

# SDA Biopreparedness Report

## “Raising Biopreparedness Levels in Europe”

December 2009



With the support of:

**Baxter**

**emergent**  
biosolutions™

**A *Security & Defence Agenda* Report**

**Rapporteur: Russell Price**, Continuity Forum

**Editorial coordinator: Réjane Serandour**, Security & Defence Agenda

**Photos: Frédéric Remouchamps**

**Year of publication: 2009**

**SECURITY & DEFENCE AGENDA**

Bibliothèque Solvay, Parc Léopold,  
137 rue Belliard, B-1040, Brussels, Belgium

T: +32 (0)2 737 91 48 F: +32 (0)2 736 32 16

E: [info@securitydefenceagenda.org](mailto:info@securitydefenceagenda.org) W: [www.securitydefenceagenda.org](http://www.securitydefenceagenda.org)

# Contents

<b>Introduction</b>	<b>p.4</b>
<b>ROUNDTABLE REPORT</b>	<b>p.6</b>
Programme	p.6
Session I—Influenza Pandemics: what concrete measures now?	p.7
Session II—Is Europe ready for a bioterrorist attack?	p.14
List of participants	p.23
<b>EXPERTS' REPORT</b>	<b>p.28</b>
List of contributors	p.28
<b>POLITICAL INITIATIVES ON BIOPREPAREDNESS</b>	
<b>Jacques Barrot</b>	p.29
<b>Androulla Vassiliou</b>	p.31
<b>Sabine Ehmke-Gendron</b>	p.33
<b>Guenter Bretschneider</b>	p.35
<b>ECONOMIC ASPECTS OF BIOPREPAREDNESS</b>	
<b>Warwick McKibbin, Alexandra Sidorenko</b>	p.37
<b>Andrew Burns</b>	p.40
<b>Caroline Rudisill</b>	p.42
<b>SURVEILLANCE</b>	
<b>René Snacken</b>	p.45
<b>John Oxford</b>	p.47
<b>BIOSAFETY &amp; BIOSECURITY</b>	
<b>Nancy Connell</b>	p.49
<b>Thomas Binz</b>	p.50
<b>BIOPREPAREDNESS AND CITIES</b>	
<b>Ervigio Corral Torres</b>	p.52
<b>Isaac Weisfuse</b>	p.54
<b>TOWARDS AN ALL-HAZARDS APPROACH?</b>	
<b>John-Erik Stig Hansen</b>	p.56
<b>Iris Hunger</b>	p.58
<b>Andreas Wenger, Sergio Bonin</b>	p.61
<b>ANALYSIS, by Russell Price</b>	p.63
<b>About the SDA</b>	<b>p.68</b>
<b>SDA Upcoming Events</b>	<b>p.69</b>
<b>The Security Jam</b>	<b>p.70</b>



## Introduction



How prepared is Europe for biological threats – whether in the form of a natural pandemic or a bioterrorist attack? And how best can European biopreparedness be improved?

Five years after launching its working group on bioterrorism and pandemic preparedness, the SDA presents its latest initiative on biopreparedness. Protecting European citizens from natural or terrorism-related infectious disease outbreaks has never been so important, as health scares multiply and fears increase that biological agents may fall into the wrong hands. Some progress has been made at European level, but a fully streamlined approach has yet to be developed. It is clearly time to assess existing mechanisms and regulations and find the way forward for a common strategy on biopreparedness, and to equip Europe with the right tools to prepare for and respond to either pandemics or bioterrorist attacks.

This publication contains both the report from the SDA's October 14th roundtable and a collection of contributions from leaders in the field. The initiative takes into account the political realities, industrial capabilities and technical expertise that are of direct relevance. I hope that the lessons and recommendations contained here will receive from policymakers and officials across the EU the consideration they clearly deserve.

Whereas the October roundtable concentrated on developing recommendations for raising biopreparedness levels, the experts' contributions were intended to reinforce these proposals with technical assessments that will aid the implementation of these recommendations while also attempting to ground the political debate in reality.

Following introductory comments from EU Commissioners Barrot and Vassiliou whose portfolios were on the front line of this issue under "Barroso I", experts working worldwide across the full spectrum of relevant bio-issues address the topic from their particular area of expertise and offer concrete recommendations to policymakers.

The topics covered include political aspects (high costs and consequences vs. low probability of attack, cooperation with partners, comprehensive approach), economic aspects (impact of an event and how to mitigate it), detection & prevention (detection systems, surveillance mechanisms, intelligence-sharing...), preparedness (healthcare facilities, vaccines/stockpiles, public communication strategy) and response (civil protection, crisis management, mitigation of social disruption).

Many of the policymakers and experts involved in this SDA project have emphasised the need for an "all-hazards" approach to biopreparedness- that takes into consideration the full range of potential risks from a terrorist attack, other forms of intentional release, accidents and natural disease outbreaks.

The project also highlighted the lack of communication between scientific and governments circles on biopreparedness. Politicians are too often loath to implement recommendations of the scientific community, that they fear may be costly, unnecessary or alarmist. This is where the SDA initiative hopes to add value: by creating a neutral space where political and scientific leaders can exchange ideas.

The SDA thanks the roundtable speakers and all the experts who have contributed to the report and hopes that it will be heeded by those in a position to ensure that the EU is as prepared as possible for biological events.

A handwritten signature in black ink, appearing to read "Giles Merritt". The signature is fluid and cursive, with a prominent initial "G".

**Giles Merritt**

**Director**

**SECURITY & DEFENCE AGENDA**



# Raising biopreparedness levels in Europe

**Monthly Roundtable – Wednesday 14 October, 2009**

Bibliothèque Solvay, 12:00-16:00

### Session I - 12:00-13:30

### Influenza pandemics: what concrete measures now?

A plethora of different healthcare and health policy institutions have come to the fore across Europe in response to increased awareness of the potential impact of a pandemic. How close are EU states to adopting common pandemic influenza planning? Are vaccine stockpiles now at the right levels to cope with major outbreaks of H1N1? Is interoperability and inter-sectoral cooperation in Europe adequately developed? How best can private and public actors work together to prepare for and mitigate the effects of a major pandemic outbreak in Europe?

**Dr. Robert Kadlec**, Vice President, PRTM Management Consultants, and former Senior Director for biological defence policy in the White House Homeland Security Council, USA.

**Prof. Dr. Michael Kunze**, Medical University of Vienna, Austria

**John F Ryan**, Head of Unit for Health Risks, DG for Health and Consumers, European Commission

**Marc Van Ranst**, Influenza Commissioner, Belgian Ministry of Health

**Susanne Weber-Mosdorf**, Assistant Director-General, World Health Organisation (WHO)

### Session II - 14:30-16:00

### Is Europe ready for a bioterrorist attack?

How similar yet how different are the defences needed to counter a deliberate bioterrorist attack and naturally occurring outbreaks of influenza? Has the European Commission's 2007 Green Paper on bio-preparedness had a major influence on policy thinking across the EU, and if so what lessons of "Best Practice" can be learnt? Is the EU's CBRN action plan the right answer to problems of prevention, preparedness and response to bioterrorism? How alert are EU countries' intelligence services to bioterrorism threats, and how effective is their intelligence-sharing?

**Patrick Dietz**, Policy officer, DG Justice Freedom and Security, European Commission

**Carsten Fausbøll**, Director, Civil Emergency Planning, NATO

**Vladimir Kuvshinov**, Counsellor Civil Protection, Mission of the Russian Federation to the EU

**Oliver Rüss**, Adviser to the EU counter-terrorism coordinator, Council of the EU

**Allen Shofe**, Chairman International Security and BioPolicy Institute (DC/Brussels) and Senior Vice-President Public Affairs, Emergent BioSolutions

With the support of:

**Baxter**

**emergent**  
BioSolutions

# Raising Biopreparedness Levels in Europe

## Roundtable Report

Influenza pandemics and the threat of bio-terrorism were the two big topics under discussion at a roundtable organised by the Security and Defence Agenda (SDA) entitled “Raising bio-preparedness levels in Europe”. The event, held at the Bibliothèque Solvay in Brussels on 14 October 2009, brought together international experts to share their experiences and opinions about how serious a threat pandemics and bio-terrorism pose, how well prepared Europe is to protect its citizens and the role of national policy in dealing with these issues.

### Session I - Influenza pandemics: what concrete measures now?

To kick off the debate, **Giles Merritt**, SDA director and roundtable moderator, put it to the panel that the current H1N1 outbreak was generally considered as a mild virus infection and, as such, could be considered as “a dress rehearsal” for a more severe threat in the future.

**Susanne Weber-Mosdorf**, Assistant Director General of the World Health Organisation (WHO), said that if the current situation was just a rehearsal, then it was a particularly tough one. Her colleagues back in Geneva, for example, were working 24 hours a day in the “Shock Room”, where the H1N1 flu is monitored. She underlined the seriousness of biological threats, by pointing to the fact that they do not respect the concept of fairness or national borders.

The threat therefore has to be considered on a global, rather than a purely European, basis. Coordinated government action at a global level was a must, she said. In this respect, the common global regulatory framework established in 2007 under WHO leadership has been a considerable help towards more effective planning in many countries, according to Weber-Mosdorf. The work underway to prepare for H5N1 Avian Flu, which was generally expected to be the next pandemic, was adapted well to the H1N1 flu that unexpectedly arrived instead.

Even though the H1N1 outbreak has been clinically classified as moderate, the effect on generally well-off European healthcare systems should not be underestimated, Weber-Mosdorf said. And the problems of control and treatment in poorer countries, where the health infrastructure is considerably less well developed

and the financial pressures far greater, are only likely to be worse, she added.

Richer countries must examine the benefits of supporting those less able to invest in the basic healthcare services that are key to confronting outbreaks. Access to medicines and particularly vaccines is vital. So far more than 85 countries have been identified as needing help, and yet WHO may only have 150 million doses of vaccine. Complicating matters further is the simple fact that many of these countries are not even able to provide the syringes needed for an effective vaccination programme.



Susanne  
Weber-Mosdorf

At the moment, the situation is unbalanced and neither stable nor secure. To achieve effective European bio-preparedness, a global perspective is needed as well as strong support for international programmes that recognise the value of appropriate investment in other countries’ healthcare programmes, Weber-Mosdorf concluded.

**Robert Kadlec**, a former director of Biodefence policy in the US Homeland Security Council, provided a perspective from the other side of the Atlantic. The US was not sufficiently prepared for H1N1, he told participants, despite some \$50 billion having been invested in various bio-defence measures for both pandemics and bio-terrorism preparedness. There was an urgent need to properly fund and develop systems able to cope with the complexity of the issue, he said.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



Aligning systems and resources across 50 US states, which comprise 35,000 public health departments, illustrates the scale of the challenge in establishing common systems. As in Europe, the diverse structures, management and funding of these resources can prove problematic, raising legal questions and sometimes requiring changes in legislation. Establishing uniform and consistent methodologies is a common problem for both the US and EU, he said.



Robert Kadlec

The surprise factor of the H1N1 pandemic underlines the inherent difficulty of planning and the need for speed and agility, Kadlec underlined. Experts had anticipated that the next pandemic would emanate from Southeast Asia and be H5N1, a threat that remains. Instead, H1N1 burst out from the south west of the American continent. It had also been expected to be a more virulent, but less transmissible variant; in fact it was the reverse.

Surveillance is key to be able to rapidly identify emerging threats and react quickly to them. He also highlighted the idea that all bio-threats, no matter whether they are pandemics or bio-terrorism, are global in nature, know no borders and are international security threats. The entire international community must recognise its responsibility to bolster the capabilities of those without the means to do so, he said. Resilience is only as strong as the weakest link in the chain, and so strengthening those weakest links has a positive impact on bio-preparedness for everyone, he said.

Summarising an assessment of the situation by U.S. President Barack Obama, Kadlec referred to four key areas: prevention, mitigation, reaction and changing the global health situation. Prevention, or avoiding the development of a bio-threat from either a natural or man-made source, requires a combination of surveillance, reporting and technical infrastructures that historically have been very difficult. This may be changing, however, with the emerging capabilities relating to synthetic biological developments. Early intervention provides a powerful mitigation strategy, but is dependent on the ability to accelerate the development, manufacture and distribution of vaccines and other medicines. With this in mind, the US has set up an authority within the



John Ryan

Department of Health and Human Services, called the Biomedical Advanced Research and Development Authority, to examine developing policies in this area. Improved access to

effective healthcare globally is also key. This is clearly both an expensive and an ambitious exercise, but one that is at the heart of solving the problems we face, Kadlec said.

**John Ryan** brought a specifically EU view to the debate, as the Head of the Health Threat Unit within the European Commission's Directorate-General for Public Health and Consumer Protection as well as a Commission representative on the board of the European Centre for Disease Prevention and Control.



## Raising Biopreparedness Levels in Europe

### Roundtable Report



Ryan held the view that the number of deaths across Europe and the world had so far been underestimated and that the numbers now circulating should be treated with caution.

From the start of the outbreak, the EU has acted in close liaison with the World Health Organisation, which has taken the threat to public health very seriously, Ryan said. In practice, this cooperation meant that the Commission mobilised the Argus alert system, which involves all the Commission departments and the 24-hour management service. For the first time, the Health Security Committee, which is the member states' committee responsible for dealing with health threats, was also mobilised, he said. This involved daily meetings up until July to discuss the situation, how it was evolving and the risk management measures that might be needed to deal with the situation.

To get a clearer picture of the situation across Europe, the Commission obliged member states, through its communicable diseases regulations, to report to the EU body on their national cases. An agreement with WHO is now in place whereby cases are reported simultaneously to WHO and EU systems.

The Health Security Committee agreed on a number of specific issues. For example the treatment of people falling ill outside their home country, advice on travel to affected areas, and general advice to the public on prevention measures, which was particularly important in the containment phase before people were in a position to start talking about vaccines. Of particular significance was the agreement between the 27 Member States on vaccination priority groups and risk groups. The committee also agreed on the issue of school closures, which is a major business continuity issue, Ryan said. In the coming months and into the next phase of the pandemic, the Health Security Committee will continue its role of risk management on a case-by-case basis, he said.

The Commission has also worked closely with the European Centre for Disease Prevention and Control, a European agency set up in Stockholm a few years ago and whose task is to prepare risk assessments on issues of public health and communicable diseases. The Commission and WHO work with the agency to try and identify the specific risks and the public health measures needed in order to control the situation.

This centralised expertise ensures that other Commission departments are also informed, so that other policy areas are fully integrated in the response. For the health system to react properly, it is also essential for example to have a functioning electricity system, a reliable food system and for people to be able to cross borders or travel to work.

Just how unusual and significant the issue is can be illustrated by the fact that the Council, i.e. health ministers, have so far met four times since April, whereas normally they would only meet twice a year. The main issues at the last meeting included vaccination strategies, public communication and support to third countries.

The EU is aware that there is growing disquiet on the vaccine issue among the public. It is not sufficient to have the vaccination available, but individuals must actually be persuaded to become vaccinated. This is a priority issue that the EU will try to work together on across Europe.

The second issue will be support for developing countries. As WHO's Weber-Mosdorf said, member states have committed to stepping up their efforts to support these countries, using the UN and WHO systems to obtain supplies of vaccines, anti-virals and other medical equipment. This support is on top of that given to these countries to develop their health systems.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



Preparedness is another issue. There has been a community pandemic preparedness plan since 2005, and this was a great help in dealing with the H1N1 outbreak as of April. Many of the member states were actually better prepared than would have been expected, Ryan said. However, while the health sector is very well prepared, there may be a gap in how prepared other sectors such as energy or transport are, he added. In fact, one conclusion from a Presidency pandemic preparedness conference last year, subsequently endorsed by health ministers last December, was that the Commission should update its pandemic planning by focusing on areas outside health.

One final topic that Ryan brought up, and which was also discussed by the Council, was that of regulatory issues surrounding vaccine approvals and rollouts. Three vaccines were authorised in a very short time, and quick progress was made on defining a common procurement process, Ryan highlighted. There is also help available to assist member states with the voluntary sale of excess supplies, which allows one member state with too much supply to sell or provide supplies to another member state so that everybody has a minimum supply for their risk and priority groups.

The Commission will carry out post-marketing surveillance with the ministries, the Health Security Committee and the Medicines Agency to ensure that any adverse effects are quickly analysed and the analysis fed back into the system as quickly as possible. This helps to maintain a high level of safety and confidence in the products.

On the question of dosage, the Medicines Agency is evaluating whether one dose or two of the approved vaccines is needed. This assessment could considerably change the situation regarding access to and availability of vaccines.



Marc Van Ranst

With all this focus on vaccines, Ryan reminded the audience that the role and use of anti-virals and other preventative measures shouldn't be forgotten. We're not putting all our money into vaccines, he emphasised. One item that does not figure on the EU's list of preventative measures, however, is travel restrictions. The EU, together with its international partners, has taken a policy line that restrictions are not an effective measure from a public health point of view.

**Marc Van Ranst**, as Belgium's Influenza Commissioner, turned the focus to his home country, giving some statistics on cases and fatalities and then raising the subject of Belgium's vaccination programme as well as vaccine stockpiles and the anti-vaccination movement.

In mid-October, Belgium had an estimated 4,160 cases of H1N1, Van Ranst said, pointing out that his country no longer directly tests every influenza-like illness (ILI). Since the start of the outbreak, there have been almost 13,000 cases of this novel virus H1N1; of this total, three people unfortunately died while the others recovered, he said.

In terms of mortality, Van Ranst stressed that the absolute number of fatalities from H1N1 is relatively low. The absolute number of fatalities could be lower than the 1,200-1,500 who died in Belgium from influenza last year, he said. Still, the age of those dying must be taken

## Raising Biopreparedness Levels in Europe

### Roundtable Report



into consideration, he pointed out. Most of those who died from influenza in Belgium last year were over 85. While every life is valuable, if people are dying in their 30s and 40s the total number of “life years” lost will be much greater, even if the absolute number of deaths is smaller than in a normal influenza season.

In Belgium, the vaccination programme started to be phased in during the third week of October, first vaccinating the medical sector, followed 10 days later by other risk groups. The vaccine is provided for free. Belgium purchased enough to vaccinate the whole population with one shot, rather than two. This is seen as a possible gamble, Van Ranst said.

Many member states have based their policies on purchasing two vaccines, a multi-million euro investment that can be considered like a strategic stockpile that may not even be used. In addition, many vaccine producers are unable to manufacture enough of the H1N1 variant vaccines and so are forced to turn away vaccine orders. Van Ranst said this raised ethical questions that needed careful thought so that vaccines are available where they are needed.

It seems wrong to produce vaccines that you will knowingly stockpile and that are likely not to be used, Van Ranst said. It may be appropriate, or even necessary, for some vaccines to be sold back to producers or to create an alternative interstate sales process to allow vaccines to be transferred to those who have been unable to acquire them, he said. Creative international solutions need to be found and applied, he said.

Belgium's Influenza Commissioner also raised another ethical issue to do with priority groups in his own country. Not all international organisations seem to have

understood the guidelines for priority groups, he said. We are receiving a lot of vaccination requests from specific interest groups or organisations based in Brussels, which ethically is very difficult to even consider and is of course something that we will not do, he said.

At the other end of the spectrum, there is the anti-vaccination movement. Given the power and reach of the Internet today, the movement has a platform to speak to the general public and instil unfounded fears into at least some of the population. YouTube videos can be seen suggesting all kinds of rumours and misinformation that Mr Ranst describes as blatant stupidities. However ludicrous the ideas may seem though, this situation cannot be ignored. Simply ignoring their views is an outdated and potentially dangerous approach, Van Ranst said.

