

RadioNational Background Briefing

[Program Home](#) [Past Programs](#) [Galleries](#) [Podcasts and Feeds](#) [About Us](#) [Contact Us](#)

BIOWAR

Broadcast: Sunday 4 September 2005 9:00AM

America has beefed up biological weapon research by \$6 billion, and 11,000 people now have hands-on access to virulent biological agents. Scientists and analysts question the sanity of such a strategy. Remember anthrax was dispersed by an American.

[Facebook](#) [Twitter](#) [Delicious](#) [Reddit](#) [Digg](#) [what are these?](#)

Transcript

[Show](#)

Further Information


- [Project Bioshield](#)
- [Dr Tara O'Toole](#)
- [Professor Jonathan King](#)
- [Professor Richard Ebright](#)
- [Professor Jeanne Guillemin](#)
- [Milton Leitenberg](#)
- [Richard Danzig](#)
- [Professor Herbert Huppert](#)

 **Sunday 8am, as part of Sunday Extra**
Repeated: Monday 4am
Presented by **Jonathan Green**

RELATED CONTENT

- ▶ The war of the camphor laurels
- ▶ Tackling Indigenous youth suicide, and kicking goals
- ▶ Calls for overhaul of Fair Work Act
- ▶ West of Asia Closeup: Saudi women who want to drive
- ▶ The Drawing Room: Solving the world's problems

NOW ON RADIO NATIONAL

 12:00PM AEDT
With Eleanor Hall.
The latest reports and analysis of the day's breaking

stories.
[The World Today](#)

- ▶ [Program Guide](#) ▶ [A-Z programs](#)
- ▶ [Tune Your Radio](#)

BIOWAR

[show transcript](#)

Broadcast: Sunday 4 September 2005 9:00AM

America has beefed up biological weapon research by \$6 billion, and 11,000 people now have hands-on access to virulent biological agents. Scientists and analysts question the sanity of such a strategy. Remember anthrax was dispersed by an American.

[Facebook](#)[Twitter](#)[Delicious](#)[Reddit](#)[Digg](#)

what are these?

Transcript

[Show](#)

Further Information

[Project Bioshield](#)

[Dr Tara O'Toole](#)

[Professor Jonathan King](#)

[Professor Richard Ebright](#)

[Professor Jeanne Guillemin](#)

[Milton Leitenberg](#)

[Richard Danzig](#)

[Professor Herbert Huppert](#)

[Sunshine Project](#)

[Dr Jonathan Tucker](#)

[Atlantic Storm](#)

Credits

Presenter Tom Morton

BIOWAR

show transcript

Broadcast: Sunday 4 September 2005 9:00AM

America has beefed up biological weapon research by \$6 billion, and 11,000 people now have hands-on access to virulent biological agents. Scientists and analysts question the sanity of such a strategy. Remember anthrax was dispersed by an American.

[Facebook](#)[Twitter](#)[Delicious](#)[Reddit](#)[Digg](#)

[what are these?](#)

Transcript

[Hide](#)

Man: Anthrax, anthrax, botulinum toxin, plague, plague....

Tara O'Toole: Bioterrorism constitutes one of the top international security threats of the 21st century.

George W. Bush: We must assume that our enemies would use these diseases as weapons.

Jonathon Tucker: The most likely suspects are insiders, so ironically, the threat may be us.

Tom Morton: Welcome to our nightmare.

George W. Bush: And we must act before the dangers are upon us.

NewsReader: Good morning. In news just in there are unconfirmed reports that a number of patients have been admitted to hospitals in Germany suffering from smallpox. Health authorities are refusing to comment until further tests have been done.

Man: The number of confirmed cases of smallpox in Europe has risen to over 3,000 since this morning, European time.

Tara O'Toole: Smallpox has been eradicated in nature, and already there's speculation that the outbreak could be the work of a terrorist group.

Tom Morton: Welcome to our nightmare.

Terrorists have released the smallpox virus in major airports and train stations in Europe and the United States. The deadly virus is spreading like wildfire. World leaders must act. With only limited stocks of vaccine, governments must make urgent decisions. Hundreds of thousands of lives are hanging in the balance.

Welcome to *Background Briefing* on ABC Radio National. I'm Tom Morton.

Well, the scenario we've just described is, of course, fiction. But it's one which was played out in Washington earlier this year.

The US is spending \$6 billion on biodefence: research on live, virulent organisms like anthrax and plague. Many American politicians, from President George Bush down, believe that the United States and its allies are vulnerable to an attack by terrorists with biological weapons.

