



House of Commons  
Science and Technology  
Committee

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# **The Scientific Response to Terrorism**

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**Eighth Report of Session 2002–03**

*Volume I*





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**Eighth Report of Session 2002-03**

***Volume I***

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### Committee staff

The current staff of the Committee are Chris Shaw (Clerk), Emily Commander (Second Clerk), Alun Roberts (Committee Specialist); Ana Ferreira (Committee Assistant) and Ms Simali Shah (Committee Secretary)

### Contacts

All correspondence should be addressed to The Clerk of the Science and Technology Committee, Committee Office, 7 Millbank, London SW1P 3JA. The telephone number for general inquiries is: 020 7219 2794; the Committee's e-mail address is: [scitechcom@parliament.uk](mailto:scitechcom@parliament.uk)

# Contents

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<b>Report</b>	<i>Page</i>
<b>Summary</b>	<b>3</b>
<b>1 Introduction</b>	<b>5</b>
<b>2 The threat</b>	<b>6</b>
<b>3 The Government response</b>	<b>10</b>
Structures	10
The CBRN Science Working Group and SAPER	11
New funding	11
<b>4 Research, development and procurement</b>	<b>12</b>
Government	14
<i>Military</i>	14
<i>Civil</i>	16
<i>Coordination</i>	17
<i>A UK Department of Homeland Security?</i>	18
Universities and Research Councils	19
Medical technologies	21
<i>Health Protection Agency</i>	22
<i>Vaccines</i>	24
<i>Personal protection and decontamination</i>	29
<i>Surveillance</i>	30
<i>Industry</i>	32
<i>Agriculture</i>	35
Non-medical technologies	36
<i>Fire services</i>	36
<i>Customs and ports</i>	38
<i>Transport</i>	39
<i>Food</i>	43
<i>Water</i>	44
<i>Postal services</i>	45
<i>Environment</i>	45
<i>Private sector countermeasures</i>	45
<b>5 Emergency and operational response</b>	<b>47</b>
Medical	48
<i>Ambulance service</i>	49
<i>Communication</i>	50
<i>Skills</i>	50
Police	52
Fire Service	53
Military	54

Decontamination	55
Coordination	55
Planning and exercises	56
<b>6 Overseas cooperation</b>	<b>56</b>
<b>7 Security of research</b>	<b>58</b>
Security of research establishments	58
<i>Anti-terrorism, Crime and Security Act</i>	58
Vetting of students and researchers	62
<i>Voluntary Vetting Scheme</i>	62
<i>Ethical behaviour</i>	63
Scientific publication	65
<i>Statement by editors and publishers</i>	65
<i>Military research</i>	67
Export control	67
International conventions	68
<b>8 Security, openness and the media</b>	<b>69</b>
Our inquiry	69
Openness and research	71
Openness and security	72
Openness and the public	73
<b>9 Conclusion</b>	<b>74</b>
<b>Formal minutes</b>	<b>84</b>
<b>Witnesses</b>	<b>85</b>
<b>List of written evidence</b>	<b>87</b>

## Summary

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We have sought to determine how science and technology can be harnessed to develop countermeasures to chemical, biological, radiological and nuclear (CBRN) devices employed by terrorists, how science and technology is informing the response to terrorism and what measures are required to discourage the use of science and technology to develop such weapons. We have found areas of good practice, for example with the Office of the Deputy Prime Minister's (ODPM's) New Dimension programme of procurement for the Fire Service. It is clear that the Defence Science and Technology Laboratory (Dstl) and the Police Scientific Development Branch (PSDB) are playing an active role in establishing the merits of available technologies and we welcome this.

We have concerns about the long-term research and development of CBRN countermeasures. There has been very little new investment in this area. The UK's greatest source of expertise – at Dstl Porton Down – has a military focus and does not have a home defence remit. The Home Office is the lead Department on CBRN issues but we have detected a weak scientific culture there. We hope that this will change with the recent appointment of a Chief Scientific Adviser to the Department.

We propose a Centre for Home Defence, under the Home Office, to develop technologies for civilian use. The Centre would form the hub of a national network of researchers to tap into the research capabilities in our universities and Research Councils.

The surveillance of dangerous chemicals and pathogens, both nationally and internationally, has been a concern to us. Existing public health services provide a good basis for this nationally and the formation of the Health Protection Agency must not weaken this. Internationally, we are aware of concerns that the World Health Organization (WHO) is not well resourced and that there is a lack of coordination with the bodies responsible for monitoring plant and animal diseases, an issue which the UK Government should pursue.

The Government's attitude to public communication seems to betray a fear of alarming the public. As a result, scraps of information have trickled into the public domain. A clear picture which could provide the necessary reassurance to the public has not yet emerged. As a result, the public is insufficiently prepared for a CBRN event, and hence the country (which needs an informed public) is also insufficiently prepared.

The Government has also imposed an unnecessary level of secrecy surrounding its counter-terrorism research. In our view this is counterproductive and only serves to stifle the national and international effort to develop countermeasures.

We recognise that scientific education, research and publication conducted in the UK could provide information and expertise of value to terrorist groups. The Government has sought to limit this through the Export Control Act and the Anti-terrorism, Crime and Security Act and it is considering changes to the Voluntary Vetting Scheme. These measures must be applied in a sensitive manner, and the evidence suggests that this is the case, but we urge the Government to resist the pressure to impose strictures on science that would damage the research base and hamper the scientific response to terrorism.

We have concluded that scientists working with dangerous substances or pathogens should subscribe explicitly to an ethical code. While we recognise that such subscription will not prevent misuses of science, it will have the effect of heightening awareness of scientists' responsibilities. The learned societies and the Research Councils should develop an understanding of what such a code involves and provide incentives to sign up.

# 1 Introduction

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1. Following the terrorist attacks on Washington and New York and the anthrax letters that circulated subsequently, there has been much activity, on both sides of the Atlantic, to address the threat from major terrorist attacks. We decided to conduct an inquiry to examine the extent to which the UK response was underpinned by science and technology, what contribution science and technology could make in combating terrorism and what issues needed to be faced by the research community to ensure that their activities did not unwittingly assist terrorists' activities. We decided to focus on the conventional attacks employing CBRN agents. This reflects the fact that countermeasures to such agents are most likely to benefit from science and technology rather than any assessment we have made of the threat. The same could be said for cyberterrorism; but we considered that the relevant issues were not significantly different from more general IT security issues.

2. The inquiry was announced on 19 December 2002 with the following terms of reference:<sup>1</sup>

- How countermeasures against biological, chemical and radiological terrorism are informed by science and technology.
- How the surveillance of dangerous chemicals and pathogens is coordinated, both nationally and internationally, and what policies are in place to respond.<sup>2</sup>
- The public communications policy on the threat and response to biological, chemical and radiological terrorism.
- What research relevant to chemical, biological and radiological threats is being undertaken in the UK, and what controls are placed on it.
- The need for an ethical code of conduct for scientists working with dangerous substances or pathogens.

3. We received around 45 items of written evidence. Some of the evidence from the Government was classified as restricted or secret. We held six oral evidence sessions between March and June 2003, which addressed:

- The medical and public health response.
- Government research.
- Research security and the conduct of scientists.
- Protection of food and water supplies.
- Fire service response.

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1 Press Notice No. 8, Session 2002–2003

2 This refers to threats both known and hypothetical.

- The response of the Home Office and the Department of Health.

4. Three sessions were held either partially or wholly in private, although as much of this has been published as possible. In the case of the private session held on 16 June with the Fire Health and Safety Directorate of the ODPM, almost all of the transcript was subsequently declassified. The issue of Government openness and its cooperation with this inquiry will be discussed in section 8 of the report.

5. We undertook two visits as part of the inquiry: to Dstl (on a confidential basis) and the Centre for Applied Microbiology and Research (CAMR), both at Porton Down in Wiltshire, on 26 February 2003; and to the United States of America on 4–10 May 2003. We are also grateful to the Security Service for briefing us on the CBRN threat. The easy access to information in the US, relative to the UK, about the threat and countermeasures to CBRN devices has meant that we have drawn heavily on the US experience.

6. We are grateful for the assistance of Home Office officials for coordinating the Government's response to our inquiry and to the staff of the British Embassy in Washington and the Consulates-General at Atlanta and San Francisco for hosting the Committee during its US visit. We are indebted to our Specialist Advisers – Professor Roy Anderson of Imperial College, Professor Alastair Hay of Leeds University, Professor Bill Keevil from Southampton University and Professor Michael Elves, formerly of GlaxoWellcome.

## 2 The threat

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7. The scientific response to terrorism requires an appreciation of the threat. This inquiry focuses on chemical and biological weapons, largely because the Cold War threat from nuclear weapons and the civil nuclear programme has led to the development and availability of effective radioactivity detector technologies. Concerns that terrorists might employ a “dirty bomb”, a device in which conventional explosives are used to spread radioactive material over a wide area, does raise issues about the application and deployment of these technologies and the availability of treatments.

8. Chemical and biological weapons are nothing new. There is evidence that the Assyrians employed a form of chemical weapon in the 7<sup>th</sup> Century BC and their use was extensive in the First World War.<sup>3</sup> In more recent years concerns over their use has led to major international treaties – the Chemical Weapons Convention and the Biological and Toxin Weapons Convention, parties to which undertake not to develop or stockpile such weapons. The emphasis in both these cases was the use of chemical and biological weapons by states. The awareness that such devices might interest terrorist groups is not new either and indeed there are instances of their use in this way. The attacks on Washington and New York on 11 September 2001 did not employ CBRN devices yet they demonstrated the existence of a terrorist group intent on killing large numbers of people and their ability to do so. A group with such intent would undoubtedly be tempted by the use of CBRN devices. The anthrax letters that followed 11 September 2001 increased the focus on

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3 [www.mod.uk/issues/cbw/history.htm](http://www.mod.uk/issues/cbw/history.htm)

chemical and biological agents. A more detailed analysis of the range of CBRN devices is provided by the Defence Committee's report *The Threat from Terrorism*, published in December 2001.<sup>4</sup> The Royal Society's report *Measures for controlling the threat from biological weapons*, published in July 2000, gives an account of the nature of biological weapons, their effectiveness and an assessment of the agents that are most likely to be used.

9. For an appropriate scientific response to the CBRN threat, all players need to be aware of the nature and the extent of the threat. We believe it is important that a single body within Government is charged with formulating a threat assessment and communicating this information. It should be clearly designated at such. The assessment of this threat needs to be communicated efficiently to those who need to make judgements about the appropriate use of resources. In June 2003, the Government set up a Joint Terrorism Analysis Centre, which brings together those responsible for assessing the terrorist threat with those charged with reporting it.<sup>5</sup> We understand it will bring together, among others, Security Service's Counter-Terrorism Analysis Centre, the Secret Intelligence Service, Government Communications Headquarters, Defence Intelligence Staff, the police, including Special Branch, and the security division (TRANSEC) of the Department of Transport (DfT).<sup>6</sup> This is a welcome step and we can hope it can bring clarity to a confusing picture.

10. The Government's assessment of the threat posed by possible terrorist CBRN use is provided by the Security Service, drawing on technical help from the Defence Intelligence Staff. On 17 June Eliza Manningham-Buller, Director General of the Security Service (MI5), told the Royal United Services Institute that "My conclusion, based on the intelligence we have uncovered, is that we are faced with the realistic possibility of some form of unconventional attack. That could include a Chemical, Biological, Radiological or Nuclear attack. Sadly, given the widespread proliferation of the technical knowledge to construct these weapons, it will be only a matter of time before a crude version of a CBRN attack is launched at a major Western city".<sup>7</sup>

11. The input from Dstl Porton Down is appropriate. Given that in a previous incarnation it was responsible, until the late 1950s, for developing the UK's offensive biological and chemical weapons programme as well as defences against such weapons, it would seem to be ideally suited to provide input. Many of our witnesses from various parts of Government cited their contact with Porton Down.

12. Despite this there seems to be some confusion. Professor Pete Boriello from the Public Health Laboratory Service (PHLS) was unaware of what threat analysis should inform his work: "From the dangerous pathogens point of view, I am not sure how the decisions were made but I certainly know, as do most of my colleagues, what the four top ones are. We also have a view as to which the most difficult to deal with would be. So whether or not that has come through a myriad of systems or from one given point, I do not know, but we have that information".<sup>8</sup>

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4 Second Report of the Defence Committee, Session 2001–02, *The Threat from Terrorism*, HC 348–I, paras 51–72

5 HL Deb, 3 July 2003, col 123 WA

6 Intelligence and Security Committee, *Annual Report 2002–2003*, June 2003, Cm 5837, para 62

7 Eliza Manningham-Buller, "Countering Terrorism", *RUSI Journal*, Vol148, Issue 4 (August 2003)

8 Q 37

13. The Chief Medical Officer reports that anthrax, botulism, bubonic plague, smallpox and tularaemia are the agents that have been most extensively studied and used in scenario plans. In *Getting Ahead of the Curve*, he states that these have the highest priority because of their ability to be spread rapidly or cause high mortality and that contingency planning has existed for many years.<sup>9</sup> In the DoH's evidence to this inquiry, it states that post-11 September 2001 it improved the provision of diagnostic support to the NHS "by developing a facility, expertise, technology and training base able to respond to Government needs related to agents of greatest threat (*Bacillus anthracis* [anthrax], *Francisella tularensis* [tularaemia], *Yersinia pestis* [plague], poxvirus [smallpox] and viral haemorrhagic fevers)".<sup>10</sup> We also learn that "Standard Operating Procedures were developed for key category A biological agents: anthrax; smallpox; plague; tularaemia; botulism and the viral haemorrhagic fevers".<sup>11</sup> These lists are similar but some agents – botulinum toxin and viral haemorrhagic fevers – appear in some and not others. A report by The Royal Society published in July 2000 included a list of 25 micro-organisms or bacterial toxins that had been identified as those which potentially could be used in a deliberate release.<sup>12</sup>

14. The PHLS list is available on the HPA website (see Box 1). The Centers for Disease Control in the US (the nearest equivalent organisation) presents a similar list for internet users.<sup>13</sup>

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9 Department of Health, *Getting Ahead of the Curve: A strategy for combating infectious diseases*, A report by the Chief Medical Officer, January 2002, para 2.60

10 Ev 120

11 Ev 120

12 The Royal Society, *Measures for controlling the threat from biological weapons*, July 2000

13 [www.bt.cdc.gov](http://www.bt.cdc.gov)

**Box 1: Categories of infectious agents***Category A Diseases/Agents<sup>14</sup>*

Are easily disseminated or transmitted from person to person  
 Have high mortality rates and potential for major public health impact  
 Might cause public panic and social disruption  
 Require special action for public health preparedness

Diseases in this category include:

Anthrax, smallpox, botulism, plague, tularaemia and the viral haemorrhagic fevers

*Category B Diseases/Agents*

Are moderately easy to disseminate  
 Have moderate morbidity rates and low mortality rates  
 Require enhancement of both diagnostic capacity and disease surveillance

Diseases in this category include:

Glanders, melioidosis, brucellosis, psittacosis and Q fever

*Chemical agents*

The following chemicals could be used in a deliberate release: nerve agents, mustard gas, chlorine, hydrogen cyanide, phosgene and ricin. All have serious and potentially fatal effects.

15. The UK Government employed the “Australia List” of pathogens and toxins for its Anti-Terrorism, Crime and Security Act 2001, with respect to the security of laboratories (see paragraphs 190–201). This list was drawn up by a group of countries (including the UK) for the purposes of export control. This seems to have been superseded by the (classified) Salisbury List. The US also includes a list of select agents for its 2001 Patriot Act, which includes 33 viruses, 11 toxins, 20 bacteria, 1 prion (BSE) and 6 fungi. Beyond the broad categorisation of A and B agents in the PHLS list, there is no ranking and as such they provide little basis for policy-making. It seems to be generally assumed that anthrax and smallpox are two of the most likely biological agents and we heard during our visit to the Lawrence Livermore National Laboratory in California that they had established four or five realistic scenarios.

**16. There seems to be a range of risk assessments, particularly within the Department of Health (DoH). It is not clear who in Government is responsible for determining what threats the UK should be responding to, and with what priorities. We have not established how risk assessments are informing Government policy and thus the scientific response. There should be a single assessment, informed by science and intelligence, which is communicated clearly to all those who need to make strategic decisions on funding allocations. We hope that the Joint Terrorism Analysis Centre can fulfil this function.**

## 3 The Government response

### Structures

17. The Government's response to CBRN terrorism is led by the Home Office but it involves many departments, agencies and external organisations. A summary of the principal departments and their roles is shown in Table 1. The collated Government written evidence provides a more detailed description of their contribution.<sup>15</sup>

**Table 1: Roles of the principal Government Departments.**

Cabinet Office	The Cabinet Office has a co-ordinating role, ensuring that policy is joined up across the whole of Government.
Home Office	The Home Office is the lead Department on CBRN issues. The police have a key role in CBRN countermeasures, including the enforcement of the Anti-Terrorism, Crime and Security Act.
Department of Health	The Public Health and Clinical Quality Directorate and the Operations Directorate play particularly important roles at strategic planning and response levels in dealing with the health consequences of terrorism. The Department's Economics and Operational Research Division provides valuable support e.g. in modelling the effects of deliberate release of hazardous biological agents or material. The Health Protection Agency has a medical surveillance role through the Public Health Laboratory Service and a research function through the former Centre for Applied Microbiological Research (CAMR).
Ministry of Defence	The MoD has no direct role in CBRN response, although given its experience with the military response to CBRN devices it is playing an emerging role through Military Aid to the Civil Power (MACP) and by advising on technology development and procurement.
Department of Trade and Industry/Office of Science and Technology	One of the DTI's central objectives is to make the most of the UK's science, engineering and technology skills and resources. The Office of Science and Technology is responsible for funding basic research via the seven Research Councils. It also supports Professor Sir David King, the Chief Scientific Adviser to the UK Government, in his role co-ordinating science and technology across Government. Professor King chairs SAPER.

18. The coordination of the Government's response is achieved through the Cabinet Office. CBRN terrorism is dealt with under the auspices of the Ministerial Group on Protective and Preventive Security and the Ministerial Group on Resilience, both chaired by the Home Secretary. These Ministerial Groups are supported by committees with scientific representatives from other areas of Government, including Dstl Porton Down (Ministry of Defence), the Office of Science and Technology (OST, part of DTI) and the CBRN team (Home Office).<sup>16</sup>

19. The Cabinet Office also houses two other groups relevant to this inquiry: The Civil Contingencies Secretariat (CCS) and the Government Information and Communication

<sup>15</sup> Ev 96–149

<sup>16</sup> Ev 98

Service (GICS). The CCS was “set up to improve the resilience of Central Government and the UK”. Its functions include horizon-scanning, ensuring that the Government can function in times of emergency and improving the capability of Government departments to respond.<sup>17</sup> GICS is a network of communication professionals working in Government Departments and agencies across the UK. It leads the Counter-Terrorist Communication Group on behalf of the Home Secretary. Public communication will be dealt with below in Section 8.

## The CBRN Science Working Group and SAPER

20. The CBRN Science Working Group, chaired by the Chief Scientific Adviser, was established to look at specific areas of CBRN resilience in December 2001. The group included academic, industry and Government specialists.

21. The CCS, along with the OST, has established an ad hoc committee called Scientific Advisory Panel for Emergency Response (SAPER). Its role is to complement existing mechanisms for providing scientific advice to the Government. The Government’s Chief Scientific Adviser, Professor Sir David King, chairs it and membership is drawn from Government, practitioners and academia. While the existence of the Science Working Group and SAPER are in the public domain, their membership and activities are classified.

## New funding

22. Gordon Brown announced new money to fight terrorism in his Budget 2003 speech:

“At home, our responsibility is to safeguard our communities from terrorist threats and here our resolve again is absolute. It is therefore right also to set aside in this Budget an extra £330 million for additional domestic counter-terrorism measures. The Home Secretary will therefore take forward measures to improve detection work at our ports and enhance our response to a range of terrorist threats”.<sup>18</sup>

23. In the area of health, Minister of State John Hutton told us that “We have made a significant amount of money available. I think that over a four-year period it is something like £260 million of dedicated additional spending. Most of that is to do with counter measures – vaccines, needles, antibiotics, and other supplies”.<sup>19</sup> Other health spending is difficult to disaggregate since it is held in primary care trust budgets and other budgets in the NHS. It is not clear whether this is “new” Treasury money. We suspect that it has been found at the expense of other parts of NHS spending.

24. The UK’s budgetary response to CBRN terrorism compared to the US is modest to say the least. The US Department of Health and Human Services has increased its annual budget to the National Institute for Allergy and Infectious Diseases (NIAID) to from \$2.3

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17 Ev 98–99

18 HC Deb, 9 April 2003, Col 271

19 Q 671

billion \$4 billion.<sup>20</sup> According to its Director, Anthony Fauci, NIAID will spend \$1.5 billion on research into bioterrorism countermeasures.<sup>21</sup>

25. Any investment must be related to the level of risk, or at least the perceived level of risk. The US response reflects the impact of the attacks of 11 September 2001 on US society and politics. Indeed, despite the high level of US investment, some there argue that it is insufficient. A newspaper article by two senior public health professionals accuses the US health authorities of going “wobbly on biodefense”.<sup>22</sup> Government spending must reflect the resources it has available and what impact it could have if spent on, for example, increased healthcare spending or transport infrastructure. It has been difficult to establish new spending precisely in this area in the UK. This is not necessarily a problem since subtle shifts in priorities may not easily be costed. **In some areas greater investment in CBRN home defence is required, either for research or to reflect that many parts of Government have been expected to expand their role. This must be reflected in their budgets.**<sup>23</sup>

26. Our efforts to establish how much new money has been allocated to the CBRN response have not been wholly successful, and the R&D component even less so. Announcements of new Government money are often greeted with a degree of cynicism owing to a lack of systems to prevent double counting. The Government might argue that new investment only gives a partial picture of the change in its policy and priorities. Nevertheless, we feel that a highly sensitive issue such as this requires the publication of a headline figure which gives an impression to a concerned public of the seriousness with which the Government takes that threat from CBRN terrorism. **We recommend that the Government publish figures on its spending on CBRN countermeasures, before and after 11 September 2001, with an indication of how this money is being spent.**

## 4 Research, development and procurement

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27. We have been keen to establish the existence of a thorough appraisal of the research requirements posed by the CBRN terrorist threat. Sir David King’s CBRN Science Working Group has been brought to our attention, although its findings are classified. The Foresight Cyber Trust and Crime Prevention project was set up in March 2003 “To explore the application and implications of next generation information technologies in areas such as identity and authenticity, surveillance, system robustness, security and information assurance”.<sup>24</sup> There is no reference to CBRN countermeasures but it is likely that there will be relevant technologies.

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20 [www.nih.gov](http://www.nih.gov)

21 Dr Anthony Fauci, “The power of biomedical research”, *The Washington Times*, 9 July 2003

22 Dr William Bicknell and Kenneth Bloom, “Smallpox and Bioterrorism”, *The Washington Times*, 9 July 2003

23 See paragraph 48 below

24 [www.foresight.gov.uk](http://www.foresight.gov.uk)

28. In 2002 the National Academies of Science in the US (the American equivalent of the Royal Society) published *Making the Nation Safer*.<sup>25</sup> It identified 14 technical areas which needed addressing (see Box 2). Indeed this is only one of several impressive studies conducted by the National Academies in recent years.<sup>26</sup>

**Box 2: Fourteen of the most important technical initiatives identified by the US Academy of Science.**

*Immediate applications of existing technologies*

1. Develop and utilise robust systems for protection, control, and accounting of nuclear weapons and special nuclear materials at their sources.
2. Ensure production and distribution of known treatments and preventatives for pathogens.
3. Design, test, and install coherent, layered security systems for all transportation modes, particularly shipping containers and vehicles that contain large quantities of toxic or flammable materials.
4. Protect energy distribution services by improving security for supervisory control and data acquisition (SCADA) systems and providing physical protection for key elements of the electric-power grid.
5. Reduce the vulnerability and improve the effectiveness of air filtration in ventilation systems.
6. Deploy known technologies and standards for allowing emergency responders to reliably communicate with each other.
7. Ensure that trusted spokespersons will be able to inform the public promptly and with technical authority whenever the technical aspects of an emergency are dominant in the public's concerns.

*Urgent research opportunities*

1. Develop effective treatments and preventatives for known pathogens for which current responses are unavailable and for potential emerging pathogens.
2. Develop, test, and implement an intelligent, adaptive electric-power grid.
3. Advance the practical utility of data fusion and data mining for intelligence analysis, and enhance information security against cyberattacks.
4. Develop new and better technologies (e.g., protective gear, sensors, communications) for emergency responders.
5. Advance engineering design technologies and fire-rating standards for blast- and fire-resistant buildings.
6. Develop sensor and surveillance systems (for a wide range of targets) that create useful information for emergency officials and decision makers.
7. Develop new methods and standards for filtering air against both chemicals and pathogens as well as better methods and standards for decontamination.