His recommendation was to fight back with facts. The benefits of vaccination programmes and, conversely, the risks of non-vaccination to both the individual and the community need to be highlighted. Clear guidance must be provided. Failure to address this activity would, in his opinion, be a big mistake.



Michael Kunze

The last speaker of the day's first session was Professor **Michael Kunze** from the Medical University of Vienna, who was speaking in a personal capacity rather than expressing the opinions of either the university or the Austrian government.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



Austria is on the whole well prepared for the pandemic, according to Professor Kunze. Sufficient anti-virals are stockpiled to treat 52% of the whole population. There are also orders or agreements with industry for all 8 million Austrians to be vaccinated with two doses each. A new Austrian technology based on a cell culture vaccine is well tolerated and shows good results, Professor Kunze pointed out.

This preparedness could mean therefore that although Austria is only a small country, it may be in a position to not just share knowledge but also supplies with neighbours or other member states of the EU.

However, the issue of sharing vaccines is not a simple one, Professor Kunze said. In the planning stages for a pandemic, his view had always been to get as much vaccine as possible because politically you need to have enough for the entire population or else you may as well have none.

The debate of whether one or two doses of vaccine is required is far from over, based on his information from the ECDC. It might be that one dose is enough for one risk group, but that two doses are needed for another. The second big factor is the actual uptake of the vaccination available.

Influenza, by its very nature, is unpredictable and these issues complicate the situation further. Professor Kunze felt that the situation was very fluid and vaccination rates could climb or fall, underlining the difficulty of deciding whether to share vaccines.

On the seriousness of the pandemic, Professor Kunze urged caution in leaping to any conclusions. The H1N1

pandemic has been described as a 'mild' disease compared with seasonal influenza, but seasonal influenza is by no means mild. It kills people, he reminded participants.

Perhaps the majority of cases of H1N1 pandemic influenza are relatively simple to address, but for some risk groups the situation is really dramatic and so cannot be dismissed as 'mild'. Compared with the threat posed by other potential infections such as the H5N1 virus, the current situation could be simply termed as a wake-up call. But the uncertainty over how it may develop and cases with complications show signs of a full-blown crisis, Professor Kunze said.

Professor Kunze said he was often asked back in Austria why so much needed to be invested in planning and treatment, and whether it was really worth it. "What's all the fuss about?" was a common question. His reply is a comparison with the fire brigade. "You may not have had a fire for years and years, but you'd never say get rid of it," he said.

#### Question & Answer session

With the floor open for questions and comments, some of the topics raised were the migrant community's access to healthcare, steps being taken on joint procurement and sharing vaccinations, and the WHO Alert System.

Roumyana Petrova-Benedict from the International Organization for Migration asked the panel what the situation was for the migrant community who may have no access to healthcare at all. She stated that in her experience, planning and exercises tended to exclude

## Raising Biopreparedness Levels in Europe

### Roundtable Report



these people and this was an area that needed support and attention.

**Van Ranst** responded by saying that from a public health perspective, especially for vaccination, the success of a campaign is measured by how you protect the weakest in the community. In Belgium, there has been consensus from the beginning that less privileged people as well as migrants without identity documents have equal access to vaccines if they need it. Meetings have been set up with organisations dealing with the homeless population to ensure that these people are informed. People who are in Belgium, legally or illegally, when the vaccination programme is ongoing and who belong to the risk groups will have access to the vaccine, he said. This is definitely not the time to try to make distinctions between people, based on social or economic factors, he stated.

**Merritt** then raised the question of whether this should be the case with crowded refugee camps, which would be a major potential source of infection. **The Commission's Ryan** answered by saying that this had been looked at in connection with the Pandemic Communication. The size of the problem can be seen from the fact that there are 10 million illegal migrant people in the EU, or more than three times the population of Ireland. Ryan said that discussions with member states suggested that many were not in the same situation as either Belgium or Austria in being able to help their own populations, and as a result assistance to illegal migrants may be affected. This would be an area to be followed up with member states, not in order to point fingers, but to develop strategies to help those countries, he said.

"When you see the official figures in other policy papers on migration, it does make you wonder how many people are outside the official healthcare systems," Ryan said. "If there are, then you're going to have a serious

problem." The Commission will be trying to manage financial resources as much as possible to help member states that have acute problems with this situation, he said.

On the issue of joint procurement and sharing of excess vaccinations, Sandra Gaisch from GSK asked for an update on what was being done and what the actual mechanisms would be.

The Commission has suggested that member states should agree that every country that needs access to the vaccines should have access at the same time, or at the time when they need it, based on the EU's solidarity principle, Ryan said. In order to achieve this, we proposed helping those countries without a supply arrangement to get one in place as quickly as possible. We therefore asked countries to share their experience in procuring the vaccines and created a common tender. Now member states without any supply will have to consider whether they want to use those tenders. There have also been a few offers from some member states to make their excess supplies available on a commercial, paying basis. There is also a possibility relating to excess supplies from elsewhere. Again, we have had offers, but this generates questions of competition, liability and all sorts of complicated legal issues that we will have to leave to the lawyers to solve, he said.

**Weber-Mosdorf** said that a large part of the procurement challenge is being able to anticipate what will be effective with regards to vaccine dosage and not just having the capacity to produce it. Having the medicine available is only part of the equation. Legal considerations and clarity about the potential size of an available stockpile for developing countries are also key. Innovation and international solidarity are needed to address these challenges, or else it could very soon turn out to be too late, she warned.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



Brooks Tigner, Editor and Chief Policy Analyst of Security Europe, focused on the WHO alert system. In his opinion, WHO had moved too quickly in raising the alert level to that of a pandemic and wondered whether it was appropriate bearing in mind the differences between H5N1 and H1N1, current levels of infection and the mortality rate. He suggested that WHO could perhaps be more cautious in the future about raising its alert level.

**The Commission's Ryan** accepted that there had been some concern about the alert system and said that the Commission will discuss with WHO how the pandemic plan can be revised and how the pandemic levels can better reflect the real level of threat for the future. He thought that the pandemic levels had been planned with a different scenario in mind, but it's difficult to modify a pandemic plan at a world level in the middle of a pandemic. He mentioned the alternative approach of the French, who rather than going to phase 6 went to an intermediate phase (5.5).

**Van Ranst** stressed that the difficulty of Alert Planning was the inherent unpredictability of the situation. Rigorous adherence to a process is not necessarily helpful, he said, adding that the plan could have been changed. Politically, this may be problematic, he acknowledged, as politicians do not like to change plans because they can be seen to be wavering back and forth on issues. But if you have to have a plan, and it isn't working, then you need to change it immediately, he said.

**Weber-Mosdorf** of WHO accepted that a review of the organisation's Alert System may be necessary. She stressed, however, that the Alert Process was created as a specific instrument to deal with a different virus (H5N1) that is considerably more fatal. The Alert system provides a monitoring structure and, importantly, informs people about the spread of a virus. It does not inform about the severity. Adding a severity factor would be useful, she said.

The broader issues of communicating and distributing reliable information have been an ongoing problem worldwide. This has been a topic of much discussion at the World Health Assembly and work will continue to advise WHO members on the best ways to move forward, she said.

In closing the session the WHO Assistant Director General revisited the core themes that produced the threats in the first place: money, weather and microbes.

Microbes are very much dependent upon the weather and are changing very quickly. Looking at the new diseases that are emerging every year, more than 70% of these are capable of transmission from animals to humans. Some of those are produced because we have problems in our food production methods. Climate change and investment also have a big impact on the issues, she said.

More focus needs to be applied to the causes of disease, **Weber-Mosdorf** stressed. This has to be one of the lessons learned from the current situation, especially as it may well be a more effective way to prevent, influence and control pandemics in the future.

### Session II: Is Europe ready for a bio-terrorist attack?

Deliberate bio threats, rather than naturally occurring ones, were the focus of the afternoon session. **Giles Merritt**, as the roundtable's moderator, put it to the panel that the EU's recognition of the unpredictability of such threats may in fact weaken the case for counter terrorism measures. If the threat cannot be identified, its source known or the timing determined, governments and the

## Raising Biopreparedness Levels in Europe

### Roundtable Report



relevant authorities may be tempted not to devote many resources to countering the threat of bio-terrorism. And with that provocative suggestion, he gave the floor to the panellists.

**Mr. Rüss**, advisor to the Council of the EU's counter-terrorism coordinator, stressed the importance of first understanding the analysis of the general threat, before moving on to the situation in the EU and the specific measures that have to be taken.



Oliver Rüss

Islamist terrorism remains the central threat, not only for EU states, but also for Muslim countries, he said. Al-Qaeda may be weaker than it was, but it is still a very big threat to our societies, the coalition forces in the Afghan region and other countries. Terrorist propaganda efforts to recruit young Muslims to fight against the West are growing and home-grown structures are an increasing threat, he said. Reviews of previous cases and attacks

reveal that we face more skilled terrorist groups that are taking a more professional approach. There are handbooks, manuals, terrorist camps, mainly in the Afghan and Pakistan region, and use of distance learning and the Internet. Terrorist training could include everything from improvised explosive devices (IEDs) to chemical weapons.

The modern terrorist is not dumb, uneducated and unscientific, but highly motivated and professional. This is a very important difference with the past situation.

A big danger is that to underestimate the enemy, Rüss said. Terrorists will use all the techniques they can. To some extent, a "race" has developed between states and terrorist organisations on the preparations needed. Terrorist organisations are also improving other skills such as using encryption in their communication and in intelligence methods, as was seen in different countries.

We must bear in mind that terrorists could also try to use modern technology, Rüss said. An example from the CBRN field was the arrest of a scientist at CERN, the European Organisation for Nuclear Research in Switzerland, in October of 2009.

As for the cost of bio-preparedness, Rüss referred to a report for the US Congress that estimated at \$6 billion the total economic impact from the Washington/East Coast anthrax incident that took place just after 9/11. These figures show the devastating impact that such an event could have on the economy, not to mention all lives that might be in danger.

The EU is also developing a CBRN action plan that is now at the decision stage and CBRN issues are integrated into the European Bomb Data System database rolled out by Europol, he said.

Europe must keep pace with developments, Rüss said. The EU and other institutions as well as the dedicated intelligence community must collaborate very closely, he concluded.

**Carsten Fausbøll**, Director of Civil Emergency Planning at NATO, pointed out that terrorists' acquisition of weapons of mass destruction was identified at a 2006 NATO summit as the principal threat to the alliance over the next 10 to 15 years. The heads of state and government present also noted that rapid advances in

## Raising Biopreparedness Levels in Europe

### Roundtable Report



biological science and technology continued to increase the threat of bio-terrorism. NATO has worked a lot in these areas and will continue to do so, Fausbøll said.

One of the most important areas is perhaps improving intelligence sharing, Fausbøll said, as the more that is known about ideas and potential terrorist attacks, the better it is for everyone. While NATO doesn't have a dedicated intelligence service, it has established a terrorist threat intelligence unit, which deals with these matters and gains intelligence from the Allies.

The alliance has several programmes that deal with terrorism. Since 9/11, NATO has developed a military concept for defence against terrorism, said Fausbøll. A CBRN battalion was also created, which is available for helping a civilian site if needed. On the civilian side, following 9/11, the alliance established a Civil Emergency Plan, not only to assist nations, but also to improve interoperability.



Carsten Fausbøll

NATO also developed the "Comprehensive Strategic Level Policy for Preventing the Proliferation of WMDs and Defending against CBRN Threats". For the first time, this document binds together all activities in the chemical, biological and nuclear field at

NATO. This means that NATO will work actively to prevent the proliferation of weapons of mass destruction by state or non-state actors and will protect the alliance from the WMD threat should prevention fail.

If there is a WMD attack, we should be prepared for recovery through a comprehensive political, civilian and military approach, Fausbøll said. The ability to bring

together civilian, political and military approaches is one of NATO's strengths, he added. NATO is not an organisation that would normally deal with influenza pandemics, or with small terrorist attacks, but NATO would be involved in a larger scale attack, he said.

When asked whether preparedness for naturally occurring pandemics helps with counter measures for bio-terrorism, Fausbøll responded that the scenario was of huge interest to NATO. With regard to H1N1, there is a lot of concern because it might have an impact on operations in Afghanistan and the Balkans, either as an outbreak of pandemic flu among forces or that infection could be brought back from areas of operation. NATO therefore welcomes all advances in this area, he said.

Operations in Afghanistan are not anti-terrorist *per se*, but the fact that NATO has a presence and is assisting the Afghan government has an impact on potential terrorists, denying them the ability to operate from Afghanistan, he said.

On the issue of a terrorist attack, Fausbøll thought that a lot more could be done. A couple of weeks prior, a joint Swiss-US exercise was organised in Switzerland, called Black Ice. The exercise dealt with a bio-terrorism attack that developed into an economic plague attack. In real life, this would lead to a situation where health authorities would need to work together with intelligence, law enforcement and various international organisations. In this respect, there is still a lot of work to do. Europe and Interpol work well with national law enforcement agencies and the EU and WHO work well with national health organisations, but more work is needed to bring all this together, Fausbøll said.

Should NATO face an Article 5 situation, i.e. an act of aggression against one NATO member considered as an



## Raising Biopreparedness Levels in Europe

### Roundtable Report



attack against all the Allies, we would need to know who is in charge. Fausbøll suggested that perhaps it shouldn't be a single individual or organisation taking the lead, but rather an international organisation that knows how to work together on these issues.

In the nuclear field, the International Atomic Energy Agency (IAEA) has a joint radiation emergency management plan. This plan involves a lot of international organisations working together with the IAEA, which takes the lead when it comes to nuclear incidents. This could be seen as an example for how to develop a joint bio-emergency management plan for international organisations, Fausbøll concluded.

**Vladimir Kuvshinov**, the Civil Protection Counsellor of the Mission of the Russian Federation to the EU, shared with the audience information about the activities and laws within Russia to deal with epidemics of all kinds.

Being linked with the International Cooperation Department of the Ministry for Civil Defence, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM of Russia), part of his job is to deal with disaster management, he explained. In Russia, there are many joint exercises on how to protect the population after epidemic threats, Kuvshinov said.

The federal executive body is responsible for organising practical actions, while the protection of the population against emergencies is the primary task of the Russian Disaster Management System, state executive agencies, local authorities and the private sector. Kuvshinov stated that all residents, regardless of whether they are Russian nationals, are protected from all types of emergencies. Paragraph 3, Article 22, of the Russian Federation's constitution states that it is the common responsibility of the federal government and the entities of the Russian federation to take actions aimed

at fighting natural and man-made disasters, epidemics and the mitigation of their consequences.



Vladimir  
Kuvshinov

Analyses have shown that there is a gap between the requirements for sanitary and counter-epidemic activities on the one hand and the practical capabilities during emergencies on the other, Kuvshinov warned. As a result, natural or man-made disasters may lead to medical and epidemic effects including large numbers of casualties and difficult sanitary and epidemiological conditions, resulting from the failure of power or water supplies or sewerage systems, the concentration of a large number of people in one place, and the organisation of the public health system in affected areas.

Information about pandemics and negative changes in the epidemiological conditions is given to the civil defence bodies in Russia. The information includes the following data: the facts of an epidemic, the scale and possibility of it spreading, the state of the environment, potentially hazardous facilities and sanitary and epidemiological control services available in the location of the epidemic.

Counter-epidemic operations, such as controlling facilities in the disaster area, are carried out in order to prevent infectious diseases from spreading and to protect the health of the nation, Kuvshinov said.

**Allen Shofe**, Senior Vice President Public Affairs of Emergent Bio Solutions, laid out what he believes could

## Raising Biopreparedness Levels in Europe

### Roundtable Report



be done to ensure Europe is as prepared as possible for a biologic attack.

When the 9/11 Commission issued its report a few years ago, it started out by saying that 9/11 had been a failure of imagination, in other words no one had been able to imagine terrorists seizing airplanes and using them as missiles to attack buildings and kill people.

Following the September 17 anthrax attacks, the head of the Centers for Disease Control and Prevention (CDC) Dr. Goeberding said, "We realise we don't know anything about how to react to a biological attack".

Since then, the US has built a massive stockpile of medical counter measures, including smallpox, anthrax and botulinum vaccines, as well as therapeutics for various kinds of biological attacks. Since 2001, the US has so far spent close to \$50 billion on medical counter measures.

A source of frustration in dealing with European governments, Shofe said, is the lack of an overall plan including detection, diagnostics and preparation, followed by the delivery of medical counter measures.

The US system is not perfect, but after 10 years and billions of dollars on planning, progress is being made, Shofe said.

He deemed that the US has developed a more comprehensive bioterrorism preparedness system which encompasses detection, diagnostics, preparation and delivery of medical counter measures. This is probably because it was subject to a major terrorist attack before the EU and because it has a long enshrined tradition of preventive policy built upon worst-case scenarios. These differences of approach also triggered different responses on the two sides of the Atlantic, and sometimes even misunderstandings. However, Shofe saw the developments within the Global Health Security Initiative and the recent changes in the US administration as an opportunity to harmonize policies across the Atlantic and improve preparedness through exchange of best practices.

A topic of serious concern, he said, is the complexity of the transatlantic drug-licensing system that we cannot afford to apply for medical counter measures against CBRN agents, given the huge potential for damage that these agents hold. To illustrate the current situation, he gave the example of the world's only FDA-approved anthrax vaccine which is produced in the US but whose availability in Europe is hindered by the complexity of the

transatlantic licensing system.

To avoid lack of availability in times of crisis, the EU and US must devise an emergency authorisation system dealing particularly with medical counter measures against CBRN agents.



Allen Shofe

A public private partnership system, similar to that in the US, would be preferred and is being actively promoted with many European governments, he said. One of Shofe's aims during the

Swedish presidency is to push the idea of a regional stockpiling system with Europe. He has discussed this with various member states, suggesting a Baltic stockpile, a Nordic stockpile and so on. A number of small countries are not interested in building their own stockpiles of medical counter measures for biological threats, but this would be one possibility, he said.

Much work is being carried out with the biological weapons convention in Geneva, he said. Unfortunately there is no international convention on the transportation of dangerous pathogens, he added, mentioning an incident in Canada when a very dangerous sample of a plague pathogen was sent through the mail. Prior to 9/11 about 570 scientists worked with dangerous pathogens in the US; now there are 14,000. Insufficient research capacity with the pharmaceutical organisations

## Raising Biopreparedness Levels in Europe

### Roundtable Report



means that counter measures for bio-terrorism incidents are simply not capable of reacting immediately, or indeed within a month, or a year, Shofe said. No government outside of the US is enabling the required research capacity, he underlined, making the requirement for a stockpile all the more urgent.

Homeland Security Directive 21, issued in October 2007 when the administration realised that a vaccine stockpile with medical counter measures was vital in case of an international emergency, enables the US to share its resources with allies. A global stockpile system was proposed, but since 2007 not a single government has taken advantage of it, Shofe said.

**Patrick Dietz** works at the European Commission's Justice, Freedom and Security Directorate General, in the unit dealing with the fight against terrorism. He focused his presentation on the EU's CBRN action plan, which he considered to be one of the Commission's major contributions to enhance preparedness against bio threats.

The action plan, which was developed over 18 months and finally adopted this year, includes provisions concerning the prevention of unauthorised access to CBRN material and addresses Europe's response and recovery capacities.