The US is spending \$6 billion on biodefence: research on live, virulent organisms like anthrax and plague. But many top scientists are saying that bioterrorism is a beat-up.

Jonathan King: All of this bioshield, bioterror, biodefence is an enormous fraud on the public. This cannot be done in the backyard, it cannot be done in the basement, it cannot be done in the garage, and the notion that this could be done without being detected, there's no basis in reality whatsoever.

Tom Morton: There's a fiery debate raging, one in which the boundaries between science and politics, and fact and fiction quickly get blurred.

In January this year, a group of senior European and American politicians gathered in Washington to take part in *Atlantic Storm*. *Atlantic Storm* was a dramatic exercise, one designed to alert the public and key policy makers, to the threat of bioterrorism.

Tara O'Toole: Well I think the threat is very real, in fact I would argue that bioterrorism constitutes one of the top international security threats of the 21st century. Biological weapons are at this stage of our technologies, quite easy to build and to disseminate. There aren't a lot of impenetrable technical barriers to a terrorist group unleashing a biological weapon, and such an attack could cause great suffering and loss of life as well as economic and social disruptions. So I fear that the attraction of bioweapons to terrorist groups will only increase.

Tom Morton: That's Dr Tara O'Toole. She's the CEO of the Center for Biosecurity at the University of Pittsburgh, which designed and ran *Atlantic Storm*.

Participants in *Atlantic Storm* included former Secretary of State, Madeleine Albright and former government ministers from Canada, Poland, France, the Netherlands and Italy.

As the exercise began, they were all meeting in Washington for a Transatlantic summit.

Tara O'Toole: We alleged that as these leaders were flying across the Atlantic for this meeting, there were reports of smallpox cases in Europe coming on to the airwaves, and by morning it was confirmed that there were smallpox cases in Turkey and in Germany, and of course since smallpox has been eradicated from the natural world, these confirmed reports meant that there had been smallpox attacks in Europe.

NewsReader: European leaders of the Transatlantic Security Summit in Washington appealed for calm. They refused to speculate on the source of the infection. However, German Radio is reporting that a group called al Jihad al Jadid, believed to be affiliated with al Qa'eda is claiming responsibility on an Arabic language website.

Tom Morton: The politicians watched news broadcasts from the fictional Global News Network, describing an epidemic out of control. A fictional terrorist group called Al Jihad Al Jadid, has released smallpox in locations like Frankfurt airport, the metro in Rotterdam and Penn Station in New York. More than 70,000 people were infected with the potentially deadly virus.

Tara O'Toole: We posited that we had a number of people walking through these busy airports and train stations and so forth, with a backpack on them, just releasing what would be an invisible, odourless cloud of smallpox into the air.

Tom Morton: And the rationale behind having the terrorists in the scenario, spread the virus in the airports, was that there's a very large number of people passing through these airports going to different destinations, in this case around Europe, and also the United States. So you'd in a sense be achieving the maximum effect by spreading it there.

Tara O'Toole: Yes. There's an incubation period, the time between when one is exposed to smallpox or any illness, any virus or bacteria really, and when you start getting sick, when you become symptomatic. In that period which is about two weeks for smallpox, of course people in our very busy and mobile society can go all over the globe, and they would. So that people who were at Frankfurt Airport on one day could be in virtually any country of the world two weeks later when they came down with smallpox. And that would make it very difficult to figure out, at least at first, where the points of attack were, and who might be at risk and how big the scope of the attack was and whether there was one or many etc. etc.

Tom Morton: So once the exercise was under way, what were some of the dilemmas which the public officials and politicians in the exercise had to deal with?

Tara O'Toole: They were struggling for some way to, for example, harmonise rules about who could cross borders in Europe, which of course have been wide open, if you're a member of the EU, you can go from one country to the other, but in the story, for example, we had people from Poland who had no vaccine flooding into Germany, seeking vaccine. Germany does have quite a good supply. Some countries wanted to close the borders in order to protect their people and also to prevent their people from spreading the disease further. But it was quickly realised by a member of the European Parliament, Erica Mann, who was playing, that that would cause economic havoc and devastation very, very quickly. So the idea behind it was to create a vivid experience with these leaders, in the hope that this kind of portrayal of what might happen in a biological attack would be an emotional experience for them, that they would then convey to their colleagues, and spread the word that this was an important problem that deserved more attention.

