
Dourine					
Enzootic Bovine Leukosis					
Epizootic Haemorrhagic Virus Disease					
Epizootic Lymphangitis					
Equine Viral Arteritis	1				
Equine Viral Encephalomyelitis					
Equine Infectious Anaemia					
Foot and Mouth Disease				8	
Glanders and Farcy					
Goat Pox					
Lumpy Skin Disease					
Newcastle Disease		1	1		
Paramyxovirus of pigeons					
Pest des Petits Ruminants					
Rabies					1**
Rift Valley Fever					
Rinderpest (Cattle plague)					
Scrapie					
Sheep pox					
Swine Vesicular Disease					
Teschen Disease (Porcine enterovirus encephalomyelitis)					
Tuberculosis (Bovine TB)					
Vesicular Stomatitis					
Warble Fly					

West Nile Virus					

* This table shows confirmed exotic notifiable disease investigations. Further information can be found at:

http://www.defra.gov.uk/animalh/diseases/notifiable/ndi2008.htm

Full information on all UK notifiable animal diseases can be obtained via:

http://www.defra.gov.uk/animalh/diseases/notifiable/index.htm

and UK reports to the World Organisation for Animal Health (OIE) can be found on the OIE website via:

http://www.oie.int/wahis/public.php?page=country_reporting&this_country_code=GBR&detailed=1

** Rabies case involved one imported dog held in quarantine.

Form B (i)

Background information on outbreaks of reportable infectious diseases in Plants - United Kingdom

Disease	Number of cases per year				
	2004	**2005**	**2006**	**2007***	**2008**
Ciborinia camelliae (Camelia flower blight					
Clavibacter michiganesis subsp. *sepedonicus* (Ring rot in seed potatoes)	2				
Colletotrichum acutatum (Strawberry black spot) in propagating crops				1	
Columnea latent viriod				4	
Erwinia amylovora (Fireblight)					
Florida passionflower virus				1	3
Pepino mosaic virus in tomato crops			8	3	4
Phytophthora kernoviae	16	19	7	10	24
Phytophthora ramorum (Sudden Oak Death)	141	163	74	103	121
Plasmopara obducens (Downy mildew) of Impatiens					
Potato spindle tuber viroid on tomato crops					
Potato virus M (non-European isolate) in seed potato crops					1
Puccinia horiana (Chrysanthemum white rust)					
Ralstonia solanacearum (potato brown rot)		1			

Ralstonia solanacearum (potato brown rot) in river surveys	6	4	1	6	5
Synchytricum endobioticum (potato wart disease) in private gardens					2
Tobacco mild green mosaic virus					2
Xanthomonas fragariae	3	2			

**Confirmed figures*

The serious diseases above were all investigated, but occurrence could be explained by normal introduction means and there was no evidence of deliberate malicious introduction. There were also a number of findings of less important routine notifiable diseases, but these can also be explained by natural means of spread or by trade pathways.

Form B (ii)

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

1.	Time of cognizance of the outbreak	February 2008
2.	Location and approximate area affected	Open farm, Belfast, Northern Ireland
3.	Type of disease/intoxication	*E. coli* O 157 (PT 31)
4.	Suspected source of disease/ intoxication	Farm animal contact, then person to person spread in households/schools
5.	Possible causative agent(s)	Goats
6.	Main characteristics of systems	.....
7.	Detailed symptoms, when applicable	
-	respiratory	.....
-	circulatory	.....
-	neurological/behavioural	.....
-	intestinal	.....
-	dermatological	.....
-	nephrological	.....
-	other	.....
8.	Deviation(s) from the normal pattern as regards	
-	type	.....
-	development	.....
-	place of occurrence	.....
-	time of occurrence	.....
-	symptoms	.....
-	virulence pattern	.....
-	drug resistance pattern	.....
-	agent(s) difficult to diagnose	.....
-	presence of unusual vectors	.....
-	other	.....
9.	Approximate number of primary cases	.....
10.	Approximate number of total cases	17
11.	Number of deaths	0
12.	Development of the outbreak	Onset illness Feb – April 2008
13.	Measures taken	Removal of positive animals from open farm

Form B (ii)

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

1.	Time of cognizance of the outbreak	June 2008
2.	Location and approximate area affected	Hospital In-patients Belfast Northern Ireland
3.	Type of disease/intoxication	Listeriosis
4.	Suspected source of disease/ Intoxication	Possible link with pre-packed sandwiches
5.	Possible causative agent(s)	.....
6.	Main characteristics of systems.	Bacteraemia
7.	Detailed symptoms, when applicable	
	- respiratory	.....
	- circulatory	.....
	- neurological/behavioural	.....
	- intestinal	.....
	- dermatological	.....
	- nephrological	.....
	- other	.....
8.	Deviation(s) from the normal pattern as regards	
	- Type	First ever outbreak of Listeriosis recognised in Northern Ireland
	- development	.....
	- place of occurrence	.....
	- time of occurrence	.....
	- symptoms	.....
	- virulence pattern	.....
	- drug resistance pattern	.....
	- agent(s) difficult to diagnose	.....
	- presence of unusual vectors	.....
	- other	.....
9.	Approximate number of primary cases	7
10.	Approximate number of total cases	.....