The groundwork for the action plan started with two seminars in 2006, which formed the basis of a green paper on bio preparedness. The responses to the green paper were quite promising, Dietz said, encouraging us not only to continue the work on bio-preparedness, but also on similar threats, such as those deriving from misuse of chemicals, radiological or nuclear materials.

The next step was convening a CBRN task force to which representatives from member states' authorities such as ministries of defence, interior and justice were invited. EU bodies such as Europol, Eurojust and the Council also participated, as did stakeholders in industry. A total of 15 meetings resulted in a report being presented and discussed at a conference in Prague at the beginning of this year and forming the basis for the CBRN action plan, Dietz said.

This multi-sector and multi-agency approach, inviting all relevant players in the area to participate and discuss the gaps and the policy areas to focus on is one of the characteristics of the Commission's policy, he explained. This principle will be maintained during implementation, he said. A CBRN advisory group will be formed with similar members, he added.

At no point did the Commission lose sight of the fact that the responsibility to respond to CBRN incidents lies with member states, he said. The Commission therefore focuses on coordinating, supporting with financial means, and gathering best practices, rather than proposing and passing new legislation or a regulatory approach. During the implementation phase, it might become necessary, or desirable, for legislative measures to be put forward in particular areas, Dietz said. However, they would be subject to a separate impact assessment.

The action plan has to be proportionate and focused on those areas considered the most relevant. One of the key tasks in implementing the action plan will be to define and set up an EU list of high-risk CBRN materials, including biological agents and toxins. Many lists are already available, but it would be preferable to focus on those substances that are most relevant from a security, rather than safety, perspective in order to limit the scope of the action plan.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



Another consideration is to avoid duplication and work with existing structures, based on existing legislation.

Respect for the relationship between security measures and the freedom of science and research is vital. Measures such as personal security vetting and background checks are not popular, but are necessary to a certain extent to prevent the unauthorised transfer of knowledge. This topic must be addressed very carefully, Dietz said.

The CBRN action plan is currently being discussed in the Council, and the presidency aims to reach conclusions by the end of this year. This would mean that, with the support of the member states, implementation could start at the beginning of next year.

Dietz was keen to point out that the action plan is not a legal instrument, but a political commitment. It depends very much on contributions not only from the Commission services but also member states and stakeholders to ensure the proposals within the plan provide real added value in the fight against biological threats.

#### Question & Answer Session

With the floor open for debate, the main issues raised were the cost of bio-preparedness compared with the economic impact of an attack, and coordination between international bodies and between member states.

Are all these efforts towards bio-preparedness really necessary, questioned **Giles Merritt**. In the middle of one of the deepest economic crises of the last century, are the billions of dollars being spent in the US and the EU not an exercise in political back covering as much as anything else?

The economic impact of a bio attack cannot be underestimated, **Allen Shofe** said. The impact would be absolutely massive, he said. He took the anthrax case in Washington as an example. A few letters with just a few grams of powdered anthrax in them were sent to three office buildings. The cost to decontaminate the three buildings was over one billion dollars. If the New York subway system was attacked and anthrax spores, which can live up to 17 years, were released, the subway system would have to shut down until costly and lengthy decontamination was carried out. One can imagine the economic impact to a city like New York, Paris or London, he said.

Shofe compared the situation to car insurance. No one buys car insurance with the intention of having an accident so that they can collect the insurance. We buy insurance in case something happens, he said.

He also pointed out the ease with which biological, as opposed to nuclear, weapons could be obtained. Biological weapons are a "poor man's choice" of weapon, he said. Anybody with a rudimentary knowledge of biology can potentially weaponize anthrax, he said. In addition, the increasing use of antibiotics in some countries to treat just about anything can rapidly lead to antibiotic-resistant strains of a disease that are harder to treat. There is no one single approach that will work; the approach must be multifaceted, he said.

Elisa Harris, Senior Research Scholar from the University of Maryland, disputed the statement that anyone with a rudimentary knowledge of biology could turn a biological agent into a weapon. There are operational and technical challenges, she said. She also asked the panel to provide concrete valid information in the public domain about bio-threats. Shofe responded by saying that the website of the US Congress was a good reference point. The World at Risk report would provide further ideas of the threats out there, he said.

## Raising Biopreparedness Levels in Europe

### Roundtable Report



**Robert Kadlec** backed the point that the economic impact of an attack would be huge. If there was a successful attack on a single major metropolitan area, the impact could be over one trillion dollars through loss of life and economic consequences. Addressing bio-security is, ultimately, the insurance policy, he said.

Kadlec also compared spending in this area with that for nuclear weapons or missile defence, whose only purpose is to deter the use of nuclear weapons or to shoot down missiles. Bio and pandemic expenditure has extra benefits: it expands capacity in our public health system, improves our means to develop and manufacture drugs and vaccines that can be used for other purposes, and also adds to the capability of addressing broader bio-risks.

Alexandra Sidorenko, an economist at the Australian National University, said that she was of the opinion that the financial and insurance sector should contribute to the costs of bio-preparedness measures. What was effectively being developed was a form of insurance product to cover sovereign risks and to cover the cost to the governments of handling a major bio-disaster, she said. A simpler method would be to have a risk-pooling mechanism across member states to avoid duplicating efforts and stockpiling, Sidorenko said. A stockpile of broad-spectrum antibiotics, simple disinfectants and personal protection measures would also be appropriate, she suggested. The first point is to look at some type of EU-wide, possibly commercial, insurance, to cover these risks, she said. She also raised the point that the World Trade Centre was insured and yet the insurer failed to deliver. The question of what would occur should the insurer be unable to deliver therefore also needs to be addressed, she said.

Russell Price, Chairman of the Continuity Forum, responded to Merritt's question of whether all the efforts were necessary by stating that one of the first duties of a state is to protect its people. The crucial question is how it chooses to protect its people. There are all sorts of

risks in life, and how you prepare your society to deal with them is key as some of those risks may become reality, he said.

**Carsten Fausbøll** said that as a public servant he had to work in the best and most cost-effective way possible, in accordance with the directives received from policy makers. However, while public servants can try to influence the decision makers, those decision makers are not obliged to listen. Sometimes policy makers go overboard in pursuing actions that are politically motivated, even if they are not in the best interests, he said.

In **Mr. Rüss's** opinion, organisation, raising awareness and preparation should all be considered before money. There are a large number of steps that could be taken to prepare for incidents, before a single euro is spent, he said.

Education was one crucial area highlighted by Peter Schellinck, from Schellter Strategy Consults. Perhaps too little is being invested in education, he suggested. He also raised Chernobyl as an example from which lessons can be learned.

Sharing information and coordination was the subject of various questions and comments. Christine Rohde, from the German Collection of Micro-Organisms and Cell Cultures, said that some very good initiatives such as the *Seine workshop agreement* existed, but that she considered there to be a need for more linking in with the CBRN prevention plan, the ECDC and the European Biological Safety Association.

Russell Price raised the point that a more connected approach was needed in general in the EU. Clarity of direction from national governments would be a great support to pharmaceutical companies, he said. Rather than having 27 separate member states coming up with disjointed plans, which look fine but don't actually

## Raising Biopreparedness Levels in Europe

### Roundtable Report



function, surely a more coordinated approach would deliver greater value, he suggested.

Should an attack occur, Dietz said that in his opinion the EU was already quite well organised. The European Centre for Disease Control is ready for immediate action and the ECDC is well connected with the health authorities in all member states, he said.

**Dr. Erik Heegaard** from the Biosecurity Institute pointed to the fact that biosecurity – which supervises the agents, equipment and expertise needed to develop biological weapons - is largely being ignored in most of Europe. The UK and Denmark are two of the few European countries that have legislation on biosecurity and oversight in place. However, in most of other countries it is not regulated and the awareness of risks is very poor - both from a user perspective and among policy makers.

One major concern is the threat from insiders. Hence, we should be more focused on the radicalization of people with access to dangerous pathogens, i.e. the risk that biologists become terrorists.

That scenario holds serious ramifications, likely overshadowing the occasional attempted theft or home-lab level activities by uninformed terrorists with poor lab-skills. Europe holds all the ingredients for disaster: dangerous agents, equipment, advanced lab infrastructure and terrorist activity. The latter is fuelled by people coming in from outside the region but also by home-grown. This mix of educated home-grown was seen in the London bombings 3 years ago, where 7 of the perpetrators were medical doctors.

Heegaard further held that the rapid advancement of biosciences as we currently experience will further increase the availability and possibly the sophistication of potential bioweapons, to perhaps include engineered agents even including eradicated pathogens, epitomized by smallpox. There is a continuous expansion of lab capacity which, albeit built for legitimate civilian and public health-related purposes, has a dual-use potential

which increases the possibility to access dangerous agents and build expertise.

Having listened to all the afternoon's comments, **Giles Merritt** closed the session by saying he was not fully convinced that the EU has a plan. Instead, his impression was that there was a lot of emotion that didn't amount to a comprehensive plan.

Prevention and crisis management, i.e. trying to reduce the probability of a bio attack and trying to reduce the impact if something dreadful does happen, must be separated much more clearly in our thinking, Merritt said. Governments have to be very careful in their threat analyses, avoiding emotion and relying more on scientific facts, he said. The threat needs to be defined much more precisely than what has been heard in this afternoon session, he said. Governments must also think much more carefully about how to manage public information if any of these emergencies were to become a threat or a reality, he said.

Merritt thanked all the speakers and delegates for their involvement in the day's event and hoped that the SDA report would add to the political process of trying to strengthen our bio-defences.

# Raising Biopreparedness Levels in Europe

## List of Participants

**Paul Ames**

*Freelance journalist*

**Axel Angely**

*Officer*

North Atlantic Treaty Organisation (NATO)

**Albena Arnaudova**

*Communication Advisor to the Representation to the EU*

World Health Organization (WHO)

**Mohamed Raja'e Barakat**

*Expert*

**Abolfazl Beheshti**

*Vice President*

European Network for Environment and Sustainable Development

**Stuart Bell**

*DTRA Field Office*

Defense Threat Reduction Agency

**Thomas Binz**

*Head Biosafety*

Swiss Federal Office of Public Health

**Annie Bollaert**

*Programme and Information Officer, Political Section*

Mission of Canada to the EU

**Jacques Bonnet**

*Contrôleur Général des Armées*

Ministry of Defence, France

**Inder Bugarin**

*Journalist*

Reforma / BBC Mundo

**Jessica Burnett**

Health and Social Affairs

Mission of Canada to the EU

**Geert Cami**

*Co-Founder & Director*

Security & Defence Agenda (SDA)

**Crystel Croeisaerd**

*Account Manager*

Science Research Funding International

**Fabio D'Atri**

*Administrator, Chemicals, Contaminants and Pesticides*

European Commission

Directorate General for Health and Consumers

**Isabelle Daoust-Maleval**

*Head of Office*

Ministry of Defence, Delegation for Strategic Affairs, France

**Hilary Davies**

*Assistant Director (Research and Technology)*

European Defence Agency (EDA)

**Xavier Decramer**

*Account Manager*

Hill & Knowlton International Belgium

**Joan Delaney**

*Independent Consultant*

**Polydoros Demetriades**

*Principal Administrator*

European Commission

Directorate General for Education and Culture

**Patrick Dietz**

*Policy Officer*

European Commission

Directorate General for Justice, Freedom and Security

**Toon Digneffe**

*Director, Government Affairs & Public Policy*

Baxter World Trade

**David Henry Doyle**

*Security JAM Communication Officer*

Security & Defence Agenda (SDA)

# Raising Biopreparedness Levels in Europe

## List of Participants

**Carsten Fausbøll**

*Director, Civil Emergency Planning, Operations Division*

North Atlantic Treaty Organisation (NATO)

**Frédéric Flipo**

*First Secretary*

Embassy of France to Belgium

**Sandra Gaisch**

*Senior European Affairs Manager*

GlaxoSmithKline (GSK)

**Stefaan Ghesquiere**

*Legal Trainee*

International Committee of the Red Cross (ICRC)

**Laurent Giquello**

*French National Expert*

NATO - Air Command and Control System Management Agency (NACMA)

**Thierry Gobillon**

*Information Security Officer, Risk Management & Compliance*

ING

**Willemien Groot**

*Science Editor*

Radio Netherlands Worldwide

**Elisa D. Harris**

*Senior Research Scholar*

University of Maryland

**Erik D. Heegaard**

*Director Scientific Affairs*

Bavarian Nordic

**Jessica Henderson**

*Senior Strategy Development Manager*

Security & Defence Agenda (SDA)

**Barry Holmes**

*National Collection of Type Cultures*

Health Protection Agency Porton Down

**Denisa-Elena Ionete**

*Staff Officer, Civil Emergency Planning*

North Atlantic Treaty Organisation (NATO)

**Jan Jacek**

*Official*

Permanent Representation of the Czech Republic to the EU

**Janina Johannsen**

*EU Defence Policy & NATO*

European Aeronautic Defence and Space Company (EADS)

**Mark Johnson**

*Director European Markets, Sales and Marketing*

Emergent Biosolutions

**Robert Kadlec**

*Vice President*

PRTM Management Consultants

**Frank Kämper**

*Project Officer, Capabilities Directorate*

European Defence Agency (EDA)

**Michalis Ketselidis**

*Policy Officer, Crisis Management Unit, SG/B/3*

European Commission

Secretariat General

**Snezana Knezevic**

*Counsellor*

Mission of Serbia to the EU

**Lisa-Marie Kunz**

Representation of Bavaria to the EU

**Michael Kunze**

*Professor*

Medical University of Vienna (Medizinische Universität Wien)

**Vladimir Kuvshinov**

*Counsellor - Civil Protection*

Mission of the Russian Federation to the EU



# Raising Biopreparedness Levels in Europe

## List of Participants

**Jean Labrique**

*Secretary General*  
Western Defense Studies Institute

**Yves Lagoude**

*European Affairs Director, Thales Security Solutions and Services*  
Thales International

**Grégory Lamory**

*Manager European Affairs*  
Sanofi-Aventis, Belgium

**Stephan Lehmann**

*Head of Office*  
Result Group

**David Levitt**

*Business Development Director*  
CBRNe World

**Accogli Luciano**

*Medical Project Officer*  
European Defence Agency (EDA)

**Abhijeet Malik**

*EU Business Development Adviser*  
PricewaterhouseCoopers

**Pascal Mallet**

*Correspondent Defence/NATO*  
Agence France Presse (AFP)

**Pauline Massart**

*Senior Manager*  
Security & Defence Agenda (SDA)

**Giles Merritt**

*Director*  
Security & Defence Agenda (SDA)

**Christian Mirre**

*YHRI European Representative*  
Youth for Human Rights International (YHRI)

**Agathe Monchovet**

*Senior policy coordinator*  
Greater London Authority

**Sean Murray**

*Consultant*  
Raywell Public Affairs

**Adrien Ogée**

*Defence Affairs Representative*  
Thales International

**Paul Pardon**

*Joint Medical Committee*  
North Atlantic Treaty Organisation (NATO)

**Roumyana Petrova-Benedict**

*Senior Migration Health Manager*  
International Organization for Migration (IOM)

**Irina Margareta Popescu**

*Project Assistant*  
Security & Defence Agenda (SDA)

**Constantinos Prevelakis**

*Consultant*  
North Atlantic Treaty Organisation (NATO)

**Russell Price**

*Chairman of Continuity Forum*  
Continuity Forum

**Bogdan George Radulescu**

*Foreign Affairs Senior Editor, Periscope Magazine*  
The Foundation for a New European Civilization

**Magdalena Rodriguez de Azero**

*Executive Manager*  
European Federation of Pharmaceutical Industries and Associations (EFPIA)

**Christine Rohde**

*Collection Curator, Biosafety Officer*  
DSMZ - Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH

# Raising Biopreparedness Levels in Europe

## List of Participants

**Oliver Rüss**

*Adviser to the EU Counter-terrorism Coordinator*  
Council of the European Union

**John F. Ryan**

*Head of Unit for Health Threats*  
European Commission  
Directorate General for Health and Consumers

**Peter D. Schellinck**

*Chairman*  
Schellter Strategy Consults

**Christian Schleippmann**

*Senior Officer for Armaments Policy*  
European Defence Agency (EDA)

**Tracey L. Schmitt**

*Vice President, Corporate Communications*  
Emergent BioSolutions Inc.

**Frederik Schumann**

*Consultant*  
CEIS European Office

**Réjane Serandour**

*Project Manager*  
Security & Defence Agenda (SDA)

**Philippe Servais**

*Administrator, BioSafety and BioSecurity programme*  
European Commission  
EuropeAid Cooperation Office (AIDCO)

**Allen Shofe**

*Senior Vice President, Public Affairs*  
Emergent BioSolutions Inc.

**Alexandra A Sidorenko**

*Adjunct Research Fellow*  
Australian National University

**Tristan Simonart**

*Policy officer, Security Research & Development*  
European Commission  
Directorate General for Enterprise and Industry

**David Sorrentino**

*Chief Financial Officer*  
Science Research Funding International

**William Stanbury**

*Epidemiologist*

**Silvia Steyrer-gruber**

*Senior Director Vaccines, Global Marketing & Commercial Europe*  
Baxter World Trade

**Paul Sturm**

*Project Assistant*  
Security & Defence Agenda (SDA)

**Brooks Tigner**

*Europe Defence Technology Editor*  
Jane's International Defence Review

**Manuela Tudosia**

*Project Manager*  
Polit Bureau

**Peter Tulkens**

*Managing Director*  
Polit Bureau

**Johan Van Calster**

*Managing Director*  
CLIVAN bvba

**Luc van de Winckel**

*Senior Manager, Business Development*  
Lockheed Martin Global

**Marc Van Ranst**

*Influenza Commissioner*  
Interministerial Commissioner's office for Influenza

**Philippe Vanlangendonck**

*Lawyer*

**Vyta Vinciene**

*CEO*  
Educational Projects Centre (EPC)

# Raising Biopreparedness Levels in Europe

## *List of Participants*

**Anja Vvedenskaia**

*Journalist, EU and NATO observer*

BBC Russian Service

**Susanne Weber-Mosdorf**

*Assistant Director General*

World Health Organization (WHO)

**Gwyn Winfield**

*Editor*

CBRNe World

# Raising Biopreparedness Levels in Europe—Experts' Report

## List of Contributors



**Jacques Barrot**, Commissioner for Justice, Freedom & Security, European Commission



**Thomas Binz**, Head Biosafety, Swiss Federal Office of Public Health, Switzerland



**Guenter Bretschneider**, Head of the EuroAtlantic Disaster Response Coordination Centre (EADRCC), NATO



**Andrew Burns**, Lead Economist, Development Prospects Group, World Bank



**Nancy Connell**, Director, Center for Biodefense, University of Medicine & Dentistry of New Jersey, USA



**Ervigio Corral Torres**, Director, SAMUR (Servicio de Asistencia Municipal de Urgencia y Rescate), Madrid, Spain



**Sabine Ehmke-Gendron**, Director for Civil Protection, Council of the European Union



**Iris Hunger**, Head, Research Group for Biological Arms Control, University of Hamburg, Germany



**Warwick J. McKibbin**, Senior Fellow, Global Economy and Development, Brookings Institution and **Alexandra Sidorenko**, health economist and an Adjunct Research Fellow at the Australian National University's Centre for Applied Macroeconomic Analysis.