Tom Morton: *Atlantic Storm* was widely reported in the American media. There were editorials in *The Washington Post*, calling for urgent action to combat the bioterrorist threat.

The creators of *Atlantic Storm* knew which buttons to press. They'd already got the ear of Vice-President Cheney with a previous exercise called 'Dark Winter'.

But prominent scientists have sharply criticised both *Atlantic Storm* and 'Dark Winter'. But scientists say it's highly unlikely that terrorists could mount a mass attack with biological weapons, as the scenarios depict.

One of those scientists is Jonathan King, Professor of Molecular Biology at MIT. King says that the creators of these scenarios are panic-mongering.

Jonathan King: I would say these scenarios were very deeply kind of irresponsible, almost dangerous. They present proposals out of the imagination as if they're actually established, that some actual named al Qa'eda representatives were in the Soviet Union getting smallpox stocks. Every piece of which is a total figment of the imagination. The notion that the terrorists could grow up smallpox in hidden facilities, tissue culture facilities which have extensive maintenance requirements, this is not again a small-scale thing, it requires a lot of skill, a lot of money, a lot of people, material being delivered in all the time, sterile conditions, positive air control, this is not a low tech garage operation. These scenarios were loaded with proposals that represented a kind of misrepresentation of what's known about these things, I would say in an extremely irresponsible way.

George W. Bush: [Applause] I ask you tonight to add to our future security with a major research and production effort to guard our people against bioterrorism, called *Project Bioshield*. The budget I've sent you will propose almost \$6 billion to quickly make available effective vaccines and treatments against agents like anthrax botulin and toxin, ebola and plague.

We must assume that our enemies would use these diseases as weapons and we must act before the dangers are upon us.

[Applause]

Tom Morton: President George Bush announcing the creation of *Project Bioshield* in his State of the Union address in 2003. *Project Bioshield* is a \$6 billion program to strengthen America's biodefence.

It sounds like a good idea. Who could argue, for example, with doing research to create new vaccines against diseases like anthrax or ebola?

Well, lots of people. Earlier this year 753 scientists wrote an open letter to the journal *Science*, questioning the direction of research under *Project Bioshield*.

One of those scientists was Richard Ebright.

Richard Ebright: It's been counterproductive with respect to biodefence because at the same time it has been accompanied by, indeed it has driven a twentyfold increase in the number of institutions with live, fully-virulent bioweapons agents, and a twentyfold increase in the number of individuals with access, hands-on access to live, fully-virulent bioweapons agents. Currently in the United States there are more than 11,000 individuals who've been registered for access to bioweapons agents, hands-on access to bioweapons agents. Now it follows mathematically that there is an increased risk of deliberate release. I would argue the most likely path, for a sub-national adversary such as al-Qa'eda, to acquire a bioweapons capability is to obtain the bioweapons agents and training and handling of those agents by penetrating one of the bioweapons agents research projects in the United States. One well-placed graduate student, post-doctoral fellow or technician. No cost, salaries being provided courtesy of the United States taxpayer, no risk, no difficulty.

Tom Morton: So are you saying here that effectively, in your view, the more people that are working on this kind of research, biodefence research, the greater the risk that...

Richard Ebright: There can be no serious question. When Mohamed Atta and his associates wanted to learn how to fly aeroplanes into buildings, they came to the United States and enrolled in flight schools, and received that training. If a future Mohamed Atta and his associates wishes to carry the bioweapons attack, he will come to the United States, enrol in one of the university programs in biodefence sponsored by National Institutes of Health, obtain access to those agents, obtain training in handling them, and mount an attack. This has been negative for biodefence, negative for science, negative for public health.

Tom Morton: Richard Ebright. He's Professor of Chemistry at Rutgers University and Laboratory Director at the Waksman Institute of Microbiology.

It's been shown that the anthrax used in the 2001 postal attacks in the United States was weapons-grade anthrax from a US military source.

Jonathan Tucker is a former UN biological weapons inspector, and senior researcher at the Center for Non-proliferation Studies in Washington.

Jonathan Tucker: The great irony of the US biodefence program, is it was stimulated in a massive way by the anthrax letter attacks of the Fall of 2001, and we still don't know who the perpetrator is. The great irony of the US biodefence program is it was stimulated by the anthrax letter attacks of the Fall of 2001, and we still don't know who the perpetrator is. The most likely suspects are insiders, people who worked in the biodefence community and had access to dangerous pathogens and had all the know-how and the equipment needed to weaponise them. So ironically the threat may be us. I mean at least to a large extent, we may be making the danger worse, rather than better, by engaging in this type of research and development.