29. It is regrettable that no such comparable study has been conducted in the UK. The Royal Society announced an inquiry in 13 March 2003 on the state of development of detection and decontamination technologies, which is due to report early in 2004. This is a valuable study, for which the Society should be commended. The Royal Society does not have the resources to undertake an inquiry on the scale of the US study. But this is something the Government could address, as it did in 2002 for the Society's inquiry into Infectious Diseases in Livestock and most recently by commissioning an inquiry into nanotechnology. Professor King's CBRN Science Working Group is no doubt well informed but its scale and its secret mode of operation make it unlikely that it provides an authoritative appraisal of the UK's scientific capability necessary to address the CBRN

25 National Research Council of the National Academies, *Making the Nation Safer* (Washington DC 2002), p 2

26 [search.nap.edu/terror/](http://search.nap.edu/terror/)

terrorist threat. SAPER may yet be able to fulfil this role but the secretive manner in which it operates is destined to constrain its work (see Section 8). Government Ministers, including the Prime Minister, are fond of extolling the strength of UK science.<sup>27</sup> Here is a prime example of how it could be harnessed for the national good through the Royal Society and the other learned societies, all of which are a valuable resource of scientific advice, as we concluded in our 2002 report, *Government Funding of Scientific Learned Societies*.<sup>28</sup> **There has been no extensive effort that we can establish to identify the research needs to develop CBRN countermeasures and as a result there has been no clear statement of what is required. Without this, the research community is in no position to respond effectively and in a coordinated manner.**

**30. There are few issues in which access to the best scientific expertise is more important than in the fight against terrorism. We welcome the Government's willingness to commission and fund Royal Society inquiries and urge it to consider providing the resources to the Society to produce a thorough and public appraisal of the role that science can play in combating terrorism.**

## Government

### Military

31. The Ministry of Defence has no formal role in the scientific response to terrorism, yet through its research agency, Dstl, it is the primary source of Government-funded technologies with application to CBRN countermeasures.

32. Dstl contains three operating divisions: Science, Technology and Analysis. The Science Division, at Porton Down, has four operating departments: Biomedical Sciences, Detection, Physical Sciences and Environmental Sciences. The largest part of the income of each department arises from CBRN work.<sup>29</sup>

33. Although Dstl clearly has expertise of relevance to CBRN terrorism, Dr Richard Scott, Director of Science at Dstl Porton Down, told the Committee his work focused on the military: "The MoD does not have a lead role in homeland defence, it supports the Home Office, it supports other Government Departments, and as such the research programmes at Porton Down have not changed because they are there post-9/11 in response to homeland defence. They are there purely to support the servicemen".<sup>30</sup> Only around £5 million of Dstl Porton Down's £80 million income comes from other UK Government Departments.

34. Some Dstl technologies, such as vaccines and chemical and biological detectors, are of clear benefit to civilian countermeasures. Dr Scott stressed, however, that military technologies could not be simply applied for civilian use. Military research was targeted towards particular environments and for use by trained personnel. Dr Scott said "MoD has

27 Speech by Tony Blair to the Royal Society, 23 May 2002

28 Fifth Report Science and Technology Committee, Session 2001–02, *Government Funding of the Scientific Learned Societies*, HC 774–I, paras 65–69

29 Ev 263

30 Q 265

a strategy for producing vaccines but the strategy for producing vaccines in a military context is totally different from that which it would be in a civilian scenario”.<sup>31</sup> He went on: “the systems have been developed for a military environment and military use ... would need to be tuned, modified and engineered to operate in that [civilian] arena, and it needs to be developed against a specific role and context so we are then specification-led rather than just technology-led”.<sup>32</sup> For example, on detectors: “They are engineered out in a military environment. If you put that detector into a civilian environment, it would have alarms you were not expecting.” He said “I still think you have to work out the concept of use. ... superficially it looks like it buys you an awful lot but it may not buy you as much as you think”.<sup>33</sup>

35. The transfer of military technologies to industry was the basis for setting up the Defence Diversification Agency (DDA) in 1999. According to its website, “It does this by offering access to the UK’s defence science and technology knowledge base and aims to:

- strengthen the UK’s economic and industrial performance;
- improve UK competitiveness and thus; and
- help businesses to grow through innovation”.<sup>34</sup>

36. It would be appropriate for the DDA to be active in this area. Since the principal purchasers of any commercialised technology in this area are likely to be civil Government departments, their involvement at an early stage would be necessary. We were pleased to read in Dstl’s 2003 annual report of a successful joint venture company called Acolyte Biomedica Ltd, which is developing the BacLite detector. This is derived from military bacterial detection technology developed to detect biological warfare agents.<sup>35</sup>

37. Dstl Porton Down is a great strength and an important asset to the UK. During our visit there we were impressed by the range of technologies being developed. In the US, the respect with which the laboratory was held was unmistakable. Our concern is not what Porton Down is, but what it is not: it is a military research facility not a home defence facility. The Government’s basic research capability needed to change after 11 September 2001. Dstl is the UK’s most important repository of scientific expertise in the science of CBRN countermeasures yet Dr Scott told us that there has been little shift in Dstl’s research strategy.<sup>36</sup> **In our view, UK home defence is too reliant on Dstl’s military-derived technologies. We need a substantial and clearly focused research programme driven by the specific requirements of civil defence.**

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31 Q 251

32 Q 275

33 Qq 273,275

34 [www.dda.gov.uk](http://www.dda.gov.uk)

35 Defence Science and Technology Laboratory, *Annual Report and Accounts 2002/2003*, p 4, 12–13

36 Q 265

## Civil

### Home Office

38. The Home Office is taking the lead on CBRN issues. It would be logical for it to develop a strong research capability of its own. The first Chief Scientific Adviser at the Home Office, Professor Paul Wiles, was appointed in November 2002. His job title is Director of Research, Development and Statistics (the research arm of the Home Office) and he works closely with the PSDB and the Forensic Science Service. He is currently reviewing the way in which science is managed and used in the Home Office. Professor Wiles is a welcome addition to the Department. We hope that this view is shared by the Home Secretary and he is given encouragement and resources to build a research programme and enhance the scientific culture in the Home Office.

39. The PSDB was established to:

- Provide technical advice to police and Ministers
- Improve the operational effectiveness and efficiency of the police service
- Support the Home Secretary's responsibilities for counter-terrorism

40. Although the main customer is the police, the PSDB also deals with MoD, the Prison Service, DfT, and Customs and Excise. It has sites at Sandridge in Hertfordshire, and Langhurst in Sussex. Its budget in 2002–03 was £22 million. There is not much evidence of a research function and its role seems to be to assess existing technologies rather than to derive its own. It is not clear to us that the PSDB is contributing much beyond training and in any case, we are not convinced that the PSDB would be the appropriate vehicle for a CBRN research programme. **Despite regulating animal experimentation for many years, sponsoring the Forensic Science Service and having powers through the Anti-terrorism, Crime and Security Act 2001 over the security of laboratories, we are strongly of the view that there is a weak scientific culture in the Home Office. The Office of Science and Technology has set up a Science Review Directorate to assess the scientific endeavours of Government departments. We recommend that it consider the Home Office a priority.**

### Health and Safety Executive

41. The Health and Safety Executive (HSE), an agency of the Department for Work and Pensions, has been involved in the Central Government-led work on general civil contingencies issues, and specifically on the response to CBRN terrorism. This involvement falls broadly into three areas:

- To ensure that measures taken to deal with CBRN are not inappropriate on health and safety grounds
- To ensure that aspects of health and safety law do not impede effective contingency planning and emergency response

- To provide expertise and expert knowledge in major hazards, nuclear and biological and chemical agents, employing its experience of identifying, assessing and managing risk.

### *Other Government Departments*

42. Other departments with a research capability in CBRN countermeasures are the DoH (including the Health Protection Agency (HPA)) and the ODPM. These will be considered in the sections on medical technologies and the Fire Service below, respectively.<sup>37</sup>

### *Coordination*

43. The Government's evidence states that the Home Office and MoD fund research into CBRN counter measures in support of the operational response and that the Home Office sponsors and makes use of MoD research programmes in the assessment of the threat, detection, physical protection and medical counter measures.<sup>38</sup> In the US the Department of Defense is working very separately from the new Department of Homeland Security (DHS), as we learnt.

44. An obvious avenue for cooperation is at Porton Down, where the HPA (formerly CAMR) and Dstl can watch each other "over the fence". Both are engaged in vaccine work and other potential medical countermeasures. There have been suggestions that the collaboration has not been as enthusiastically explored as one might imagine. Our evidence is anecdotal. The organisations will point to the joint publication of research, yet this proves no more than that there is some collaboration. **Greater collaboration between Dstl and HPA at Porton Down could be very productive and would avoid duplication. We recommend that greater efforts are made to explore synergies and joint projects.**<sup>39</sup>

45. We sought evidence from TRANSEC, which advises the industry on security issues. We were told that it had nothing to say: CBRN security in the transport system was a Home Office issue. Eventually, it provided a short memorandum which was vague and uninformative and yet nevertheless it was classified restricted. **The establishment of a CBRN Team in the Home Office is important, and it is desirable that a single Department takes the lead, but there needs to be appropriate expertise within and available to other Departments. We are not satisfied that the Department for Transport has such expertise, or that it has a clear understanding of the route by which it could attain the information it would need to respond to a CBRN emergency.**

46. SAPER is a welcome initiative which we hope will succeed in improving the coordination of the scientific effort across Government. We have been offered scant evidence that, as a result of the working group, departments have managed to initiate change and now provide better resilience. There is also negligible evidence that there is any long-term strategy to employ scientific and technological solutions to the CBRN terrorist threat, which we infer is a sign of the weak scientific culture in many departments. **We are**

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37 See paragraphs 55–105, 106–112

38 Ev 119

39 The relationship between Dstl and academia is considered below in paragraph 53.

concerned that SAPER, as an advisory panel, has no resources to drive through change or initiate research.

### *A UK Department of Homeland Security?*

47. The US Administration's decision to create the DHS has raised the question as to whether the UK should follow suit. The Government has insisted that this is not necessary and that the measures taken to improve cross-Government coordination are sufficient. The Home Secretary has stated:

“The massive department with a multi-billion pound budget for which Congress is now voting in relation to the homeland security facility is way beyond anything that we in this country could contemplate without completely dislocating not only our government procedures but the investment that we need in key services that secure the kind of lifestyle, economy and services that make this country worth living in [in] the first place”.<sup>40</sup>

We understand the point the Home Secretary is making here, and indeed because Britain has been subject to terrorist threats for many years there are competences in the UK which are currently absent in the USA. In some areas there is good coordination and administrative confidence, and that can be contrasted to the situation in the USA where we heard of the problems and disruption caused by the creation of the new department. An exception to this improved coordination is in the scientific and technological research effort. Where a terrorist or a potential terrorist has access to sophisticated toxins, pathogens or weapons, confidence founded on a history of dealing effectively with terrorist events in the past is misplaced. We need a greater scientific and technological knowledge among those who are expected to deal with terrorist incidents. In the US, this is understood, and appropriate measures are being put in place. In the UK, by and large, this is not understood.

48. A key feature of the DHS is its organisation into four divisions, one of which is science and technology. This is the equivalent of the Home Office having a Minister of State for Science and Technology. It is this recognition of the importance of science and technology in home defence that the UK should seek to emulate. Decisions taken concerning science and technology at DHS should be heeded here too. First the DHS does not have control over the medical research effort, since much of this has dual use and it would be unwise to detach this effort from wider healthcare provision. Second, the idea of a Homeland Defense Laboratory was rejected on the basis that the new department needed to draw on the expertise in more than one laboratory, although much of this resides in the Lawrence Livermore Laboratory, which we visited in the US. **The UK does not need a Department for Homeland Security but we do recommend the creation of a Centre for Home Defence as a Government agency, with the following features:**

- **It would conduct or commission research and development aimed at strengthening the UK's technical capability to prevent, respond and mitigate the effects of a terrorist attack, in particular those using CBRN agents;**

- It would be under the auspices of the Home Office within the remit of the Minister of State for Counter-Terrorism. SAPER would act as its scientific steering group;
- It would have its own research budget of no less than £20 million a year and would be responsible for conducting basic research, deriving new technologies for home defence and adapting military technologies for civil use;
- It would not conduct research on medical countermeasures but would have substantial input into and commission research conducted by the Department of Health (including the Health Protection Agency), the Medical Research Council and Dstl;
- It would have a physical presence in close proximity to a centre of academic scientific excellence;
- It would identify relevant research expertise within universities and Research Council Institutes; and
- It would form strong links with academic and Government research laboratories overseas.

## Universities and Research Councils

49. The Research Councils are not responsible for development of specific countermeasures or related policy. However, as they indicated in their evidence, they “support a good deal of basic and strategic research which is to different degrees relevant to such development”.<sup>41</sup>

50. In their evidence to this inquiry, the Research Councils describe research being undertaken that would be of value in developing countermeasures to CBRN terrorism, for example.<sup>42</sup>

- The Natural Environment Research Council Centre for Ecology and Hydrology has considerable experience of dealing with the impacts of sudden releases of chemicals or radiochemicals e.g. following Chernobyl. Other research focuses on possible remedial actions following releases of hazardous materials.
- Research at the Council for the Central Laboratory of the Research Councils’ (CCLRCs’) Daresbury Laboratory may help in the development of in-field detection techniques for bacteria and viruses.
- Some Research Council-funded work is directed at detection and prevention of criminal acts themselves. CCLRC are undertaking research on unobtrusive security devices for detecting people and weapons through walls. We were impressed by this work when we visited the CCLRC’s Rutherford Appleton Laboratory on 1 April 2003.

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41 Ev 221

42 Ev 222

- The Engineering and Physical Sciences Research Council is establishing a new Crime Prevention and Detection Programme, which will include support for anti-terrorism technologies, advancement in forensic science techniques and personal security devices.
- The Economic and Social Research Council is funding research on the domestic management of terrorist attacks, including understanding the causes and social effects of terrorism, and public communication.

51. The important issue is to what extent this basic research is being harnessed for CBRN countermeasures. Much of the basic medical research being undertaken in universities and MRC Institutes is likely to be of dual use. We asked Dstl to what extent it undertook research collaborations externally. It has provided us with an extensive list of organisations with which it has published research jointly. We also understand that around 20% of the CBRN element of the MoD research programme left with Dstl is subcontracted to universities, industry and other research providers.<sup>43</sup> Dstl, along with other Government agencies such as the HPA, should recognise that they benefit from close collaboration with top university departments where there is a strong culture of working in an open way which facilitates constructive criticism.

52. Our view is that the links between Dstl and other bodies need to be strengthened to address the new threats. CCLRC says that its R&D projects involving sensors, detectors and information technology “are a significant part of the CCLRC research programme and, although the development programme is primarily to support the civil and academic research community, there could be potential security applications”.<sup>44</sup> There could be security applications yet it is curious that no-one from Dstl or anyone else has made more effort to establish their value.

53. We had noticed a press article describing DNA fingerprinting technology, developed at the University of Ulster by Dr Colm Lowery, which could quickly identify pathogens in the event of a biological attack. While the university’s press release may well have oversold the story, Dr Scott’s response was disappointing, describing the work as “fairly standard” and does not suggest that Dstl was making the most of the resource that is the UK science base. The press release reports that Dr Lowery had “been invited to the Centers for Disease Control Prevention (CDC), Atlanta, USA, to work alongside the world’s leading scientists in the fight against bioterrorism”. If Dr Lowery’s work was so standard, it is hard to believe that CDC would have shown the interest in the research that it has.<sup>45</sup> **We understand that science at the Ministry of Defence will be the subject of a review by the OST Science Review Directorate. This should consider the use being made of academic research by Dstl and what mechanisms could be introduced to maintain quality control at regular intervals.**

54. We conclude that the UK science base has huge potential for developing CBRN countermeasures but see only limited evidence that it is being tapped. Sir David King told us that “my office has very strongly encouraged the Home Office to work closely with

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43 Ev 225–226

44 Ev 225

45 University of Ulster press release, 10 March 2003

Research Councils and industry, Research Councils being the entry point into academic research regarding emerging technologies and research base on this particular theme”, which implies that not much had been done in the past, although Dr Ian Lawston from the Home Office felt that “My impression is that we are harnessing academia fairly well”.<sup>46</sup> An option would be for a cross-Council bid to Spending Review 2004 for funding to develop that potential. Personal and National Security’ is one of eight multi-Council themes in a stakeholder consultation on future science priorities published by Research Councils UK on 18 August 2003 in the lead up to Spending Review 2004.<sup>47</sup> We have doubts that the Research Councils should be used so overtly pursue Government’s research objectives, however, and it is not obvious that we need more basic academic research in the area. This is consistent with the view of John Marburger, Director of the White House Office of Science and Technology Policy, who stated in April 2002:

“I realised that the means for reducing the risk and consequences of terrorist incidents were for the most part already inherent in the scientific knowledge and technical capabilities available today. Only in a few areas would additional basic research be necessary, particularly in connection with bio-terrorism. By far the greater challenge would be to define the specific tasks we wanted technology to perform, and to deploy technology effectively throughout the diffuse and pervasive systems it is designed to protect. The deep and serious problem of homeland security is not one of science, it is one of implementation”.<sup>48</sup>

A better option to a Research Council initiative would be for relevant Government departments to embark on a more coordinated programme of research in this field but develop extensive links with relevant research groups in universities and Research Council institutes. We recommend the establishment of a Home Defence Research Network under the direction of a new Centre for Home Defence. Part of its role would be to build on the outputs from the Royal Society’s study into detection and decontamination and provide an horizon-scanning capability.

## Medical technologies

55. During 2000, the DoH reviewed its arrangements for dealing with biological incidents and re-evaluated the medical countermeasures in place to deal with a large-scale incident. A Medical Countermeasures Group was established in February 2001. The purpose of this Group was to provide medical and scientific advice to the department on the medical response to the deliberate release of biological agents and to consider operational requirements. The Medical Countermeasures Group aims to ensure that up-to-date research findings are shared and fed into policy on preparedness to deal with bioterrorism and identified gaps in countermeasures.

56. The DoH evidence provides a comprehensive picture of how it has used science and technology to inform its post-11 September 2001 activities. These include:

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46 Q 747

47 [www.rcuk.ac.uk](http://www.rcuk.ac.uk)

48 Keynote Address to the 27th Annual AAAS Colloquium on Science and Technology Policy, 11 April 2002

- Procurement of vaccines and medical countermeasures;
- Development, in concert with Dstl, of new personal protective equipment (PPE);
- Expansion of CAMR’s response capabilities and transfer of new technologies for biological agents; and
- Establishment by PHLS of emergency response teams and specimen tracking database.

David Harper, as Chief Scientist, has taken the lead for DoH on CBRN matters and was involved in the CBRN Science Working Group.

### Health Protection Agency

57. *Getting Ahead of the Curve* contained a proposal for the creation of a new Health Protection Agency (HPA).<sup>49</sup> The Agency was not formed as a result of the perceived increased threat after 11 September 2001 but the proposal explicitly recognised that any strategy to tackle infectious diseases needed to consider CBRN terrorism.

58. The Agency, which came into being as a Special Health Authority on 1 April 2003, combines some of the functions of the PHLS with those of CAMR and the National Focus for Chemical Incidents (NFCI). The HPA is working in close partnership with the NRPB this year. There are plans to incorporate the National Radiological Protection Board (NRPB) into the HPA “during or after April 2004”, but primary legislation would be required to achieve this.<sup>50</sup> The functions of the HPA (including the NRPB) in relation to CBRN terrorism are summarised in Table 2. Written evidence was received before the HPA was established and oral evidence was taken the day after, on 2 April 2003. In this report we will generally refer to the constituent bodies.

**Table 2: Functions of the principal constituent parts of the Health Protection Agency prior to 1 April 2003.**

Public Health Laboratory Service	The PHLS was a national organisation of 47 Laboratories organised into 8 regional groups, and central units – Communicable Disease Surveillance Centre, Central Public Health Laboratory and headquarters
Centre for Applied Microbiology and Research	CAMR conducted research on microbial hazards associated with human health, and develops and manufactures diagnostic, prophylactic and therapeutic products.
National Focus for Chemical Incidents	NFCI worked to improve NHS preparedness with respect to chemical incident management and to advise the Department of Health and the devolved administrations of the potential public health impact of chemical incidents. It also undertook public health surveillance of the impact of exposure to environmental chemicals.
National Radiological Protection Board	NRPB provides Government and other authorities with advice and practical guidance on radiological protection. It has monitoring facilities as well as providing a monitoring coordinating role.

49 Department of Health, *Getting Ahead of the Curve: A strategy for combating infectious diseases*, A report by the Chief Medical Officer, January 2002

50 Ev 102; www.hpa.org.uk

The House of Lords Science and Technology Committee published its report on Fighting Infection in July 2003. It concluded that the health service does not have the capacity to deal with chemical or biological threats on a major scale. It recommended that the HPA be given responsibility “for integrating surveillance related to human, animal and food-borne infection at national, regional and local levels in order to bridge the gaps that currently exist between these areas of speciality”.<sup>51</sup> On 5 August the HPA published its corporate plan. Among its new areas of work will be:

- Rolling out a training programme for health care professionals so that they can recognise, diagnose, and manage patients who have been exposed to CBRN agents; and
- Developing new standardised laboratory tests for biological agents to ensure rapid and accurate diagnosis.

59. At the creation of the HPA, a board of non-executive directors was announced. Sir William Stewart, Chairman of the HPA, professed himself delighted with their “high calibre and quality”.<sup>52</sup> We have no reason to doubt their credentials but we are surprised that no attempt seems to have been made to recruit internationally. It is vital that the HPA gets the best guidance possible and we should be honest to admit that this does not all reside within the UK.