**John Oxford**, St Bartholomew's and the Royal London School of Medicine and Dentistry, UK



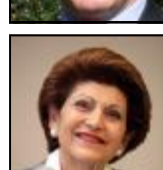
**Caroline Rudisill**, Deputy Director of the MSc in Health Economics, Policy and Management, London School of Economics, UK



**René Snacken**, Senior Expert, Preparedness and Response Unit, ECDC, Sweden



**John-Erik Stig Hansen**, Head of Centre, Danish National Centre for Biological Defence, Statens Serum Institute, Denmark



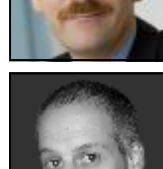
**Androulla Vassiliou**, Commissioner for Health, European Commission



**Isaac Weisfuse**, Deputy Health Commissioner, NYC Department of Health and Mental Hygiene, USA



**Andreas Wenger**, Director of the Center for Security Studies, ETH Zurich and **Sergio Bonin**, researcher, United Nations Interregional Crime and Justice Research Institute (UNICRI)



## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*



**Jacques Barrot**, European Commissioner for Justice, Freedom and Security, assesses the current bio-threat and efforts undertaken by the Commission in addressing it, looks at synergies between preparedness to natural and man-made threats and emphasises the importance of bringing on additional stakeholders.

If a deliberate introduction of deadly pathogens or a naturally occurring disease outbreak were to occur in Europe, the impact on its citizens and economy could be devastating. Biological weapons have the capacity to infect thousands of people, contaminate soil, buildings and transport assets, destroy agriculture and infect animal populations, and eventually affect food and feed at any stage in the food supply chain.

It is clear that the benefits of scientific development in this area need to be balanced against possible security concerns, given that through the global development of life sciences and biotechnology, some dual-use expertise and technology could become available to criminal political entities and terrorists. In parallel, naturally occurring diseases, laboratory accidents or other inadvertent releases of disease agents and pathogens pose a threat which can also disrupt our societies and harm our economies.

Although in the past terrorists have mainly used explosives or improvised explosive devices, it is not excluded that they may resort to non-conventional means such as biological weapons or materials in the future. The risk of a bioterrorist attack has been statistically low, but when weighted against its consequences in terms of human life, psychological and economic effects, it becomes evident that action is needed.

Considering that biological weapons and infectious diseases share several fundamental characteristics (e.g. a bio-weapons attack and a natural pandemic can be detected in similar ways), both threats can be tackled simultaneously, with an all-hazards approach. Such an approach aims at taking into consideration all potential risks, from a terrorist attack, other intentional release, ac-

cident or naturally occurring disease, so as to be prepared to handle all crisis situations which may emerge.

“*Considering that biological weapons and infectious diseases share several fundamental characteristics both threats can be tackled simultaneously, with an all-hazards approach.*”

Virtually, everything we do to be prepared for a possible defence against bioterrorism, such as improving disease surveillance and detection systems, enhancing cross-border communication, facilitating international laboratory cooperation, and developing mechanisms for international sharing of medical countermeasures, also benefits all of us in the event of a naturally-occurring outbreak.

In order to improve the ability of the European Union to prevent, respond to and recover from a biological incident or attack, the coherence of actions in different policy sectors requires that all relevant stakeholders in Member States and at EU level be consulted. This includes e.g. national authorities responsible for risk prevention and response, human, animal and plant health, customs, civil protection, law enforcement authorities, the military, bio-industry, epidemiological and health communities, academic institutions and bioresearch institutes.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*

In addition, collaboration with and within the private sector should also be highlighted. The sharing of best practices is encouraged among the pharmaceutical and food industries, but also between corporations and SMEs involved in the food supply chain. These organisations should be able to rely on effective mitigating systems when intelligence and countermeasures fail.

On the basis of such an all-encompassing approach that included a broad consultation with all relevant stakeholders, the Commission adopted the Communication on Strengthening Chemical, Biological, Radiological and Nuclear Security in the European Union – an EU CBRN Action Plan in July 2009. The Action plan foresees three main areas of CBRN security work:

Prevention – ensuring that unauthorised access to CBRN materials of concern is as difficult as possible;

Detection – having the capability to detect CBRN materials in order to prevent or respond to CBRN incidents;

Preparedness and response – being able to efficiently respond to incidents involving CBRN materials and recover from them as quickly as possible.

The overall objectives of the CBRN Action plan are to address gaps in the field, to promote the sharing of information and exchanges of best practices and to offer a set of tangible deliverables that should, among others, raise the level of bio-preparedness in Europe.

“*Policy measures are not enough if we are to successfully counter the CBRN threat. The involvement of the private sector, professional associations, research institutes, and regular exchange of views between all relevant stakeholders is necessary.*”

It is clear that a number of activities have already been undertaken at the European level. However, policy measures are not enough if we are to successfully counter the CBRN threat. The involvement of the private sector, professional associations, research institutes, and regular exchange of views between all relevant stakeholders is necessary.

This is the reason why the Commission very much welcomes initiatives such as "Raising Biopreparedness levels in Europe". The organisation of similar roundtables and the publication of related policy reports is certainly one important step forward in our joint efforts and work to improve the biopreparedness level in Europe, not only on paper but also in practice.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*



**Androulla Vassiliou**, European Commissioner for Health, outlines broader EU efforts at biopreparedness.

The 2009 influenza H1N1 pandemic which governments across the globe are currently tackling clearly demonstrates the importance of effective preparedness for major emergency situations, while also illustrating the need for sufficient flexibility to adapt response measures to a fast-moving situation. A steadily improving level of bio-preparedness is necessary both to respond to naturally occurring diseases, but also to the possible deliberate release of harmful agents by criminals or terrorists. While the probability of such events occurring may be low, the effects of such events on society can be dramatic and in the absence of good bio-preparedness, they could severely disrupt our societies.

Bio-preparedness is of growing importance in all areas concerned with emergency preparedness, such as health, civil protection and law enforcement. It is also of growing relevance for cooperation between sectors, be they civilian and military or public and private, as well as between governments. With the aim of contributing to a high level of health protection in the European Union, the European Commission has made it a priority to combine the efforts of all its concerned services in taking initiatives to further raise the level of bio-preparedness.

In the health field, the European Commission has undertaken a broad range of actions in cooperation with Member States, and is planning to reinforce them in order for the health sector to maintain a high level of protection against biological threats. The EU Health Security Committee (HSC), which is composed of high level representatives of the Member States and senior officials of the European Commission, has proven to be an effective platform for coordinating responses to emergency situations across the European Union. The HSC has agreed a comprehensive health security programme to take forward work on improved risk assessment and risk management of biological threats.

The Commission has developed an EU emergency preparedness and response plan, and its EU influenza pandemic preparedness plan is now being revised.

“While the probability of such events occurring may be low, the effects of such events on society can be dramatic and in the absence of good bio-preparedness, they could severely disrupt our societies.”

The Commission and Member States benefit from the valuable assistance of the European Centre for Disease Prevention and Control, which provides scientific advice and operates early warning and response systems. Cooperation between treatment facilities in hospitals and diagnostic capacities in laboratories is being facilitated, and special curricula for training healthcare staff on providing health care in an emergency situation have been developed. The establishment of health emergency operation facilities has been promoted in a coordinated manner between the European Commission and the Member States.

Raising levels of bio-preparedness is a cross-sectoral issue which is being pursued at the European Commission across all the policy areas concerned. In particular, collaboration between policies on health, civil protection and law enforcement has brought valuable results for improved bio-preparedness. In an emergency situation, the EU Civil Protection Cooperation Mechanism has proven to be an effective tool in helping to coordinate technical interventions, and law

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*

enforcement services can provide useful intelligence information. Research supported by the European Commission also helps to deepen knowledge in this field.

“ *Improving biopreparedness demands close cooperation internationally, as well as at regional and national levels.* ”

As a further step towards broadening the scope of bio-preparedness at EU level and deepening cooperation across sectors, the European Commission adopted in June 2009 a Chemical, Biological, Radiological and Nuclear (CBRN) Action Plan. One of its objectives is to review the current state of bio-preparedness in these fields achieved in the EU, identify gaps and set out possible further actions to raise levels of bio-preparedness. Strengthening bio-preparedness also implies an 'all hazards' approach: preparedness planning against man-made biological threats can benefit from emergency planning for pandemic situations, and vice versa.

In today's interconnected world, the effects of biological incidents and crisis situations can spread rapidly around the globe. Improving bio-preparedness therefore demands close cooperation internationally, as well as at regional and national levels. Only by bringing together relevant expertise from different sectors and countries will we succeed in strengthening the level of preparedness against biological threats.

I therefore welcome the initiative of the Security and Defence Agenda to organise an expert consultation and develop this report on raising bio-preparedness levels in Europe. I am sure that it will make a useful contribution to the ongoing discussions on this issue.



## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*



**Sabine Ehmke-Gendron**, Director for Civil Protection at the Council of the European Union's General Secretariat, outlines the Council's efforts, cooperation between the Council and the Commission, and emphasises the need for an "all-hazards" approach.

As recognized by participants in the SDA Roundtable on "Raising levels of biopreparedness in Europe" on 14 October 2009, our modern society is highly exposed to biological threats. The representative of the Council of the European Union's Counter Terrorism Coordinator presented the current terrorist threat and underlined the changing environment in which this threat is evolving.

This contribution will not look at the wider political implications and considerations brought about by such a complex challenge, but rather will focus on the concrete steps taken or under consideration to make a "difference on the ground" from a civil protection perspective.

The risks we face can materialize in many forms. Some biological weapons and materials can infect thousands of people, contaminate soil, buildings and transport assets, destroy agriculture and affect food and feed. Major infrastructure in the areas of health, transport, energy supply, communication etc. could break down. And there is not only the threat from terrorism: naturally occurring diseases, laboratory incidents or other inadvertent releases of disease agents and pathogens pose a threat which can disrupt our societies and harm our economies in the same way.

That is why EU action on the reduction of biological risks and the enhancement of preparedness and response is pursued in the context of an all-hazard approach. This also applies to EU civil protection and emergency management: the European Council has repeatedly asked for EU action to be based on an all-hazard approach covering man-made as well as natural emergencies, as well as on an integrated approach, covering the whole disaster cycle encompassing prevention, preparedness, response and recovery.

“ *The risks we face can materialize in many forms. Major infrastructure could break down.* ”

CBRN-related action taken over the past years demonstrates the EU's willingness to take up the challenge posed by a very difficult "enemy" and the great complexity of a multilateral process, required to work in "inter-agency mode" at all levels in view of the wide-spread impact of possible CBRN incidents. From a civil protection perspective, it may suffice to mention:

\* The Joint Council/Commission CBRN Programme which recommended action in risk assessment, vulnerability reduction, quick detection and identification, response, research and international cooperation; this programme has been integrated as a key element into the EU Action Plan on Combating Terrorism which accompanies the EU Strategy on Combating Terrorism and is a living document under constant review by the Council.

\* Revision of the Council Decision on the Community Civil Protection Mechanism and its Monitoring and Information Centre ("MIC"): the Mechanism is the main instrument available in civil protection. It provides for training, exercises and expert exchange, as well as the ability to pool and compile information on necessary resources and the registration by Member States of self-sufficient modules, such as CBRN modules. The MIC works on a 24/7 schedule and is the main information hub, advisor and facilitator in the coordination of assistance made available by the Member States. The Civil Protection Financial Instrument

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*

has been adapted accordingly and broadened in scope, in particular for prevention.

\* EU Directive for the Identification and Designation of EU Critical Infrastructure: the Directive aims at reducing the vulnerability of critical infrastructure and applies to the transport and energy sectors. It may be broadened to also cover other sectors such as the ICT sector upon review. This is an important element of prevention activities in our highly interconnected and interdependent societies.

\* Council mandates on CBRN Risks and on Bio-Preparedness developing the parameters of EU action both to avoid accidents in the handling of CBRN substances (CBRN safety) and to prevent and respond to a voluntary abuse of CBRN substances (CBRN security), based on the Commission's Green Paper on Bio-Preparedness.

Discussions are currently ongoing in the Council on the CBRN Action Plan submitted by the Commission early this year. The Plan covers all policy sectors affected and involves all relevant actors, providing a coherent framework for implementation. In order to maximise effectiveness and cost saving, it focuses on three key actions: make unauthorized access to CBRN materials as difficult as possible (prevention); having the capability to detect CBRN materials if control over them is lost and being able to efficiently respond to CBRN incidents and recover from them as quickly as possible (preparedness and response). The Action Plan should be adopted by the end of 2009.

The European Commission has proposed to reinforce and develop the different CBRN-related civil protection action through the "CBRN Resilience Programme in Civil Protection". It calls for intensified exercise, training and

expert exchange activities, a maximised use of the Security Research Programme, a scrutiny process for modelling tools used for planning processes as well as actual CBRN emergencies and closer cooperation on communication strategies. On response, additional kinds of CBRN modules need to be considered for registration by the Member States, together with the possibility to pre-position CBRN modules linked to large cross-border public events. A new assessment of all relevant assistance which could be made available by Member States can be expected to start in the near future. Also proposed is the establishment of a structured European scientific back-office made up of experts and laboratories for supporting teams active on site.

“ *Cooperation across all concerned sectors, between Member States and at EU level needs to be further strengthened.* ”

More generally, cooperation across all concerned sectors, between Member States and at EU level needs to be further strengthened. Good coordination and communication between the national services is necessary in order to draw up bio-contingency plans. Specific CBRN networking structures to exchange best practices and facilitate common action at EU level can play a crucial role in an actual crisis. The adoption of the CBRN Action Plan in December will highlight the EU's strong political commitment to develop a working security culture bringing real added value to existing structures and processes.

Given the new legal base for Civil Protection and the "Solidarity Clause" contained in the Lisbon Treaty, developments in this policy area can be expected to intensify and provide government leaders and lead agencies with a further enhanced support tool at EU level.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*



**Guenter Bretschneider**, Head of the EuroAtlantic Disaster Response Coordination Centre, covers NATO's efforts (capabilities and structures) in the area of biopreparedness, with emphasis on the EADRCC's work.

At their Summit in Strasbourg – Kehl in April of 2009, Heads of State and Government endorsed NATO's comprehensive strategic-level policy for preventing the proliferation of Weapons of Mass Destruction (WMD) and defending against Chemical, Biological, Radiological and Nuclear (CBRN) threats.

With this policy the Alliance will seek to enhance capabilities that are critical to robust CBRN defence, such as bio-detection and disease surveillance, by investing more national resources – when possible – to accelerate NATO's efforts within CBRN defence and by entering into partnerships for further research and development of innovative technologies and strategies.

Allied Governments have primary sovereign responsibility to prepare for and mitigate the consequences of a CBRN event and their first responders should have the full range of protective, medical, and remediation tools to identify, assess, and respond rapidly to an event on home territory. However, major civil emergencies can pose a threat to security and stability, and because CBRN consequence management is challenging and could be a massive, costly and protracted effort, NATO will be prepared to lend its capabilities to national authorities, if requested. Moreover, if Allies improve civil preparedness with regard to a CBRN event, this would devalue the utility of employing such methods, when coupled with other prevention and protection measures.

Planning for CBRN consequence management is a multi-dimensional effort, requiring coordination within the Alliance at all levels, as well as with civil emergency planning authorities and other international organizations, as appropriate. NATO has considerable

CBRN defence capabilities to offer to Allies' and partners' first responders and it also serves as a forum where planning arrangements for such eventualities can be coordinated among countries. The Alliance will work to coordinate and harmonise the development of military and non-military CBRN defence capabilities to the extent possible and develop recovery mechanisms for a CBRN event.

“*Planning for CBRN consequence management is a multi-dimensional effort, requiring coordination within the Alliance at all levels, as well as with civil emergency planning authorities and other international organizations, as appropriate.*”

NATO will continually review and update its *Civil Emergency Planning (CEP) Action Plan for the Improvement of Civil Preparedness Against Possible Attacks with CBRN Agents* to reflect the most recent political guidance, evaluate changes in threats, risks and vulnerabilities; incorporate the development of new technologies, capabilities and strategies; and enhance outreach to partners, international organizations and civilian entities, in accordance with CEP Ministerial Guidance. NATO when appropriate will coordinate internally to execute a comprehensive approach to recover from the use of WMD or a CBRN event. In the event of a disease outbreak that could be deliberate, NATO will work closely with partners and relevant international organisations, as appropriate.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Political initiatives on biopreparedness*

Already at the Washington Summit in 1999, NATO Heads of State and Government agreed to launch a WMD Initiative to enhance the possibilities for Allies to assist one another in the protection of their civil populations against WMD risks. As a part of this Initiative, the Senior Civil Emergency Planning Committee (SCEPC) was directed to develop and maintain an inventory of national capabilities for protecting civil populations against WMD risks.

This "Inventory" comprises the key types of capabilities which would be critically required for immediate response needs in case of CBRN attack against civilian populations. It is important to note that both Allies and partner nations are providing inputs to the "Inventory". To date, inputs from 42 nations have been received.

The Euro-Atlantic Disaster Response Coordination Centre (EADRCC) serves as the repository for the "Inventory". Nations responding to an event involving CBRN agents can request the EADRCC to assist in the co-ordination of the response to this event. The EADRCC will use the "Inventory" to identify the resources requested by the stricken nation and will act as a clearinghouse for assistance in case of CBRN incidents in the same manner as it does for natural and technological disasters.

Effective implementation of a comprehensive approach requires the cooperation and contribution of all major actors, including international organisations, when relevant. Information sharing with the World Health Organisation (WHO), for instance could enable the Alliance to better monitor and identify anomalies in global health trends, leading to earlier detection of and improved response to biological threats. Within existing resources, NATO will continue its dialogue with these stakeholders through seminars, workshops, conferences, and technical cooperation with partners in order to exchange views, share their relevant experience, and disseminate best practices, when appropriate.

In the case of a CBRN event, NATO will rapidly establish a Media Operations Centre. The Media Operations Centre will support nations as required and will coordinate the release of factual information to accredited media outlets to quickly inform the public of NATO's support and response.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Economic aspects of biopreparedness*



**Warwick McKibbin and Alexandra Sidorenko** contribute an in-depth analysis of the global costs of an Influenza Pandemic.

*McKibbin is an economist who heads the Australian National University's Centre for Applied Macroeconomic Analysis, and is a Senior Fellow at The Lowy Institute for International Policy in Sydney and the Brookings Institution in Washington. Alexandra Sidorenko is a health economist and an Adjunct Research Fellow at the A.N.U.'s Centre for Applied Macroeconomic Analysis and the Australian Centre for Economic Research on Health.*

With the development of medical science and modern disease control measures, the world is better prepared to face a bio-threat in the form of either a pandemic or a deliberate attack. However, the integrated nature of the global economy – the increased global mobility of goods, services, capital and people - makes such bio-threats global as well. They will be difficult if not impossible to contain geographically, and the economic effect will certainly spill over national borders. Here, we offer some estimate of the economic consequences of a pandemic influenza based on computer simulations incorporating what we know about influenza transmission and the likely response by governments as well as markets.

The conventional analysis of economic costs of illness based on loss of time and income of those affected with the disease and their caregivers underestimates the total cost of disease. The experience of the SARS epidemic in 2003 demonstrated that, even in an event with a relatively small number of cases and deaths, the global costs can be large and not limited to the countries directly affected. Epidemics have significant effects on economies through large reductions in consumption of various goods and services (such as tourism and group recreation), increases in business operating costs, and the flight of capital from affected countries.