Tom Morton: The threat may be us.

Those five words of Jonathan Tucker's encapsulate what many of the critics of *Project Bioshield* are saying, that the real danger is not a mass bioterrorist attack by a group like al-Qa'eda, but what's going on inside America's biodefence laboratories. And some of it is pretty kooky.

Edward Hammond: Probably the strangest one that we've come across was a proposal that was floated by the Air Force in the mid-'90s to develop a substance that would make enemy soldiers gay, and the idea was that (this is not my attitude about this, but this was the attitude of the proponents of this weapon) was that it would cause a breakdown in morale among enemy troops if they could suddenly be turned homosexual.

Reader: Proposed by Wright Laboratory: Chemicals that affect human behaviour so that discipline and morale in enemy units is adversely affected. One distasteful, but completely non-lethal example would be strong aphrodisiacs, especially if the chemical also caused homosexual behaviour.

Tom Morton: Are these serious proposals?

Edward Hammond: I think the proposal to use a gay aphrodisiac, it was certainly made in all seriousness. I don't believe that there was any activity to actually develop that weapon, if it could even be developed. I rather suspect that such a thing simply doesn't exist. But at the same time that for example that proposal for the so-called aphrodisiac bomb was being floated, the army, the US army, was actively researching different types of opioids, or opiates in other words, drugs related to fentanyl, or to the illicit drug, heroin for use as a weapon. So real world research has gone forward in recent years, and we know only the outlines of it because chunks of it are classified, but where this is going to take us in the long run is our main concern.

Tom Morton: Edward Hammond, from the Sunshine Project. The Sunshine Project is a small, not-for-profit think-tank which specialises in using FOI legislation to unearth classified military research, like the aphrodisiac bomb.

Some of that research borders on farce. Did you know, for example, that a small biotech company in Texas has patented the

smell of human shit, for use as a non-lethal biological weapon?

As we'll hear a little later, the US Defence Department is also looking at weaponising powerful anaesthetics like Ketamine and even club drugs like Ecstasy.

But if you think that's weird, there's something much weirder and potentially much more dangerous happening as we speak, in laboratories around the United States.

Research is already under way to genetically modify diseases such as anthrax, plague and tularemia, research which is specifically designed to make them even more deadly. Richard Ebright.

Richard Ebright: The kind of research that is ongoing now involves taking bioweapons agents and generating derivatives that are resistant to existing counter-measures, resistant to antibiotics, resistant to vaccines. Taking bioweapons agents and increasing their pathogenicity, increasing their virulence; taking bioweapons agents and increasing their environmental durability, so that they can remain persistent in an environment following a distribution like that; taking bioweapons agents and increasing their ability to be disseminated or distributed widely in an attack. This research as a result is exceedingly dangerous, this represents research that degrades national security, research for which we spend money to make ourselves less secure. The research on next-generation bioweapons agents we are engaging in an arms race with ourselves.

The notion that engineered biological weapons, viruses, manipulated to be more dangerous, is a decade off, is simply wrong.

Tom Morton: The rationale for doing this kind of research goes like this: terrorists might be able to genetically modify diseases like anthrax to make them resistant to antibiotics or vaccines. Therefore we need to be one step ahead of the terrorists. We need to make those antibiotic resistant strains of anthrax ourselves so that we can then develop new countermeasures.

Tara O'Toole: The notion that engineered biological weapons, viruses, manipulated for example to be more dangerous, is a decade off, is simply wrong. It's a belief that's held by a lot of people and policy-making circles at least in the United States, largely I think as a result of their ignorance of what's really going on in biology. And as happens with any technology, as time passes the technology gets easier and easier to use. The same thing is happening with these biological techniques, that were once very arcane and could be used only by sophisticated scientists in high level labs, are now routine procedures that are performed in hundreds if not thousands of labs all over the world every day, for legitimate purposes.

Tom Morton: But is there really a danger that terrorists could engineer their own bioweapons, as Tara O'Toole suggests?

Jonathan King: No. The notion that you can grow ebola virus or Marburg virus or smallpox virus in your garage or in your basement is a total absurdity.

Tom Morton: Jonathan King, Professor of Molecular Biology at MIT.