**60. The formation of the Health Protection Agency is a positive move in terms of ensuring good public health surveillance and combating infectious serious disease, and it should also enhance the UK’s CBRN counter-terrorism measures. The split of the PHLS between national and local functions within NHS Trusts has been given much attention and we do not plan to repeat the arguments, except to say that expertise in the identification and epidemiology of possible biological agents must be retained at a local level.**

61. Before 11 September 2001, the DoH had asked CAMR to provide a Strategic Response Capability. The role was to provide support to DoH, the NHS and other Government agencies in responding to emergencies arising from dangerous micro-organisms. CAMR concentrated on those micro-organisms rarely encountered in the UK. In the case of deliberate release, CAMR focused on the clinical consequences of a release, thereby complementing the role of the Dstl Porton Down.<sup>53</sup>

62. It is not obvious that the events of 11 September 2001 have had a major impact on the DoH’s research programme beyond that mentioned at CAMR above. Dr Harper told us that most additional funding in this area is for countermeasures for training and awareness raising. He said that most of their research work had been on modelling the impact of releases, although this “could be substantially increased in the future”, and relatively small projects to look for diagnostic tests for different chemical agents.<sup>54</sup> Dr Harper should note

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51 House of Lords, 4th Report of the Select Committee on Science and Technology, Session 2002–03, *Fighting Infection*, HL Paper 138, para 5.38

52 [www.hpa.org.uk](http://www.hpa.org.uk)

53 Ev 120

54 Qq 280, 246

the comments by the pharmaceutical company PowderJect that “the role of basic biological research and further product development is central to the development of effective and broad countermeasures against biological weapons”.<sup>55</sup>

63. Dr Charles Penn from CAMR told us that “terrorism is a problem which has come not instead of existing health and other problems but as well as, so it is balancing the extra needs and activities which have come with that with the existing commitments and existing programmes of work”.<sup>56</sup> CAMR has received an extra £11 million over 5 years to strengthen its diagnostic capability.<sup>57</sup>

64. There is a danger that Government bodies will be expected to enhance resilience with little or no extra funding. Neil McColl from the NRPB told us that its grant had been fixed in cash terms for a number of years and that, as a consequence, it had diverted resources that were addressing other problems. He said that the NRPB had given up some work looking at other accident studies and radioactive waste management issues: “It erodes our knowledge base... our delivery of emergency response has probably been strengthened in some ways ... but some of the other aspects of radiation protection are starting to suffer”.<sup>58</sup> **We have concerns about the funding of the HPA and the NRPB. We have been told that they have been asked to take on new functions but it is unclear whether adequate additional resources will be available to meet the challenges from CBRN terrorism. We recommend that any increase in their activities relating to CBRN countermeasures should be reflected in their budgets. The HPA should not be undermined so soon in its existence by a lack of funds.**

### Vaccines

65. Vaccines are available for a surprisingly small number of infectious agents, around 10% according to PowderJect. We heard from Gail Cassel from Eli Lilly in the US that only two vaccines were available for the 13 agents on the A List (see Table 3). If vaccines are to be a major biodefence tool then a concerted research effort will be required into a range of agents that have so far received little attention owing to their low prevalence in the populations of developed countries. The US National Institutes of Health has recognised this by establishing a new Vaccine Research Center with an annual budget of \$50 million. We were told during our visit in May 2003 that the Center was set up with HIV as its primary target but that biodefence was now an important objective also. The House of Lords Science and Technology Committee reports that pharmaceutical companies invest 10 or 20 times less money in vaccine R&D than in therapeutics.<sup>59</sup> PowderJect reports that while the timescale for developing a bioweapon on an industrial scale is 3–5 years, it takes 12–15 years to develop a vaccine.<sup>60</sup>

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55 Ev 201

56 Q 9

57 Q 73

58 Qq 63–67

59 House of Lords, Fourth Report of the Select Committee on Science and Technology, Session 2002–03, *Fighting Infection*, HL Paper 138, para 8.3

60 Ev 202

**Table 3: Development of vaccines for A list agents.**<sup>61</sup>

Agent	Properties	Current vaccines
Anthrax	Non-contagious spore forming bacteria; inhalation anthrax toxemia is lethal; 70–100% fatality if left untreated	Anthrax vaccine with 5–6 doses over 12–18 months with annual booster available; may respond to ciprofloxacin if treated early
Smallpox	Highly contagious DNA virus; variola major; 30% mortality	Wyeth: DryVax 1 shot live vaccine 10 years+; safety concerns in elderly; no known cure; treatment with antivirals may have some efficacy
Plague	Pneumonic plague; highly contagious bacterium <i>Yersinia pestis</i> ; 80–100% mortality	No commercially available vaccine; may respond to aminoglycosides if treated early
Botulism	Non-contagious, spore-forming bacteria; toxin is lethal if enters water or food supply	No vaccine: antiserum or immunoglobulin in short supply
Tularaemia	<i>Francisella tularensis</i> , a highly infective non-contagious intracellular bacterium	Experimental live attenuated vaccine available; If treated early will respond to antibiotics
Viral haemorrhagic fevers	Arenaviruses; Lassa fever, bunyaviruses; Rift Valley fever, filoviruses; Ebola, haemorrhagic flaviviruses; yellow fever: carried by insect or rodent vectors; highly fatal	No vaccines exist except for yellow fever and Korean haemorrhagic fever; ribavirin against hantavirus; no effective therapies

66. Dstl Porton Down has a vaccine programme as does its close neighbour CAMR. Dr Scott told us that “We are undertaking, and have been since the last Gulf War, a number of medical countermeasures development programmes to try and ensure in the biodefence area that we produce rapid acting effective vaccines”. This includes, with the DoH, work on the development of the smallpox vaccine and new generations of anthrax and plague vaccines.<sup>62</sup> We were told by Dr Scott that he was working “very closely with our US counterparts in the DoD [Department of Defense] to generate a whole panel of defence vaccines”.<sup>63</sup> The holy grail of vaccine development is the production of a generic vaccine that provides protection against a wide range of pathogens. We understand that Dstl is active in this pursuit. The vaccine development work by Dstl Porton Down would seem to bring closer the prospect of protection for civilians against several of the A List agents, but

61 Ev 202

62 The new anthrax vaccine about to enter phase 1 clinical trials; the plague vaccine is about to enter phase 2 clinical trials

63 Q 265

Dr Scott was cautious: “the strategy for producing vaccines in a military context is totally different from that which it would be in a civilian scenario”.<sup>64</sup>

67. There has been a lot of public attention on vaccines. But, as Dr Scott said, their role needs careful thought before large amounts are invested: “Many of the current vaccines take a long time to establish immunity. Are we going to go and immunise our populus with fifteen different vaccines on the off-chance there might be a bioterrorism event using these materials? ... you need to do the thinking first and then work out where you can spend the money”.<sup>65</sup> The amount of money is substantial. As Dr Penn pointed out, “the science is there to attempt to develop safe and effective treatments or vaccines for a wide range of organisms but the risk and cost of doing so for each and every case is very high”.<sup>66</sup> According to PowderJect, the cost of developing a new vaccine could be in excess of \$350 million.<sup>67</sup>

68. A further problem is ensuring that large numbers of doses are available in the event of a bioterrorist attack. Either large volumes are stockpiled or there needs to be the capability to produce large amounts very quickly.

69. We share Dr Scott’s concern that too much attention may be given to vaccination. Nevertheless, it is prudent to marshal available resources without compromising research programmes into vaccines for infectious diseases such as HIV, malaria or even SARS. The decision by DoH to ask CAMR to provide a Strategic Response Capability to concentrate on those micro-organisms rarely encountered in the UK seems sensible.

### *Rapid Response Vaccine Facility*

70. In September 2002 CAMR submitted to the DoH a draft business case for a Rapid Response Vaccine Facility. The proposal was for the design and build of a state-of-the-art manufacturing facility capable of operating at Pathogen Containment Levels 3 and 4 (the degree to which the worker is protected from the agent) and suitable for process development and production of vaccines for emergency use. The projected cost was £30 million.

71. The Government has not accepted the business case in its current form. Hazel Blears, giving evidence to the House of Lords Science and Technology Committee on 8 April 2003, said that the DoH was keen that the development time should be reduced below six months and they had concerns about the cost. Ms Blears said “That does not mean the door is closed on it and I am certainly still happy to consider it with advice from the HPA and to see if there is a way forward on this”. The House of Lords Science and Technology Committee did not give explicit support to the proposal in its report *Fighting Infection* but said it was pleased that the DoH would consider a further submission.<sup>68</sup> Dr Pat Troop, Chief Executive of the Health Protection Agency told us that the proposal “was not turned

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64 Q 251

65 Q 248

66 Q 44

67 Ev 202

68 House of Lords, 4th Report of the Select Committee on Science and Technology, Session 2002–03, *Fighting Infection*, HL Paper 138, para 4.12

down, but there were some issues in the business plan that we felt needed further clarification and discussion”.<sup>69</sup> Dr Harper from the DoH told us that “we have asked specifically that the Health Protection Agency considers the vaccine production facility in the round, looking at what is available in dialogue with industry and with the wider academic community as well”.

72. The evidence we have received on the proposal from the pharmaceutical industry displays little enthusiasm. Philip Wright from the Association of the British Pharmaceutical Industry (APBI) said “I think it would be very interesting if a public body could actually out-compete some highly competitive industries across the globe”.<sup>70</sup> Nick Higgins from Acambis questioned the proposed speed of development. He said that his company had been able to produce a bottled vaccine within 10 months of getting the contract: “CAMR typically has not worked at that sort of breakneck speed and I think generally industry tends to work faster”.<sup>71</sup> Dr Scott from Dstl dismissed the idea that the public sector could not match the speed of industry, but tellingly, he refused to be drawn on the merits of the facility, maintaining that “we need to establish the case”.<sup>72</sup>

73. We too have concerns about the creation of a Rapid Response Vaccine Facility. There is merit in a publicly funded vaccine development facility. As the APBI indicated, “only a few member companies in the UK have category three facilities and none have category four”, which are necessary for handling the most dangerous biological agents. CAMR has many qualities but we believe that this venture would be better conceived as a partnership between CAMR and industry. Given the Government’s policy of keeping the pharmaceutical industry at arms’ length on this issue, this was not an avenue that CAMR could pursue.<sup>73</sup> John Hutton indicated that the DoH was planning a more constructive (and long-overdue) dialogue with industry. This is an opportunity to rethink the proposed Rapid Response Vaccine Facility. **We recommend that the HPA develop with industry a fast efficient vaccine production facility which combines a service to the tax-payer and benefits participating companies. This should form part of a long-term vaccine development strategy for Government.**

### *Vaccination policy*

74. While vaccines generally offer better protection against infection if administered before exposure, they can have value in limiting the effects after exposure. In the case of smallpox, current vaccines can keep a patient alive although they do not prevent them being carriers, which has implications for restricting the spread of the disease. The DoH have published a smallpox strategy, based upon regional teams of vaccinated staff, ring-fenced vaccination around any outbreak and the procurement of additional vaccine stocks. The Prime Minister said that the Government’s policy on smallpox vaccination was consistent with WHO guidelines.<sup>74</sup> These state that:

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69 Q 693

70 Q 199

71 Q 201

72 Q 250

73 The role of industry in developing medical countermeasures is considered in paras 91–102

74 HC Deb, 18 December 2002, Col 835

“vaccination of entire populations [against smallpox] is not recommended. The reason for not recommending such mass vaccination is that there is a risk of severe reactions to the vaccine, including death, and the fact that vaccination can prevent smallpox even after exposure to the virus... the best method of stopping a smallpox outbreak, should it occur, remains the same – search and containment. That means identifying persons with smallpox, identifying those people who have been in contact with them, and vaccinating them”.<sup>75</sup>

75. Smallpox has attracted a lot of attention on account of its virulence and the potential susceptibility of the population. There has not been a case in the UK since 1978. As a result, medical practitioners have no licensed vaccine available to them. With no incidents of infected individuals, it is not possible to test a vaccine to regulatory standards in an ethically acceptable manner. There are two commercially available vaccines. The purchase by the UK Government of the product produced by PowderJect was highly contentious and the subject of a National Audit Office (NAO) inquiry.<sup>76</sup> This issue will not be considered here. Representatives from the companies (the other one was Acambis) insisted to us that there was nothing to choose between their products and we have no reason to doubt them.<sup>77</sup>

76. The US Government has decided on a mass vaccination campaign and inevitably this has focused attention on UK policy. The medical community is largely supportive of the UK position. Vivian Nathanson from the BMA told us that “Smallpox vaccine is a dangerous vaccine and if nobody has smallpox in the community you do not give it to people who are not at front line risk”. But there could be a mass vaccination programme with “the right kind of agent and the right kind of vaccine”.<sup>78</sup> We note that the US smallpox vaccination programme has been making slow progress, with less than 40,000 individuals (excluding the military) as of September 2003.<sup>79</sup>

### Regulation

77. Dr Paul Drayson, Chief Executive of PowderJect, said that the smallpox vaccine that PowderJect produced was unlicensed and that it had provided for an emergency response situation against a potential biodefence threat. He said that the responsibility for compensation and indemnification lay with the medical practitioner who administered the vaccine, who would be a Government employee. Issues of indemnification and vaccine damage payments would therefore come under the responsibility of Government. We were reassured to hear the Minister, John Hutton, confirm to us that all healthcare workers taking the smallpox vaccine would be compensated for any side effects.<sup>80</sup> Evidence from the US military vaccination programme suggests that adverse side effects have been lower

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75 Statement by the Director-General of the World Health Organization, Dr Gro Harlem Brundtland, 2 October 2001

76 National Audit Office, *Procurement of Vaccines by the Department of Health*, Report by the Comptroller and Auditor General, HC 625, Session 2002–2003, April 2003

77 Q 180

78 Q 121

79 The US Centers for Disease Control has distributed 291,400 doses of vaccine to states for pre-vaccination of key health and safety workers, at the discretion of the states and the workers, [www.hhs.gov](http://www.hhs.gov); [www.smallpox.army.mil](http://www.smallpox.army.mil)

80 Q 687

than expected and there have been no deaths among the 450,000 who have been vaccinated.<sup>81</sup>

78. The Committee heard during its visit to the US of the Food and Drug Administration's (FDA's) ability to invoke the "animal rule".<sup>82</sup> This enables it to approve critical drugs and vaccines based on evidence of their effectiveness in animal tests rather than on extensive human studies. This permits scaled-back human trials, especially for products to counter biological and chemical weapons. The equivalent body in the UK is the Medicines and Healthcare products Regulatory Agency (MHRA), which has recently been formed by the merger of the replaced the Medical Devices Agency and the Medicines Control Agency. The MHRA tells us that "When the CSM [Committee on Safety of Medicines] considers the application on the basis of quality, safety, efficacy and the risk:benefit of the product, it takes into account the data submitted and also the reasons for absence of full data. This is then factored into evaluation of risk:benefit before a decision is taken". At a European level, we understand that the European Medicines Evaluation Agency already has a provision for marketing authorisation under exceptional circumstances.<sup>83</sup> How this applied is another matter. The vaccine manufacturer Acambis reports that guidance from the European Medicines Evaluation Agency is that any new smallpox vaccine needs to be fully tested as a 'new vaccine', which would involve Phase I trials of a hundred or so people, Phase II of several hundred and Phase III of many thousands to show that it is safe.<sup>84</sup>

**79. The Government's decision not to conduct a mass vaccination programme for smallpox is correct in our view. The reported side effects of the vaccine make this option unattractive. Should a safer vaccine become available, we would expect the Government to reconsider this policy yet the Minister refused to address this point. We have heard of doctors' concerns about the "worried well".<sup>85</sup> A safe vaccine might prove cost effective, provide reassurance to millions and possibly act as a deterrent to any attack.**

### ***Personal protection and decontamination***

80. A DoH working group was looking at the procurement of personal protective equipment (PPE) at the time of 11 September 2001. While the new specification was being established, the NHS procured PPE as an interim measure, the process starting in October 2001 and finishing in March 2002, at a cost of £16 million.<sup>86</sup> It became apparent that these interim suits were faulty, as David Harper from the DoH explained to us:

"At the time of September 11, we put out very quickly on an interim basis personal protective equipment recognising the possible new threats we might need to be prepared for. ... we then rolled out the programme of provision of the new suits and decontamination units. When the suits were tested ... they were found to leak through some of the foot seams ... once we were made aware of this [we] had

81 [www.smallpox.army.mil](http://www.smallpox.army.mil)

82 US Food and Drug Administration press release P 02-17, 30 May 2002

83 Ev 260

84 Ev 212

85 Q 104

86 Ev 121

discussions with the industry, with the provider, and with the end users, to come up with a suitable interim solution to maintain our capability in an operational sense, information was put out very quickly indeed, and we undertook a rolling programme of modification which will rectify the problem”.<sup>87</sup>

81. This is an embarrassing episode for the DoH. We can understand the desire to be seen to be doing something in response to the 11 September 2001 attacks but the Department has succeeded only in undermining confidence in its competence. An NAO review of NHS preparedness reports the concerns of the London Ambulance Service about “the recurring costs associated with maintaining and replacing the one-off Department of Health issue”.<sup>88</sup> The most curious aspect of the affair is that the suits were tested by Dstl.<sup>89</sup> Either Dstl did not identify the problem or its advice was ignored. We were also surprised that in the first instance the Fire Service was not consulted.<sup>90</sup> Its demands are likely to be more in line with the health service than the military.

82. In law the DoH is responsible for the decontamination of the public.<sup>91</sup> The DoH and the OPDM have signed a Memorandum of Understanding in respect of mass decontamination. It outlines the basis on which the Fire Service will assist the Department of Health by providing and staffing mass decontamination facilities at a CBRN incident.<sup>92</sup>

83. The NAO review found that existing provision to deal with contamination incidents was inadequate and that there was a fragmented approach, which had led to individual NHS trusts procuring different types and quantities of PPE and decontamination facilities. Only after this review were national specifications developed.<sup>93</sup> The review concluded that the situation concerning PPE and decontamination equipment was continuing to improve.

**84. In its initial procurement of personal protective equipment after 11 September 2001, the DoH acted too hastily and without consulting sufficiently widely. We are content that problems are being remedied but at considerable expense and at a cost to the public’s and health professionals’ confidence in the Department’s competence.**

## Surveillance

### Public health service

85. The surveillance of clinical infectious diseases in England and Wales is co-ordinated through the Communicable Disease Surveillance Centre (CDSC) of the PHLS. In the clinical setting, notifiable diseases, as specified in the Public Health (Control of Disease Act) 1984 or the Public Health (Infectious Diseases) Regulations 1968, must be reported by the medical practitioner to the Consultant for Communicable Disease Control, who will

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87 Q 239

88 Report by the Comptroller and Auditor General, *Facing the Challenge: NHS Emergency Planning in England*, HC 36 Session 2002–2003, November 2002, Annex G, p 51

89 Q 242

90 Qq 616–618

91 Q 620

92 Ev 135

93 Report by the Comptroller and Auditor General, *Facing the Challenge: NHS Emergency Planning in England*, HC 36 Session 2002–2003, November 2002, pp 25,30

then pass the data on to CDSC. We understand that CAMR provides such information directly to CDSC using electronic means.

### *NHS Direct and others surveillance techniques*

86. The Government's evidence to the inquiry says the data that NHS Direct provides could provide an early warning of the effects of a biological attack and complements the existing national schemes of clinician, and routine and specialist laboratory reporting systems that capture illness at a slightly later stage. It says that the system is likely to be at its most effective once an attack is suspected or confirmed, as it would provide an early assessment of the potential extent of an attack.<sup>94</sup> The service, which receives 7.5 million calls a year, seems to have great potential if used alongside other surveillance techniques. According to John Hutton, Minister of State for Health, "All NHS Direct staff have been trained in the rationale, mechanism and importance of their surveillance programme, set up to detect outbreaks of infectious diseases. Analysts have been trained to deliver daily surveillance reports".<sup>95</sup> Dr Maureen Baker from the Royal College of General Practitioners told us that the UK should "move towards a more integrated surveillance system which uses the data from in-hours general practice, which uses NHS Direct data and possibly in the future uses data from out-of-hours primary care and Accident & Emergency centres".<sup>96</sup> In the US we heard attempts were being made to monitor the purchase of drugs, such as analgesics, at pharmacies to assess public behaviour and track illnesses for which people seek over-the-counter treatments. The British Medical Association argues that "Disease control and surveillance measures should be enhanced to aid early detection of pathogens, and extra resources should be made available for research into early warning and identification of biological warfare agents".<sup>97</sup> **The use of NHS Direct data to give an early warning of a CBRN attack is a useful addition to the existing surveillance techniques but it should form part of an integrated surveillance system that uses data from a variety of sources.**

### *World Health Organization*

87. The WHO has a Communicable Disease Surveillance and Response division. This includes a global alert and response system which gathers official reports and rumours of suspected outbreaks from a wide range of formal and informal sources. Formal reports of suspected outbreaks are received from ministries of health, national institutes of public health, WHO regional and country offices, WHO collaborating centres, civilian and military laboratories, academic institutes, and non-governmental organisations. WHO publishes a Weekly Epidemiological Record with "rapid and accurate dissemination of epidemiological information on cases and outbreaks of diseases under the International Health Regulations and on other communicable diseases of public health importance". Following the use of anthrax spores in the US, WHO set up a Chemical and Biological Weapons Working Group to share information, activities and experience.<sup>98</sup> We heard

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94 Ev 140

95 HC Deb 5 September 2003, Col 5W

96 Q 125

97 Ev 220

98 [www.who.int](http://www.who.int)

concerns in the US that the WHO surveillance mechanisms were not well resourced and it had set up its own Emergency Operations Center at CDC. **The World Health Organization provides a valuable resource in the response to CBRN terrorism and it should not be under-resourced. We recommend that the Government raise this issue at the appropriate forum.**

### *Industry*

88. The UK has a successful pharmaceutical industry and we were interested to establish what role it could play in developing CBRN countermeasures. Dr Philip Wright of the ABPI told the Committee about its development, with the BioIndustry Association, of a Bioterrorist Task Force which aimed to start exploring with Government what industry could contribute. He said that “It has been somewhat problematic. ... there was not a clear dialogue and I think consequently the industry has probably found it quite difficult to know how to provide assistance or respond to any potential future requests for assistance without some sort of more positive dialogue”.<sup>99</sup> The ABPI says this “contrasts strongly with the approach of the US”.<sup>100</sup>

89. The problems for industry are summed up by the Academy of Medical Sciences: it is “unrealistic to expect industry to respond in the absence of a definable market – the issue is not just one of market, but also of capacity to react rapidly to an emergency”.<sup>101</sup> PowderJect highlight the sharing of potential liabilities and intellectual property rights as issues which require careful consideration in collaborative ventures.<sup>102</sup>

90. Some believe that the Government needs to provide, at the very least, clear information about where its policies lie and what sort of market might emerge. PowderJect argues that vaccines which may be developed against biological weapons do not necessarily follow traditional commercial market forces so some pump priming by the Government is necessary. It says that “a proactive anticipatory programme is needed between Government and industry in key areas if an effective UK biodefence strategy is to be implemented”.<sup>103</sup>

91. The ABPI says that “existing anti-infective medicines are likely to be the best approach to responding to a potential incident.” However, they claim that they have not been approached by Government to “discuss or suggest possible medicines already licensed in the UK for additional indications against putative biological threats.” They do not know if individual companies have been approached in this regard.

92. The ABPI states that it has been in contact with the Home Office, DTI and other Government Departments over the last 18 months in order to ensure that appropriate expertise in industry was shared among key stakeholders. It reports the overall outcome of this contact to have been “a little disappointing” and that there had been a reluctance to

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99 Q 189

100 Ev 236

101 Ev 199

102 Ev 205

103 Ev 200

discuss potential threats.<sup>104</sup> Acambis also report difficulties in conducting an open dialogue with the Government. PowderJect complains about the lack of clarity over the Government's objectives and is unclear about whether any increases in Government-funded research have occurred in any of priority disease areas. It argues that industry is keen to contribute to the development of new products but that "Government must share some of the risk involved in developing products for which there is no guaranteed market".<sup>105</sup>

93. David Harper from the DoH stated: "We do talk to industry. Clearly with vaccine procurement and development in the general sense ... there is a dialogue with ABPI and others and we have spoken specifically with industry in regard to the smallpox vaccine procurement". Richard Scott from Dstl also felt that there had been worthwhile interactions with industry: "As far as MoD is concerned with their vaccine development programme, they use industry widely, and we do talk to them about our requirements. We have them involved".<sup>106</sup> **We accept there has been contact between Government and the pharmaceutical industry to discuss medical countermeasures but it has been insufficient to enable companies to adapt their own research programmes with confidence.**

94. We were pleased to detect a shift in Government thinking during the course of our inquiry. John Hutton told us that "We have had discussions with the industry on an ad hoc basis, particularly when procurements are coming up and we need to re-stock or re-equip. I think there is a case now for us to look at a more strategic relationship with the biotech industry, and I will be taking that forward myself".<sup>107</sup> **We are pleased that our probings have prompted action to improve the dialogue with the pharmaceutical industry and that Mr Hutton accepts the criticism that the existing dialogue with the pharmaceutical industry has been inadequate.**<sup>108</sup> **We are less pleased that it took Ministers so long to recognise the crucial role that industry must play in developing biomedical countermeasures. We look forward to learning of his progress in the Government's response to this report.**

### *BioShield*

95. In his January 2003 State of the Union Address, President Bush announced Project BioShield—an attempt to develop and make available modern, effective drugs and vaccines to protect against attack by biological and chemical weapons or other dangerous pathogens such as smallpox, anthrax, and botulinum toxin. Project BioShield is designed to:

- Ensure that resources are available to pay for "next-generation" medical countermeasures;

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104 Ev 236

105 Ev 204

106 Q 233

107 Q 674

108 Q 675

- Strengthen NIH development capabilities by speeding research and development on medical countermeasures based on the most promising recent scientific discoveries; and
- Give FDA the ability to make promising treatments quickly available in emergency situations.

96. Use of this authority is currently estimated to cost \$6 billion over 10 years. Funds would also be available to buy countermeasures to protect against other dangerous pathogens, such as Ebola and plague, as soon as scientists verify the safety and effectiveness of these products. The US Congress has yet to pass the necessary legislation and there are reservations about the way the money would be allocated since the Bill requests permanent indefinite funding authority and this could threaten other federal budgets.<sup>109</sup> Under the programme, the US Government would create a new market for anti-bioterror products by purchasing vaccines or therapies once they are developed. The idea is to encourage research companies to work on vaccines against illnesses caused by potential agents such as anthrax or botulinum toxin which occur so rarely in a natural setting that few, if any, companies are researching them.

97. Philip Wright of the ABPI said he thought that BioShield “seems to have covered and thought of all the main issues” and that the US approach is more effective in that BioShield “provides not just one perspective which is a research-based capability but also the pull through, and also considers how to create the market or the incentive for companies to produce the defence agents that may be required”.<sup>110</sup> The scheme is not without its critics in the US. In an article in the *Washington Times* on 9 July 2003 Drs Tara O’Toole and Thomas Ingelsby of the Johns Hopkins Center for Civilian Defense Studies describe Bioshield as a “modest tweaking of market forces” and compares the US Government’s investment in biodefence with the \$6.8 billion being spent in 2003 on missile defence research.