Several studies have estimated the economic costs of an influenza pandemic. Among them figure the Asian Development Bank estimate of a 2.6-6.5 percent loss for Asia's GDP and 0.6 percent for global GDP resulting from a mild to moderate influenza pandemic, and a U.S. Congressional Budget Office estimate of a 1.5-5 percent loss in U.S. GDP in a mild to severe pandemic. Recent estimates by Oxford Economics evaluate the impact of the current H1N1 influenza pandemic on the UK economy to be a 5 percent loss of GDP during the first

six month of the pandemic<sup>1</sup>. Both absenteeism and school closures add to the costs of pandemics, but factors such as rises in business costs and shifts in demand by consumers and businesses are also important drivers of the overall costs.

The technical study by Mc Kibbin and Sidorenko examines the global economic consequences of an influenza pandemic under four epidemic scenarios ranging from mild to ultra-severe<sup>2</sup>. The study used the computer model developed by Warwick McKibbin and Peter Wilcoxon (Syracuse University). The model includes 20 countries/regions and six sectors of production in each economy. The equations capture both trade and financial market linkages between and within economies. The construction of shocks associated with the spread of the flu follows the methods developed by McKibbin and Jong-Wha Lee (Asian Development Bank and CAMA) for analysing the economic costs of SARS. Shocks due to influenza pandemic include a decline in the size of the labor force due to a rise in mortality and disabling illness; an increase in the cost of doing business, especially in service sectors where human interactions are largest; a shift in consumer preferences away from services that require exposure to others, which is independent of the effects of changes in incomes and prices; and a re-evaluation of investment risk in light of the responses of governments and their health systems to the influenza pandemic.

As labor supply contracts because of mortality and morbidity, the return on capital falls in all affected countries -- but more in those countries experiencing larger shocks. Growth slows everywhere as output falls. But the differences among countries imply that financial capital will flow from the developing countries to the United States and Europe, where investors feel safer.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Economic aspects of biopreparedness*

For the mild scenario (modelled on the 1968/69 Hong Kong Flu), the labour-force shock is the largest driver of the GDP contraction for most countries. As the pandemic grows more damaging in increasingly severe scenarios, the largest GDP losses are linked to rising production costs. The loss of labour through deaths and sickness reduces output in all countries, and can be expected to raise inflation in the short run to the extent that output falls by more than demand falls through income and wealth contraction. On the other side of the ledger, the shift in demand away from the most vulnerable productive sectors tends to lower the relative price of those products and services, while the imposed fall in aggregate spending (investment, in particular) also tends to lower prices. These disparate factors act together to raise inflation in most economies, while some may experience deflation.

“*Influenza is notoriously difficult to predict in an epidemiological sense, and there is plainly a great deal of uncertainty about how individuals and markets would respond when faced with mass morbidity and significant loss of life.*”

Even a mild pandemic would likely make a noticeable dent in global economic output. The mild scenario, estimated to cost the world 1.4 million lives, would reduce total output by nearly one percent, or approximately \$330 billion in the first year. As the scale of the pandemic increases, so, of course, do the economic costs. A massive global economic slowdown occurs in the “ultra” scenario (modeled on the 1918/19 Spanish flu experience) with over 142 million

deaths and some output in economies in the developing world shrinking by half in the year of pandemic. The loss in output in this scenario is \$4.4 trillion, 12.6 percent of global GDP in the first year. The composition of the slowdown differs sharply across countries with a major shift of global capital from the affected economies to the less affected safe haven economies of North America and Europe.

Some robust results with respect to the model's underlying assumptions emerge. One is that stock markets fall and bond markets rally, although to differing degrees in different countries. The second robust result is that monetary policy

responses play a key role in determining economic consequences. Countries expected to focus on preventing exchange rate depreciation end up with very tight money, which raises the costs of the pandemic.

We also find that the more severe the pandemic, the more developing countries are hurt relative to North America and Europe; Japan is caught in the middle. The asymmetries in the epidemiological outcome generate flows of capital from the most affected developing countries into industrialized economies, worsening the current account positions of the receiving countries and putting downward pressure on developing country exchange rates. World trade would likely contract significantly.

Whether a pandemic causes inflation or deflation depends on the relative size of declines in demand and supply across sectors. Consumption-smoothing – the tendency of families to try to maintain living standards in the face of temporary distress -- implies that aggregate demand would decline by less than supply. This, together with increases in the costs of doing business, suggests that inflation is a more likely consequence of pandemics than deflation. But a sufficiently strong shift in spending preferences that caused serious economic dislocation could lead to deflation. Current financial crisis and low consumer confidence may exacerbate these deflationary pressures. Countries that try to prevent exchange rate changes are more likely to experience a deflationary shock as tight monetary policy compounds the economic contraction.

Influenza is notoriously difficult to predict in an epidemiological sense, and there is plainly a great deal of uncertainty about how individuals and markets would respond when faced with mass morbidity and significant loss of life. The current H1N1 pandemic has shed some light on the behavioural responses, including social distancing, absenteeism (both through sickness and precaution), and school closures. Fortunately, it has been relatively mild to date, yet the economic costs to countries like UK, USA and Mexico have been significant. Losses from an 1918-style pandemic would include trillions of dollars of potential output, along with millions of lives, and a disproportionate amount of those losses would be borne by developing countries that could least afford the blow. Taking into account the global impact of the potential pandemic, developed countries should put together measures to assist developing countries in coping with the pandemic threat, including early detections and emergency response measures. When facing a low-probability high-cost adverse event, a

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Economic aspects of biopreparedness*

risk-averse individual will choose to insure against the potential losses at an actuarially fair premium plus additional risk premium. Expenses on bio-preparedness measures can be considered to be such an insurance premium. Moreover, extra government spending resulting from these measures can be beneficial in light of the current global financial situation. In summary, it would pay to invest considerable resources now to prevent an influenza pandemic and to prepare for the consequences of failure.

“*It would pay to invest considerable resources now to prevent an influenza pandemic and to prepare for the consequences of failure.*”

#### Endnotes

<sup>1</sup><http://www.oef.com/free/pdfs/ukmswineflu>

<sup>2</sup><http://www.brookings.edu/views/papers/mckibbin/200602.htm>

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Economic aspects of biopreparedness*



**Andrew Burns**, Lead Economist for the Development Prospects Group at the World Bank, presents several scenarios predicting the economic impact of pandemics across levels of severity.

There are three useful categories of economic consequences that are associated with major biological events.

**Avoidance costs:** economic costs incurred by individuals and firms that seek to prevent themselves from being exposed to the pathogen.

**Economic impact of the actual disease:** time lost from work; additional medical costs incurred; time-lost from work due to caring for the disease; and in the case of zoonotic disease the economic impact that the disease may have on any industry associated with an outbreak among animals.

**Permanent costs associated with loss of life or incurred disability:** the difference between the value of economic production under two scenarios, one where individuals were infected and were debilitated and/or died and a second where the bio-event did not occur.

The severity of these costs in a given country depends on: 1) the nature of the pathogen, 2) the age structure of the population, 3) the wealth and health of the population, and 4) the structure of the economy.

#### ***Possible economic consequences of a pandemic flu***

Following the SARS outbreak in 2003 and the Avian Influenza outbreaks of 2005-6, public awareness of the likelihood of a possible pandemic flu rose. Several efforts to assess the potential economic impact from a pandemic flu natural outbreak were undertaken, among which those of McKibbin, Warwick, and Alexandra Sidorenko (2006) and Burns, van der Mensbrugge and Timmer (2006). These estimates suggested a pandemic flu event could reduce global GDP in the initial year of

the pandemic by between 0.7 and 4.8 percent (Table 1) or between 0.4 and 2.7 billion in 2009 dollars. The wide range of estimates mainly reflected different assumptions about the severity of the flu. The morbidity and infectiousness of the low-case scenario in Table 1 is modeled on the basis of a “normal” but novel flu (arguably similar to the current H1N1 pandemic), the moderate scenario modeled on the basis of the 1957 Asia flu and the severe epidemic modeled on the 1918-19 Spanish flu. Additional death estimates associated with each of these scenarios ranged from, 1.4 million in the mild flu scenario and 71 million in the severe flu scenario – as compared with global flu deaths that average about 0.2 and 1.5 million annually.

Efforts to differentiate between the sources of the GDP losses, suggest that 60 percent of the income losses from a flu pandemic would be due to public efforts to avoid infection. An estimated 30 percent of the loss is from work-time lost by sick individuals, those required to stay home and care for them and by increased absenteeism. The smallest share of the overall loss in GDP in the year of the outbreak (10 percent) would be due to the costs of increased mortality.

Avoidance costs tend to be particularly high in the epicenter of a pandemic, and in the service sector (restaurants, retail sales, hotels, mass transport, and tourism). For instance air travel to Hong Kong during the SARS epidemic was off by as much as 75 percent during the peak of the crisis and between 50 and 60 percent during the four-month period the outbreak was active. Retail sales declined by 15 percent at the peak, and by about 9 percent over the four month period, implying about a 15 percent decline from trend (Siu and Wong, 2004) over the four month period or about 5 percent on an annualized basis. Similarly, the outbreak of H1N1 in Mexico caused tourism revenues in that country to fall by



# Raising Biopreparedness Levels in Europe—Experts' Report

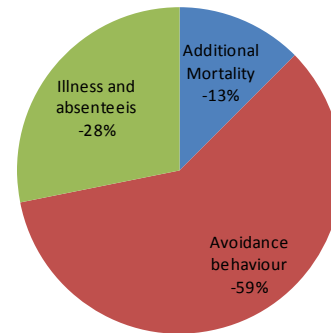
## *Economic aspects of biopreparedness*

**Table 1 Possible economic impacts of flu pandemic**

	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
<i>(percent change in GDP, first-year)</i>			
World	-0.7	-2.0	-4.7
High-income	-0.7	-2.0	-4.7
Developing	-0.6	-2.4	-6.3
East Asia	-0.7	-2.5	-5.9
Europe and Central Asia	-0.6	-1.4	-2.9
Middle-East & North Africa	-0.7	-2.8	-7.0
South Asia	-0.6	-2.1	-4.9
Deaths (millions)	1.4	14.2	71.1

Source: Burns, van der Mensbrugghe and Timmer (2006) based on McKibbin & Sidorenko (2006)

**Figure 1 Causes of GDP loss**



Source: Burns, van der Mensbrugghe and Timmer (2006)

more than 40 percent in the first quarter of 2009 as compared with 2008. At its peak air travel was off 80 percent and hotel vacancies in tourist regions reached 80 percent.

The direct cost from efforts to cull diseased animals to prevent the spread of a zoonotic influenza could be as high as 0.7 percent of GDP at the regional level, with localized impacts much higher in sub-regions specialized in the production of the carrier animals.

Mortality costs tend to be proportionately higher in poor countries because of weaker public health systems, poorer hygiene within the general population and higher prevalence of chronic disease –which tends to increase the likelihood that a given flu case results in death. The long-term costs of increased mortality tend to be higher. An upper-limit to this cost would be the net-present value of the income not produced by individuals who died (about 2 percent of GDP assuming that the average person lost 30 years of economic life and a discount rate of 3 percent).

### ***Extension of pandemic results to a major bio-terrorism event***

The extent to which a bio-terror event would generate similar results will depend on its nature. The introduction of a contagion that mirrored a pandemic, or the perception that such a contagion might be widely released could generate very heavy avoidance costs. A non-contagious event would tend to be more contained in its impact. Were the mortality rate associated with a human-generated contagion high, then impacts could be orders of magnitude larger.

### References

- Burns, Andrew, Dominique van der Mensbrugghe and Hans Timmer “Evaluating the Economic Consequences of Avian Influenza”, *mimeo*, World Bank. <http://siteresources.worldbank.org/INTTOPAVIFLU/Resources/EvaluatingAleconomics.pdf>.
- McKibbin, Warwick, and Alexandra Sidorenko. 2006. *Global macroeconomic consequences of pandemic influenza*, Lowy Institute for International Policy, Sydney Australia.
- Siu, Alan, and Y.C. Richard Wong. 2004. “Economic Impact of SARS: The Case of Hong Kon.”Hong Kong Institute of Economics and Business Strategy, Working Paper 1084. April.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Economic aspects of biopreparedness*



**Caroline Rudisill**, Lecturer in Health Economics in the Department of Social Policy at the London School of Economics & Political Science, presents the microeconomic costs of pandemics and focuses on individuals' risk perceptions and behavioural change in the face of pandemic risks.

Since the end of April 2009, the H1N1 virus (swine flu) has emerged as a global-level threat. Armed with a new vaccine, we begin the start of flu season with populations worldwide holding varying degrees of risk perceptions regarding H1N1 and facing different actual H1N1 risks depending on their population segment.

Until April 2009, pandemic flu preparations focused on the H5N1 virus (avian flu). The emergence of H1N1 from the other side of the world, with an epidemiological genesis in swine rather than birds has triggered the same public health pandemic flu preparedness actions that a significant H5N1 outbreak might. However, fundamental differences in the current epidemiological natures of the H5N1 and H1N1 viruses mean that although many of the public health strategies valuable for fighting avian flu would also be pertinent for H1N1, individuals' behavioral reactions may significantly differ.

“A series of individual-level decisions worsen the macroeconomic impact of influenzas.”

Pandemic influenzas have macroeconomic and microeconomic implications reaching beyond immediate health care resource costs. At a macroeconomic level, loss of trade and productivity would contribute to a fall in GDP of affected countries.

The microeconomic costs of a pandemic occur at the individual level but have ramifications for the broader economic costs of the pandemic. A series of individual-level decisions such as limiting the consumption of

associated food (poultry or pork) and avoiding being around other members of the public through air travel, sporting events or public transportation worsen the macroeconomic impact of flues.

Foregoing behavioural preferences for fear of illness such as substituting pork consumption for fish or meat or not going to the movies means that individuals are overestimating actual risks and thus not partaking in an activity they would have otherwise preferred.

H1N1 moving between humans means that individuals in affected countries may be more hesitant to continue their every-day activities or travel plans. It is not the actual risks of contracting H1N1 that matter here but how individuals perceive their risks of contracting the virus as this proves a better predictor of behaviour.

Findings on Europeans' knowledge about appropriate preventative reactions regarding avian flu point to a lack of understanding as to whether the avian flu virus is transmitted between humans and whether there are dangers in consuming poultry or eggs during the outbreak (Mossialos and Rudisill 2008). Di Giuseppe et al. (2008) also found gaps in Europeans' knowledge about the transmission of H5N1 and the adoption of appropriate preventative behaviours.

While the transmission modes of H1N1 and H5N1 differ presently, this lack of knowledge may lead individuals to treat them similarly in terms of making behavioural decisions. A May 2009 Harvard School of Public Health survey suggests that Americans have made behavioural adjustments to avoid H1N1 exposure with 25% of respondents avoiding public gathering places such as sporting events, malls or public transport and 27% avoiding air travel, specifically. An October 2009 Ipsos

# Raising Biopreparedness Levels in Europe—Experts' Report

## *Economic aspects of biopreparedness*

MORI survey carried out on behalf of the London School of Economics\* uncovered similar but less extensive behavioural adaptations with 10% of British adults aged 18 years and over saying that they avoided places where many people gathered together, like sporting events, shopping centres or public transportation since the outbreak of swine flu this past spring and summer (Rudisill forthcoming).

The risk research literature would predict that individuals' perceptions of risk are lower for those risks with which they have more experience. As the H1N1 virus has spread to many countries throughout the world and passed among us for about six months, the emergence of new cases hardly garners any more than a short mention in the news. Average individual experience coupled with media desensitization of the flu form a powerful feedback loop, encouraging individuals to become more complacent and to take fewer precautionary measures than they did during the initial outbreak. This evolution in popular risk perception is expected but should be balanced against public health messages reiterating appropriate preventative actions.

“ *Informing the public about what is appropriate and inappropriate preventative behaviour is important for both H1N1 and avian flu.* ”

As H1N1 vaccinations programmes are just commencing throughout European countries, now is the time for public health ministries to fine-tune their public awareness and vaccination campaigns. An individual's vaccination decision depends not only on their risk perceptions about H1N1 but also their risk perceptions toward vaccination itself. Regarding swine flu vaccination in particular, our recent Ipsos MORI study found that 55% of British adults were “very likely” or “fairly likely” to take up the vaccination if offered it whereas 39% were “not very likely” or “not at all likely.” Furthermore, other recent research modelling various epidemiological scenarios for the flu pandemic found that a 70% vaccination rate would successfully attenuate the epidemic's severity (Yang et al. 2009).

Critical review of public health campaign efforts as well as the accessibility of vaccine deliveries are needed to achieve state and international public health goals. In particular, campaigns should appeal to individuals' sense of altruism in expressing that the vaccine is not just about preventing oneself from getting the virus but also

preventing its spread to others. The campaigns also should emphasize that the vaccine is a ‘regular’ seasonal flu vaccine with a different strand of flu put into the vaccine. Where individuals are less certain about a technology they are less likely to accept it. If public health campaigns can both appeal to citizens' sense of civic altruism and assuage their concerns about viral contraction from vaccination, then pandemic risks posed by H1N1 can be significantly reduced.

While the current H1N1 virus outbreak has been unfolding, Egypt, China and Vietnam have identified human cases of avian flu while Germany has had a case in a wild bird. Therefore, avian influenza continues as a threat to poultry and human populations in many geographic settings.

This means that informing the public about what is appropriate and inappropriate preventative behaviour is important for both H1N1 and avian flu as the propensity to treat them in the same way may lead to unintended economic impacts. We know from the risk literature that in the face of uncertainty, individuals tend to manufacture associations between risks they deem as related when facing uncertainty. Consequently, it is important from a public health communications perspective to be clear on what is appropriate versus inappropriate behaviour for each particular flu strain, including the availability of a vaccine for H1N1 and the importance of this vaccination not just for the individual but society in general.

### **Recommendations**

**Be pro-active about achieving vaccination rate goals** – This means changing delivery models to beyond the obvious healthcare settings such as General Practitioner practices and into schools, work places, community-based forums, and public settings

**Continually inform the public** – People get complacent about familiar risks. Consequently, public messages from the initial outbreak advocating hand-washing, covering the mouth when coughing, etc are even more critical in the flu's latter stages, as public risk perception wanes.

**Appeal to altruism in vaccination campaigns** – Swine flu vaccinations are not just about individual risk but lowering societal risks. By framing vaccination as having individual as well as societal benefits, public health awareness campaigns can increase awareness while reducing the severity of the pandemic.

# Raising Biopreparedness Levels in Europe—Experts' Report

## *Economic aspects of biopreparedness*

### Sources

Di Giuseppe G, Abbate R, Albano L, Marinelli P, Angelillo IF: **A survey of knowledge, attitudes and practices towards avian influenza in an adult population of Italy.** *BMC Infectious Diseases* 2008, **8**:36.

Harvard School of Public Health: **H1N1 Virus (Swine flu) Survey II, May 5-6, 2009** [[http://www.hsph.harvard.edu/news/press-releases/files/Swine\\_Flu\\_Week\\_2.toplevel\\_release.pdf](http://www.hsph.harvard.edu/news/press-releases/files/Swine_Flu_Week_2.toplevel_release.pdf)]

Mossialos E, Rudisill, C: **Knowledge about avian influenza in the European Region.** *Emerging Infectious Diseases* 2008, **14**:1956-57.

Rudisill, C: forthcoming. Optimism bias and intentions for swine flu vaccination, LSE Health Working Paper Series.