11.	Number of deaths	3
12.	Development of the outbreak	Onset illness May – July 2008
13.	Measures taken	Review hospital and sandwich producer HACCP processes

Form B (ii)

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

1.	Time of cognizance of the outbreak	Jan 2008
2.	Location and approximate area affected	Specific hospitals within the Northern Health & Social Services Trust, Northern Ireland
3.	Type of disease/intoxication	*C.difficile*
4.	Suspected source of disease /Intoxication	Introduction of ribotype 027 into the Trust with person/person spread
5.	Possible causative agent(s)	*C.difficile* ribotype 027
6.	Main characteristics of systems	Gastrointestinal
7.	Detailed symptoms, when applicable	
-	respiratory	.....
-	circulatory	.....
-	neurological/behavioural	.....
-	intestinal	.....
-	dermatological	.....
-	nephrological	.....
-	other	.....
8.	Deviation(s) from the normal pattern as regards	
-	type	Ribotype 027
-	development	.....
-	place of occurrence	.....
-	time of occurrence	.....
-	symptoms	.....
-	virulence pattern	.....
-	drug resistance pattern	.....
-	agent(s) difficult to diagnose	.....
-	presence of unusual vectors	.....
-	other	.....
9.	Approximate number of primary cases	.....
10.	Approximate number of total cases	309
11.	Number of deaths	49 of the 309 patients had *C. difficile* on their medical certificate as cause of death
12.	Development of the outbreak	.....

13. Measures taken

Creation of outbreak control team; creation of isolation ward; revised antibiotic policy to limit prescribing of certain antibiotics; enhanced ribotyping surveillance; enhanced cleaning regimes; enhanced hand hygiene regimes; revised hospital discharge and patient transfer protocols; regular audits of and evaluation of control measures.

Form B (ii)

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

1.	Time of cognizance of the outbreak	24 October 2008
2.	Location and approximate area affected	North London, Private residence
3.	Type of disease/intoxication	Anthrax
4.	Suspected source of disease/Intoxication	Animal skins used as drum skins.
5.	Possible causative agent(s)	*Bacillus anthracis*
6.	Main characteristics of systems	.....
7.	Detailed symptoms, when applicable	
-	respiratory	Inhalation anthrax
-	circulatory	.....
-	neurological/behavioural	.....
-	intestinal	.....
-	dermatological	.....
-	nephrological	.....
-	other	.....
8.	Deviation(s) from the normal pattern as regards	
-	type	.....
-	development	.....
-	place of occurrence	.....
-	time of occurrence	.....
-	symptoms	.....
-	virulence pattern	.....
-	drug resistance pattern	.....
-	agent(s) difficult to diagnose	.....
-	presence of unusual vectors	.....
-	other	.....
9.	Approximate number of primary cases	1
10.	Approximate number of total cases	. 1
1.	Number of deaths	1
12.	Development of the outbreak	.....
13.	Measures taken	Environmental sampling Risk evaluation Decontamination of premises

Form C

Encouragement of publication of results and promotion of use of knowledge

At the Third Review Conference it was agreed that States parties continue to implement the following:

> **"Encouragement of publication of results of biological research directly related to the Convention, in scientific journals generally available to States parties, as well as promotion of use for permitted purposes of knowledge gained in this research."**

Nothing new to declare.

Form D

Active promotion of contacts

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

For each event the following details are provided:

a.	**Name of the conference, etc**.	Anthrax Workshop
	Arranging organization(s), etc.	Cardiff University
	Time	16 – 17 Mar 2009
	Place	Cardiff
	Main subject(s) for the conference, etc.	Pathology & immunity of anthrax
	Conditions for participation	Home Office security pass
	Point of contact for further information, registration, etc.	
b.	**Name of the conference, etc**.	Vector Borne Disease in Europe
	Arranging organization(s), etc.	SCI, Bioresources Group, London
	Time	19 June 2009
	Place	SCI, London
	Main subject(s) for the conference, etc.	Vectors and Vector borne disease
	Conditions for participation	
	Point of contact for further information, registration, etc.	Sc Conference Department conferences@soci.otrg ++ (44) 207 2357743
c.	**Name of the Conference, etc.**	VLA Conference 2009
	Arranging organisation(s)	VLA
	Time	2 - 4 September 2009
	Place	Royal Holloway, UK
	Main subject(s) for the conference, etc.	Animal Infections
	Conditions for participation	Fee