Jonathan King: Don't forget that if you want to grow these viruses and become a terrorist, you have to live through the experience, therefore you have to not die from the infection yourself. This can not be done in the backyard, it cannot be done in the basement, and all of this bioshield, bioterror, biodefence is an enormous fraud on the public. It takes an enormous amount of equipment, if you have to grow up cells and tissue culture, you have to have sterile conditions, you have to have high pressure, you have to have the agents and materials which are very expensive, constantly brought in to keep the cells growing. You have to be able to purify the viruses, requires ultra centrifuges, high pressure filtration equipment. This can not be done in the backyard, it cannot be done in the basement, it cannot be done in the garage, and the notion that this could be done without being detected, there's no basis in reality whatsoever, and all of this bioshield, bioterror, biodefence is an enormous fraud on the public. These agents are not presently in existence, they're not a threat to human population, that programs are going to bring them into existence.

Man: Anthrax, anthrax, botulin toxins, ebola, and plague.

Reader: It was about this time that our townsfolk began to show signs of uneasiness, for from April 18th onwards, quantities of dead or dying rats were found in factories and warehouses. In some cases the animals were killed to put an end to their agony. From the outer suburbs to the centre of the town, in all the byways where the doctor's duties took him, in every thoroughfare, rats were piled up in garbage bins, or lying in long lines in the gutters.

Richard Danzig: The idea of biological terrorism is ages old. In the Middle Ages people catapulted cadavers over the walls of cities under siege, so that they could spread plague. The British infected blankets with smallpox.

Tom Morton: Richard Danzig was Secretary of the Navy in the Clinton administration. And he's been a key player in the corridors of Washington in drawing attention to bioterrorism.

Richard Danzig: I think as Navy Secretary I began particularly as the Under-Secretary for the Navy, the number two job to think about areas that we had invested in heavily for military defence, and areas that were potential vulnerabilities to us, where we had not invested heavily. And the biological warfare, or biological terrorism issues were very striking to me because when I began to become interested in them a decade ago in the mid-90s, it was pretty evident that most of the military regarded this as a set of issues that really weren't central to national security concerns. Their view I think would be that these were issues

for doctors, and doctors were support personnel. Weapons were things that exploded or had kinetic impact, and it was difficult I think for people trained in a profession that was so focused on a certain kind of weapon, to see the potential in this other kind of weapon.

Tom Morton: Well you say in the paper that you wrote, entitled, 'Catastrophic Bioterrorism', that there are, as you put it, 'real, possibly imminent, and very substantial dangers'. What specifically did you have in mind when you said that?

Richard Danzig: Well I think that there are several different kinds of modes of biological attack. I think the one that is most on our minds in general that's been very much discussed in a lot of the open literature is anthrax as a potential weapon. The Fall of 2001 mailing of anthrax to various media and political figures in the United States further heightened attention to anthrax as a potential weapon. For me, that is the No.1 concern.

Reporter: It seemed to surprise no-one, anthrax arriving on the doorstep of the US Congress.

George W. Bush: There has been today, I just talked to leader Daschle, his office received a letter, and it had anthrax in it. The letter was field-tested and the staffers that had been exposed are being treated.

Tom Morton: The anthrax attacks in the United States, coming soon after September 11, galvanised public concerns about the threat of bioterrorism. But in fact, the largest and most successful bioterrorist attack in American history had occurred more than ten years previously, and it went unnoticed at the time. The target was salad bars.

Here's biological weapons expert, Milton Leitenberg.

Milton Leitenberg: The very first event was this Rajneesh group in Oregon in 1984, and that's also important because they considered what agent to use, and they had a very weird purpose, they wanted to take over a country election, and so they wanted to make everyone sick on election day. And so they considered an agent that could have been a bit more serious, and decided not to do that, and what they did was salmonella, and put it on salad bars, and so everybody got the same kind of intestinal diarrhoea that visitors get when they go to Egypt or Mexico or India or Singapore. But it made 750-odd people ill, and it was not understood that that's what had happened, until a year after. It was not understood that it was an overt act.

News Reader: Japanese police are tonight investigating the worst case of terrorism in Japan in more than 20 years. As millions of people made their way to work by train, a deadly nerve gas, developed by Nazi Germany, was released on the Tokyo subway system, killing six people, perhaps more.

The attack was carefully co-ordinated and according to the government, involved more than one person in the planning.

Tom Morton: In 1995, the Aum Shinrikyo cult launched an attack in the Tokyo subway, using sarin gas. Twelve people were killed, and thousands were hospitalised.

The gas they used, sarin, is a chemical agent, but it wasn't the cult's first choice. They'd already tried to develop a much more deadly biological weapon, anthrax.