Yang Y, Sugimoto JD, Halloran ME, Basta NE, Chao DL, Matrajt L, Potter G, Kenah E, Longini IM: **The Transmissibility and Control of Pandemic Influenza A (H1N1) Virus.** *Science* 2009, **32**: 729 – 33

*\*The survey was carried out using Ipsos MORI's in-home Face-to-face Omnibus service, CAPIBUS, from 2<sup>nd</sup> – 8<sup>th</sup> Oct 2009. A nationally representative sample of 944 adults, aged 18+ in Great Britain was interviewed, with data subsequently weighted to the known profile of this population (Quota sample across 152 sample points).*

## Raising Biopreparedness Levels in Europe—Experts' Report

### Surveillance



**René Snacken**, Senior Expert in the Preparedness and Response Unit of the European Centre for Disease Prevention and Control, presents the ECDC's experience and perspective on the A(H1N1)v pandemic and makes recommendations for the future.

The 2009 A(H1N1)v virus is the fourth influenza pandemic in the last century. Influenza pandemics are expected events and three major events helped EU countries to accelerate preparation in the previous years

Numerous publications on previous pandemics undoubtedly advanced national preparedness, especially since the virus that caused the Spanish flu in 1918 re-emerged in 1997. The emergence and the spread of SARS in 2003 also stimulated scientific research on pathogens that crossed the species barrier. Eventually the transmission of H5N1 from domestic birds to humans and the spread of the virus over continents by migrating birds were a trigger for accelerating preparedness in EU countries. Following these events, ECDC, a young EU agency, was established in Stockholm 2005 for the prevention and the control of communicable diseases.

In addition, other non infectious events have allowed to refine the response of authorities to major health events: the heat wave in 2003 responsible for 70.000 deaths in Europe helped health authorities to improve surveillance mechanisms and to better control such catastrophes.

From 2005 onward, ECDC participated in self-assessments of national pandemic plans in all EU Member States. Country visits with the help of WHO allowed the estimation of surveillance capacities, prevention policies, cases management, logistics and communication strategies. New approaches were included such as the participation of non-health sector, inter-operability (between countries or regions), the identification of essential services (energy), and the inter-sectoral approach. With the emergence of the pan-

demical virus, these last years have paid off, even if adjustments are still necessary. ECDC has played an essential role in the coordination of activities, cases definition and surveillance at EU level, and release of guidance (e.g. the use of antivirals).

“Even if Europe appears well prepared, other important challenges remain to be met.”

Indeed, influenza surveillance was set up in the 1980's and is currently managed by ECDC. After the start of the current pandemic, case-based reporting switched to aggregated data notification in all EU countries. This transition, thought to collapse when individual counts of cases were impossible, was successful thanks the upsurge capacity of surveillance networks. As of October 24<sup>th</sup>, 22 EU countries reported intense activity, most of them above the epidemic threshold. In addition, the ECDC recently started to collect a new indicator, the Severe Acute Respiratory Infection (SARI) that would allow to estimate the severity of the disease or its possible change, and to provide figures for better planning acute health care. The ECDC also co-ordinates a network of laboratories (CNRL) for the early detection of any anti-viral resistance or the presence of genetic markers of a possible worsening of severity.

Aside from surveillance, ECDC also collects relevant information with web-crawling computer applications of epidemic intelligence that allowed the detection of SARS in 2003.

## Raising Biopreparedness Levels in Europe—Experts' Report

### Surveillance

Nevertheless, even if Europe appears well prepared, other important challenges remain to be met.

The management of a pandemic needs a continual adjustment of scientific assumptions, e.g. attack rates, as they can vary over time and space. For this, mathematical modelling is of particular value when there is no scientific evidence for supporting such assumptions.

Absence of stockpiling of antibiotics or ancillary supplies, identified as weaknesses in national plans, is difficult to solve. The lack of publications on influenza transmission or conflicting results from some studies are a cause for confusion, especially when trust in health authorities is not optimal. This needs more efforts in scientific research as it is the case in treatment of severe cases, e.g. immuno-globulines, monoclonal antibodies or extracorporeal circulation.

Another challenge is the control of transmission of the virus from human to animal. Prevention policies are obviously needed for agriculture workers, especially those in contact with susceptible animals.

After the transition of the pandemic virus to a seasonal virus, most probably in 2010, the impact of the pandemic will persist over years as the morbidity and mortality in young adults will probably decline slowly over time. This would engender a need to adapt vaccination policies and possibly to include additional age groups.

The most important challenge will be the unpreparedness of developing countries. Publications of the period have shown the huge death toll paid by developing countries in the 1918 Spanish flu pandemic. The management and control of this pandemic should be included in a more general development plan in primary health care

In conclusion, essentially thanks to the lessons learnt from SARS and H5N1, European countries have accelerated their preparedness in the previous five years. The response during the first months of the pandemic showed that preparedness was appropriate. Nevertheless, other challenges remain to be met. There is an important need for scientific research in domains where gaps still remain.

## Raising Biopreparedness Levels in Europe—Experts' Report

### Surveillance



Arguing that “virologists are on tap but not on top” **John Oxford**, from St Bartholomew’s and the Royal London School of Medicine and Dentistry in the United Kingdom expands on the tenuous relationship between scientific and political spheres that leads to shortfalls in preparedness and emphasises the danger of dual-use expertise.

The current outbreak of the pandemic influenza A/Capifornia/4/09 (H1N1) known throughout the world in scientific and every other circle, as ‘swine influenza’ illuminates, as if under a powerful inquisition searchlight, two sorts of scientific and political failures, albeit alongside a number of global successes.

Firstly, as regards our failures, we should have increased virus surveillance much more than we did. It is quite possible that a concerted plea from us scientists over the last ten years would have unleashed a cascade of cash to finance such a venture.

“We should have increased virus surveillance much more than we did.”

A recent example in the UK illustrates how weak the scientist is compared to the politician. A senior scientific adviser to the Home Office has been sacked because of a disagreement with Ministers. A commentator noted that scientists are expected to be on tap but never on top. In this case Professor Nutt made a public statement about the risks of cannabis. He pointed out, as others before have, that legalising the drug would be of benefit because the risks would be lower than already licensed drugs such as alcohol.

In the wide context, an astrophysicist once urged me to be more demanding both for the attention of politicians and for the wherewithal to support virus surveillance activities. He pointed out that virologists were content to receive grants of 2 million dollars, whilst a space project such as Man on Mars could receive a billion dollars.

This I feel is the strength of the SDA Biopreparedness

project: a meeting of two cultures, science and politics. Both sides learn rapidly and to mutual advantage. I remember one year in Brussels urging members of the EU to press on more rapidly, or even start preparedness for an influenza pandemic. Perhaps I was brusque in my comments. I remain unapologetic. We have at present in front of our eyes a European Nation, Ukraine, in a state of panic about a virus which for the last 9 months has been spreading around the world. Politicians there are now pulling levers much as in the old railway signalling boxes. But in the absence of firm pandemic preparation and plans, in the absence of vaccines and antiviral stockpiles, what can be done on the spot? In essence very little apart from stirring up a whole community so that people on the street start wearing masks and staying at home. I would not wish that sort of problem on any nation and yet even within the EU some citizens have to put up with this.

Politicians have not welcomed scientific pandemic recommendations in the form of a preference list. Often a ‘neutral’ list, such as vaccines, antivirals and hygiene, is preferred. A preference can be picked from the list and fellow countrymen assured that European scientific strategy was being followed. The least costly approach is hand hygiene. Hygiene is an important part of an overall strategy but by itself would leave many vulnerable citizens unprotected, compared to a contribution of vaccines, antivirals and hygiene.

We had envisioned the protective ring we had formulated for the EU, namely the pre-ordering of vaccines, as the outer ring of an Iron Age fort defence system. After all, if our European predecessors 3000 years ago could rely on three ringed safety in an iron age who are we to trump them? The second wall of defence is a stockpile of antivirals, Tami flu and Relenza. These drugs are rather difficult to synthesise and cannot just be bought at the time in large quantities. In the UK, where we must have

## Raising Biopreparedness Levels in Europe—Experts' Report

### Surveillance

seriously twisted the politicians arm the government has stockpiled antibiotics and analgesics alongside antivirals. The third wall of defence, should the invader mutate to avoid vaccine and also become drug resistant, is hand and surface hygiene. Personally I am pleased and relieved to see this simple and effective home front preventive restored to its previously elevated position. The Greek goddess 'Hygeia' would be quietly satisfied. In reality of course, all three defence zones are used concurrently. I can see them in action at present in the UK.

I do feel that with so called biological warfare (BW) we have a very different situation. Unexpectedly the danger could be from the very scientists and doctors actually working on these projects, or the counterpart biological protection, both in the EU and worldwide.

In early November 2009, we witnessed an individual in the US army turn on his companions in Fort Hood, Texas, killing 13 of them, and also saw an Afghan policeman kill five of his British trainers in Helmand Province. Most importantly we reviewed, aghast, the anthrax attack in the USA in 2001. This is the only clear example of biological warfare in action since time immemorial. There are two points to be made, firstly, the attack was significantly unsuccessful in causing human infection with only a handful of deaths in a population of 360 million. This was in the face of grams of weaponised anthrax. Secondly, a panic gripped citizens in the US thousands of miles from Washington. The country seized up for many months. But there is a most important aftermath which we are obliged to think carefully about. Who was the culprit? I suspect many would blame the so called 'Dr Death' in Iraq or even Saddam Hussein himself, but could it have been a renegade scientist participating in a US government project?

We have benefited enormously by the focus of the EU, UN, WHO, and national governments on pandemic plan-

ning. Without the investment in antiviral stockpiles and vaccines we would have been caught nastily by the emergence of the swine virus.

We now have to begin planning for the next pandemic. The gap could be quite short and more compressed than between 1957 and 1968. In fact we already have oversight on a candidate H5N1 bird influenza or even H2N2.

The Elizabethan poet John Donne put everything in place in his poem 'For whom the Bell Tolls, No Man is an Island'. Even in the 17<sup>th</sup> Century before he became a preacher at St. Pauls Cathedral near St. Bartholomews hospital, he recognised that we all live on a single planet and interacted all the time. This attitude comes to the fore with EU preparedness. Every EU nation needs once again to think carefully about these pandemic influenza and BW threats because a weakness in one nation can quickly spread to others.

#### Recommendations

1. Seriously expand virus surveillance and place extra focus on human/bird and human/wild and domestic pig interface include influenza and other respiratory and diarrhoea viruses.
2. Start planning for the second pandemic of the 21<sup>st</sup> Century with a target date of 2015.
3. Survey EU institutes with anthrax or biological warfare (BW) expertise and quantify their viruses/bacteria together with the number of scientists.
4. Increase hygiene levels throughout the EU, both on surfaces and the hand.

Increase H5N1 vaccine stockpiles and also incorporate H2N2 viruses as a second level threat.



## Raising Biopreparedness Levels in Europe—Experts' Report

### *Biosafety & biosecurity*



**Nancy Connell**, Director of the Centre for Biodefense at the University of Medicine and Dentistry of New Jersey, USA, addresses biosecurity and biosafety in laboratories across the globe.

The report of the SDA's October 2009 Roundtable on Raising Biopreparedness Levels in Europe points to the discussion's focus on three primary factors: speed of response, agility in reaction and capacity for mass effect or impact. An important emerging point is the convergent nature of man-made and natural risks, and a key aspect of adequate preparation, response and mitigation of these risks is the overlapping requirement for capacity. Laboratory capacity is a central function in both public health response and the research supporting that response. Here, I will address the topics of biosecurity and biosafety in the context of the global proliferation of biocontainment laboratories.

New biotechnology is introduced at staggering rates; dramatic progress in our understanding of immunology, neuroscience, plant genetics and bioinformatics, for example, is accompanied by novel technologies such as systems biology, nanotechnology, delivery systems and robotics<sup>1</sup>. The concurrence of these advances offer great promise in biomedicine and one hopes to eventually see their application to public health problems such as infectious disease, access to clean water, and hunger. These rapid advances in biotechnology require a marked expansion in capacity.

However, there are also serious implications in the wake of these remarkable advances in biotechnology development. For example, what perils are inherent in laboratory work with dangerous organism experiments? What is the risk of laboratory-acquired infections – transmission to community? In the academic research community: will there be nefarious application of novel technologies to the development of man-made weapons<sup>1</sup>? How will oversight be applied to this potentially dangerous work?

There are pockets or clusters of enterprise around the world, linked to both public health capacity and research enterprise. Yet there is no method of tracking the proliferation of active high level biocontainment (biosafety level 3 or 4) laboratories. A recent comprehensive estimate of BSL-4 laboratory capability estimates the following numbers: North and South America 9; Europe 11; Africa, Asia and Australia: 10. In South Asia alone, there are 27 BSL-3 labs with 6 more in planning; India has 1 BSL-4 with two in planning<sup>2</sup>. The different speeds at which regions are progressing in these areas do not necessarily correlate with the degree of safety and security regulations that are applied: these regulations should be standardized at the global level and should include operations management, personnel security, emergency response planning and adequate workforce training.

#### Endnotes

<sup>1</sup> National Research Council, *Globalization, Biosecurity, and the Future of the Life Sciences* (Washington, DC: National Academies Press, 2006),

<sup>2</sup>Gronvall, GK and Bouri, N. Biosafety laboratories. *Bio-secur Bioterror* 6:299 (2008).

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Biosafety & biosecurity*



**Thomas Binz**, Head of Biosafety at the Swiss Federal Office of Public Health covers laboratory biosafety and biosecurity, and makes recommendations for improvement in these fields.

Medical diagnostic and research laboratories may handle dangerous human pathogens in order to fulfill their essential functions for healthcare and the development of new drugs and vaccines for the cure of infectious disease. Fundamental scientific knowledge also largely depends on high quality research within medical laboratories and it should therefore be possible to be carried out without unnecessary (administrative or other) hurdles. On the other hand, it is essential to ensure that these laboratories operate safely so that the risk of worker infection or accidental release is minimized (biosafety) and that the facilities are secure to avoid unauthorized access to dangerous biological agents (biosecurity).

Laboratory biosafety, which is a relatively well established field, is defined as the application of containment principles, technologies and practices that are implemented to prevent the unintentional exposure to pathogens and toxins, or their accidental release. Laboratory biosecurity, which is currently subjected to national- and international-level debate (e.g. the EU CBRN task force report<sup>1</sup>), consists in the protection, control and accountability for valuable biological materials within laboratories, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release<sup>2</sup>.

The handling of human pathogens within laboratories requires special safety measures in order to prevent an unintentional exposure of workers or the accidental release of these microorganisms in the environment. One of the cornerstones of safe handling is the correct assessment of the risks linked to a particular microorganism and a type of activity (e.g. research or production). Therefore, many international guidance documents and national regulations define the criteria for risk assessment and the subsequent safety measures

that are needed. Risk is determined in relation to the different properties of a given microorganism such as pathogenicity, virulence and transmissibility as well as in regards to the type of the activity and the methods used. To achieve proper and adequate risk assessments, many countries have adopted legal frameworks providing the requirements for risk assessment and safety measures to be applied when working with dangerous human pathogens. In addition, a competent state authority is usually designated for the control of compliance with biosafety standards. With the advent of recombinant DNA technology, it has become possible to genetically engineer many pathogenic microorganisms like viruses and bacteria and it became necessary to define risk assessment criteria for recombinant microorganisms as well. From a legal standpoint it is important to assure that laboratories can work without unnecessary measures. The state-implemented oversight system and control measures should enhance and assure the overall biosafety within a country without hindering research progress and manufacturing capacity.

“ *The handling of human pathogens within laboratories requires special safety measures in order to prevent an unintentional exposure of workers or the accidental release of these microorganisms in the environment.* ”

The safety requirements for a given type of microorganism and activity may include physical containment measures such as air locks, filtration of outgoing air, effluent and infectious waste inactivation. Other requirements include the application of good

# Raising Biopreparedness Levels in Europe—Experts' Report

## *Biosafety & biosecurity*

microbiological practice, the use of microbiological safety cabinets and safe pipettes, bottles and culture flasks as well as the limitation of access to the laboratory and the presence of a professional biosafety adviser within the institution (e.g. biosafety officer).

In terms of biosecurity, the report of the biological subgroup of the EU CBRN Task Force proposes a number of recommendations in order to enhance the security of biological agents within Europe. These include among others the creation of a list of biological agents and toxins of special safety and security concern, awareness-raising for biosafety and biosecurity, the development of training courses as well as additional standards and procedures including the introduction of security background checks. The report also points out that work on security can only be successful if it is built on firm implementation of existing safety measures and legislation.

Whatever the future biosafety and biosecurity regulatory framework may look like, it may be essential to:

- bridge and unite the existing laboratory biosafety and -security competencies in place
- carefully evaluate the risks and benefits of additional safety and security measures in biomedical and biotechnological research and manufacturing institutions
- promote biosafety and -security training and awareness
- to identify and fill in the gaps into the existing national and international regulatory frameworks in terms of the improvement of control measures in terms of importation and exportation of biological agents

### Endnotes

<sup>1</sup>[http://www.ebsaweb.eu/ebsa\\_media/Downloads/EBSAActivities/Biosecurity\\_and\\_Biopreparedness-p-877/CBRNupdate02\\_02\\_2009-p-1180/CBRN\\_TF\\_Report\\_20\\_01\\_2009.doc](http://www.ebsaweb.eu/ebsa_media/Downloads/EBSAActivities/Biosecurity_and_Biopreparedness-p-877/CBRNupdate02_02_2009-p-1180/CBRN_TF_Report_20_01_2009.doc)

<sup>2</sup>Biorisk management, Laboratory biosecurity guidance, WHO, 2006. [http://www.who.int/csr/resources/publications/biosafety/WHO\\_CDS\\_EPR\\_2006\\_6.pdf](http://www.who.int/csr/resources/publications/biosafety/WHO_CDS_EPR_2006_6.pdf)

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Biopreparedness and cities*



**Ervigio Corral Torres**, Director of SAMUR\* Madrid, recommends steps that emergency medical services should take in order to be able to respond to catastrophic CBRN events modelled on the initiatives undertaken by SAMUR Madrid. In doing so, he provides very specific, on-the-ground preparedness advice for professionals in the field.

There has recently been a marked increase in attention towards CBRN risks. We are continuously witnessing displays by institutions of their capabilities to incorporate self-protection elements, to decontaminate, and to employ many response devices.

These capabilities are often displayed by security forces (police and army) and by fire and rescue services. In contrast, medical emergency services lag behind significantly in displaying their capabilities.

However, how many cities in Europe could say with confidence that they are prepared to face an industrial accident or a terrorist attack of a CBRN nature resulting in 100 to 150 severely affected victims? How many of these cities could have a contingent of 100 fire-fighters and 40 to 50 ambulances (with doctors and nurses on board a third of them to administer advanced vital care) on site all in less than 15 minutes? Or put more simply, how many cities are capable of reacting with adequate results to a CBRN event?

We at SAMUR (Servicio de Asistencia Municipal de Urgencia y Rescate) do not have the answer but our accumulated experience in SAMUR Madrid informs us that there is a simple solution: converting emergency services into catastrophe and emergency services.

The majority of emergency services from major cities are structured to assist, according to their capacity, an important number of individual interventions on a daily basis. Budgets are limited and it would be very difficult for the responsible manager to stretch the service's capabilities to cope with situations involving multiple victims. We must think of new ways to structure organisations in ways that are economically sustainable and operationally efficient.