98. It is debatable whether a UK BioShield would be an effective use of resources. Some could argue that the UK can take advantage of the incentives that would be provided by the American taxpayer. There is some truth in this but it is important to recognise that US and UK policies will not necessarily be aligned, as we have already witnessed in the contrasting approaches to smallpox vaccination. If US Congress passes the legislation we feel that the UK could benefit from an active dialogue with those companies in the US bidding for contracts awarded under Project BioShield.

99. The Treasury has shown an enthusiasm for stimulating private sector R&D through the tax system and we were anxious to know what discussions Mr Hutton had had with his colleagues in the Treasury as to how best to provide incentives for industry with regard to biodefence. His evasive answer leaves us concerned.<sup>111</sup> It is hard to understand how meaningful incentives can be put in place without the Treasury’s involvement. We would have liked to see an acknowledgement of this. We were pleased to see the House of Lords inquiry into *Fighting Infection* express similar concerns in relation to vaccines: “We believe

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109 “The urgent first step on biodefense”, *The Washington Times*, 24 July 2003

110 Qq 205,213

111 Q 680

that ... the Government should ... create financial incentives to enable early research, development and commercialisation of vaccines".<sup>112</sup> **The UK is a relatively small consumer for the global pharmaceutical industry and it is in a weak position to provide powerful incentives to develop particular products. A UK BioShield is not justified but there is much the Government could achieve, in collaboration with the pharmaceutical industry, to improve the market for medical CBRN countermeasures.**

## Agriculture

100. The response of the Department for Environment, Food and Rural Affairs (DEFRA) to CBRN terrorism is relevant in three ways:

- Agriculture may be the target or may be adversely affected, with economic implications;
- Some animal diseases, notably anthrax and tuberculosis, can be transferred to humans;<sup>113</sup> and
- Experience and expertise in tracking and monitoring animal infectious diseases may be of value in developing countermeasures.

101. Animal diseases are divided into A list and B list infections, in a similar manner to human agents. These are categorised by the Office Internationale des Epizooties (OIE). List A diseases have the potential for very serious and rapid spread, are of serious socio-economic or public health consequence and are of major importance in the international trade of animals and animal products. Examples are foot and mouth disease, rinderpest, Rift Valley fever, bluetongue, African horse sickness, classical and African swine fevers and avian influenza and Newcastle disease. List B diseases, such as anthrax, are considered to be of socio-economic and/or public health importance within countries and are significant in the international trade of animals and animal products.<sup>114</sup>

102. Before 11 September 2001, List A agents were subject to a range of controls.<sup>115</sup> DEFRA says it invests around £40 million annually into animal welfare and disease research. The current value of projects relevant to contingency plans and their use by terrorists is £16 million.

103. The foot and mouth epidemic of 2001 has the potential to inform future control strategies for animal diseases. If the Government has learnt from the three inquiries it commissioned and the report of the Environment, Food and Rural Affairs Committee, it should be in a good position to tackle any major outbreak of disease.<sup>116</sup> The Government would do well to heed the findings of the US National Academies. In their report *Countering Agricultural Terrorism*, they stressed that an intentional attack could differ

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112 House of Lords 4th Report of the Select Committee on Science and Technology, Session 2002–03, *Fighting Infection*, HL Paper 138, para 8.4

113 There are around 400 of these "zoonotic" infections; Department of Health, *Getting Ahead of the Curve: A strategy for combating infectious diseases*, A report by the Chief Medical Officer, January 2002, para 2.48

114 Ev 127

115 Ev 127–128

116 First Report of the Environment, Food and Rural Affairs Committee, *The Impact of Foot and Mouth Disease*, 23 January 2002, HC 323

from the accidental spread of a disease: an agent could be introduced covertly into remote areas and multiple sites; covert transmission is more likely to result in the survival of a pathogen in transit; a more virulent strain is likely to be selected; and the release is likely to be timed for the greatest chance of success.<sup>117</sup>

104. Professor Graham Pearson from Bradford University points out that while the surveillance of human pathogens is conducted by the WHO, animal pathogens are monitored by the OIE and plant pathogens by the Food and Agriculture Organization (FAO). He reports that “the coordination between these three bodies leaves much to be desired”. He says that although the WHO has addressed question of responses to chemical and biological attacks of humans, “there is no sign of any comparable response to biological attacks against animals or plants”. Professor Pearson argues that the UK, as a member of both the OIE and the FAO, should in conjunction with the EU request that the OIE and FAO, in consultation with the WHO, prepare response plans for countering deliberate attacks against animals or plants. **The international surveillance of biological agents should embrace animal and plant diseases as well as human ones. We recommend that the Government take action to improve the coordination between the relevant international bodies.**

## Non-medical technologies

### *Fire services*

105. The Government says in its evidence that there was no specific activity within the Fire Service focused on CBRN terrorism in the period before 11 September 2001<sup>118</sup>. Mr Peter Morpew, HM Senior Inspector of Fire Services, told us that ODPM was now spending £860,000 on two main research strands. The first is looking at the decontamination of people, in collaboration with the DoH and the police and ambulance service.<sup>119</sup> The second, working with the police, is into the design of protective equipment – into protection of the airways and the protection of skin through impermeable clothing.<sup>120</sup> All of this research is being carried out externally. Mr David Peace, Director of the ODPM’s Fire Research Division, said the Fire Service had a small research group of 15 professionally qualified staff who, before 11 September 2001, spent about half a million pounds annually on a variety of issues in support of the Fire Service. This work expanded significantly after 11 September 2001.<sup>121</sup>

### *New Dimension Programme*

106. Following the terrorist attack on 11 September 2001, the DTLR Minister with responsibility for fire (now ODPM) requested HM Chief Inspector of Fire Services for England and Wales to examine the fire service’s ability to respond to such catastrophes. A “New Dimension Group” was established “to evaluate Fire Service capabilities and to make

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117 National Research Council Committee on Biological Threats to Agricultural Plants and Animals, *Countering Agricultural Bioterrorism*, National Academies Press, 2003, pp 3–5

118 Ev 135

119 Q 602

120 Q 605

121 Q 640

recommendations to ensure that it is sufficiently trained and equipped to deal with catastrophic, CBRN and conventional terrorist incidents”.<sup>122</sup> Before 11 September 2001 individual fire authorities would procure their own equipment. A decision has subsequently been made that central government will buy the key bits of equipment such as radios and mass decontamination equipment.<sup>123</sup>

107. Twelve specifications for equipment associated with mass decontamination of the public were completed:

- Casualty decontamination structures
- Casualty pre decontamination packs
- Casualty post decontamination packs
- Firefighter decontamination equipment
- Radiation monitoring equipment
- Radiation dosimetry
- Chemical monitoring equipment
- Biological monitoring equipment
- Air sampling/flammability detection equipment
- Casualty carrying equipment
- Firefighter gas tight suits

108. As a result of the programme, ODPM will provide 77 Incident Response vehicles for carrying mass decontamination equipment and 190 purpose built decontamination units. Each vehicle will carry decontamination units, each capable of decontaminating large numbers of people (200 people per hour) and ancillary equipment, including temporary clothing for affected members of the public. This equipment will be deployed flexibly, on the basis of a comprehensive analysis of risk, to meet the needs of all fire authorities. The new equipment being purchased includes 4,400 additional gas tight suits, doubling the fire service capability, to enable firefighters to work safely. The new decontamination Disrobe and Re-robe packs contain insulated clothing which provides good protection from inclement weather. Investment through the programme amounts to £56 million. We understand that money comes from the £330 million announced by the Chancellor in his Budget 2003. An update on the progress of the programme to September 2003 has been published as evidence.<sup>124</sup> The Local Government Association, in its evidence to the Bain Review (commissioned by the ODPM to inquire into and make recommendations on the future organisation and management of the Fire Service) had commented that “The extra resources in 2003/04 (£66m) are insufficient to fund even a 3.5% pay award, price

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122 Office of the Deputy Prime Minister, *The New Dimension Newsletter*, Issue 1, May 2002

123 Q 628

124 Ev 258–260

increases, and the additional cost of pensions. This apparently leaves nothing whatsoever for probable commitments”. One of these is “Additional activities relating to the new threat of terrorism”.<sup>125</sup> **The New Dimension programme seems a sensible and comprehensive attempt to address the CBRN terrorist threat, for which we commend the Fire Service.**

109. After its formation of the New Dimension Group, HM Fire Services Inspectorate started to publish a series of newsletters, informing the stakeholders – fire authorities, brigades, partners and interested groups – of the progress of the programme. This was a welcome initiative and in the first three issues provided detail on the procurement of mobile decontamination units. Also presented was information on the input of Professor Sir David King’s Science Working Group on 14 February 2002, which as far as we can ascertain is the only public statement of its activities.

110. It was disappointing, therefore, that publication ceased after three issues in August 2002. We pursued this matter with officials from the ODPM’s Health and Safety Directorate when they gave evidence on 16 May 2003. We had been told by Nick Raynsford, Minister of State at the ODPM, that this session needed to be in private for security reasons. The implication was that the remainder of the programme, such as chemical, radiological and biological monitoring equipment, was of a sensitive nature and so the newsletters had been stopped. We were very surprised to hear from witnesses during the session that this was not the case; rather, the ongoing fire dispute had been the real reason for the Government’s secrecy and nothing in the New Dimension programme was classified.<sup>126</sup> Mr Morphey reassured us that the publication of these newsletters would resume. However, as this report was being finalised we can find no evidence of this.<sup>127</sup> **We had been assured that the Office of the Deputy Prime Minister would resume publication of the New Dimension newsletters to inform the fire community of the programme’s progress. To our knowledge this has not occurred and we recommend that this takes place without delay.**

111. **Government had shown a willingness to communicate the progress of the New Dimension programme, which we welcome. It is our view, however, that the fire dispute did not provide adequate grounds to change this policy. We regret that Ministers apparently felt unable to give the real reason for not cooperating with this part of our inquiry. It is a sorry indictment of the Government’s policy on releasing information on security issues that Government witnesses were unaware of, or unwilling to stick to, the reasons advanced by Ministers for refusing permission for them to appear in public.**

### **Customs and ports**

112. The Home Office says that the strength of the UK’s border control lies in the specialist expertise and close co-operation and co-ordination of the key agencies, namely the Police (including Special Branch), the Security Service, Immigration and HM Customs and Excise. The Home Office says they operate an intelligence-led approach, targeting those

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<sup>125</sup> Local Government Association, *First submission to the Independent Review of the Fire Service*, October 2002, para 66

<sup>126</sup> Qq 654–655

<sup>127</sup> Q 625

who pose a risk to our security, while not causing endless disruption to passengers, trade and freight.<sup>128</sup>

113. Since the 11 September 2001 attacks in the US the screening and searching of passengers and baggage at airports and seaports has been stepped up. Examining Officers for Police, Immigration and Customs now have the power to stop, question, search and detain any individual entering or leaving Great Britain or Ireland if they believe that person is connected with terrorist activities. Air and sea carriers must now supply information to an Examining Officer, upon written request, about passengers, crew and freight on all journeys to, from and within the UK. The Home Office is setting up joint immigration controls in France and Belgium, so that people can be checked, and if necessary refused passage, before they leave for the UK.

114. The BBC reported on 14 May 2003 that customs officers in the UK are to be issued with new detection equipment in an effort to stop terrorists bringing in material for a radioactive bomb. New detection technology has been installed at the Channel Tunnel entry points and the port of Calais to check for people concealed in lorries or trains. This technology is currently being extended to other ports in France, Belgium and the Netherlands.<sup>129</sup> In a written answer in the House of Lords on 3 July, Home Office Minister Baroness Scotland of Asthal said that investment in this detection technology represented a “significant” part of the £330 million announced in the 2003 budget for counter-terrorism.<sup>130</sup> **We welcome the move to install radiation detectors at ports and its public announcement. This will contribute to the public’s confidence in the measures taken by the Government and could act as a deterrent to potential terrorist groups. The communication of this initiative is at odds with the Government’s usual policy on CBRN countermeasures. We urge the Government to take a more consistent and open approach.**

### *Transport*

115. TRANSEC regulates security across the aviation, maritime, channel tunnel and railway industries.

### *Rail*

116. The DfT website says that since the events of 11 September 2001, the Surface Modes Branch of TRANSEC has developed a number of new initiatives, while continuing to advise/regulate its industries along established lines. It says that advice on chemical and biological weapons has been issued to the industry, including London Underground. There is work being undertaken to develop detection systems that would enable it to extend the application of screening at airports across all modes of transport.<sup>131</sup>

117. The British Transport Police (BTP) says it has had considerable experience of dealing with terrorism on the railways in Britain. Since 1997 around half the terrorist attacks on

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128 [www.homeoffice.gov.uk/terrorism](http://www.homeoffice.gov.uk/terrorism)

129 [www.homeoffice.gov.uk/terrorism](http://www.homeoffice.gov.uk/terrorism)

130 HL Deb, 3 July 2003, Col 124WA

131 TRANSEC’s response to the terrorist attacks in the USA on 11 September 2001, [www.dft.gov.uk](http://www.dft.gov.uk)

mainland Britain have had rail targets. The BTP has officers trained and equipped to deal with terrorist situations, including a chemical or biological threat, and contingency plans are in place and kept under constant review. It does not make public many details of its response capability or contingency plans. BTP says that some hoaxes are specifically designed to test the reaction of the authorities as part of the terrorist's planning process. Where an incident turns into a terrorist inquiry, it will be investigated by the Anti-Terrorist Branch of the Metropolitan Police.<sup>132</sup> The Government says that in London, the Metropolitan, British Transport and City of London Police have approximately 1,100 trained officers and the necessary equipment to provide a full CBRN response capability.<sup>133</sup>

118. On its website, BTP describes railway stations as generally very controlled environments – mainline stations, it says, particularly in London, are among the safest areas of public space in Europe. Less information is available on the London Underground and we have failed to get cooperation from Ministers to address this issue. TRANSEC did provide evidence to the Defence Committee inquiry on Defence and Security in the UK, in which it stated that “Following the Sarin attack in Tokyo, LUL actively considered what action is needed to take to deal with a similar attack. BTP have trained officers to respond to CB [chemical and biological] attacks and exercises have been held to test and develop contingency plans involving the emergency services”.<sup>134</sup>

119. We have been unable to pursue the development of countermeasures for the London Underground on the basis that in doing so we would be compromising national security. We have been fortunate that our hosts in the US were more than happy to explain the systems they are developing to counter the CBRN threat in their metro systems (see Box 3). Underground railways do pose particular problems, as Dr Richard Scott of Dstl was keen to point out.<sup>135</sup> That is why in March 1995 the Aum Shinrikyo sect targeted the Tokyo metro. We understand that the BTP is taking part in handling trials for biological detection equipment, which hints at some activity.<sup>136</sup> **The Government's refusal to allow us to examine the technologies employed by the London Underground is wrong. We fear that the Government's refusal to discuss the problems simply creates the impression that it does not know how to solve them.** We will return to the issue of openness and security in Section 8.

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132 [www.btp.police.uk](http://www.btp.police.uk)

133 Ev 118

134 Sixth Report of the Defence Committee, Session 2001–02, *Defence and Security in the UK*, Minutes of Evidence, HC 518–II, Wednesday 17 April 2002

135 Qq 272–275

136 Seventh Report of the Defence Committee, Session 2002–03, *Draft Civil Contingencies Bill*, HC 557, Ev 60

**Box 3: US metro systems**

A partnership was formed in 1999, between the Washington Metropolitan Area Transit Authority (WMATA) and several Federal agencies (including the US Departments of Energy (Sandia Laboratory), Justice, and Transportation) to advance the efforts to improve the safety and security of the Metrorail system against chemical or biological terrorism. (Scientists from the Sandia Laboratory briefed the Committee on this programme during its visit to Livermore, California.)

The federal partners and several National laboratories offered installation direction and testing of the chemical sensor system. WMATA is utilising a sensor system designed to act as an early warning system to safeguard first responders, employees, and customers on its subway system. WMATA was the first transit property in the United States to implement a strategic test programme of this nature.

In addition to the PROTECT system, the Metro Transit Police Department has provided small devices to its officers that they can wear in the Metrorail system that detect radiation. The devices notify the officer of the presence of radiation so further investigation may be employed. The department has also deployed hand held radiation sensor equipment to its specialised units.

120. In the area of nuclear and improvised radioactive devices (“dirty bombs”), HSE has provided technical advice [to the DfT] on the range of applications and sizes of radioactive sources used in the UK, and helped to prioritise those which presented a significant opportunity for terrorist activity. HSE also gave advice on the trial of detection devices for use in transport monitoring.

121. We find it curious that the HSE should have given advice on radiation devices for transport monitoring but not for other applications nor for other forms of CBRN detection. It must have expertise in these areas that could be usefully employed. **The HSE has made the case for a strong role in informing CBRN countermeasures but we do not have the impression that it has been sufficiently proactive in providing that advice nor adequately consulted by other parts of Government. It is right that the HSE has a degree of autonomy but it seems the Department for Work and Pensions provides little input to its activities. We believe that the HSE needs stronger ministerial direction which its sponsoring Department is either unable or unwilling to provide.**

122. The issue of CBRN countermeasures in the UK transport system is curiously absent from the Government’s written evidence to this inquiry. We invited a representative from TRANSEC to give oral evidence before us. The Secretary of State for Transport refused permission at the last minute, we suspect on the promptings of the Home Secretary. We were told that CBRN issues were a Home Office matter, despite information on the DfT website stating that TRANSEC had issued advice to industry. We agree with the former Minister of State at the Home Office, John Denham, who stated (while in office): “It is tempting to feel that ... airport security should be taken away from the DfT and given to someone else, but in practice it is essential that those who are responsible for our airlines, airports, railways and the underground actually build into their day-to-day responsibilities an understanding of what is needed in the running of those major services so that we can respond to emergencies”.<sup>137</sup> Transport companies will want to take a holistic approach to their security and this will be made difficult if they have to go to different departments for advice depending on the threat. The transport of hazardous materials could be an attractive

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137 HC Deb, 4 March 2003, Col 202WH

target for terrorists. This needs proper attention from the DfT. **TRANSEC is charged with providing security guidance to transport operators yet we are told that an important part of security will now be dealt with by another department. Transport operators need clear lines of communication with Government. We recommend that either the transport security is brought under the remit of the Home Office or that the DfT is left to deal with all transport security issues.**

### *Aviation*

123. Aviation security within the UK is regulated by TRANSEC. It sets out the security processes, training and technology to be deployed at UK airports, as part of its responsibility as the Appropriate Authority for the UK defined by Annexe 17 of the Chicago Convention.

124. BAA plc is the largest airport owner in the UK. Its security performance is overseen by a board sub-committee, the Safety, Security and Environment Committee. It says it has developed a proactive safety and security management system, covering policy, performance standards and monitoring. One third of its employees work in security, mainly screening passengers and hand baggage after they have checked-in, before the airside departure lounge. It has completed the installation of systems to screen hold baggage for all international departing passengers at its UK airports, costing over £175 million. BAA says these systems use the world's most advanced and effective screening technology, whose development was led by BAA, with TRANSEC.<sup>138</sup>

125. BAA in its evidence cites the example of its hold baggage screening system as an example where a previously non-existent technology was developed by BAA working together with a manufacturer and Government. The BAA Chief Executive chaired a seminar in February 2003 to address the new threats from chemical, biological and radiological weapons, with TRANSEC, Smiths Industries and QinetiQ. BAA says that several areas were identified for further research and will be taken forward using the same successful methodology that was used for hold baggage screening.

126. BAA says that the national response to the threat from chemical, biological and radiological weapons is still at a relatively early stage with the focus on response. It says that work on preventative measures, which consist of technology and the appropriate processes for deployment, is now going ahead.

127. During our visit to the US we heard from scientists at the Sandia National Laboratory. Its PROACT system (Protective and Responsive Options for Airport Counter-terrorism), having been installed successfully in the Washington Metro (as "PROTECT", see Box 3), is now being tested at San Francisco International Airport. The programme seeks to demonstrate detection system components as a basis for future integrated chemical and biological facility-monitoring systems.

128. We commend BAA on its initiative in working to develop technological solutions to the issue of CBRN security. We recommend that the Government assist BAA in its efforts and investigate how the US PROACT system could be tested in the UK.

### Food

129. The Food Standards Agency (FSA) is the lead department for consequence management of food contamination incidents in England and Wales. The expertise, experience and contacts used in the management of these relatively frequent incidents are directly relevant to a CBRN attack. The Agency has no formal role in prevention and resilience, but works with UK agriculture departments to provide advice to the food industries.<sup>139</sup> The FSA has a radiological safety research programme which supports continuous surveillance of levels of radioactivity in food, and investigates any food safety aspects of radioactive waste. The FSA issues advice on outbreaks of food poisoning. Most recently it has issued advice on a Salmonella outbreak last year in the South East and North West of England.<sup>140</sup>

130. Tesco describes the malicious contamination of food for terrorist purposes as a real and current threat. It operates on the principle that food retailers have always been a possible target for individuals or groups seeking personal gain. Tesco says its suppliers must meet stringent safety and quality criteria. Routine testing by the supplier takes place on products prior to delivery. Product samples are chosen at random by their Quality Control staff for chemical and microbiological analyses as appropriate. Tesco says it has developed strong links with the FSA, DEFRA, the Pesticide Safety Directive and the European Commission. John Longworth, Group Trading Law and Technical Director at Tesco, said that he had expert scientists who have direct access to Dstl Porton Down. These range from toxicologists through to microbiologists and epidemiologists. He said Tesco had close contact with the FSA, DEFRA and other Government agencies on a daily basis.<sup>141</sup>

131. The British Retail Consortium provided us with a full list of security measures its members currently employ. What seems to be lacking is a sense that there is a new threat from terrorists that provides new challenges to the food industry. We were interested to read the remarks by Eliza Manningham-Buller made on 16 October 2003 that supermarkets present very attractive targets for terrorists.<sup>142</sup> **The food industry has established practices to deal with tampering but concerted effort by an international terrorist organisation is a problem on a different scale. It would be regrettable if it allowed a misplaced confidence in its procedures to lead to vulnerabilities.**

132. The British Retail Consortium says that food retailers look to Government, especially the FSA, for advice on specific contamination issues. Mr Longworth complained to us that “we are still awaiting advice from Government on this issue as an industry” and that “the melding together of the Government plan and the industry plan has not yet taken place

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139 Ev 111

140 Salmonella outbreak leads Agency to issue hygiene alert, Food Standards Agency Press Release R491-28, 15 October 2002

141 Q 487

142 Annual James Smart Memorial Lecture, 16 October 2003, City of London Police Headquarters

and has not yet been promulgated within the industry itself".<sup>143</sup> Marcel Bóo, Director of CBRN Resilience at the Home Office, told us that there has been a document on decontamination in the public domain since February, a revision of which would be produced following a consultation that began in July 2003, extended to cover the decontamination of buildings.<sup>144</sup> These documents may be in the public domain but either the industry is unaware of them or do not think they are relevant to them. Mr Bóo said "Clearly they need to be proactive in securing that [information] ... each police force round the country has a dedicated resource within the police force which can advise all local businesses about preventive security as well as access to the guidance that we provide". Given the importance of this issue, it is curious that the Home Office thinks that it is acceptable to produce guidelines then sit and wait until someone comes and asks for them. As this report was being finalised, the revision promised by Mr Bóo was not evident on the Home Office's website. The Home Office must improve its communication if the food industry is to put in place the necessary technology and procedures. The DEFRA-led Food Chain Emergency Liaison Group, which comprises representatives from across the food chain and Government, would appear to be the ideal vehicle to communicate information of this kind.<sup>145</sup>

## Water

133. DEFRA's Drinking Water Inspectorate has established with the water industry the facility of a call-off contract, whereby the presence and concentration of a number of materials potentially usable by terrorists to contaminate drinking water supplies can be established. During the emergency phase of a CBRN terrorist incident, the Drinking Water Inspectorate would probably be required to provide technical and scientific advice to the Chief Constable's Co-ordinating Group. The Drinking Water Inspectorate says that research has also been initiated into improving existing methods of analysis for target materials; extending those methods to include additional materials; developing screening methods; improving the speed of analysis; and investigating appropriate on-line monitoring equipment. There are regular reviews of the potential threat to drinking water supplies.<sup>146</sup>

134. We took evidence from Julian Dennis, representing Thames Water and Water UK. He told us that the call-off contract set up by the Drinking Water Inspectorate and Water UK had selected materials and chemicals that might be used by terrorists and planned to investigate detection systems for those substances.<sup>147</sup> It is not clear that the risk assessments made by the group were necessarily the same as those made by others.