Milton Leitenberg: They had four years, they had masses of money, they spent \$10-million or so on this program, they could even go buy an electron microscope. They had a few trained people, but they couldn't get the agents they wanted. They wanted to make anthrax and botulinum toxin. They could only get the vaccine strain of anthrax, which would never make anyone sick, even if they knew how to grow it and distribute it properly. So they never got a pathogen. In other words, some agent that would actually make people sick.

Secondly, they didn't know how to work with what they had. So they made mistakes, and they produced in fact nothing. And the same happened with the clostridium botulinum, which is the bacillus which produces botulinum toxin, food poisoning. They did not get what they needed and they did not know how to make what it should produce if they had gotten what they needed.

Tom Morton: Milton Leitenberg. He says that Aum Shinrikyo's failure to produce anthrax, despite the very substantial money and know-how they had at their disposal, is a salutary lesson. It ought to make us sceptical about claims that terrorist groups could easily acquire and use biological weapons.

In other words, those who talk up the threat of bioterrorism need a reality check.

Leitenberg says we ought to be particularly sceptical about fictional scenarios like *Atlantic Storm* and *Dark Winter*, which simulate a mass bioterrorist attack, killing tens of thousands of people.

Reader: The number of confirmed cases of smallpox in Europe has risen to over 3,000 since this morning, European time.

Reporter: Smallpox has been eradicated in nature, and already there's speculation that the outbreak could be the work of a terrorist group.

Tara O'Toole: We had done a different kind of exercise called *Dark Winter* in June of 2001 in which we portrayed three smallpox attacks on American cities, and had the former officials pretend to be the US National Security Council trying to cope with these attacks. And that was a very successful exercise in that some of the participants, notably former Senator Sam Nunn, were very galvanised by the experience, and started to persuade the US Congress that we needed to pay more attention to the need for smallpox vaccine.

Tom Morton: Now as you heard, the Dark Winter exercise was in June, 2001, a couple of months before September 11th. That fictional scenario assumed that Saddam Hussein might send terrorists infected with smallpox to the United States as biological suicide bombers.

But in the aftermath of the attacks on the World Trade Center, that fictional exercise acquired a sudden political potency.

Jeanne Guillemin is Senior Fellow at the MIT Security Studies Program, and she says that Dark Winter helped set the scene for claims that Saddam Hussein might give biological weapons to terrorists.

Jeanne Guillemin: So it was a very politically planned scenario, and I'm not sure everyone is aware, but in October of 2001, after the 9/11 attack and frankly we were right in the middle of just beginning to feel the impact of the anthrax letters, a staff person handed Vice-President Richard Cheney a videotape of the Dark Winter exercise with all these, to be frank, exaggerations about contagion rates and violence and people shooting each other in order to get vaccinated, quite a horrendous scenario, I think from any point of view, and one which was roundly criticised in major medical journals by the way, for inaccuracies concerning things like contagion rates. And in any case, in October of 2001, Vice President Richard Cheney saw the Dark Winter videotape and on the very same day he went to a National Security Council meeting and told the President that getting a national smallpox vaccination campaign would be a priority for the United States, so that's what we should do. And he was very taken with the idea that Saddam Hussein in the scenario, had biological weapons, was going to attack the United States with terrorists who were infected with smallpox and that the world was headed for even more of an apocalyptic attack than they had just undergone.

Tom Morton: In November 2002, in the lead-up to the Iraq war, President Bush authorised a national smallpox vaccination campaign, beginning with the defence forces and first responders.

But the campaign was something of a fizzer.

Jeanne Guillemin: It certainly was. There were the deaths of three first responders following their vaccination, older people who were at risk for heart problems, and indeed the vaccination had in the past been associated with heart problems, inflammation in the area of the heart, and this is indeed what happened and three people died. And when that happened, which was in the early part of the program as it reached the civilian population, the program seriously faltered. States that were interested withdrew, hospitals that were going to co-operate withdrew, and I think the American public also got the idea as the invasion happened, there were no weapons of mass destruction to be found in Iraq, there were no biological weapons in Iraq, it was this absolutely tremendous publicity about Saddam Hussein's biological weapons. But I think people in the United States began to say, Well you know, what's more risky, that vaccination or the risk of Saddam Hussein's terrorists coming to this country a la Dark Winter, and invading it, infecting us with their disease? Well, they said, you know, the vaccine was a lot more risky than in fact an invasion by Saddam Hussein's terrorists. And people walked, they walked away from that vaccination. And they were right to walk away from it.