	Point of contact for further information, registration, etc.	http://www.vla.gov.uk/ events@vla.defra.gsi.gov.uk

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d.	**Name of the conference, etc.**	EBSA 12th Annual Conference.
	Arranging organization(s), etc.	European Biosafety Association
	Time	16th-17th June 2009
	Place	Stockholm Sweden
	Main subject(s) for the conference, etc.	General Biosafety inc. blood borne pathogens, industrial scale Production issues & Biosecurity
	Conditions for participation	Fee payment (reduction for EBSA members)
	Point of contact for further information, registration, etc.	EBSA website http://www.ebsaweb.eu/ebsa_12

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e.	**Name of the conference, etc.**	Health Protection 2009
	Arranging organization(s)	Health Protection Agency
	Time	14-16 September 2009
	Place	University of Warwick, UK
	Main subject(s) for the conference, etc.	- health protection - infectious disease - chemical & radiation exposure - emergency preparedness, (including CBRN)
	Conditions for participation	by application
	Point of contact for further information, registration, etc.	http://www.healthprotectionconference.org.uk

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2. Information regarding other opportunities

Nothing to report.

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	YES

Links to the UK's Anti-Terrorism, Crime and Security Act 2001 (ATCSA):

http://security.homeoffice.gov.uk/legislation/current-legislation/acsa-2001/?view=Standard
http://security.homeoffice.gov.uk/legislation/current-legislation/acsa-2001/pathogens-toxins

Link to text of the UK's Biological Weapons Act 1974:

http://www.statutelaw.gov.uk/

Amendments since last year:

The Academic Technology Approval Scheme (ATAS) was introduced on 1 November 2007 For information, see link:

http://www.fco.gov.uk/en/fco-in-action/counter-terrorism/weapons/atas/

(b)	Exports of micro-organisms* and toxins	YES	YES	YES	NO

Link to current UK Export control lists:

http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/control-lists/index.html

Further information on UK export control legislation can be found at:

http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/index.html
http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/legislation/current-legislation/page8901.html

(c)	Imports of micro-organisms* and toxins	YES	YES	YES	YES

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

Amendments since last year:

The Plant Health Order was amended in 2008:

http://www.defra.gov.uk/planth/phorder/

Links to UK import/export legislation for animal and plant pathogens:

http://www.defra.gov.uk/animalh/diseases/pathogens/index.htm
http://www.defra.gov.uk/planth/phorder/index.htm

Further information on UK domestic controls to prevent the proliferation of nuclear, chemical and biological weapons, and their means of delivery has been submitted under UN Security Council Resolution 1540 requirements and can be found via:

http://www.un.org/sc/1540/nationalreports.shtml
http://www.un.org/sc/1540/legisdocuments.shtml

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.

26 March 1975

2. Past offensive biological research and development programmes:

Nothing new to declare.

Form G

Declaration of vaccine production facilities

1. **Name of facility:** MedImmune UK Ltd

2. **Location (mailing address):** Plot 6 Renaissance Way
Boulevard Industry Park
Speke
Liverpool
L24 9JW

3. **General description of the types of diseases covered:**

Influenza vaccine

Form G

Declaration of vaccine production facilities

1.	**Name of facility:**	Novartis Vaccines and Diagnostics Limited
2.	**Location (mailing address):**	Gaskill Road Speke Liverpool, L24 9GR

3. General description of the types of diseases covered:

During 2008, Influenza vaccines only were manufactured at this facility. Two distinct types:

(a) Northern Hemisphere Influenza vaccine: Cultivation of egg adapted influenza virus Three strains incorporated within the vaccine (Trivalent).

(b) H5N1 avian influenza vaccine (monovalent i.e. single strain): Cultivation in eggs of attenuated H5N1 strains produced by 'Reverse Genetics'. Designated at containment category allocated Cat 2 (Enhanced). The enhancements refer to a requirement for additional personal protection (use of RPE) and vaccination of operators with current Northern Hemisphere Influenza vaccine. This agent is designated as a GMO & an appropriate manufacturing licence (GM consent) has been granted from the UK Competent Authority. IAPO (the 'Importation of Animal Pathogens Order', 1980) does not apply to these strains due to attenuation at the genetic level.

Transition to a new purpose built influenza vaccine manufacturing facility is planned at the start of the 2010 manufacturing campaign. Some laboratories in the new facility are already operational and commissioning activities are ongoing.

Form G

Declaration of vaccine production facilities

1. Name of facility: Health Protection Agency
Centre for Emergency Preparedness and Response

2. Location (mailing address): Porton Down
Salisbury
Wiltshire
SP4 0JG

3. General description of the types of diseases covered:

Manufacturer of anthrax vaccine