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143 Qq 472,478

144 Q 735; Home Office, *The Decontamination of People Exposed to Chemical, Biological, Radiological or Nuclear (CBRN) Substances or Material: Strategic National Guidance*, First Edition, February 2003

145 Ev 158

146 Ev 128

147 Q 450

### **Postal services**

135. Before 11 September 2001, anti-terrorism measures in the UK postal services were limited to letter bombs.<sup>148</sup> Subsequently, and in particular in response to the anthrax letters that followed in the USA, the Government says it has introduced a range of measures.

136. The HSE commissioned the Health and Safety Laboratory (HSL) to carry out research to determine the risk of Post Office workers being exposed to anthrax if it was introduced into the mail system. The research findings allowed HSE to give the Post Office advice on control options that could be considered to reduce the risk of workers being exposed to this agent. This advice was shared with Government for action where appropriate. HSE also issued public advice (on its website) on the options to be considered to reduce the risk of workers being exposed to chemical and biological agents transmitted by mail.

137. The HSL's research has made a valuable contribution. We have two concerns relating to it. The HSE has not considered any biological agents other than anthrax yet the US incidents demonstrated how effective anthrax could be.<sup>149</sup> It is hard to believe that none of the other A List agents could be distributed through the postal system.

138. A further concern is the process by which this study was commissioned. It seems that it was done on the initiative of the HSE. This shows commendable initiative on their part but it should not have been necessary. There should be a central mechanism by which such research needs are identified and then commissioned. This reinforces our view that there should be a Centre for Home Defence.

### **Environment**

139. DEFRA is the lead Government Department in responding to the effects of an overseas nuclear accident. The Radioactive Incident Monitoring Network (RIMNET) system has been developed to monitor airborne radioactivity coming into the UK and expertise has been developed following the accident at Chernobyl.<sup>150</sup> In 1996 the NRPB published a review of decontamination and clean up techniques for use in the UK following releases of radioactivity into the environment.<sup>151</sup> The Environment Agency has responsibility for environmental decontamination and is undertaking "extensive work" in prevention, detection, monitoring, recovery and decontamination and animals and livestock.<sup>152</sup>

### **Private sector countermeasures**

140. Many of the facilities that might prove to be attractive terrorist targets are in private hands. In a written statement in July, the Home Office Minister, Beverley Hughes, said that the Government's advice to private organisations was to "leave the demanding and potentially dangerous job of detecting CBR [chemical, biological or radiological] materials

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148 Ev 132

149 Q 551

150 Ev 128

151 Ev 128

152 Ev 129

to personnel in the emergency services and responsible agencies”.<sup>153</sup> For many businesses this is a practical solution to a problem that few companies will have to face, but for many of the sectors we have discussed above, it is not viable to delegate parts of their security measures to the emergency services. Airport security is a classic example where the role is not undertaken by the emergency services. Some other industries – such as chemicals and pharmaceuticals companies – have their own emergency services and have considerable experience in handling contamination or escape incidents. They should be encouraged to share their knowledge with the public emergency services, where they do not already do this

141. It is not clear to us what obligation the Government places on companies in these situations to install or implement CBRN countermeasures or who takes the lead in developing the necessary technologies. The Health and Safety at Work Act 1974 applies where a criminal event is foreseeable. The Home Office tells us that the level of threat, as determined by the security services, is therefore the deciding factor. We do not find this situation reassuring. There may be no specific threat to, say, Heathrow Airport but we feel that the Government should be able to insist on measures being taken by a company. Instead the Government simply “expect something to be done”.<sup>154</sup>

142. The Government believes that industry should meet all its running costs, including those relating to security but it is not clear how the appropriate level of expenditure is determined. In the case of transport, the costs of security measures required by the Government are met by industry. In most cases the costs are eventually passed on to the passenger in the ticket price.

143. Private companies may need strong guidance on what measures need to be taken. In the cases we have considered there seems to be a good relationship between the private sector and the relevant Government Department. It is less obvious what happens if the measures recommended impose a cost burden that a company is unprepared to meet. Mr Bóo said that companies were “extremely proactive themselves in wanting to address this because they recognise it is in their own business interest to have thought about and addressed these issues”.<sup>155</sup> We understand why the Government is taking the approach that it is but this is a matter of national security. We believe that the Government must have the statutory authority to insist that measures are taken by private companies. Equally we are sympathetic to companies that are obliged to invest large sums in preparing for what must seem to be no more than a remote threat. The US Department of Transportation has been making transport security grants available. We were pleased that Beverley Hughes recognised this as an issue that needed addressing.<sup>156</sup>

**144. We recommend that the Government provide detailed guidance to companies on CBRN countermeasures and their development, and satisfy itself that it has the powers, if necessary, to demand the introduction of the necessary security measures. This should be complemented with a system of fiscal incentives or grants to offset the cost.**

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153 HC Deb, 8 July 2003, Col 49 WS

154 Ev 245

155 Q743

156 Q 741

### Staffing issues

145. In Section 8 we discuss the moves made by the Government to update the Voluntary Vetting Scheme for Research Council and university researchers. The ability of journalists to breach security at airports highlights the problems in the private sector, and we suspect that national security is placed at greater risk by allowing potential terrorists unfettered access to key facilities than it is by giving someone a technical background in microbiology; yet it is our impression that the Government gives the latter higher priority. Vetting of personnel in transport facilities, in particular airports, presents a formidable challenge, given the high turnover and low pay of staff but that should not be a disincentive to act.<sup>157</sup>

**We recommend that the Government consider a standard vetting scheme for workers at high risk facilities. This should not be compulsory and the Government should work with the industry to develop an efficient scheme with minimum bureaucracy.**

## 5 Emergency and operational response

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146. This inquiry has not attempted to assess the adequacy of the emergency response as such. Nevertheless, we have been keen to determine how well the response has been informed by science and technology and how this has been coordinated and disseminated. The Government's *Dealing with Disaster* publication contains guidance on the handling of emergencies, although it is not intended as the vehicle for specific guidance on the response to a CBRN emergency.<sup>158</sup> A forthcoming fourth edition will pay more attention to CBRN incidents.<sup>159</sup> The current outlines the role of different services during an emergency:

- The Ambulance Service
- Hospitals
- Public Health
- The Police Service
- The Fire Service
- HM Coroner
- Maritime and Coastguard Agency
- Local authorities
- Central Government
- Environment Agency

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<sup>157</sup> Ev 250

<sup>158</sup> Letter from Susan Scholefield, Head of the Civil Contingencies Secretariat, 19 June 2003, inviting comment on the draft Civil Contingencies Bill.

<sup>159</sup> Home Office, *Dealing with Disaster*, Revised Third Edition, June 2003

- Commercial organisations
- Volunteers
- The Military

These organisations are to greater or lesser extent dependent on science and technology for their response.

## Medical

147. *Shifting the Balance of Power: The Next Steps* states that primary care trusts (PCTs) will become responsible for the delivery of the vast majority of health authority functions, including emergency planning.<sup>160</sup>

148. Dr Nathanson from the BMA expressed concerns about this. She questioned whether PCTs have the skills, resources and time to take on this extra responsibility. The only advantage she could see was that at present GPs do not know the local disaster plan because it is so secret; the involvement of PCTs would at least provide access to this information. Dr Nathanson felt that emergency planning would be better dealt with on a local geographical basis.<sup>161</sup> On a more positive note, Mr John Harrop from Salford Royal Hospital Trust reported that he liaised with his equivalent in his local PCT and there had been good continuity of personnel with the PCT and its predecessor organisations, and that there were established major incident plans that had not altered dramatically since the formation of the PCT.<sup>162</sup>

149. Dr Maureen Baker from the Royal College of General Practitioners (RCGP) said that primary care teams were “starting to get a very little support in terms of funding to organise the training”.<sup>163</sup> RCGP has agreed with the DoH to begin a training programme for trainers. It will “pull in people from the various regions ... support them with resource packs and then ... franchise these individuals to run that training”.<sup>164</sup>

150. The UK national stockpile of countermeasures was established before Christmas 2001. “Pods”, a range of pre-packed consignments of emergency equipment and pharmaceutical products, are accessible by the NHS on a 24-hour basis for rapid deployment in the event of a mass casualty incident, which may or may not be associated with deliberate release of hazardous material.<sup>165</sup>

151. An NAO report into NHS emergency planning in England published in November 2002 concluded:

“The quality of plans and preparedness improved after September 11, but coverage of chemical, biological and radioactive incidents was mixed, some plans were still out of

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160 Department of Health, *Shifting the Balance of Power: The Next Steps*, February 2002

161 Qq 111–112

162 Q 142

163 Q 117

164 Q 122

165 Ev 121

date and there was scope to improve arrangements for working with other emergency organisations, such as the police and fire services. Importantly, one third of health authorities considered post September 11 that they did not test their plans frequently enough and nearly a fifth considered that their testing was not effective”.<sup>166</sup>

The problems were particularly bad for radiological incidents, with 20% of health authorities unprepared; 80% had not tested their response. These concerns were echoed by a Public Accounts Committee report, which concluded that “parts of the NHS are not well prepared to handle the emerging threats from nuclear, chemical, biological and radiological incidents”.<sup>167</sup>

### **Ambulance service**

152. Ambulance services have responsibility for co-ordinating the on-site NHS response and determining the hospital(s) to which injured persons should be taken, which may depend on the types of injuries received. The ambulance service, in conjunction with the medical incident officer and medical teams, endeavours to sustain life through effective emergency treatment at the scene, to determine the priority for release of trapped casualties and decontamination in conjunction with the fire service, and to transport the injured in order of priority to receiving hospitals.

153. The Fire Service takes the lead in identifying any threat. Peter Bradley from the London Ambulance Service said that the Fire Service is usually first on the scene and that this arrangement is appropriate. What happens at a potential CBRN incident if the ambulance service is first on the scene is not clear. Without an assessment of the risk they are at danger and potentially a threat to others. Mr Bradley said “There is talk of ambulance staff having access to pagers which can detect certain types of chemical incidents, but again we have got a very good arrangement with the Fire Service around the country and that has never failed us so far so I think we rely on the Fire Brigade with their access scientists to do that”.<sup>168</sup> We are pleased to hear there has been “talk” of a detection capability for ambulance crews as we are concerned that they may become too reliant on the Fire Service in this respect and will need some capability. **We recommend that it should become a medium term aim to provide the ambulance service with a basic level of detector technology for CBRN incidents in high risk areas, along with the necessary training and access to scientific expertise.**

154. We were told by Mr Bradley that small ambulance services are having trouble releasing staff for training: “The pressures on the day to day activities are such that they have difficulty, both in terms of getting equipment and getting the staff released”.<sup>169</sup> The Ambulance Service Association told the Defence Committee in May 2003 that ambulance services “have not received any additional resources to deal with the new and emerging threats. This compares unfavourably with colleagues in the other blue light services who

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166 Report by the Comptroller and Auditor General, *Facing the Challenge: NHS Emergency Planning in England*, HC 36 Session 2002–2003, November 2002, para 9

167 Eleventh Report of the Public Accounts Committee *Facing the Challenge: NHS Emergency Planning in England*, 16 April 2003 HC 545

168 Q 151

169 Q 161

seemingly have received substantial additional funding”.<sup>170</sup> This is a concern to us. **We recommend that the Government provide the means for all ambulance services to get access to CBRN training, regardless of their size.**

### Communication

155. The Deputy Chief Medical Officer updated doctors in October 2001, through the “Public Health Link” message cascade system, in response to the anthrax attacks in the USA.<sup>171</sup> Despite this, Vivienne Nathanson from the BMA said that “most GPs would tell you that they feel starved of knowledge, starved of information. They have not been given a lot of information, they are not certain what their role will be and they are not certain when they will get information if there is a suspected attack”. She said that following the ricin arrests in north London, GPs local to that area were getting their information from BBC Online and news programmes, which she said was not good enough.<sup>172</sup> Dr David Harper from the DoH told us that they had “a technical problem that has been rectified, which held up some of the information for a relatively short time ... since then we have improved the system. There is now an option for an automated e-mail system from PCTs to GPs specifically and to community pharmacists as well”.<sup>173</sup> Dr Harper said the system needed continual refinement and that it was a real challenge to match the speed of the media. We wonder whether this may be a case of joining rather than beating. **Unless GPs are able to give authoritative information the health service risks being overwhelmed by concerned members of the public. The Government should work with the media to feed information to the public about counter-terrorist activity.**

156. The HPA website contains information on potential biological agents.<sup>174</sup> The BMA’s Vivian Nathanson said the site was good but that awareness was poor. This highlights the limits of using the internet: it is largely a passive medium. It is a shame that such a good resource is not more widely appreciated. **We recommend that the Health Protection Agency take steps to disseminate information on potential biological agents through other channels or employ means to improve awareness of its website.**

### Skills

157. There are short-and long-term skills issues. There is the long-term shortage of specialists in certain fields, such as microbiology, particularly in virology and mycology, and also pathology and toxicology. The Committee heard that the situation was worst at the top end with few consultant medical microbiologists.<sup>175</sup>

158. Dr Nicholas Beeching, a consultant in infectious diseases, told us that there is a shortage of diagnostic and clinical capacity. There are only about 90 clinical infectious disease specialists in England, half of which are academic appointees. Dr Beeching said that with the amount of time needed for training and preparation, let alone in actually

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170 Seventh Report of the Defence Committee, Session 2002–03, *Draft Civil Contingencies Bill*, HC 557, Ev 59

171 Ev 121

172 Q 105

173 Q 714

174 [www.hpa.org.uk](http://www.hpa.org.uk), see paragraph 14 above

175 Q 56

responding in the event of something happening, he and his colleagues were “stretched to the limit”.<sup>176</sup>

159. We are content that the Government recognises the problems of skill shortages in some areas but less confident that the measures being taken are sufficient.<sup>177</sup> The problem is particularly pressing in the case of microbiology and infectious diseases in light of the global outbreak of SARS. The House of Lords Science and Technology Committee report on *Fighting Infection* also identified concerns over training. It recommended “that the Government, in conjunction with relevant Royal Colleges and the Joint Committee on Infection and Tropical Medicine, address the shortage of expertise in clinical infectious disease, clinical microbiology and communicable disease epidemiology by increasing numbers of fully funded consultant posts and ensuring that there are available training posts”.<sup>178</sup> **We endorse the findings of the House of Lords Committee report on *Fighting Infection* that action is needed to tackle the shortages in several clinical specialties and urge the Government to address them promptly.**

160. A second problem is the skills in the current cohort of practitioners. There are concerns that GPs will struggle to recognise diseases such as anthrax and smallpox, having never seen a case. Dr Hans-Christian Raabe, a GP in Lancashire, is concerned that healthcare staff are unaware of the procedures and the facilities in response to a terrorist attack.<sup>179</sup> As we reported above, the Royal College of General Practitioners has secured funding from the DoH to develop training for GP trainers on biological agents and perhaps chemical and radiological threats.<sup>180</sup> Mr Hutton says that “Since 11 September 2001, training to spot outbreaks of infectious diseases caused by the deliberate release of biological agents has increased. This has included educational articles in national and international medical journals, authoritative and up-to-date advice on the Department of Health and Health Protection Agency’s websites and seminars/conferences for specific groups of healthcare workers”.<sup>181</sup>

161. Dr Vivienne Nathanson at the BMA told the Committee that we have got to get GPs to think not only, “Is this the common thing that I see every day?” which it is likely to be, but also, “Could it just be something really peculiar?”.<sup>182</sup> The PHLS says there is concern as to how much those working at the routine coal-face in the NHS are aware of, and able to respond to, documents containing information and policies on the deliberate release of pathogens. It notes that the capability of the front line NHS diagnostic laboratories to recognise potential BT [biological and toxin] agents is only now being tested for smallpox. “This means there remains a considerable task of awareness raising and training”.<sup>183</sup>

162. CAMR is developing a series of training courses to address these needs for health professionals. The first course in March 2003 concentrated on specialist medical personnel,

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176 Q 115

177 Q 704

178 House of Lords Fourth Report of the Select Committee on Science and Technology, Session 2002–03, *Fighting Infection*, HL Paper 138, para 7.5

179 Ev 237–238

180 Ev 200

181 HC Deb, 8 September 2003, Col 5W

182 Q 124

183 Ev 191

but this will be followed by other practical courses for first line laboratory staff and accident and emergency staff. It plans to build on this programme to provide basic introductions to biological emergencies for NHS managers and planners, for leaders in the emergency service and Government and for the media if required. The HPA's Corporate Plan reports that "Training [has been] delivered to general practitioners, A&E staff and support staff, medical microbiologists, lead Primary Care Trust (PCTs) and Strategic Health Authority (SHAs)."<sup>184</sup>

**163. There are no easy answers to the problem of improving awareness of potential biological agents, particularly in general practice. Training will help but there is a danger that, unless it is regularly reinforced, it will be hard to condition GPs and other front-line health professionals to recognise and deal with the unexpected. We recommend that the Government make sufficient resources available to achieve this.**

## Police

164. *Dealing with Disaster* states that police will normally co-ordinate all the activities of those responding at and around the scene of a land-based emergency. Where terrorist action is suspected, the police will normally take measures to protect the scene. These include establishing cordons under the Prevention of Terrorism Act and carrying out searches for secondary devices. They also take initial responsibility for safety management at such incidents for those working within cordons.<sup>185</sup> The police response has focused on training and protective equipment. The Home Office has provided funding for the provision of personal protective equipment to all officers trained in CBRN procedures. Brian Coleman, Director of the PSDB, told us that "There is no doubt that a lot of work remains to be done in these new areas and changed areas of threat that have developed over the last 18 months but I believe that we are very well placed to do this because we are a sophisticated requirements driven organisation for science and technology in law enforcement".<sup>186</sup>

165. The Home Office, in liaison with the Association of Chief Police Officers and MoD, set up a national Police Training Centre at Winterbourne Gunner near Porton Down, in October 2001. Here police officers from all forces are trained in CBRN response procedures. In a House of Lords Written Answer Baroness Scotland of Asthal said that 3,700 officers would be trained to deal with a CBRN incident by July 2003 and this would rise to 6000 next year.<sup>187</sup> This is a facility we would have wished to have examined.<sup>188</sup> Unfortunately, the Home Office refused our request for a witness to appear, even in private. This decision is curious since a member of our Committee, Mr Robert Key, in whose constituency Winterbourne Gunner lies, was invited to the facility and we understand that the media have been offered briefings. It is in everybody's interest that the House is well-informed by its Committees. The Home Office's decision defies logic.

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<sup>184</sup> Health Protection Agency, *Corporate Plan 2003–2008*, p 29

<sup>185</sup> Home Office, *Dealing with Disaster*, Revised Third Edition, June 2003, p 8

<sup>186</sup> Q 263

<sup>187</sup> HL Deb, 3 July 2003, Col 124WA

<sup>188</sup> Q 806

166. We were interested in the comments of David Veness, Assistant Commissioner of Specialist Operations at Scotland Yard, who has outlined his “wish list” for the emergency services. These were:

- Better detection and identification methods on the chemical and biological field;
- Personal protection for emergency service workers; and
- “Post bucket” decontamination technology.<sup>189</sup>

167. We are particularly interested in his first point. As we described above, *Dealing with Disaster* states that if terrorist action is suspected, the police will carry out searches for secondary devices and take initial responsibility for safety management. It is hard to see how they can fulfil this role unless they are equipped with detection devices which can, at the very least, reveal if there some sort of agent that may be cause for particular concern. In a letter to the Defence Committee in June 2003, Mr Raynsford reported that “There are two systems [for biological agent identification and monitoring] currently under evaluation by PSDB and Dstl which will test for a range of agents ... User handling trials are being undertaken by BTP, City of London Police, and the Metropolitan Police Force”.<sup>190</sup> Information published by the Government on the exercise held at Bank Underground Station in London on 7 September 2003 states that “London’s Fire Brigade and Police Services now have new chemical, biological and radiation detection and identification equipment with further equipment due”.<sup>191</sup> We are pleased that police are being supplied with CBRN detection equipment. The Government should be moving to a situation where police officers in high risk areas have at least a primary level of detection capability.

## Fire Service

168. The primary role of the fire service in a major emergency, according to *Dealing with Disaster*, is the rescue of people trapped by fire, wreckage or debris.

169. A key technological requirement for the Fire Service is detection. The Service operates in the “hot zone” and it has primary responsibility for the safety of people at the scene of the incident.<sup>192</sup> Mr Morphew told us that “detection will influence the way we go about our business, the level of protection, how speedily we must operate and the distances involved from the incident”. We gather that the CBRN Resilience Committee, led by the Home Office, has set up a special task group to look at detection apparatus. Mr Morphew said “It is not an area that the Fire Service is particularly skilled at. It is very much on the edges of technology and we have been reliant on that particular team to inform all the emergency services, the police, the ambulance and ourselves, on what is the best way of detecting what we call biohazards”.<sup>193</sup> This is troubling. Mr Pete Bradley of the London Ambulance Service told us that “We rely on the Fire Brigade, who are usually there before us in any case, to

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189 David Veness, *Anticipating an enduring threat*, *FST Journal* (Vol17, No10), July 2003, pp 5–6

190 Seventh Report of the Defence Committee, Session 2002–03, *Draft Civil Contingencies Bill*, HC 557, Ev 60

191 [www.ukresilience.info](http://www.ukresilience.info)

192 Q 147; Home Office, *Dealing with Disaster*, Revised Third Edition, June 2003, p 8

193 Q 652

establish what sort of incident it is, what the agents are involved”.<sup>194</sup> **The Fire Service says it does not have the skills to work with biohazard detection equipment yet the other emergency services are relying on its expertise. If this arrangement is to remain in place then the Government must move rapidly to provide the Fire Service with effective detection and identification technology and the skills to use it.**

170. Mr Dobson told us that all Fire Service personnel are trained to deal with hazardous material (e.g. CBRN) incidents: “We train at a number of levels together with the police and ... we do have a Fire Service representation at Winterbourne Gunner and we send Fire Service principal managers there to understand and learn about joint emergency service operations within a CBRN incident.”<sup>195</sup>

## Military

171. The Ministry of Defence has “an operational role in prevention and consequence management”. MOD says it has developed some of the world’s best counter terrorist expertise and capabilities.<sup>196</sup> The provision of military aid to the civil power (MACP) is set out in an MoD booklet. One of the three categories of aid is “Assistance to the civil authorities in dealing with an emergency such as a natural disaster or major incident”.<sup>197</sup>

172. In its evidence to the Defence Committee inquiry on Defence and Security in the UK, the Chief and Assistant Chief Fire Officers Association said that: “the MACP scheme does not constitute a guarantee and that the level of assistance will be dependent on current military commitments in the UK and abroad. However, the benefits to responding agencies, including the military, of planning, training and exercising together are well recognised and include allowing all parties to identify gaps in liaison, operational procedure and policy”.<sup>198</sup>

173. During our visit to Dstl Porton Down, we were briefed on its MACP provision. This included the deployment of scientists through immediate response teams. These provide advice and practical assistance to Police and Military Bronze and Silver Commanders on all chemical and biological weapon-related matters. Their capabilities include detection, identification, sampling and decontamination.

**174. The military, and in particular Dstl Porton Down, provide a potentially valuable resource in the response to a real or suspected CBRN incident. Nevertheless, it should be recognised that Dstl’s priority is the support of the military. We therefore recommend that the deployment of scientists to a suspected CBRN incident through immediate response teams should come under the control of and be financed by our proposed Centre for Home Defence.**

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194 Q 149

195 Q 638

196 Ev 115

197 Ministry of Defence, *Military Aid to the Civil Community—A Pamphlet for the Guidance of Civil Authorities and Organisations* (Third Edition), 1989

198 Sixth Report of the Defence Committee, Session 2001–02, *Defence and Security in the UK*, HC 518–II; Ev 206

## Decontamination

175. The Home Office leads a cross-Government CBRN Decontamination Programme. Initiated in July 2001, it aims to draw together all the strands of work relevant to decontamination – from detection to decontamination of the environment – and ensure inter-Departmental coordination.<sup>199</sup> It has issued *Strategic National Guidance on the Decontamination of People Exposed to CBRN Substances*. The method it outlines is “soap and water, rinse-wipe-rinse”, which we understand is state-of-the-art.<sup>200</sup>

176. We have outlined the moves taken by the Fire Service to procure decontamination. We have no reason to doubt their assertion that they have got the best technology available. Mr Peter Morphew considers their provision to be “cutting edge”.<sup>201</sup> He should note the comments of David Veness of Scotland Yard, however, who has professed a wish to move beyond this basic technology. It is no use having cutting edge technology if it is still not good enough. The problems faced by the Americans in clearing up after the anthrax letters is evidence of the technological deficiencies in this area. A further problem is the wide range of environments requiring decontamination. According to Steris, “there is no single solution for treating chemical or biological contamination. Successful remediation requires the selective use of multiple technologies”.<sup>202</sup> Sir David King also stated that decontamination was a big issue and the subject of major research.<sup>203</sup> **We recommend that one of the first steps for our proposed Centre for Home Defence is to conduct or commission new research into decontamination processes and procedures.**

## Coordination

177. We were keen to establish if there is a national standard operating procedure as to who goes in as the first responder in a suspected CBRN incident. We were told that there is, but it is a “mixture”.<sup>204</sup> Mr Morphew from the Fire Service told us that “All local authorities will have some arrangements for the management of joint emergency services incidents. They will have a committee that meets quarterly or monthly, depending on the area and the amount of tension that there is. These committees will plan the response, who does what and what support will be needed... The police will have a role. They will secure the site. The Fire Service will have a role in the sense of protective equipment. There will be anti-terrorist branch personnel who will also have a role and ambulance personnel will be standing by to take away anybody who is injured. It is a combined operation”.<sup>205</sup> In other words, it depends.