Reader: The Prefect greeted them amiably enough, but one could see his nerves were on edge. 'Let's make a start, gentlemen', he said. 'Need I review the situation?'

Richard thought that wasn't necessary. He and his colleagues were well acquainted with the facts.

'The question', Old Castel cut in almost rudely, 'is to know whether it's plague or not.'

Two or three of the doctors presented protested, the others seemed to hesitate. The Prefect gave a start and hurriedly glanced towards the door to make sure it had prevented this outrageous remark from being overheard in the passage.

Old Castel, who was placidly chewing his draggled yellow moustache, raised his pale, bright eyes and gazed at Rieux. Then, after sweeping the other members of the committee with a friendly glance, he said that he knew quite well that it was plague, and needless to say, he also knew that when it's to be officially admitted, the authorities would be compelled to take very drastic steps.

Tom Morton: That's an excerpt from Albert Camus' novel, *The Plague*, which deals with an outbreak of bubonic plague in the French colony of Oran. In the story the authorities are reluctant to admit the plague has taken hold amongst the populace, and reluctant to admit that they can't control it.

Camus' novel is both a grim portrayal of the actual effects of the plague and an allegory of France under the Nazi occupation, a portrait of a society corroded by fear.

And the fear that biological weapons generate, is a greater danger than the consequences of their actual use. That's the conclusion of a report by the Royal Society to the British government. Herbert Huppert was the Chair of that working group.

Hubert Huppert: What I really mean is that the chance of their being used is relatively small, and in all likelihood if there is a biological or chemical attack, the number of people who'll be killed will again be relatively small, and relative means in comparison with our usual everyday experiences. If there is a biological or chemical attack, the number of people who'll be killed will be relatively small, and relative means in comparison with our usual everyday experiences. And I think it's interesting to

compare this with road accidents. In the United States on September 11th, 3,000 totally innocent people were killed. That's terrible, there's no doubt about that, but I think you have to compare this with the fact that 45,000 also innocent people are killed each year on the roads, just in the US alone. So the terrorist attack of 9/11 was only about a month-and-a-half's-worth of road accidents.

So in our opinion, while the government should take very seriously this question of potential terrorist attacks, I don't think the man in the street need worry about it very firmly. But it's the fear that the people are taking on that is the greatest problem. So what I would say is the people should be knowledgeable about what might happen, but I don't think they should go around fearing what might happen.

Tom Morton: Hubert Huppert, Professor of Theoretical Geophysics at Cambridge.

Now if Huppert is right, that we should be knowledgeable but not afraid, then how should we feel about scenarios like *Dark Winter* and *Atlantic Storm*, which dramatise the fear of bioterrorism?

Tara O'Toole: What we need to realise is that we live in a time when bioterrorism is a real possibility, and indeed we live in a time when we are particularly vulnerable to world-wide epidemics. We're seeing it now in Asia with the avian influenza worries escalating. One of the things that became clear in *Atlantic Storm* is that no country is an island.

The initial instinct of leaders when they saw other countries under attack was to be generous with vaccine. But as soon as their own country was threatened, they became very protective, this is completely understandable, of their own people, and a lot stingier with what they were willing to give out. Yet if smallpox was abroad in the world, we would all be at risk, and that's really the case of many contagious diseases, you know, we can't continue to think of nations as islands that can close themselves off from the rest of the world when there's an infectious disease involved, we need global strategies and global operational plans, not just national plans.

Milton Leitenberg: Well if Dr O'Toole and her group had just played out the international response part of the exercise without having written this scenario, I would say the answer to the question is Yes. The fact that she didn't do that however, to me, undercuts her whole claim for what the value is, because I believe the larger part of the value to that group, just as it was in the previous *Dark Winter*, are to be able to claim that this is possible to occur and be done by bioterrorists. If she had not made that claim, then I would say Yes, there's value in the exercise for people to practice these kinds of international response, and then she could have done that all she wants. There was no need to cook up all of this nonsense about what the terrorist group could do.

Tom Morton: So this is panic-mongering, you're saying?

Milton Leitenberg: Yes, absolutely.

Tom Morton: But I mean isn't there a value in us thinking about what our response ought to be in the event of a bio terrorist attack?

Milton Leitenberg: Yes, but I think it should be keyed to what we really think bioterrorists could be capable of.

Tom Morton: Milton Leitenberg, Senior Researcher at the Center for International and Security Studies at the University of Maryland.

Reader: The Advantages and Limitations of Calmatives for Use as a Non-Lethal Technique.