“ How many cities are capable of reacting with adequate results to a CBRN event? ”

Relying on my previous experience, I outline below the steps recommended by SAMUR to emergency health services that wish to “re-invent” themselves into services capable of providing an adequate response to CBRN incidents.

Mobile catastrophe vehicles should be utilized during daily assistance operations.

These resources' (specifically vehicles) operational effectiveness will suffer during an actual CBRN catastrophe if these vehicles and resources are not frequently used. It is necessary for the emergency services to have logistical support vehicles responding to minor incidents in their day to day operational protocol. SAMUR has two such vehicles circulating permanently in Madrid. These vehicles constitute the first response line in accidents involving multiple victims, including CBRN incidents. These vehicles are equipped with a CBN decontamination kit to attend to patients and emergency staff intervening in the incident. They are also equipped with protective clothing with different permeability and penetration levels, as well as stand-alone air supporting equipment, sacs with positive pressure for contaminated patients and chemical and biological detectors (war gases, CO, NH<sub>3</sub>, SH<sub>2</sub>) and alpha, beta and gamma radiation. All these make it possible to respond in less than 10 minutes to the accident scene.

# Raising Biopreparedness Levels in Europe—Experts' Report

## *Biopreparedness and cities*

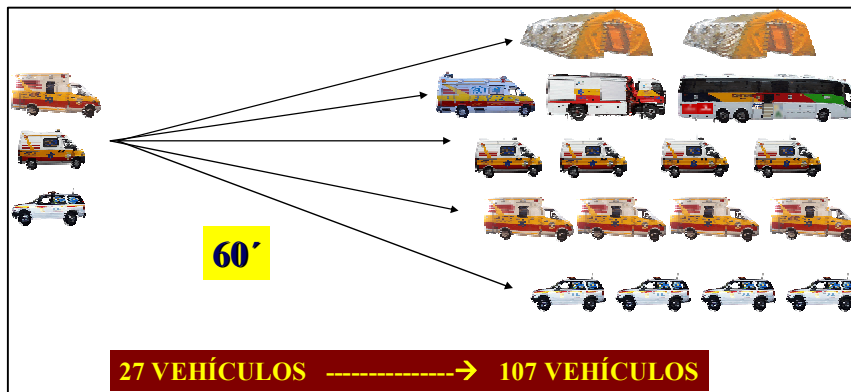


Figure 1 - Civilian Volunteers Corps: a force multiplier

The system must be operational 24h/day, 365 days/year and staffed with trained professionals for special incidents.

Besides the staff members of the above-mentioned vehicles, a great number of the regular operational staff is trained in handling this sort of incident. Thus, in the event of a biological incident, there will be at least 8 to 10 professionals who will provide care to the victims, establish protection areas and measures for the intervening staff and coordinate with the other responding services.

The training for catastrophe management must be specific, continuous and should reach all staff members from the service.

All service staff members except for specialised personnel should have the necessary knowledge to handle such incidents. Training must be given on an on-going basis so that all staff members re-familiarize themselves with the use of self protective material at least every six months. All staff members must wear individual basic protection equipment when responding to CBRN incidents.

The official emergency service must integrate a volunteer civilian force:

This is perhaps one of the main measures that each regional government must implement. It is necessary to habilitate the response capability which I mentioned before. This is one reason why in Madrid, SAMUR integrated the City Civil Protection into the SAMUR Civil Protection. In exchange, the management, maintenance and resources of SAMUR's Volunteers Corps were significantly enhanced by the addition of 2,000 volunteers. These volunteers undergo the same training as the service's professional staff, work with the same material resources and operate under the service's procedures.

One example of the effectiveness of a volunteer civilian force is illustrated by the fact that during the terrorist attacks in Madrid on March 11, 2003, SAMUR was able to quadruple its forces in only 60 minutes thanks to the Volunteers Corps (Figure 1).

Drills must be performed together with other institutions at least once a month. In this way the coordination and training among all intervening services will be continuously improved. It is important that each service knows its areas of responsibility as well as those of the other relevant services. All intervening staff must speak the same operative language (common procedures known by all) and should be able to utilize the same rescue and self-protection devices.

It is necessary to have reference hospitals readily prepared to admit victims. Today, few hospitals are prepared to admit these kinds of victims while deploying the necessary self-protective measures. These hospitals must actively participate in drills with the other participating services.

Over the last two years, SAMUR has answered 4 biological incident alarms (at the embassies of USA, UK and Ukraine) which led SAMUR to deploy its operational resources and fully carry out its procedures on biological risks in coordination with the police and fire-fighters. This coordinated and rehearsed-for effort succeeded in decontaminating all affected subjects and transferring them to hospitals.

Today in Madrid, thanks to all of these actions, SAMUR Civil Protection is capable of providing a response in 3 phases which allows setting up 6 biological decontamination lines with a total capacity of decontaminating and transferring 180 patients in one hour.

## Raising Biopreparedness Levels in Europe—Experts' Report

### *Biopreparedness and cities*



**Isaac Weisfuse**, Deputy Health Commissioner in the New York City Department of Health and Mental Hygiene, examines inherent vulnerabilities and challenges posed by major urban centres in prevention, detection and response modelled on his experience in NYC.

Throughout history, cities have been vulnerable to naturally occurring outbreaks of infectious diseases. From the epidemiologic perspective, cities contain all the right 'ingredients' for outbreaks: large numbers of susceptible people, overcrowded conditions causing close personal contact, behaviors that may promote transmission (such as drug use, unprotected sex), concentrations of vulnerable populations (such as the elderly or those who are immuno-compromised) and continued introduction of new infections through the rapid global mobility of populations. Cities are also bioterrorism targets, and the same transmission dynamics that facilitate spread of naturally occurring bio-agents can facilitate intentionally released bio-agents that spread from person-to-person.

*“From the epidemiologic perspective, cities contain all the right ‘ingredients’ for outbreaks.”*

Not only are cities susceptible to large outbreaks, but the successful detection, prevention, preparedness and response to outbreaks of infectious diseases are heavily influenced by urban characteristics. The above characteristics as well as population diversity, coordination challenges, and the presence of international ports and mass transit systems, all more likely in cities, both complicate and in turn may be critical for a successful outbreak response. With the world in the midst of a pandemic due to 2009 H1N1, development of specific strategies to mitigate its effect on urban populations is urgent. Examples of urban public health preparedness challenges are highlighted in the next several paragraphs, as well as a proposal for cross city coordination.

Communication is critical to any emergency response, and may be complex in cities with large immigrant groups who may not be fluent in the native language and may access news through different outlets. In addition to the twenty three official languages, other common languages in the EU include Arabic, Turkish, Hindi, Urdu, Bengali, Punjabi and Chinese. European cities, like New York City (where it is estimated that 170 languages are spoken), need to develop rapid translational abilities, forge relationships with alternative news outlets used by immigrants, and be aware of cultural sensitivities in responding to emergencies and their aftermath. As with all emergency preparedness these capabilities must be created in advance in order to be effective during an incident.

Contact tracing - the ability to identify the contacts of persons known to have the disease in question during their infectious time period, is an important public health tool. It may allow a better understanding of who is at risk, as well as who requires prophylaxis or treatment, and may help stop the cycle of disease spread and quench the outbreak. Contact tracing starts with an interview of affected individuals to elicit names and locating information on their contacts. These persons are then contacted, and if they show signs or symptoms of disease, contact tracing is done again, and so on. Urban environments characterized by large numbers of anonymous contacts, such as may occur on mass transit systems, may present particularly challenging environments to perform contact tracing, therefore compromising this important tool.

Cities are attractive targets for bioterrorism attacks. Imagine a situation where there are dozens of sick persons, diagnosed with anthrax, who do not have any obvious relationship to each other. To save the maximum number of lives, rapid prophylaxis for those most at risk must happen. Typically public health

# Raising Biopreparedness Levels in Europe—Experts' Report

## *Biopreparedness and cities*

characterizes risk by person, place and time. All of these may be difficult to define in an urban setting, leading to a 'default' response of mass prophylaxis for the entire population including commuters and tourists, resulting in tremendous social and economic disruption. Worse yet, prophylaxis of those most in danger may be compromised because this default strategy will inevitably mix those at different spectrums of risk (including those at no risk), slowing down the response. Even though deployment of biodetection devices (as has occurred in U.S. cities including New York) would help answer the time question, leading to more timely interventions, it may not substantially reduce the numbers of persons to prioritize for prophylaxis.

*“Communication is critical to any emergency response, and may be complex in cities with large immigrant groups.”*

The operational challenges of providing large scale prophylaxis in cities are massive. The rapid creation of points of distribution sites, (PODs), where prophylaxis would be distributed has been a major focus of emergency preparedness in the United States, and many of these sites are currently being used for vaccination with 2009 H1N1 vaccine. Particular challenges for PODs in urban settings may include diversity of languages, the need to accommodate persons with disabilities, concerns about security, overcrowding of facilities, and difficulties in supplying and staffing the facilities. The large numbers of PODs required for a city requires coordination amongst many governmental and non governmental entities, as well as the need to rapidly identify and train POD staff.

The influenza pandemic provides further demonstration of urban challenges in response. The acute need for

coordination with many organizations such as hospitals, clinics, community physicians, schools, colleges and universities, police, emergency management, unions, as well as coordination with all levels of political leadership, may be overwhelming. Hospital overcrowding, especially emergency departments may compromise care for all patients due to lack of adequate staffing and facilities, and requires innovative plans to accommodate those seeking treatment or evaluation. Although the current pandemic is not severe, issues such as infection control and mass transit systems, screening at large airports, or providing services for vulnerable or quarantined populations are more difficult to resolve in cities.

How can we better meet these challenges? For a start we need to foster a dialogue among cities struggling with these problems. There are no mechanism for sharing of best practices across cities. Dialogue amongst nations occurs, and is to be encouraged, but frequently does not get to the level of detail useful to cities. Sharing best practices would promote efficiencies in public health preparedness when funding may be shrinking instead of expanding. In all probability non governmental support either through foundations, corporations, or other entities will be needed to create and potentially host an organization to facilitate this dialogue. Obtaining support and resources for this coalition may be difficult in the current economic climate, but even incremental improvements in response could save thousands of lives, and mitigate economic and social disruption.

### Recommendations

- Increase the efficiency and efficacy of public health emergency preparedness through greater collaboration amongst large urban centers.
- Find support from non governmental organizations to host or contribute to promoting this dialogue.

## Raising Biopreparedness Levels in Europe—Experts' Report Towards an all-hazards approach?



**John-Erik Stig Hansen**, Director of Denmark's Centre for Biosecurity and Biopreparedness, underlines the importance of recognising the differences between intentional versus natural biohazards, especially pertaining to prevention efforts.

If an attack with a biological weapon occurred in one or more places anywhere in the European Union, the consequences could be grave. The immediate effects in terms of direct casualties could be very significant even if the agent used did not initiate an epidemic, and the indirect effects in terms of economic and social disturbances would quickly have an impact throughout the Union and affect all Member States. These indirect consequences would be quite different from what would ensue following a natural disease outbreak. Depending on the identity of the perpetrating organisation, political, ethnic or religious groups or certain segments of the European population could be threatened by public action and civil unrest. Indeed, a biological attack anywhere in the world would to some extent have negative consequences for all nations. It is therefore in the national security interest of every nation that biological attacks do not occur anywhere at all, and if an attack should occur it is in the national security interest of every nation to make sure that the preparedness and response system in the nation under attack is sufficient to contain both the direct and the indirect consequences as much as possible.

There is currently a tendency to focus on the commonalities between the preparedness systems necessary to counter biological hazards regardless of their origin, whether natural or man-made. This is obviously a sound strategy when optimising the resources allocated to certain aspects of mitigation or medical countermeasures like surge capacity in hospitals or stockpiling of antibiotics. However, it is very dangerous to neglect the specific nature of each type of hazard as prevention of intentional bioattacks requires an entirely different strategy than prevention of natural outbreaks of infectious diseases.

The first step in preventing or preparing for an attack is to have realistic assessments of the actual threats. A key difficulty is that in this area the threat not only contains

technical and material parameters like the biological agents, their delivery devices and the medical countermeasures available, but equally important also contains the issue of enemy intentions.

*“There is currently a tendency to focus on the commonalities between the preparedness systems necessary to counter biological hazards regardless of their origin, whether natural or man-made.. However, it is very dangerous to neglect the specific nature of each type of hazard.”*

While the major parts of the public health response to biological incidents are the same whether they are of intentional, accidental or natural origin, it is important to realise that preventive efforts are very different and require completely different interventions by different actors. While the risk of a natural outbreak of disease can be assessed as the product of probability and consequence, the threat of a biological attack requires an assessment also of enemy intention. The threat therefore is best described in a semi-quantitative manner as the product of intention and risk, where risk in this context is a product of feasibility of attack and its consequences. This presents other possibilities for intervention, e.g. reducing the availability of dual-use components through implementation of biosecurity measures. It is also evident that while the risk-parameters of a given hazard are technical and quantifiable this is not the case with the intention part of a threat assessment. Enemy intentions and the utility of a biological attack are not easy to characterise although this is critical to the entire preparedness system against bioterrorism. If nobody has any intention of conducting a



## Raising Biopreparedness Levels in Europe—Experts' Report Towards an all-hazards approach?

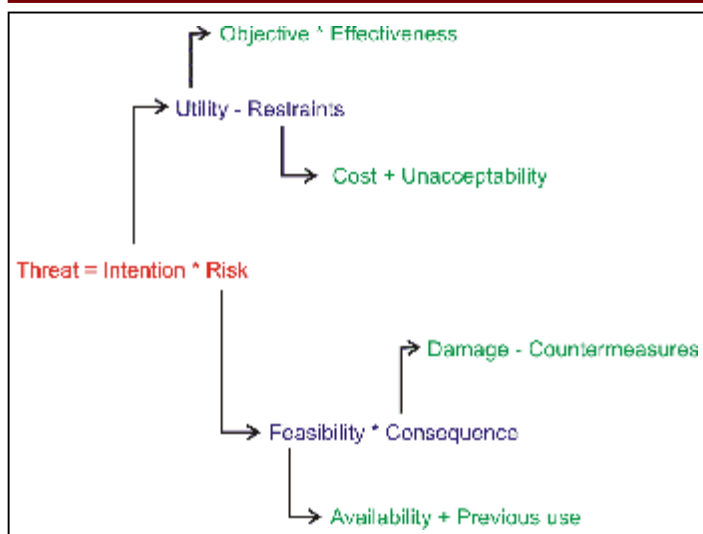


Figure 1. Threat assessment algorithm of the Centre for Biosecurity and Biopreparedness, Denmark. The algorithm subdivides the parameters into categories that may be assessed or computed individually. This algorithm differs from risk assessment of natural hazards, where human intention is absent and the risk is a product of probability and consequence.

specific biological campaign e.g. because it does not achieve any worthwhile purposes, then there is no reason to waste resources on public health preparedness and stockpiling of medical countermeasures against that specific threat. While assessment of enemy intentions and the utility of biological weapons may present a particularly difficult challenge, this dimension also offers an additional way of reducing the threat, e.g. by increasing the perceived public relations cost of an attack, by enhancing the ethical and religious taboos against biological weapons or by other efforts in the socio-political domain. A critical factor for this strategy to have any impact is to have a fairly accurate understanding of the potential enemies who might resort to biological weapons. Importantly, such an understanding requires a multidisciplinary task force with contributions from very diverse fields – microbiology, political science, sociology, military etc. – and additionally it will continuously need updating.

“ While the major parts of the public health response to biological incidents are the same, it is important to realise that preventive efforts are very different and require completely different interventions by different actors. ”

Like risk assessment for natural hazards, threat assessment for man-made hazards is not static. New technologies continuously change the possibilities for weapons production and deployment, and political, economic, ethnic and religious factors constantly make the security situation highly fluid and difficult to predict. At the same time, specific countermeasures, e.g. vaccines, may take a long time to develop, and threat projection capabilities that reach several years into the future are therefore required if specific countermeasures are to be developed in time to be in place when needed.

Such capabilities for assessment of threats and development of countermeasures exceed the resources of all but the largest nations. At the same time the security of all depends to some extent on the prevention and preparedness capacity of even the smallest nation. This is especially true when dealing with the threat from biological weapons as these may be developed within a relatively primitive infrastructure and deployed from even the poorest state. It is therefore not sufficient to have a preparedness system in your own country that may be able to contain an outbreak before it becomes an epidemic if your neighbouring country has no containment capacity to contain an attack or biosecurity measures to safeguard against clandestine procurement or even weapons production.

For the European Union this means that the motivation for a concerted effort to establish a common understanding of the biological security threat, its specific characteristics and the possibilities of intervention should be of the highest order. The use of biological weapons against European targets constitutes a grave threat with potential to disrupt societies and foment civil unrest. The need to establish a common and comprehensive approach to threat reduction initiatives and response capabilities is therefore very real and completely independent of the need to maintain a public health capacity to respond to natural disease outbreaks.

### Specific recommendations:

- Develop a common threat assessment methodology (Europol?)
- Establish a European forum for national biosecurity agencies (Council?)
- Coordinate role specialisation of EU Member State response capabilities (Commission?)

## Raising Biopreparedness Levels in Europe—Experts' Report *Towards an all-hazards approach?*



Iris Hunger's contribution looks at the increasingly close and uneasy relationship between the security and public health sectors and potential problems arising from the securitization of the health sector.

*Iris Hunger, PhD, is Head of the Research Group for Biological Arms Control, Weizsäcker Centre for Science and Peace Research, University of Hamburg, Hamburg, Germany.*

The SDA's initiative on biopreparedness looks at natural and human-made disease outbreaks simultaneously. This fits well with a recent trend of bringing health and security issues closer together. For a long time, public health had little to do with security. However it is now obvious that internal and external security and public health have become interconnected.

### ***Insecurity as a risk to public health***

Firstly, public health can be threatened by a lack of security. Through war and terror, humans are killed or physically and mentally injured. During violent conflicts, local health structures are often destroyed. Economic collapse can lead to food shortages and even famine. Refugees can contribute to the propagation of disease, in particular if they have to live in crowded refugee camps. Less obvious is the connection between border security and health: smuggling of illegal drugs, weapons, other goods (e.g. cigarettes) and people (e.g. for forced prostitution) has an effect on a nation's health in the form of drug addiction, gunshot wounds, lung cancer and sexually transmitted diseases.

Maintaining public health has two main driving forces. There is, on the one hand, a long tradition of understanding health as a human right. In this tradition, promoting health globally is a moral imperative to allow every human being the full expression of his or her abilities. Accordingly, the existing unequal distribution of the disease burden is unacceptable, both between groups of people within states and between states<sup>1</sup>. In addition to this human rights tradition, an understanding of health as an economic resource has emerged. According to this understanding, investment in global health is necessary in order to allow economic and social development, thereby guaranteeing the functioning of states<sup>2</sup>.

### ***Lack of public health as a risk to security***

Secondly, security can be threatened by a lack of public health. Infectious diseases – in particular the HIV/AIDS pandemic – are increasingly described not just as a public health problem but also as a threat to peace and security. The spreading of disease limits the military and economic power of a country. It can undermine internal and external security, e.g. if in case of an influenza pandemic police forces are not available in sufficient numbers, or if a poor health status of troops limits the capabilities of national militaries or UN peace keeping forces<sup>3</sup>. The U.S. State Department is convinced that a high disease burden contributes to political polarization, social fragmentation and economic decline, thereby slowing economic development and democratisation. Experts disagree on whether improved public health can stabilise states, as assumed by the WHO's "peace through health" initiative of 2000, and on whether the weakening of public health systems can destabilise states.