178. These arrangements have no doubt been developed over many years and we do not doubt their clarity and effectiveness at a local level. We have discussed the New Dimension programme with respect to the Fire Service. This has marked a shift to national procurement. This step has much to commend it, provided that it is compatible with local

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199 Ev 118

200 Ev 118–119

201 Q 615

202 Ev 168

203 Q 733

204 Q 635

205 Q 635

need. It is no use supplying equipment to the Fire Service if it would be more appropriately employed by the police. **We recommend that the Government consider providing a national template for the procurement of CBRN countermeasures for the emergency services as a whole. Its most appropriate deployment could then be established at a local level.**

## Planning and exercises

179. Exercises play a valuable role in testing out response plans. The Home Secretary said in July that “A series of live counter-terrorist exercises takes place each year”.<sup>206</sup> In the past these have generally been conducted in private but in the future there would be “more complex, larger scale exercises, with greater public involvement”.<sup>207</sup> We were pleased to learn that the UK will be undertaking a joint exercise with the US in 2005.

180. We also read reports of the exercise held in London on 7 September with great interest. The “Bank” exercise was planned by a multi-agency team, coordinated by the Metropolitan Police Service, in conjunction with the London Resilience Team and “designed to test the co-ordinated responses of the emergency services to a chemical release on a train in the London Underground”.<sup>208</sup> After the exercise, the Minister of State for Local Government and the Regions, Nick Raynsford, stated that “we would hope where appropriate to publish the major findings”.<sup>209</sup> **We are pleased to learn that the Government plans to be more open about counter-terrorist exercises in the future. While some of their findings will be sensitive, we hope the Government is able release some information to the public.**

181. We understand that the findings of the exercise were due to be circulated during October 2003 to senior representatives of the agencies involved in the exercise with relevant elements reported to the London Resilience Forum and Ministers through the relevant committees.<sup>210</sup> **As this inquiry had demonstrated, most departments will need to learn lessons from the findings of anti-terrorist exercises. We therefore urge that detailed findings are disseminated throughout Government.**

182. The London exercise tested the response to a chemical incident. **The response to a radiological or biological will require different responses. We therefore recommend that the “more complex, larger scale exercises” conducted in the future test such scenarios.**

## 6 Overseas cooperation

183. We have encountered extensive cooperation between the UK and its allies during the course of the inquiry. The Home Office leads on quadrilateral discussions between the UK and Australia, Canada, and the US to coordinate efforts and exchange information on

<sup>206</sup> Home Office press release 190/2003, 3 July 2003

<sup>207</sup> HC Deb, 3 July 2003, Col 27WS

<sup>208</sup> Ev 261

<sup>209</sup> End of Exercise Statement by Nick Raynsford, Minister For Civil Resilience. [www.ukresilience.info](http://www.ukresilience.info)

<sup>210</sup> Ev 261

counter-terrorism, including scientific, operational, and R&D expertise. The MoD also has a UK/US Counter Terrorism Oversight Group, of which CBRN are a minor part. The Home Office evidence says that the UK has maintained close links within Europe on counter terrorism matters for many years.

184. On 1 April the Home Office issued a press release announcing “unprecedented cooperation and sharing of intelligence between the UK and the USA” following a meeting between Home Secretary David Blunkett and US Homeland Security Secretary Tom Ridge. They agreed to set up a Joint Contact Group of senior officials who would drive a joint programme of work, including how best to share knowledge and resources.” The work would include:

- Closer working on the development of biometric technology such as iris and facial recognition ; and
- Pooling of knowledge and resources, such as vaccines, to counter chemical, biological, radiological and nuclear threats.

Speaking in a recent interview, Tom Ridge described the close relationship between the US and UK security services, even before 11 September 2003, and how discussions between the two governments involved priority-setting for counter-terrorism technology.<sup>211</sup>

185. The Home Office says the UK has maintained close links with Europe on counter terrorist matters for many years and that the UK has participated in EU events with other Member States, to examine the arrangements for the Commission to become involved in a widespread CBRN attack.<sup>212</sup> We understand that the European Commission has established a ‘Task Force’ to review the European Response capabilities to respond to CB threats.<sup>213</sup> PowderJect believes that there is a need for “greater cooperation and harmonisation between EU Member States concerning the gathering of epidemiological data on infectious diseases and the generation of broad and accurate surveillance data”.<sup>214</sup>

**186. The scientific response to terrorism is a global pursuit. We are pleased to see an impressive level of collaboration between the UK and its allies, in particular with the US. We are concerned that our desire to increase security over research may hamper this cooperation by limiting the exchange of scientists and information. The level of cooperation within the EU less evident. Whether this reflects reluctance on the UK’s part or on other Member States’ is not clear. We urge the Government to address this issue.**

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211 *Sunday Times Magazine*, 14 September 2003, pp 23–25

212 Ev 119

213 Ev 124

214 Ev 203

## 7 Security of research

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### Security of research establishments

#### *Anti-terrorism, Crime and Security Act*

187. Parts VI and VII of the Anti-terrorism, Crime and Security Act (ATCSA) 2001 strengthen legislation controlling weapons of mass destruction, and tighten controls on access to pathogens and toxins used in research laboratories in the United Kingdom. Part VI of the Act makes it an offence to aid or abet the overseas use or development of chemical, nuclear, biological or radiological weapons. Security measures in laboratories maintaining or researching pathogens have focused in the past on the containment of the pathogen and the safety of workers. (The Health and Safety at Work Act 1974 had controls intended to ensure the safety of people working with such substances, now embodied in the Control of Substances Hazardous to Health Regulations 1999.<sup>215</sup>) Part VII of the Act supplements existing measures by restricting access to pathogens. The dangerous pathogens are listed in Schedule 5 of the 2001 Act. Existing controls were contained in the Biological Weapons Act 1974 and the Chemical Weapons Act 1996. HSE says it has contributed its expert knowledge and advice on the nature and extent of the hazards presented by CBRN substances, and, in several cases, has been able to supply intelligence by identifying the sites holding such materials.

188. Under the ATCSA, premises (such as universities and research establishments) must notify the Government if they hold certain dangerous substances and provide this information to the police if requested. The Act sets up a register of premises holding specified pathogens and toxins. It also confers powers on the police to inspect such premises and give directions as to their security.

189. The Act also requires managers of laboratories and other premises to furnish, on request, the police with details of people with access to any of the specified dangerous substances held there. The Home Secretary is given power to direct that a named individual must not be allowed access to such disease strains or the premises in which they are held. The Act provides for its extension to animal or plant pathogens, pests or toxic chemicals. A Counter Terrorism Security Advisers' network has been established to work to help with the implementation of the Act.

190. The US has brought in similar restrictions on the possession of certain agents. The Patriot Act of 2001 makes it an offence for a person to knowingly possess any biological agent, toxin or delivery system of a type or in a quantity that, under the circumstances, is not reasonably justified by prophylactic, protective, bona fide research or other peaceful purpose.

## Industry

191. Dr Philip Wright of the APBI told us that there was strict security at commercial sites, largely because of the threat from industrial espionage and animal rights protestors.<sup>216</sup> He said that few companies were working with agents covered within ACTSA (only a few companies have category 3 facilities and none have category 4); however, he was concerned that extra legislation could hamper research.<sup>217</sup> The ABPI argues that the existing health and safety regulations, enforced by the HSE, can be an effective means of overseeing the safety and security of pharmaceutical facilities and that new regulations would risk undermining competitiveness and research efforts to develop new medicines.<sup>218</sup> The ABPI questions the expertise of Home Office or Special Branch officials responsible for carrying out inspections and argues that the existing system of HSE inspections could be used more effectively to gather intelligence on research in the UK. It offered to provide help to the Home Office.

## Universities

192. David Harrison of Birmingham University said that the police have been making initial contacts with universities concerning the enforcement of on ATCSA but that the impact of the Act was limited at the moment. “They have been very wise in that they have accepted their lack of understanding of the technical issues such as biological agents and toxins. ... in terms of the security, it has been tentative and, in the absence of a standard, which is what we are waiting for, I think they are holding back”.<sup>219</sup> Mr Harrison said “One of the things that universities are doing is helping the counter terrorism officers understand the technicalities of the issues they are dealing with because they are not used to dealing with biological agents or radioactive materials ... they are being very sensitive to that. They are not imposing inappropriate security”.<sup>220</sup> According to Universities UK, “universities are now fully compliant with the terms of the Act” but early indications have “highlighted the need for greater awareness amongst the Police of laboratory procedures”.<sup>221</sup>

## Research Councils

193. Nick Winterton from the Medical Research Council said that there had been very stringent controls already in place in Research Council institutes in relation to the management of toxins, pathogens and genetically modified organisms before the Act was passed. Measures such as controls on the physical access to buildings, rights of access to buildings and the use of biological containment facilities were in force and the HSE had to be notified of rights of inspection. The emphasis had been on protection of staff and the risks of an accidental leak into the environment. He said “What we now need to think about is whether the same measures which protected staff are adequate in the face of

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216 Qq 207–211

217 Q 227

218 Ev 235–236

219 Q 349

220 Q 354

221 Ev 248

potential terrorist risk”.<sup>222</sup> Research Councils are currently reviewing grant terms and conditions to reflect the Act 2001.<sup>223</sup>

### Schedule 5

194. In drawing up Schedule 5 of ATCSA, the Home Office drew upon the Australia list of biological agents for export control (see Table 4).<sup>224</sup> This list had the advantage of being readily available and the timetable for the legislation was rapid following the 11 September 2001 attacks.

**Table 4: Australia Group core list of biological agents for export control.**

<b>Viruses</b>	<b>Rickettsiae</b>	<b>Toxins</b>
Chikungunya virus	<i>Coxiella burnetii</i>	Botulinum toxins
Congo–Crimean haemorrhagic fever virus	<i>Bartonella quintana</i> ( <i>Rochalimea quintana</i> , <i>Rickettsia quintana</i> )	<i>Clostridium perfringens</i> toxins
Dengue fever virus	<i>Rickettsia prowazekii</i>	Conotoxin
Eastern equine encephalitis virus	<i>Rickettsia rickettsii</i>	Ricin
Ebola virus		Saxitoxin
Hantaan virus	<b>Bacteria</b>	Shiga toxin
Junin virus	<i>Bacillus anthracis</i>	<i>Staphylococcus aureus</i> toxins
Lassa fever virus	<i>Brucella abortus</i>	Tetrodotoxin
Lymphocytic choriomeningitis virus	<i>Brucella melitensis</i>	Verotoxin
Machupo virus	<i>Brucella suis</i>	Microcystin (Cyanginosin)
Marburg virus	<i>Chlamydia psittaci</i>	Aflatoxins
Monkey pox virus	<i>Clostridium botulinum</i>	Abrin
Rift Valley fever virus	<i>Francisella tularensis</i>	Cholera toxin
Tick-borne encephalitis virus	<i>Burkholderia mallei</i> ( <i>Pseudomonas mallei</i> )	Diacetoxyscirpenol toxin
(Russian Spring–Summer encephalitis virus)	<i>Burkholderia pseudomallei</i> ( <i>Pseudomonas pseudomallei</i> )	T-2 toxin
Variola virus	<i>Salmonella typhi</i>	HT-2 toxin
Venezuelan equine encephalitis virus	<i>Shigella dysenteriae</i>	Modeccin toxin
Western equine encephalitis virus	<i>Vibrio cholerae</i>	Volkensin toxin
White pox	<i>Yersinia pestis</i>	Viscum Album Lectin 1 (Viscumin)
Yellow fever virus		
Japanese encephalitis virus		

195. Mr Harrison said there was a certain amount of confusion on the list of substances (Schedule 5) covered under the Act: “We are not quite sure where it came from. Currently, the counter terrorism officers are also producing a second list which is called the Salisbury list, which seems to have some categorisation which is different from the other list. There is some confusion. Clearly the Australia list, Schedule five, is a legal requirement.” He said that the implication is that the new list will be adopted at some stage.<sup>225</sup> Beverley Hughes,

222 Q 352

223 Ev 222

224 The Australia Group is an informal arrangement which aims to allow exporting or transshipping countries to minimise the risk of assisting chemical and biological weapon proliferation. [www.australiagroup.net](http://www.australiagroup.net)

225 Qq 352,359

when asked whether there were any plans to make changes to Schedule 5, told us that the Government had not decided yet.

196. We have attempted to find out more about the mysterious Salisbury List. We gather it is referred to in the Government's written evidence as follows:

“A pragmatic hazard–ranking list of agents ... produced by a group of experts involving the Security Service, Dstl (Porton Down), public health experts and HSE staff.”<sup>226</sup>

This, we understand, is all the public is allowed to know, or at least it is all our Committee is allowed to know. We understand that the list has been widely distributed among university health and safety officers, which of course it has to have been if they are expected to act on it.<sup>227</sup> It is unclear how the Government can keep such a widely circulated list secret or why it should wish to.

197. A further concern is the extensive nature of Schedule 5. It features, for example, tetrodotoxin. This substance is found naturally in the Japanese puffer fish. Research Councils UK points out that this toxin has been a key tool in studying the function of nerve cells.<sup>228</sup> It would be counterproductive if the controls placed on research for the public good hamper the progress of basic medical research.

198. Mr Harrison also complained that universities were waiting for a national minimum standard for compliance with the Act from the Home Office.<sup>229</sup> They have been promised that they will at least get sight of the draft. Ms Hughes said she hoped that this would happen by the end of August. As this report is being finalised, this has yet to take place, although we understand Counter Terrorism Security Advisers have been visiting these establishments.<sup>230</sup> Mr Harrison said that there would be additional costs to universities, depending on the standards set. Some institutions at present have equipment that might not be up to standard. He was not aware of any extra funding being available to remedy this.<sup>231</sup>

**199. We are pleased to hear the police are taking a sensible and measured approach in enforcing the provisions of the Anti–terrorism, Crime and Security Act. The confusion over the emergence of a second list of agents not covered under the Act is unfortunate, however. The Government seems to be under the impression that it can have one list of agents laid down in the Act, yet enforce another list which is beyond the scrutiny of Parliament. We recommend that the Government decide which organisms it wishes to control and amend the Act accordingly.**

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226 Ev 134

227 Unpublished submission from David Harrison, University of Birmingham

228 Ev 221

229 Qq 361–363

230 Q 750

231 Q 361

## Vetting of students and researchers

### *Voluntary Vetting Scheme*

200. The Voluntary Vetting Scheme was established in 1994, to assist the Government in preventing the transfer overseas of technology related to weapons of mass destruction. Under the scheme, university institutions are invited, on a voluntary basis, to refer to the Government for advice on any applications from potential students from certain countries seeking to undertake research in particular disciplines, who might in the future engage in the proliferation of dangerous technology. The Government advises on this likelihood, leaving university institutions with the final decision on whether or not to accept those applicants. There are currently 10 countries of concern and 21 academic disciplines of concern. Where a postgraduate research application from a country of concern coincides with an academic discipline of concern, the advice is that the application should be referred to the FCO. In responding, the FCO may give a clear indication that a referred application to enter the UK is unlikely to be successful and universities might wish to take this into account in deciding whether to continue to consider the application.

201. Concerns have been expressed about the effectiveness of this scheme. The Foreign Affairs Committee recommended in its report on the Biological Weapons Green Paper that “in the light of current threats to the security of the United Kingdom, the Government takes steps to strengthen its control over biotechnological research in British universities and research institutions”.<sup>232</sup>

202. The Government has decided that a review of the Scheme was necessary because of its perceived shortcomings. It involves a number of Government Departments. The Government says it will be important to ensure that the academic community can contribute its views to this work. The review will assess the merits of a compulsory scheme and how such a scheme might be implemented and whether or not any scheme should be extended to organisations outside the higher education sector. It is concerned that its investigations should result in a measured response to the real threat. Dr Hilary Dodson, Biological Safety Officer for the University of Bradford, is sceptical about the value of controls, pointing out that “The properties of most pathogens are relatively well known, and have already been taught to a vast number of students including those from overseas” and that “The real threat posed by terrorism is adoption of novel means of delivery”.<sup>233</sup>

203. Between 1 April 2002 and 27 March 2003, four institutions between them referred over 500 cases, whereas other similar universities referred very few or none at all. The Research Councils state that they are “active parties to the Voluntary Vetting Scheme”.<sup>234</sup> The identity of institutions not taking part in the scheme is not in the public domain but it is believed these include some large universities with a distinguished research pedigree. The Association of Heads of University Administration (AHUA) reports that some universities take the view that “counter-proliferation is a professional job for the Security Service and the Immigration Service and that universities cannot be expected to be in the front line of

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<sup>232</sup> First report of the Foreign Affairs Committee, Session 2002–03, *The Biological Weapons Green Paper*, HC 150, para 31

<sup>233</sup> Ev 156

<sup>234</sup> Ev 222

national security considerations”. There are also concerns concerning competition, academic freedom and racial equality.<sup>235</sup> AHUA advocates a code of practice, claiming it would be more successful than a compulsory scheme.

204. The US has responded by imposing stricter visa controls. The Committee heard that this had led to problems with delays and re-entry and that many researchers had got “lost” having entered the country. Professor John Marburger, Director of the White House Office of Science and Technology Policy said on 19 June that the long delays in issuing visas “appears to be having a significant impact on the US science enterprise”. He also stated that US national laboratories require close interaction with international scientists and that excessive security will hamper the laboratories’ ability to achieve their aims.<sup>236</sup>

**205. The poor participation of some universities in the Voluntary Vetting Scheme means that it needs to be replaced. We do not want to see a compulsory scheme but unless universities cooperate in the new scheme, it may have to be. It is important that the UK does not become a scientific training ground for terrorists.**

### *Ethical behaviour*

206. Concerns that a scientific training could be applied to unethical research have led to the proposal of an oath for scientists analogous to the Hippocratic Oath for medics. This has been initiated by the Pugwash Conferences on Science and World Affairs (an organisation dedicated “to bring scientific insight and reason to bear on threats to human security arising from science and technology”<sup>237</sup>). One version of the oath states:

“I promise to work for a better world, where science and technology are used in socially responsible ways. I will not use my education for any purpose intended to harm human beings or the environment. Throughout my career, I will consider the ethical implications of my work before I take action. While the demands placed upon me may be great, I sign this declaration because I recognise that individual responsibility is the first step on the path to peace.”<sup>238</sup>

207. The International Committee of the Red Cross supports the principle of a code of conduct as part of its proposed “web of prevention”. It calls on scientific and medical associations and industry “To adopt professional and industrial codes of conduct aimed at preventing the abuse of biological agents”.<sup>239</sup> The BMA agrees, stating that “This oath could state that scientists should not work in a field that would lead to the development of weapons of mass killing and incapacitation”. The BMA is particularly concerned by the application of genetic technologies to develop biological weapons.<sup>240</sup>

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235 Ev 249

236 Remarks to National Academies of Science Roundtable on Scientific Communication and National Security, June 19, 2003

237 [www.pugwash.org](http://www.pugwash.org)

238 [www.spusa.org](http://www.spusa.org)

239 Ev 244–245

240 Ev 219

### *Research Councils and universities*

208. Research Councils say they would need to be persuaded that a ‘Hippocratic’ oath for scientists would achieve anything really useful: “Such pledges are only really effective if there is some system for profession membership, and a means of striking off those that infringe the code. It is also doubtful whether such an oath would discourage those scientists determined to undertake subversive research”.<sup>241</sup> Universities UK does not view such an oath favourably: “We remain to be convinced that there is value to be added by introducing an ethical code in what is already one of the most highly regulated areas of university research”.<sup>242</sup>

### *Learned and professional societies*

209. Members of the Institute of Biology (IOB) are bound by the Institute’s byelaws. These state:

“Every member of the Institute shall at all times so order his conduct ... to safeguard the public interest in matters of safety and health and otherwise. He shall ... discharge his professional responsibilities with integrity”.

210. At a meeting of the IOB Professional Affairs Board in February 2003, it was agreed that involvement with biological weapons for the purpose of aggression would contravene this code.<sup>243</sup> The Biosciences Federation concludes that “we believe that the vast majority of scientists in the UK act in a responsible and ethical manner which would not be significantly altered by signing such an oath. A more effective approach would be to ensure a wider understanding amongst scientists of public knowledge and concerns and how to interact with the public over sensitive issues”. Professor Graham Pearson argues that the UK Government should “engage in an education and outreach programme to ensure that all sectors of the UK scientific community are aware of the provisions and prohibitions of both the Biological and Toxin Weapons Convention and the Chemical Weapons Convention”. We agree that wider understanding of these issues among researchers is important, but we believe that the taking of an oath would have the effect of stimulating that awareness. Learned and professional societies are in a strong position to heighten awareness of the issues surrounding the misuses of scientific research. **We urge scientific learned societies to consider introducing an overt ethical code of conduct as a prerequisite of membership and back this up with programmes to heighten awareness of the issues involved.**

211. The Foreign Affairs Committee’s recommendation to Government that there should be stronger controls on students and researchers is evidence of the degree of political concern on the issue.<sup>244</sup> **If the scientific community does not take stronger action to regulate itself then it risks having ill-judged restrictions placed on it by politicians.**

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241 Ev 223

242 Ev 249

243 Ev 164

244 First report of the Foreign Affairs Committee, Session 2002–03, *The Biological Weapons Green Paper*, HC 150, para 31

212. **An ethical code of conduct for scientists has value in promoting awareness and providing basis for better education of researchers. Learned and professional societies and Research Councils should develop an understanding of what such a code involves and enforce it by denying grants or refusing membership. By insisting that a code of ethical conduct is unworkable they are ducking their responsibility.**

### *Industry*

213. PowderJect does not accept the need for a code of conduct in industry, although it reports that the European Biotechnology Trade Association, EuropaBio has developed a code of ethics including commitments prohibiting the development of biological weapons.<sup>245</sup> PowderJect argues that “Clear and unambiguous regulation would be a more preferred route for preventing activities for developing biological weapons”.<sup>246</sup>

## **Scientific publication**

### ***Statement by editors and publishers***

214. Concerns have been expressed that research papers in the scientific literature might inadvertently be of value to terrorist groups. This led in January 2003 to a statement issued on the publication of research with applications that may be of use to terrorists by a Journal Editors and Authors Group on Scientific Publishing and Security (see Box 4). This group featured mainly American publications, although *Nature* and *The Lancet* were represented.

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245 Ev 205

246 Ev 200

**Box 4: Statement by a Journal Editors and Authors Group on Scientific Publishing and Security.**

The scientific information published in peer-reviewed research journals carries special status, and confers unique responsibilities on editors and authors. We must protect the integrity of the scientific process by publishing manuscripts of high quality, in sufficient detail to permit reproducibility. Without independent verification – a requirement for scientific progress – we can neither advance biomedical research nor provide the knowledge base for building strong biodefence systems.

We recognise that the prospect of bioterrorism has raised legitimate concerns about the potential abuse of published information, but also recognise that research in the very same fields will be critical to society in meeting the challenges of defence. We are committed to dealing responsibly and effectively with safety and security issues that may be raised by papers submitted for publication, and to increasing our capacity to identify such issues as they arise.

Scientists and their journals should consider the appropriate level and design of processes to accomplish effective review of papers that raise such security issues. Journals in disciplines that have attracted numbers of such papers have already devised procedures that might be employed as models in considering process design. Some of us represent some of those journals; others among us are committed to the timely implementation of such processes, about which we will notify our readers and authors.

We recognise that on occasions an editor may conclude that the potential harm of publication outweighs the potential societal benefits. Under such circumstances, the paper should be modified, or not be published. Scientific information is also communicated by other means: seminars, meetings, electronic posting, etc. Journals and scientific societies can play an important role in encouraging investigators to communicate results of research in ways that maximise public benefits and minimise risks of misuse.