The use of pharmacological agents to produce a calm behavioural state, particularly of individuals and/or groups that are agitated, aggressive and/or violent, is a topic with high relevance to achieving the mission of the military and law enforcement communities.

Pharmacological agents can effectively act on central nervous system tissues and produce a less anxious, less aggressive and ultimately an easier-to-manage individual.

Tom Morton: Recently, the Sunshine Project has uncovered evidence that the US military is developing a new generation of chemical weapons.

Edward Hammond: The most worrying aspect or types of non-lethal weapons would be drugs or biochemicals that would be used in a way that was similar to what the Russians used in the Moscow theatre in late 2002. So nearly 20% of the people that were in the theatre were killed by this allegedly non-lethal gas. In the published literature, if you're shot with an AK-47 you have about a 25% chance of dying, so in other words, this allegedly non-lethal gas alone was almost as deadly as an automatic weapon, first of all. Second of all, the Russian forces did something which has happened historically, and that is they performed summary executions of people who were unconscious and were unable to resist. And that of course is illegal in and of itself under international law. But it mirrors the way that so-called non-lethal agents have been used in the past. The United States used tons and tons and tons of teargas in Vietnam, but the teargas was used as a multiplier of lethal force, not to save anyone's life, it was used to smoke people out of caves or out of buildings so that they could be shot. And this is the pattern if you look at it historically of how these types of chemicals are used by militaries. That class of weapons really has the potential

to undermine both the Biological Weapons Convention, and the Chemical Weapons Convention.

Tom Morton: Secretary of Defence, Donald Rumsfeld, has said that he believes the Chemical Weapons Convention is 'a straitjacket'.

In 2001, the Bush Administration refused to ratify the verification protocol of the Biological Weapons Convention, which would have allowed inspections of US top-secret bio-research laboratories.

And already research is under way in facilities operated by the Department of Homeland Security and Department of Defence to engineer bioweapons, to make them more virulent, and more resistant to antibiotics. And there's more to come. Jonathan Tucker.

Jonathan Tucker: One of the centres is called the Biological Threat Characterisation Center, and we'll be looking not only at existing but also prospective threat agents, including genetically engineered strains, and it's planned that quite a bit of this research will be classified on the grounds that if the adversary knows about one's counter-measure, he could find ways of circumventing it. I think this is a very dangerous logic and could lead willy-nilly to a new offensive arms race in the biological area. We have to almost bend over backwards, to be transparent, to reassure other countries of our intentions. We may be comfortable with our intentions that the United States has no desire to go back an offensive biological warfare program, but other countries may not be as confident or as trusting, and we have to persuade them that our intentions are in fact strictly defensive. And the best way to do that is through as much transparency as possible.

Tom Morton: Now if you're feeling depressed and helpless by now, take heart. There are practical and prudent measures which governments can take to guard against bioterrorism, measures which don't involve manufacturing a whole new generation of deadly diseases.

Hubert Huppert: There's no doubt that science has a very large role to play and in fact one of the recommendations of the report of the Royal Society that I chaired and wrote a lot of it, was that we could bring in new science and in particular new scientists who'd worked on areas of great importance to terrorism without realising it. And one of the examples that I like citing is that after our report came out, I received a phone call from a colleague of mine who's the head of the Mars Lander Program, and he more or less said to me, Look, he's spent the last ten years thinking about Mars and he's vaguely read about terrorism, but when he saw the Royal Society had put out the report, he immediately realised there'd be a lot of work that he's put into trying to detect biological components on Mars, that the same sort of scientific instrumentation and ideas could be used to make rather rapid evaluation of the biological content after some attack.

Tom Morton: Hubert Huppert, Professor of Theoretical Geophysics at Cambridge.

You've been listening to *Background Briefing*. Our Co-ordinating Producer is Linda McGinnis; our Researcher and Webmaster is Jason Di Rosso; Technical Production today was by Steven Tilley; and the original music you've been hearing was composed by Tom Fitzgerald and recorded by Andrei Shabunov. Our Executive Producer is Kirsten Garrett.

Further Information

[Project Bioshield](#)

[Dr Tara O'Toole](#)

[Professor Jonathan King](#)

[Professor Richard Ebright](#)

[Professor Jeanne Guillemin](#)

[Milton Leitenberg](#)

[Richard Danzig](#)

[Professor Herbert Huppert](#)

[Sunshine Project](#)

[Dr Jonathan Tucker](#)

[Atlantic Storm](#)

Credits

Presenter Tom Morton