The Research Councils say that the operation of standard peer review procedures for research proposals offers an opportunity to identify work at an early stage that might pose unacceptable security or safety risks.<sup>247</sup> The International Committee of the Red Cross also supports the use of the peer review process to “scrutinise all research with potentially dangerous consequences”.<sup>248</sup> For this to work, clear guidelines to reviewers would be required, placing some additional burdens on referees. We heard that EPSRC pays the reviewer’s department a small sum for each review. This scheme would need to be extended to provide the necessary incentives to academics but this should be funded from central Government. Beyond the research conducted in their own laboratories, Research Councils should not have to meet any additional costs at the expense of funding for research.

215. The editors and publishers statement is welcome but most of the signatories are from the US. This is a pity. It is impossible to regulate the publication of scientific research but there is value in heightening the awareness of researchers around the world about the potential misuses of their research. Sir David King told us “I think that this is a complex international issue that needs to be addressed at that level but certainly we ought to start with the European Union and then be taking it further on”. We recommend that the Science Minister raise the issue of the publication of research data with potential misuses with other EU Member States as a first step in drawing up an EU-wide code of conduct for scientific publication.

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247 Ev 222–223

248 Ev 244–245

## Military research

216. MOD says it will not publish material in the open literature that could “potentially jeopardise national security or aid proliferation, or could highlight a deficiency in the UK’s defence posture”.<sup>249</sup> It is absolutely right that national security should not be compromised by the publication of research that could be of value to terrorists. At the same time, if Dstl’s research is as world-leading as it claims it would be unfortunate if other research programmes were starved of its results and expertise. The correct balance needs to be drawn. The Government’s attitude towards secrecy displayed during this inquiry does not give us confidence that Dstl’s judgement is infallible. At the very least, a mechanism needs to be found to communicate useful data to other active researchers in the UK. **We recommend that our proposed Centre for Home Defence take on the role of identifying restricted Dstl research data that could be of value to the civil and academic research effort and provide a mechanism for disseminating these data to relevant UK researchers.**

## Export control

217. The Export Control Act (2002) is the Government’s response to the criticisms of the UK’s strategic export controls (controls on military and dual use goods) made by Sir Richard Scott in his report on arms to Iraq.<sup>250</sup> The Act provides the Government with powers to impose controls on the transfer of military and dual-use technology by intangible means, and the provision of related technical services. The Bill was the subject of concern in the scientific community since it stated that “The Secretary of State may by order make provision for ... the imposition of transfer controls in relation to technology of any description”, providing the Government with an opportunity to stifle the flow of scientific knowledge and hamper international research collaboration.<sup>251</sup>

218. As finally passed into law, “The Secretary of State shall not make a control order which has the effect of prohibiting or regulating any of the following activities—the effect of interfering with—

- a) the communication of information in the ordinary course of scientific research,
- b) the making of information generally available to the public, or
- c) the communication of information that is generally available to the public, unless the interference by the order in the freedom to carry on the activity is necessary (and no more than is necessary)”.<sup>252</sup>

219. Research Councils UK hopes that implementation of the Act is done in such a way as to “strike the right balance between lowering security risks and permitting the flow of

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249 Ev 148

250 Report of the Enquiry into the Export of Defence Equipment and Dual-Use Goods to Iraq and Related Prosecutions (The Scott Report) (HC 115). HMSO February 1996.

251 Anti-terrorism, Crime and Security Bill, [Bill 49 (2000–2001)]; Fifth Report from the Defence Committee, First Joint Report of the Defence, Foreign Affairs, International Development and Trade and Industry Committees, *Strategic Export Controls: Annual Report for 2000, Licensing Policy and Prior Parliamentary Scrutiny*, HC 718, July 2002

252 Export Control Act 2002, section 8

scientific information”. There is a danger that similar legislation has failed to achieve this balance in the US. We heard during our visit to the Lawrence Livermore Laboratory in California that while it had been straightforward for scientists from Dstl Porton Down to go to America to share ideas and information, the reverse was more problematic, involving lengthy delays for clearance. **We recommend that the Government implement the Export Control Act in a sensible and sensitive manner and negotiate with our allies to ensure the efficient flow of knowledge in both directions. Scientific communication must not become a casualty of the “war on terrorism”.**

220. We have concerns about the awareness of the Export Control Act in the academic community. Mr David Allen, Registrar at Birmingham University, told us that “it has not crossed my radar screen and most changes in legislation do. I wonder whether it is something that Universities UK, my association and other representative bodies clearly should now take very seriously”.<sup>253</sup> Mr Allen may not be typical but **we are concerned that a representative of a major research university should not have been made aware of legislation governing the conduct of academics. We recommend that the Government survey awareness of the Act among universities and initiate an awareness campaign as necessary.**

## International conventions

221. The Biological and Toxin Weapons Convention was agreed in 1972 and entered into force in 1975. It currently has 146 States Parties while a further 17 States have signed the Convention but have yet to ratify it and thereby become States Parties. The Convention, in Article I, totally prohibits biological weapons. Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

- Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;
- Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.<sup>254</sup>
- In the UK, the Convention was implemented by the Biological Weapons Act of 1974, strengthened by ATCSA in 2001.<sup>255</sup>

222. The Chemical Weapons Convention opened for signature in 1993 and entered into force in 1997. It now has 150 States Parties with a further 25 States having signed the Convention but having yet to ratify it and thereby become States Parties. The Convention in Article I totally prohibits chemical weapons. Each State Party to this Convention undertakes never under any circumstances:

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253 Q 370

254 Ev 159–160

255 Ev 160

- To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
- To use chemical weapons;
- To engage in any military preparations to use chemical weapons; and
- To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention.<sup>256</sup>

223. Professor Pearson “strongly” recommends that UK Government websites on chemicals should demonstrate joined-up government by including references and links to all prohibitions and controls on chemicals and pathogens.<sup>257</sup> We agree with him.

224. A degree of openness is required for compliance with the Biological and Toxin Weapons Convention. Dr Graham Pearson, a former Director General and Chief Executive of the then Chemical and Biological Defence Establishment at Porton Down (now Dstl), points out to us that under the Convention, the States Parties have agreed to make annual declarations of national biological defence programmes and facilities. Although the UK makes such declarations annually, they are not in the public domain and requests to place copies in the Library of the House of Commons have been refused.<sup>258</sup> The Foreign Office submission to the Foreign Affairs Committee on the Biological Weapons Green Paper states that “that policy does not preclude the UK from placing its own submission in the public domain.” and goes on to add that “Consideration might be given to actually placing the return on the FCO and MOD websites”.<sup>259</sup>

## 8 Security, openness and the media

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225. An important part of a democracy is the right for citizens to know what is being done in their name by their Government. Scrutiny by Parliament forms an important part of this process. Limits need to be placed on this openness, and national security is one of them. This section looks at the balance that should be made and the restrictions being made by the current Government. Our visit to the US, provided a useful comparison, where we discovered a more open approach.

### Our inquiry

226. We have experienced difficulty in receiving Government cooperation and several sessions have been held in private.

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256 Ev 160

257 Ev 163

258 Ev 163, 217

259 First Report of the Foreign Affairs Committee, Session 2002–03, *The Biological Weapons Green Paper*, HC 150, Ev 21

**Table 5: Problems with the Government during the course of this inquiry.**

February 2003	The Home Office agrees to coordinate the Government response to the inquiry. It will supply two versions of the evidence: one for public use and the other containing information up to the level of "Secret". The terms of reference and our suggested list of Government witnesses are not questioned and the issue was not raised in discussions between officials
10 April 2003	Our Chairman receives a letter from the Home Secretary complaining about the line of questioning at the evidence session with officials from the Office of Science and Technology, the Department of Health and the Home Office on 2 April 2003 and expressing concerns about the remit of our inquiry.
20 May 2003	The Home Secretary withdraws official Home Office witnesses from an evidence session the following day which planned to look at the development of technologies in the transport sector on the grounds of security and that the subject goes beyond our remit. The Department for Transport follows suit and withdraws its witnesses, as does BAA.
9 June 2003	Our Chairman meets with Home Office Minister, Lord Falconer, to discuss the future cooperation of the Government with our Inquiry. It is confirmed that we will restrict the inquiry to technological developments and long-term research strategy.
12 June 2003	Nick Raynsford, Minister of State in the Office of the Deputy Prime Minister, signals the withdrawal of witnesses for a planned evidence session on 16 June 2003 looking at technological development and procurement in the Fire Service, stating that the issues it planned to cover were too sensitive to be held in public. Dr Gibson responded by offering to hold the session in private, to which Mr Raynsford agrees.

227. Ministers seem to think they have a role in determining the remit of select committee inquiries. They do not. Our remit is to scrutinise the work of the OST. The Head of the OST is Sir David King. His business is our business. His involvement in the CBRN Science Working Group and the Scientific Advisory Committee on Emergency Response justifies our involvement. Even if this were not the case, just as Government should be joined up, so should departmental select committees. Government action does not always fall neatly within departmental boundaries. In these cases, departments will no doubt discuss between them how to take the issue forward. In the case of our inquiry, our Chairman, Dr Gibson, made contact with the Defence and Home Affairs Committees and others that had taken an interest to seek to avoid duplication. No objections to the scope of our inquiry were made.

228. This raises the further issue of Parliamentary scrutiny of security arrangements. Mr Blunkett believes that the Intelligence and Security Committee is the appropriate body to scrutinise Government policy in this area. It should not be necessary to point out to the Home Secretary the difference between a Parliamentary committee and a committee made up of Parliamentarians appointed by Government. As the Foreign Affairs Committee has pointed out, when the ISC was set up in 1994 the House was assured that it would not "truncate in any way the existing responsibilities of existing committees".<sup>260</sup> They concluded that the Intelligence and Security Committee be reconstituted as a House of Commons Select Committee, a view with which the Foreign Secretary has "a great deal of

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260 HC Deb, 22 February 1994, Col 164

sympathy”.<sup>261</sup> **The Home Secretary has been unnecessarily sensitive about this inquiry. It is perplexing and disappointing that he took steps, belatedly, to prevent us hearing from certain witnesses from his department and that he apparently sought to instil this uncooperative attitude in other Departments. The Home Secretary’s actions have sought to undermine the role of select committees. We recommend the Liaison Committee establish clear ground rules on the nature and extent of cooperation which is expected from Government in select committee inquiries.**

## Openness and research

229. We heard in the US that the prevailing philosophy there was that the better the flow of scientific information, the better equipped we are to harness science to combat terrorism. Research Councils UK shares this view: “The best way to defeat those who might misuse scientific information is to keep one step ahead. Suppression of information exchange makes this more difficult”.<sup>262</sup> Professor Malcolm Dando from Bradford University argues that “transparency will reduce the risk that the research is ... misappreciated nationally or by other countries”.<sup>263</sup> Professor John Marburger, Director of the White House Office of Science and Technology Policy, has stated that US national laboratories require close interaction with international scientists and that excessive security will hamper the laboratories’ ability to achieve their aims.<sup>264</sup> We agree with these views. We were struck during our visit to the US by our hosts’ admirable desire to harness the whole scientific community in the defence against terrorism.

230. There are concerns that excessive security will hamper the scientific research effort more generally. There are suggestions that the US is suffering as a result of the restrictions placed on the travel of researchers to the US. An editorial in the journal *Nature* suggests that even researchers from its allies, including the UK, are finding it difficult to work in the US and that the top European research institutions are enjoying a “mini-boom” as a result. Truly international gatherings of scientists, the article indicates, can no longer take place in the US. There has been alarm in the US scientific community about the treatment of Thomas Butler from Texas Tech University, who could face years in jail for failing to explain adequately the destruction of cultures of *Yersinia pestis*, the plague bacterium.<sup>265</sup>

**231. Attempts at introducing blanket restrictions on research will be counterproductive. It is far more likely that a terrorist will undertake his research elsewhere yet if we hamper our research effort then we undermine our own ability to devise countermeasures, and indeed scientific research more generally. We recommend that the Government heed the experience of the USA in developing its security policies.**

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261 Ninth Report of the Foreign Affairs Committee, *The Decision to go to War in Iraq*, HC 813–i, July 2003, para 165; HC 813–vii, Q 836

262 Ev 223

263 Ev 215

264 Remarks to National Academies of Science Roundtable on Scientific Communication and National Security, 19 June 2003

265 “Science and the war on terror”, *Nature*, (Vol 425, No6954), 11 September 2003, p 107

## Openness and security

232. We have heard that classification of information could be hampering CBRN countermeasures. Gary Coleman, National Focus for Chemical Incidents, told us that “All the evidence from the States and from most countries of the Western World is that the most effective response to this kind of incident or a chemical incident is done at the lowest level possible”.<sup>266</sup> The implication is that if information is retained at too high a level then the local response is less well-informed and therefore less effective.

233. The culture of secrecy can have an effect in engaging the private sector in developing countermeasures. We have heard that pharmaceutical companies have struggled to initiate a dialogue with the DoH. Nick Higgins from Acambis said the open approach of the US Government has had a positive effect of getting companies interested.<sup>267</sup> This was confirmed by Gail Cassel of Eli Lilly during our visit to the US.

234. The difference between the situation in the US and the UK is most clearly demonstrated by the provision of smallpox vaccine. In the US, the CDC website indicates which States have received what doses of the vaccine.<sup>268</sup> In the UK, Dr Paul Drayson told us that the contract under which PowderJect has supplied the smallpox vaccine to the UK Government had been done under a confidentiality agreement. This prevented him from revealing the number of doses supplied “for reasons of national security”.<sup>269</sup> The UK Government has a publicly declared smallpox vaccination policy. If it has sufficient doses to fulfil this policy, then it has no reason to be secretive. All the Government has been prepared to say is that “We have sufficient stocks of smallpox vaccine, which would be rapidly deployed to contain any outbreak. We are planning for every eventuality and this includes the ability to vaccinate the entire population if necessary”.<sup>270</sup>

**235. We take the security of the UK and its allies very seriously and we have no wish to undermine Britain’s response to the CBRN threat. We were pleased to hear Beverley Hughes say that “nobody, least of all ministers or officials, want to be secretive for the sake of it”.<sup>271</sup> This is not consistent with the Government’s behaviour during this inquiry. The restricted disclosures the Government has made to us, in writing and orally, could be of very little use to anyone except the very people who are trying to develop countermeasures. Indeed, officials have sought to block publication of material that was already in the public domain. We suspect that the Government’s reasons have less to do with security and more to do with control of information, avoiding embarrassment and a misguided belief that openness will panic the population. The culture of secrecy is embedded in the Home Office.**

236. We have found that Government scientists are engaged in a wide range of cutting edge counter-CBRN research programmes, many in collaboration with the US. Instead of keeping such work as secret as possible we believe the Government should be prepared to

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266 Q 44

267 Q 192

268 [www.cdc.gov](http://www.cdc.gov)

269 Q 185

270 HC Deb, 10 July 2003, Col 1016W

271 Q 763

be more open about it, in order to reassure the public that security is being improved, to galvanise the research community and to act as a deterrent against potential future attacks. The Home Secretary is forever proudly announcing new anti-crime initiatives yet he seems unconcerned that this might provide valuable information for criminals. It is a pity that he has not shown an equal willingness to publicise anti-terrorism measures.

237. We discuss in paragraph 125 an inconsistency in the Government's communication of CBRN countermeasures. Another example can be found in a memorandum by Nick Raynsford, Minister of State for Local Government and the Regions, to the Defence Committee in relation to its inquiry on the Draft Civil Contingencies Bill. In it he describes the testing of biological detectors:

“There are two systems currently under evaluation by PSDB and Dstl which will test for a range of agents including anthrax, ricin, tularaemia, botulinum toxin, plague and SEB [staphylococcal enterotoxin B]. User handling trials are being undertaken by British Transport Police, City of London Police, and the Metropolitan Police Force, with the outcome expected by the end of June”.<sup>272</sup>

This is precisely the level of detail that we have been unable to discuss for reasons of national security. While we welcome this level of openness, we are surprised that the Government felt able to divulge this to the public but not other similar information. Indeed, information supplied to us by the Home Office on chemical detectors was clearly marked restricted. The Government undermines its case for classifying so much information with inconsistencies in the level of detail it is prepared to put in the public domain. We are left with the impression that it does not have a clear idea of how to balance security with openness.

## Openness and the public

238. The public communication of the CBRN threat and the Government's reponse is a concern to some. According to the Biosciences Federation, “Fear of the unknown is a major destabilising force in modern society. In Washington DC during the anthrax "scare" fifteen months ago, more people were killed by gunshot wounds and by motor vehicles than by any biological weapon. The public hysteria was nonetheless directed against anthrax rather than more familiar causes of death”.<sup>273</sup> Mr Clive Norris, Director of Fire Health and Safety at the ODPM told us “It is a very fine balance. The public need to be reassured that they are well protected should there be a CBRN incident in this country but similarly we do not want members of the public alarmed when equipment is not yet deployed but is in the procurement phase”.<sup>274</sup> Mr Norris explained to us that the Fire Service's first decontamination vehicles were being deployed and that this had caused public alarm in Worcester: “The press appeared and there was public alarm because what they saw was a large, very strange looking vehicle and fire fighters wearing gastight suits. They did not know what was going on so we briefed the chief officers face to face to give the reassuring message that we need this equipment”.<sup>275</sup> David Veness from Scotland Yard

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272 Seventh Report of the Defence Committee, Session 2002–03, *Draft Civil Contingencies Bill*, HC 557, Ev 60

273 Ev 157

274 Q 629

275 Q 631

reports a similar problem during the “white powder” episodes that followed the 11 September 2001 attacks. The police had asked the leaders of the media to act responsibly “But the media people said, “If you are going to give us these wonderful pictures of men in moon suits, they are what we are going to print”<sup>276</sup>

239. The Government says it is currently considering a campaign to inform the public of the current situation and to advise them on precautions they can take. All options are being considered, we understand, but no decisions have yet been made. The Government says it will use any method necessary to communicate information and advice to the public – including use of the internet and other technology based media where appropriate.<sup>277</sup>

240. Dr Vivian Nathanson told us that one of the biggest issues in the event of a major incident will be that “the Health Service may have to deal with an awful lot of people who are not in fact directly affected and the services may get swamped by people who are frightened, who might feel that they have been exposed to whatever the agent is, and they will have to deal with that and provide a lot of reassurance” –the “worried well”.<sup>278</sup> Acambis argues that “uncertainty breeds mistrust and ... speculation in the media, and consequently the public, leading to widespread fear ... None of this helps the Government in what it is trying to do. There needs to be an open and accountable system of public communications policy on the threat and response to biological, chemical and radiological terrorism”.<sup>279</sup>

241. Confidence is further eroded if the information provided by the Government is not accurate. For example, the Home Secretary’s statement on the availability of the smallpox vaccine on 2 April 2003 alarmed health professionals and his colleagues in the DoH.<sup>280</sup> This clumsy attempt to pretend he knew more than he really did has damaged the Government’s communication strategy on the CBRN threat.

**242. We believe that the Government is far too preoccupied with the danger of alarming the public. By being so selective about the information it provides to the public, the Government breeds cynicism and results in a public with even less confidence that adequate measures are in place, or being put in place, to protect it.**

## 9 Conclusion

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243. We have found that the Government is making a concerted effort to respond to the increased threat of a major CBRN terrorist attack following the tragic events in New York and Washington on 11 September 2001. We conclude that the Government has made good use of the expertise at its disposal in the purchase of currently available technologies but that the development of new technologies has suffered from the reluctance of the Government to engage sufficiently with the pharmaceutical industry. Also lacking is an

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276 David Veness, “Anticipating an enduring threat”, *FST Journal*, (Vol17, No10), July 2003, p 6

277 Ev 145

278 Q 104

279 Ev 213

280 HC Deb, 3 March 2003, Col 594

overall civilian counter-terrorism research strategy and a civil Government research facility. We have therefore proposed a new Centre for Home Defence to fill these gaps.

244. While it has not been the focus of our inquiry, we do have comments on the UK's state of preparedness for a CBRN terrorist attack. We have found that there is still work to be done in some areas, but the Government should not be rushed into expensive and inappropriate actions. It is more important that the effort is put in and the right, considered decisions are made on the basis of the best available threat assessment.

245. Much of the evidence presented to us by the Government has been classified and we have been forced to hold several oral sessions in private. We suspect that that the classification of much of this information is not justified on security grounds: at best it is an unnecessary effort to avoid alarming the public and at worst an attempt to prevent proper scrutiny of Government. In contrast, during our visit to the US, we found that officials and scientists were keen to explain the countermeasures they were developing and had a proactive policy of communicating this to the American public. We cannot believe that the US is any less safe as a result of this policy.

## Conclusions and recommendations

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### The threat

1. There seems to be a range of risk assessments, particularly within the Department of Health (DoH). It is not clear who in Government is responsible for determining what threats the UK should be responding to, and with what priorities. We have not established how risk assessments are informing Government policy and thus the scientific response. There should be a single assessment, informed by science and intelligence, which is communicated clearly to all those who need to make strategic decisions on funding allocations. We hope that the Joint Terrorism Analysis Centre can fulfil this **function**. (Paragraph 16)

### The Government response

2. In some areas greater investment in CBRN home defence is required, either for research or to reflect that many parts of Government have been expected to expand their role. This must be reflected in their budgets. (Paragraph 25)
3. We recommend that the Government publish figures on its spending on CBRN countermeasures, before and after 11 September 2001, with an indication of how this money is being spent. (Paragraph 26)

### Research, development and procurement

4. There has been no extensive effort that we can establish to identify the research needs to develop CBRN countermeasures and as a result there has been no clear statement of what is required. Without this, the research community is in no position to respond effectively and in a coordinated manner. (Paragraph 29)
5. There are few issues in which access to the best scientific expertise is more important than in the fight against terrorism. We welcome the Government's willingness to commission and fund Royal Society inquiries and urge it to consider providing the resources to the Society to produce a thorough and public appraisal of the role that science can play in combating terrorism. (Paragraph 30)
6. In our view, UK home defence is too reliant on Dstl's military-derived technologies. We need a substantial and clearly focused research programme driven by the specific requirements of civil defence. (Paragraph 37)
7. Despite regulating animal experimentation for many years, sponsoring the Forensic Science Service and having powers through the Anti-terrorism, Crime and Security Act 2001 over the security of laboratories, we are strongly of the view that there is a weak scientific culture in the Home Office. The Office of Science and Technology has set up a Science Review Directorate to assess the scientific endeavours of Government departments. We recommend that it consider the Home Office a priority. (Paragraph 40)

8. Greater collaboration between Dstl and HPA at Porton Down could be very productive and would avoid duplication. We recommend that greater efforts are made to explore synergies and joint projects. (Paragraph 44)
9. The establishment of a CBRN Team in the Home Office is important, and it is desirable that a single Department takes the lead, but there needs to be appropriate expertise within and available to other Departments. We are not satisfied that the Department for Transport has such expertise, or that it has a clear understanding of the route by which it could attain the information it would need to respond to a CBRN emergency. (Paragraph 45)
10. We are concerned that SAPER, as an advisory panel, has no resources to drive through change or initiate research. (Paragraph 46)
11. The UK does not need a Department for Homeland Security but we do recommend the creation of a Centre for Home Defence as a Government agency, with the following features:
  - It would conduct or commission research and development aimed at strengthening the UK's technical capability to prevent, respond and mitigate the effects of a terrorist attack, in particular those using CBRN agents;
  - It would be under the auspices of the Home Office within the remit of the Minister of State for Counter-Terrorism. SAPER would act as its scientific steering group;
  - It would have its own research budget of no less than £20 million a year and would be responsible for conducting basic research, deriving new technologies for home defence and adapting military technologies for civil use;
  - It would not conduct research on medical countermeasures but would have substantial input into and commission research conducted by the Department of Health (including the Health Protection Agency), the Medical Research Council and Dstl;
  - It would have a physical presence in close proximity to a centre of academic scientific excellence;
  - It would identify relevant research expertise within universities and Research Council Institutes; and
  - It would form strong links with academic and Government research laboratories overseas. (Paragraph 48)
12. We understand that science at the Ministry of Defence will be the subject of a review by the OST Science Review Directorate. This should consider the use being made of academic research by Dstl and what mechanisms could be introduced to maintain quality control at regular intervals. (Paragraph 53)
13. The formation of the Health Protection Agency is a positive move in terms of ensuring good public health surveillance and combating infectious serious disease,

and it should also enhance the UK's CBRN counter-terrorism measures. The split of the PHLS between national and local functions within NHS Trusts has been given much attention and we do not plan to repeat the arguments, except to say that expertise in the identification and epidemiology of possible biological agents must be retained at a local level. (Paragraph 60)

14. We have concerns about the funding of the HPA and the NRPB. We have been told that they have been asked to take on new functions but it is unclear whether adequate additional resources will be available to meet the challenges from CBRN terrorism. We recommend that any increase in their activities relating to CBRN countermeasures should be reflected in their budgets. The HPA should not be undermined so soon in its existence by a lack of funds. (Paragraph 64)
15. We recommend that the HPA develop with industry a fast efficient vaccine production facility which combines a service to the tax-payer and benefits participating companies. This should form part of a long-term vaccine development strategy for Government. (Paragraph 73)
16. The Government's decision not to conduct a mass vaccination programme for smallpox is correct in our view. The reported side effects of the vaccine make this option unattractive. Should a safer vaccine become available, we would expect the Government to reconsider this policy yet the Minister refused to address this point. We have heard of doctors' concerns about the "worried well". A safe vaccine might prove cost effective, provide reassurance to millions and possibly act as a deterrent to any attack. (Paragraph 79)
17. In its initial procurement of personal protective equipment after 11 September 2001, the DoH acted too hastily and without consulting sufficiently widely. We are content that problems are being remedied but at considerable expense and at a cost to the public's and health professionals' confidence in the Department's competence. (Paragraph 84)
18. The use of NHS Direct data to give an early warning of a CBRN attack is a useful addition to the existing surveillance techniques but it should form part of an integrated surveillance system that uses data from a variety of sources. (Paragraph 86)
19. The World Health Organization provides a valuable resource in the response to CBRN terrorism and it should not be under-resourced. We recommend that the Government raise this issue at the appropriate forum. (Paragraph 87)
20. We accept there has been contact between Government and the pharmaceutical industry to discuss medical countermeasures but it has been insufficient to enable companies to adapt their own research programmes with confidence. (Paragraph 93)
21. We are pleased that our probings have prompted action to improve the dialogue with the pharmaceutical industry and that Mr Hutton accepts the criticism that the existing dialogue with the pharmaceutical industry has been inadequate. We are less pleased that it took Ministers so long to recognise the crucial role that industry must

play in developing biomedical countermeasures. We look forward to learning of his progress in the Government's response to this report. (Paragraph 94)

22. The UK is a relatively small consumer for the global pharmaceutical industry and it is in a weak position to provide powerful incentives to develop particular products. A UK BioShield is not justified but there is much the Government could achieve, in collaboration with the pharmaceutical industry, to improve the market for medical CBRN countermeasures. (Paragraph 99)
23. The international surveillance of biological agents should embrace animal and plant diseases as well as human ones. We recommend that the Government take action to improve the coordination between the relevant international bodies. (Paragraph 104)
24. The New Dimension programme seems a sensible and comprehensive attempt to address the CBRN terrorist threat, for which we commend the Fire Service. (Paragraph 108)
25. We had been assured that the Office of the Deputy Prime Minister would resume publication of the New Dimension newsletters to inform the fire community of the programme's progress. To our knowledge this has not occurred and we recommend that this takes place without delay. (Paragraph 110)
26. Government had shown a willingness to communicate the progress of the New Dimension programme, which we welcome. It is our view, however, that the fire dispute did not provide adequate grounds to change this policy. We regret that Ministers apparently felt unable to give the real reason for not cooperating with this part of our inquiry. It is a sorry indictment of the Government's policy on releasing information on security issues that Government witnesses were unaware of, or unwilling to stick to, the reasons advanced by Ministers for refusing permission for them to appear in public. (Paragraph 111)
27. We welcome the move to install radiation detectors at ports and its public announcement. This will contribute to the public's confidence in the measures taken by the Government and could act as a deterrent to potential terrorist groups. The communication of this initiative is at odds with the Government's usual policy on CBRN countermeasures. We urge the Government to take a more consistent and open approach. (Paragraph 114)
28. The Government's refusal to allow us to examine the technologies employed by the London Underground is wrong. We fear that the Government's refusal to discuss the problems simply creates the impression that it does not know how to solve them (Paragraph 119)
29. The HSE has made the case for a strong role in informing CBRN countermeasures but we do not have the impression that it has been sufficiently proactive in providing that advice nor adequately consulted by other parts of Government. It is right that the HSE has a degree of autonomy but it seems the Department for Work and Pensions provides little input to its activities. We believe that the HSE needs stronger ministerial direction which its sponsoring Department is either unable or unwilling to provide. (Paragraph 121)

30. TRANSEC is charged with providing security guidance to transport operators yet we are told that an important part of security will now be dealt with by another department. Transport operators need clear lines of communication with Government. We recommend that either the transport security is brought under the remit of the Home Office or that the DfT is left to deal with all transport security issues. (Paragraph 122)
31. We commend BAA on its initiative in working to develop technological solutions to the issue of CBRN security. We recommend that the Government assist BAA in its efforts and investigate how the US PROACT system could be tested in the UK. (Paragraph 128)
32. The food industry has established practices to deal with tampering but concerted effort by an international terrorist organisation is a problem on a different scale. It would be regrettable if it allowed a misplaced confidence in its procedures to lead to vulnerabilities. (Paragraph 131)
33. We recommend that the Government provide detailed guidance to companies on CBRN countermeasures and their development, and satisfy itself that it has the powers, if necessary, to demand the introduction of the necessary security measures. This should be complemented with a system of fiscal incentives or grants to offset the cost. (Paragraph 144)
34. We recommend that the Government consider a standard vetting scheme for workers at high risk facilities. This should not be compulsory and the Government should work with the industry to develop an efficient scheme with minimum bureaucracy. (Paragraph 145)

### Emergency and operational response

35. We recommend that it should become a medium term aim to provide the ambulance service with a basic level of detector technology for CBRN incidents in high risk areas, along with the necessary training and access to scientific expertise. (Paragraph 153)
36. We recommend that the Government provide the means for all ambulance services to get access to CBRN training, regardless of their size. (Paragraph 154)
37. Unless GPs are able to give authoritative information the health service risks being overwhelmed by concerned members of the public. The Government should work with the media to feed information to the public about counter-terrorist activity. (Paragraph 155)
38. We recommend that the Health Protection Agency take steps to disseminate information on potential biological agents through other channels or employ means to improve awareness of its website. (Paragraph 156)

39. We endorse the findings of the House of Lords Committee report on Fighting Infection that action is needed to tackle the shortages in several clinical specialties and urge the Government to address them promptly. (Paragraph 159)
40. There are no easy answers to the problem of improving awareness of potential biological agents, particularly in general practice. Training will help but there is a danger that, unless it is regularly reinforced, it will be hard to condition GPs and other front-line health professionals to recognise and deal with the unexpected. We recommend that the Government make sufficient resources available to achieve this. (Paragraph 163)
41. The Fire Service says it does not have the skills to work with biohazard detection equipment yet the other emergency services are relying on its expertise. If this arrangement is to remain in place then the Government must move rapidly to provide the Fire Service with effective detection and identification technology and the skills to use it. (Paragraph 169)
42. The military, and in particular Dstl Porton Down, provide a potentially valuable resource in the response to a real or suspected CBRN incident. Nevertheless, it should be recognised that Dstl's priority is the support of the military. We therefore recommend that the deployment of scientists to a suspected CBRN incident through immediate response teams should come under the control of and be financed by our proposed Centre for Home Defence. (Paragraph 174)
43. We recommend that one of the first steps for our proposed Centre for Home Defence is to conduct or commission new research into decontamination processes and procedures. (Paragraph 176)
44. We recommend that the Government consider providing a national template for the procurement of CBRN countermeasures for the emergency services as a whole. Its most appropriate deployment could then be established at a local level. (Paragraph 178)
45. We are pleased to learn that the Government plans to be more open about counter-terrorist exercises in the future. While some of their findings will be sensitive, we hope the Government is able to release some information to the public. (Paragraph 180)
46. As this inquiry had demonstrated, most departments will need to learn lessons from the findings of anti-terrorist exercises. We therefore urge that detailed findings are disseminated throughout Government. (Paragraph 181)
47. The response to a radiological or biological will require different responses. We therefore recommend that the "more complex, larger scale exercises" conducted in the future test such scenarios. (Paragraph 182)

### Overseas cooperation

48. The scientific response to terrorism is a global pursuit. We are pleased to see an impressive level of collaboration between the UK and its allies, in particular with the

US. We are concerned that our desire to increase security over research may hamper this cooperation by limiting the exchange of scientists and information. The level of cooperation within the EU less evident. Whether this reflects reluctance on the UK's part or on other Member States' is not clear. We urge the Government to address this issue. (Paragraph 186)

### Security of research

49. We are pleased to hear the police are taking a sensible and measured approach in enforcing the provisions of the Anti-terrorism, Crime and Security Act. The confusion over the emergence of a second list of agents not covered under the Act is unfortunate, however. The Government seems to be under the impression that it can have one list of agents laid down in the Act, yet enforce another list which is beyond the scrutiny of Parliament. We recommend that the Government decide which organisms it wishes to control and amend the Act accordingly. (Paragraph 199)
50. The poor participation of some universities in the Voluntary Vetting Scheme means that it needs to be replaced. We do not want to see a compulsory scheme but unless universities cooperate in the new scheme, it may have to be. It is important that the UK does not become a scientific training ground for terrorists. (Paragraph 205)
51. We urge scientific learned societies to consider introducing an overt ethical code of conduct as a prerequisite of membership and back this up with programmes to heighten awareness of the issues involved. (Paragraph 210)
52. If the scientific community does not take stronger action to regulate itself then it risks having ill-judged restrictions placed on it by politicians. (Paragraph 211)
53. An ethical code of conduct for scientists has value in promoting awareness and providing basis for better education of researchers. Learned and professional societies and Research Councils should develop an understanding of what such a code involves and enforce it by denying grants or refusing membership. By insisting that a code of ethical conduct is unworkable they are ducking their responsibility. (Paragraph 212)
54. We recommend that our proposed Centre for Home Defence take on the role of identifying restricted Dstl research data that could be of value to the civil and academic research effort and provide a mechanism for disseminating these data to relevant UK researchers. (Paragraph 216)
55. We recommend that the Government implement the Export Control Act in a sensible and sensitive manner and negotiate with our allies to ensure the efficient flow of knowledge in both directions. Scientific communication must not become a casualty of the "war on terrorism". (Paragraph 219)
56. we are concerned that a representative of a major research university should not have been made aware of legislation governing the conduct of academics. We recommend that the Government survey awareness of the Act among universities and initiate an awareness campaign as necessary. (Paragraph 220)

## Security and the media

57. The Home Secretary has been unnecessarily sensitive about this inquiry. It is perplexing and disappointing that he took steps, belatedly, to prevent us hearing from certain witnesses from his department and that he apparently sought to instil this uncooperative attitude in other Departments. The Home Secretary's actions have sought to undermine the role of select committees. We recommend the Liaison Committee establish clear ground rules on the nature and extent of cooperation which is expected from Government in select committee inquiries. (Paragraph 228)
58. Attempts at introducing blanket restrictions on research will be counterproductive. It is far more likely that a terrorist will undertake his research elsewhere yet if we hamper our research effort then we undermine our own ability to devise countermeasures, and indeed scientific research more generally. We recommend that the Government heed the experience of the USA in developing its security policies. (Paragraph 231)
59. We take the security of the UK and its allies very seriously and we have no wish to undermine Britain's response to the CBRN threat. We were pleased to hear Beverley Hughes say that "nobody, least of all ministers or officials, want to be secretive for the sake of it". This is not consistent with the Government's behaviour during this inquiry. The restricted disclosures the Government has made to us, in writing and orally, could be of very little use to anyone except the very people who are trying to develop countermeasures. Indeed, officials have sought to block publication of material that was already in the public domain. We suspect that the Government's reasons have less to do with security and more to do with control of information, avoiding embarrassment and a misguided belief that openness will panic the population. The culture of secrecy is embedded in the Home Office. (Paragraph 235)
60. We believe that the Government is far too preoccupied with the danger of alarming the public. By being so selective about the information it provides to the public, the Government breeds cynicism and results in a public with even less confidence that adequate measures are in place, or being put in place, to protect it. (Paragraph 242)

## Formal minutes

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### Monday 20 October

Members present:

Dr Ian Gibson, in the Chair

Dr Brian Iddon  
Mr Robert Key  
Mr Tony McWalter

Bob Spink  
Dr Desmond Turner

The Committee deliberated.

Draft Report (The Scientific Response to Terrorism), proposed by the Chairman, brought up and read.

Paragraphs 1 to 245 read and agreed to.

*Resolved*, That the Report be the Eighth Report of the Committee to the House.

*Ordered*, That the Chairman do make the Report to the House.

*Ordered*, That the provisions of Standing Order No. 134 (Select Committees (reports)) be applied to the Report.

*Ordered*, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

[Adjourned till Monday 27 October at 4.00pm ].

# Witnesses

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**Note: Asterisks in the oral and written evidence denote that part or all of a question or answer thereto, or a passage of written evidence has not been printed for reasons of security or confidentiality at the request of the witness and with the agreement of the Committee.**

## Wednesday 5 March 2003

Page

**Professor Pete Borriello**, Director of Central Public Health Laboratory, **Dr Charles Penn**, Director of Research, Centre for Applied Microbiology and Research, **Mr Neil McColl**, Head, Emergency Response Group, National Radiological Protection Board and **Professor Gary Coleman**, Executive Director, National Focus for Chemical Incidents

Ev 1

**Dr Vivienne Nathanson**, Head of Professional Activities, British Medical Association, **Dr Maureen Baker**, Honorary Secretary, Royal College of General Practitioners, **Dr Nicholas Beeching**, British Infection Society and Royal College of Physicians

Ev 12

**Mr Trevor Campbell Davis**, Chief Executive, Whittington Hospital NHS Trust, **Mr Peter Bradley**, Chairman, Operations Committee and Chief Executive, London Ambulance Service Association, **Mr John Harrop**, Senior General Manager, Critical Care and Support Service, Salford Royal Hospital Trust

Ev 18

## Wednesday 2 April 2003

**Mr Nick Higgins**, Chief Business Officer, Acambis, **Dr Paul Drayson**, Chief Executive, PowderJect, **Dr Philip Wright**, Director, Science and Technology, Association for the British Pharmaceutical Industry, **Dr John Keddie**, Director, Environmental Health and Safety, GLaxoSmithKline

Ev 23

**Dr David Harper**, Chief Scientist, Department of Health, **Dr Richard Scott**, Director of Science, Defence Science and Technology Laboratory, **Mr Brian Coleman**, Director, Police Scientific Development Branch

Ev 31

## Wednesday 14 May 2003

**Dr Mike Crumpton**, Academy of Medical Sciences, **Mr David Harrison**, Director of Health and Safety Unit, University of Birmingham, **Mr Nick Winterton**, Executive Director, Medical Research Council, Research Councils UK, **Mr David Allen**, Registrar and Secretary, University of Birmingham, Association of Heads of University Administration

Ev 38

**Mr Nick Winterton**, Executive Director, Medical Research Council, Research Councils UK, **Professor Brian Eyre**, Chair of the Royal Society's standing committee on Scientific Aspects of International Security, The Royal Society, **Dr Alan Malcolm**, Chief Executive, Institute of Biology, UK Biosciences Federation

Ev 46

### Wednesday 21 May 2003

**Dr Julian Dennis**, Chief Scientific Adviser, Thames Water, **Mr Steve Wearne**, Head of Chemical Contaminants and Animal Feed Division, Food Standards Agency, **Mr John Longworth**, Group Trading Law and Technical Director, Tesco plc

Ev 51

### Monday 16 June

**Mr Nick Starling**, Policy Director, **Dr Paul Davies**, Chief Scientist, Health and Safety Executive

Ev 61

**Mr Clive Norris**, Director, Fire Health and Safety, **Dr David Peace**, Director, Fire Research Division, **Mr Peter Morphew**, HM Senior Inspector of Fire Services, Office of the Deputy Prime Minister, Fire, Health and Safety Directorate, **Mr Ron Dobson**, Deputy Commissioner, London Fire Brigade, Local Government Association

Ev 69

### Monday 30<sup>th</sup> June

**Rt Hon John Hutton MP**, Minister of State, **Dr David Harper**, Chief Scientist, Department of Health, **Dr Pat Troop**, Chief Executive, Health Protection Agency

Ev 76

**Beverley Hughes MP**, Minister of State for Citizenship, Immigration and Counter-Terrorism, **Professor Sir David King**, Chief Scientific Adviser, Head of the Office of Science and Technology, **Mr Marcial Bóo**, Director, CBRN Resilience, **Dr Ian Lawston**, Scientific Adviser, CBRN Team, Home Office

Ev 84

# List of written evidence

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## 1 Collated Government Evidence

Summary	Ev 96
Introduction	Ev 97
Overview of Departmental Roles	Ev 98
Cabinet Office	Ev 98
Home Office	Ev 99
Department of Health (DH)	Ev 100
National Radiological Protection Board (NRPB)	Ev 102
Department for Education and Skills (DfES)	Ev 103
Department for Environment, Food and Rural Affairs (Defra)	Ev 103
Department of Trade & Industry (DTI)	Ev 105
Foreign and Commonwealth Office (FCO)	Ev 109
Food Standards Agency (FSA)	Ev 110
Health and Safety Executive (HSE)	Ev 111
Northern Ireland Office (NIO)	Ev 112
Office of the Deputy Prime Minister (ODPM)	Ev 112
Scottish Executive (SE)	Ev 113
Ministry of Defence (MOD)	Ev 115

**Section 1:** How countermeasures against chemical, biological and radiological terrorism are informed by science and technology Ev 116

1.1 Cabinet Office	Ev 116
1.2 Home Office	Ev 117
1.3 Department of Health	Ev 119
1.4 National Radiological Protection Board	Ev 124
1.5 DEFRA	Ev 126
1.6 DTI	Ev 132
1.7 FSA	Ev 133
1.8 Health and Safety Executive (HSE)	Ev 134
1.9 Northern Ireland Office	Ev 135
1.10 ODPM	Ev 135
1.11 Scottish Executive	Ev 137
1.12 Ministry of Defence	Ev 139

**Section 2:** How the surveillance of dangerous chemicals and pathogens is co-ordinated, both nationally and internationally, the policies that are in place to respond Ev 139

2.1 Home Office	Ev 139
2.2 Department of Health	Ev 140

2.3	National Radiological Protection Board	Ev 141
2.4	FCO	Ev 142
2.5	FSA	Ev 143
2.6	Ministry of Defence	Ev 143
<b>Section 3:</b> The public communications policy on the threat and response to biological, chemical and radiological terrorism		Ev 144
3.1	Cabinet Office	Ev 144
3.2	Department of Health	Ev 144
3.3	National Radiological Protection Board	Ev 145
3.3	Food Standards Agency	Ev 145
<b>Section 4:</b> What research relevant to the chemical, biological and radiological threats is being undertaken in the UK and what controls are placed on it		Ev 146
4.1	Home Office	Ev 146
4.2	Department of Health	Ev 146
4.3	National Radiological Protection Board	Ev 148
4.4	Ministry of Defence	Ev 148
<b>Section 5:</b> The need for an ethical code of conduct for scientists working with dangerous substances or pathogens		Ev 148
5.1	Home Office	Ev 148
5.2	DH	Ev 149
5.3	National Radiological Protection Board	Ev 149
5.4	FCO	Ev 149
5.5	Ministry of Defence	Ev 149
2	Dr T D Inch, Chairman, Advisory Committee to the UK National Authority for the Chemical Weapons Convention	Ev 149, Ev 150
3	Royal Society	Ev 151
4	Reading Scientific Services Ltd (RSSL)	Ev 154
5	Dr Hilary I Dobson	Ev 155
6	UK Biosciences Federation	Ev 156
7	British Retail Consortium	Ev 157
8	Professor Graham Pearson, Bradford University	Ev 158
9	STERIS UK	Ev 165
10	Dr F Duggan	Ev 173
11	Society for General Microbiology	Ev 174
12	Centre for Applied Microbiology and Research (CAMR)	Ev 179
13	Rank Hovis Limited	Ev 187
14	BAA plc	Ev 188

15	Public Health Laboratory (PHLS)	Ev 188
16	Academy of Medical Sciences	Ev 195
17	Royal College of General Practitioners	Ev 200
18	PowderJect Pharmaceuticals plc	Ev 200
19	The Royal Society of Edinburgh (RSE)	Ev 206
20	Mr Reg Maling	Ev 208
21	Acambis plc	Ev 211
22	Nutrition Society	Ev 213
23	Professor Malcolm R Dando, Department of Peace Studies, University of Bradford	Ev 215
24	British Medical Association	Ev 219
25	Research Councils UK	Ev 221
	Biotechnology and Biological Sciences Research Council	Ev 223
	Council for the Central Laboratory of the Research Councils	Ev 225
	Economic and Social Research Council	Ev 226, Ev 245
	Engineering and Physical Sciences Research Council	Ev 227
	Medical Research Council	Ev 228
	Natural Environment Research Council	Ev 230
26	Tesco	Ev 232
27	Association for the British Pharmaceutical Industry (ABPI)	Ev 234
28	Dr Hans-Christian Raabe	Ev 237
29	National Focus for Chemical Incidents	Ev 239
30	British Veterinary Association	Ev 240
31	Royal Mail Group Plc	Ev 241
32	International Committee of the Red Cross	Ev 243
33	Government	Ev 245
34	Universities UK	Ev 248
35	Association of Heads of Universities Association	Ev 249
36	Thorn Secure Science International	Ev 250
37	QinetiQ	Ev 251
38	Defence Science and Technology Laboratory (Dstl)	Ev 253
39	Office of the Deputy Prime Minister	Ev 258
40	Mr Satish Singh, Medical and Healthcare Products Agency	Ev 260
41	Home Office	Ev 261

## Reports from the Science and Technology Committee since 2001

The following Reports have been produced by the Committee since the start of the present Parliament. The reference number of the Government's response to the Report is printed in brackets after the HC printing number.

### Session 2002–03

First Report	The Work of the Particle Physics and Astronomy Research Council	HC 161 (HC 507)
Second Report	Annual Report 2002	HC 260
Third Report	The Work of the Medical Research Council	HC 132 (CM 5834)
Fourth Report	Towards a Non-Carbon Fuel Economy: Research, Development and Demonstration	HC 55-I (HC 745)
Fifth Report	The Work of the Natural Environment Research Council	HC 674 (HC 1161)
Sixth Report	UK Science and Europe: Value for Money?	HC 386-I (HC 1162)
Seventh Report	Light Pollution and Astronomy	HC 747-I
Ninth Report	The Work of the Engineering and Physical Sciences Research Council	HC 936
First Special Report	Government Response to the Science and Technology Committee's Fifth Report, Session 2001-02, Government Funding of the Scientific Learned Societies	HC 53
Second Special Report	Government Response to the Science and Technology Committee's Sixth Report, Session 2001-02, the National Endowment for Science, Technology and the Arts: A Follow-up	HC 276
Third Special Report	Government Response to the Committee's Seventh Report, Session 2001-02, The Office of Science and Technology: Scrutiny Report	HC 293
Fourth Special Report	Government Response to the Committee's Eighth Report, Session 2001-02, Short-term Contracts in Science and Engineering	HC 442
Fifth Special Report	Government Response to the Committee's First Report, The Work of the Particle Physics and Astronomy Research Council	HC 507
Sixth Special Report	Government Response to the Committee's Fourth Report, Towards a Non-Carbon Fuel Economy: Research, Development and Demonstration	HC 745
Seventh Special Report	Government Response to the Committee's Fifth Report: The Work of the Natural Environment Research Council	HC 1161
Eighth Special Report	Government response to the Committee's Sixth Report: UK Science and Europe: Value for Money?	HC 1162

### Session 2001–02

First Report	Cancer Research – A Follow-Up	HC 444
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Second Report	The Research Assessment Exercise	HC 507 (HC 995)
Third Report	Science Education from 14 to 19	HC 508-I (HC 1204)
Fourth Report	Developments in Human Genetics and Embryology	HC 791
Fifth Report	Government Funding of the Scientific Learned Societies	HC 774-I
Sixth Report	National Endowment for Science, Technology and the Arts: A Follow-Up	HC 1064
Seventh Report	The Office of Science and Technology: Scrutiny Report 2002	HC 860
Eight Report	Short-Term Research Contracts in Science and Engineering	HC 1046
First Special Report	The Government's Response to the Science and Technology Committee's Fourth Report, Session 2000–01, on The Scientific Advisory System	HC 360
Second Special Report	The Government's Response to the Science and Technology Committee's Sixth Report, Session 2000–01, Are We Realising Our Potential?	HC 361
Third Special Report	The Government's Response to the Science and Technology Committee's Seventh Report, Session 2000–01, on Wave and Tidal Energy	HC 377
Fourth Special Report	Government Response to the Committee's Third Report of Session 2000-01, on Scientific Advisory System: Scientific Advice on Climate Change	HC 493