The security effects of diseases are particularly well studied in the case of HIV/AIDS. On the one hand, the spread of this disease limits the military capabilities of states and UN troops. On the other hand, it contributes to the destabilization of states and regions. HIV/AIDS kills the economically active and reproductive part of the population. This undermines governmental capabilities, destroys social structures, leads to impoverishment, and can play a role in regional or even international destabilization.

There is an additional development that establishes a link between health and security. Until late in the last

## Raising Biopreparedness Levels in Europe—Experts' Report *Towards an all-hazards approach?*

century security was something that was exclusively threatened by militaries and was firmly in the realm of the state. This changed in the middle of the 1990s with the emergence of the concept of “human security”. The human security concept equates security with people instead of territories and with development instead of arms. This broadened meaning of security brought health and security in contact, independent of military aspects.

### ***Problematic aspects of linking public health and bioterrorism preparedness***

All of the connections between health and security described above are real-life issues and relate to naturally occurring diseases. Since the middle of the 1990s, however, the threat to public health by human-made outbreaks of disease has received increasing attention. This bioweapons threat is largely hypothetical. Intentional disease outbreaks have been extremely rare; there have been less than a handful of examples over the last 60 years.

Nevertheless, large amounts of money have been made available to defend against the bioterrorism threat. While early on this money went largely into specific anti-terrorism projects, increasingly it is used to build public health infrastructure in general. Many, particularly those at the receiving end, argue that funds' origin and intended allocation is secondary: as long as public health infrastructure is built, it is money well spent. There are a growing number of voices, however, that express uneasiness about mixing security and public health in such a way. Is this uneasiness justified? Are there aspects that should make us wary to forego the traditional separation between the two?

In my opinion, there are two such problematic aspects. First, there is evidence from the past that more money for biodefence does not automatically lead to stronger public health systems. Second, the Copenhagen School's securitisation concept has recently given rise to critical reflection of the effects of securitising non-military spheres of society such as health. In contrast to popular belief, there is a price attached to funding public health improvement out of defence budgets. There is the risk of redirection of funding. The focus of security-oriented funding for public health improvement has been mostly on highly dangerous infectious diseases. Issues of high importance under a public health point of view such as

primary health care, prevention and health promotion, chronic diseases and every-day infectious diseases such as tuberculosis or HIV/AIDS are not receiving attention. A worrying result of this focus on highly dangerous infectious diseases is an increase in work on relevant agents, which increases the number of access points to such agents for terrorists, the number of people with critical dual use knowledge, and last but not least the likelihood of accidents.

There is also the risk of a change in research culture. Traditionally, health research has been transparent, open and international. Recently, we have seen an increase in secret or semi-secret research, restrictions on the open publication of research results, and access restrictions to certain research activities for selected persons, e.g. scientists from particular countries. Life science research will suffer, if it becomes more closed, due to a decreased effectiveness of peer-review and less collaboration.

When considering the level of biopreparedness in Europe and how to raise it, I would be happy to see the experts involved consider the following two recommendations:

### **Strengthening generic public health measures globally should be a priority.**

Given that the nature of the next disease outbreak – natural or not – is almost always unknown, strengthening generic public health response mechanisms, prevention programmes, and disease surveillance systems should be the preferred option for improving biopreparedness. To date, there is no indication that terrorists would be able – even if they were willing – to use agents for bioterrorism attacks that substantially differ from natural health threats. There is an argument to be made that worldwide public health improvements would be beneficial not just in its own right, but for bioterrorism preparedness as well.

### **Strengthening public health systems should be funded out of health budgets, not defence budgets.**

Given the restrictions that are often attached to defence research, the public health infrastructure should, as a principle, not depend on defence funding. In the health

## Raising Biopreparedness Levels in Europe—Experts' Report *Towards an all-hazards approach?*

field, it is particularly important to work transparently, to use the power of peer-review to its full potential, to make expertise from diverse regions of the world available for research, and to ease the flow of information as much as possible. These conditions are not part of the tradition in security circles.

### Endnotes

<sup>1</sup> The average life expectancy of people in Somalia and Japan differs by 40 years. The mortality of children below the age of 15 accounts for 46 per cent of all deaths in Africa, compared to just one per cent in Western states. In Germany, women in the lower income groups are three times more likely to die from heart attack than women in higher income groups.

<sup>2</sup> Global epidemics carry high costs, both financially and socially. The WHO estimates that a global influenza pandemic would cost about 800 billion USD, excluding costs of a global recession.

<sup>3</sup> Similar concerns exist in companies; companies have, e.g., developed influenza pandemic preparedness plans.

## Raising Biopreparedness Levels in Europe—Experts' Report Towards an all-hazards approach?



Andreas Wenger and Sergio Bonin argue for a comprehensive approach towards biological risks, warning that treating pandemics and bioterrorism separately will lead to competition for scarce resources between involved sectors and the securitisation of health sector.

*Andreas Wenger is professor of international security policy and director of the Center for Security Studies at ETH Zurich. Sergio Bonin heads a project on emerging biotechnology risks at the United Nations Interregional Crime and Justice Research Institute (UNICRI) and formerly served as biodefence researcher at the Center for Security Studies.*

The menace of diseases caused by naturally or deliberately released viruses, bacteria, or toxins poses a serious challenge to institutions and agencies at the international, regional, national, and local levels. It confronts states with a multitude of complex issues in domestic and security policy as well as in foreign affairs. Most of these have a multidisciplinary character affecting a wide range of distinct sectors: public health, civil protection and emergency management, national security, military defence and research, civilian research, the national economy, animal health, and environmental protection.

The challenge is an old one that societies over the centuries have learned to deal with. However, three developments of our age add a new dimension to the risks from biological hazards: the increasing mobility of humans, animals, and goods due to globalization; rapid progress in the life sciences; as well as the intensification of global terrorism and extremists' evident interest in acquiring biological weapons. One of the main challenges to the comprehensive management of biological incidents lies in the varied sources of biological risk, from state and terrorist attacks to natural outbreaks. The great level of uncertainty, especially concerning the terrorist dimension of the biological threat, accounts for the differing and ambiguous threat perceptions and assessments among policymakers and experts.

In formulating strategies for defence against biological risks, most states so far pursue a variety of approaches depending on the hazard. The three sources of the threat, which affect previously unrelated domains – namely the public health sector and the national security apparatus – may cause competition for the allocation of scarce resources among uneven stakeholders and lead

to a potentially problematic integration of health issues into national security considerations. A one-sided and heavily terror-focused national biodefence approach can have unintended side-effects and may lead to questionable political prioritization. Expertise and funding are provided for national security purposes, at the expense of the health sector and research into natural infectious diseases and their respective vaccines. In addition, massive buildups of biodefence programs increase the risk of transfers of expertise and/or material from high-security laboratories, as evidenced by the originator of the 2001 anthrax-letter incidents in the US.

“An “all-hazards” approach would not only be more cost-effective but would also provide a greater degree of political and economical sustainability.”

An “all-hazards” approach for a comprehensive protection of the population against biological risks would not only be more cost-effective but would also provide a greater degree of political and economical sustainability. An inclusive understanding of the problem makes it easier to focus on synergies as opposed to trade-offs between partners and sectors. Apart from the activities of the intelligence services and certain police and military responsibilities, most of the precautionary measures and resources are intended as protection against deliberate and naturally occurring releases of biological pathogens. This is especially true for the health sector, in which a robust public health and surveillance infrastructure as well as flexible medical countermeasures contribute to prepare for both.

## Raising Biopreparedness Levels in Europe—Experts' Report Towards an all-hazards approach?

The main difference of the two approaches is one of focus. While bioterrorism preparedness is based on an anticipatory strategy that focuses on the specific threat of a terror attack involving already identified biological weapons agents, the general model of infectious disease preparedness is designed to focus not on a specified threat, but on the capability to respond to a variety of unanticipated virulent infectious diseases. This amounts to a strategy of resilience. These differences in focus have widespread implications for the implementation of readiness and response measures, especially as regards the prioritization of agencies, the resource allocation between the public health and security sectors, the emphasis placed on the different first responders, and the relationship between national and local responsibilities.

The comprehensive management of biological risks poses enormous challenges – from threat analysis to prevention, preparedness, surveillance and detection, and response and recovery – to public, private, and international actors at all levels of politics (local, national, international) in terms of coordination, cooperation and communication. Biosecurity cannot be provided without active cooperation between states, businesses, and academia, since much of the required know-how and material resides in the private sector. Accordingly, flexible knowledge-networks involving state and private actors are key factors in managing biological risks. Primary responsibility for building and structuring these networks, and thus for providing biosecurity, remains with the state actors and international organizations like the WHO, the EU or NATO.

On the policy level, states and international organisations are required to outline the strategic direction of the emergency preparation and response and have at least four key functions:

*Strategic policy formulation:* Based on an integrated conception of biological risks, a broad policy for protecting society must be formulated. Following a comprehensive risk analysis that takes into account both bioterrorism scenarios and challenges arising from natural pandemics, government agencies and international organisations provide the political decision-makers with an integrated assessment of biological

risks. This comprehensive risk assessment is the basis for distributing responsibilities and resources, with special attention being given to effective exploitation of the synergy potential between protective measures in the various areas as well as between national and international efforts.

*National regulation:* A comprehensive protection must be regulated by the state and supported by coordination efforts at the international level. Besides implementing international obligations on the level of national legislation, such regulation would also favor the development and enforcement of safety and security standards in laboratories and dual-use research activities and would foster cooperation between business and academia in formulating professional codes of conduct. Furthermore, an effective export control and registration system should be established that would serve to monitor the transfer and handling of relevant hazardous materials.

*Early warning and crisis management:* The interfaces between early warning and crisis management structures in the security and health sectors are subject to particularly serious challenges in terms of coordination and communication. Transparency and rapid information exchange, from the local to the regional, national and even international levels, are preconditions for efficient crisis management. Roles and responsibilities must be clearly delegated. All of these steps require the establishment of coordination and communication platforms as well as specialized task forces at the national and international levels.

*Banning B-weapons under international law:* The Biological and Toxin Weapons Convention (BTWC) should be strengthened and further developed in the direction of a legally binding protocol. This would urgently require the establishment of a verification mechanism and continuous adaptation of the convention to scientific and technological advances.

# Raising Biopreparedness Levels in Europe—Experts' Report

## Analysis



**Russell Price is Chairman of the Continuity Forum.**

### *Preparing or Politics?*

#### ***Proper preparation can prevent poor performance***

Can the politics and the science surrounding bio-threats ever be separated and progress made? This is the important question that persisted, following the SDA Bio-preparedness debate held at the Solvay in Brussels.

A range of thoughtful, serious experts came together and shared their views on the level of the threats faced, and the measures in place and being planned to help combat any bio-threat events.

The consensus of opinion from the report contributors and conference speakers made it crystal clear that biological threats were indeed very real from natural and also manmade sources. Although there was some divergence of opinion on the likely risks of a biological attack, it was interesting to note that such differences were focused more on the impact and type of attack, rather than its inherent probability.

What also became evident was that there was a disparity in interpretations, focus, even understanding of the essential factors that need to be addressed. Consistent references were made on the need for more research, more surveillance, better resources and particularly better communication and co-operation, at all levels from the local through to the global and particularly between government agencies and those who would be part of the 'response' chain.

In the expert submissions contained in this report, there is considerable commentary and recommendation for improvements and advances that can help; it was clear at the conference debate that a sense of frustration exists within the most expert of areas concerning the shortfalls of the current levels of preparedness.

If one was to summarise the impression created not just of member states and general EU planning but of global preparedness, it would have to be said that even through the rosier of glasses it appears disjointed and partial at best; at worst confused and short-sighted.

Our experience at the Continuity Forum is that organisations and institutions seem to have a strong tendency to trivialise risks, even denying they exist until such time as they occur. The attacks in London and Madrid, 9/11 and a host of other atrocities show the commitment of terrorists to attack our communities as viciously as possible. Is it so unthinkable that these groups would use a biological agent if they could?

#### ***Are these real threats?***

In the last century, there were three pandemics that killed tens of millions, with Spanish Flu killing many more than the trenches of the Great War. In a world with four times the population compared to 1918, and with that community now thoroughly integrated and intermingling in ways undreamt of ninety years ago, is it so unlikely that a virus will appear, spread and kill millions?

The evidence is that whilst catastrophic scenarios are not totally certain, they are far more than just remote statistical possibilities. However, across the media,

# Raising Biopreparedness Levels in Europe—Experts' Report

## Analysis

opinions and the message seems to swing from hype to hyperbole, affecting the ability to have a reasoned debate and engage on the issues sensibly with both policy makers and the public.

An examination of the history of recent major events shows that whilst each was foreseen by some, the majority were not considered a 'serious' risk until such time as it happened. The ensuing public enquiries have almost invariably found that numerous opportunities to avoid or mitigate the risks were either missed or more likely not taken. This has been seen time after time and most often it's not that the threats were not recognised or identified by experts. Rather the risks were not taken seriously enough or other perceived 'priorities' took precedence over them for those with the capability, authority, resources and indeed the responsibility to act.

A considerable part of the problem relates to the inherent uncertainty in dealing with biological threats. It is in the very nature of a virus to change, constantly altering its makeup as it replicates. Each change brings with it the potential to become more or less virulent, increasing or decreasing the impact on us all at each iteration.

Already the H1N1 virus, usually described as mild in the media, has killed more than the 9/11, Madrid and London terrorist attacks combined, and experts agree that we are still in the early stages of the spread of this virus. Yet within a few months of outbreak, there was an almost palpable sense of relief from the world's leading virologists that we were dealing with H1N1 and not the far more deadly H5N1 virus.

This sense of relief, along with the message that came from the media and the reassurances from governments, seemed to trigger a twisting of public perception, trivialising the risks and the impact of this event.

### ***Is this justified?***

The H1N1 outbreak may well turn out to be a blessing in disguise, offering a warning shot of the difficulties and the general lack of capability across our organisations, businesses and societies to respond and cope with this type of health threat.

To illustrate the point it is useful to look at some background, taking experience that translates to the current situation and looking at some of the factors that a pandemic raises.

### ***Understanding the system***

In thinking of pandemic threats, we first should understand that there appears to be a very different reaction from people generally to matters of health compared to, say, terrorism or accidents. The human consciousness seems to far more readily accept the loss of life through illness, and there appears to be a greater tolerance to, or acceptance of, death when it is caused by health conditions, either in the individual or the community. This is not minimising the personal sense of loss or the follow on impact on the lives of the families involved, but as societies, a sudden or violent loss of life has a much greater impact on the national and even international zeitgeist, than the usually more disguised and significantly greater loss of life from healthcare issues. This is a complicated area and one that has a huge number of political and social considerations involved, all combining to create a framework that affects the judgements made by our politicians and media.

Most countries have healthcare capability to a greater or lesser extent embedded in their national infrastructures. There is a huge amount of money invested in this area, delivering care, and clearly value must be sought. This regularly entails balancing factors of treatment versus cost, and metering capability against capacity. The reality is also that countries are obliged to develop their healthcare systems to match the social and economic situation; as a result there are limits. One of these limits is capacity.

Capacity is a vital function when it comes to management or mitigation in a pandemic situation. It covers a number of areas such as medicines, professional care staff, space and resources, all of which will come under pressure as demand surges during a pandemic. During the current H1N1 outbreak, with relatively few infections and comparatively mild symptoms, we are seeing national healthcare systems coming under considerable strain, with intensive care resources being challenged by the numbers requiring them.



# Raising Biopreparedness Levels in Europe—Experts' Report

## Analysis

Vaccine and medicine availability is a vital consideration, especially bearing in mind the rapidity of spread we have had so clearly demonstrated by H1N1. Production takes time, and the development of an effective vaccine cannot be guaranteed to be available when needed. Technical factors then mean that even once vaccines become available, they have to be manufactured in vast quantities. They then have to be distributed and administered, again a mammoth logistical exercise that requires access to sufficient staff and syringes to cope. This connected chain is an essential component in an effective response, and one that has considerable challenges.

At all stages, starting with the primary research and surveillance levels, through testing and approval, to production and follow up, solid cooperation and clarity between the drugs companies and governments needs to be embedded, but these are areas where politics and business can collide. The investment required by individual companies can be huge, but offers no certainty of success. Government needs the output from drugs companies to respond to outbreaks quickly, yet it appears it often lacks the capability or commitment to support this need, with some consideration of the costs to the companies involved. The result is that the stockpiles, often referred to as key to the response, aren't actually widely enough available when, and importantly where, they are really needed.

Compounding this problem is the capability of the healthcare infrastructure to quickly reconfigure itself to cope with surge demand resulting from a biohazard emerging forcibly. Many of the usual operations of the healthcare sector would have to be substantially reduced or even stopped, creating other pressures that cascade out into many of the other supporting structures, both in the social care environment and more widely in the community.

From the experience we have of working within this space over the past few years, we can see that whilst some limited progress has been made, generally the planning and its depth tends to be limited internationally. Few healthcare bodies have the resources, and in many cases lack the capability, to really develop the flexibility needed. Since March 2009, a huge amount of work has been undertaken to prepare for the effects of a pandemic, but this is missing the point.

The threat of a pandemic has been real and the subject of extensive thinking for the last seven to eight years. Governments have reassured us that plans are in place, initially focused on H5N1, to cope, yet when the threat actually emerges the cracks are clearly there to be seen.

International and national strategic planning has little effect, other than politically, if the tactical capability is lacking - this appears to be very much the case across Europe and beyond.

The recent financial crisis has cost the world billions and affected most of us; however no immediate threat to life existed. Trillions of dollars have been spent supporting the international financial system that needed help, yet a threat to millions of lives around the world is struggling to muster the resources needed to protect us. Just a small percentage of the support given the financial sector would transform capability and earn the respect and thanks of a far larger part of the global community.

### *Connecting the planning*

Over the past decade a new management discipline has entered the world of organisational management, Business Continuity Management (BCM). It has arrived as the result of the distilled experience of a number of knowledge pools and enables organisations to cope during a crisis. BCM has had a rapid rise up the corporate and legislative agenda as more of its value is realised and the more our organisations become interlinked and entwined. The process is relatively straightforward and is geared to help organisations work as normally as possible while their operations are being disrupted.

A vital lesson that comes from the world of BCM is just how interdependent systems and organisations are; one failure can quickly cause another in an apparently unconnected area. Further, BCM forcibly illustrates through many examples that for risks and their consequences to be effectively managed organisations have to thoroughly assess all the key steps in procedures processes and activities if plans are to deliver the desired resilience.

One key learning is that organisation plans have to be

# Raising Biopreparedness Levels in Europe—Experts' Report

## Analysis

connected; business and public Sector have a shared need and benefit when plans connect well with both sectors having a part to play. In the face of large scale pandemic risks, it is short-sighted for government to ignore or limit the role that the business world could play in mitigating the overall risks and of specifically responding to the diverse factors that emerge once a threat materialises.

Business Continuity planning also has a significant role in establishing the core capability of healthcare institutions to cope during a bio-health crisis. Just how well would the healthcare response fare if nursing, medical and support staff fail to turn up for work?

At the start of the outbreak it was realised face masks were potentially in short supply, that stocks of syringes were needed and that proper policies were needed to win the confidence of workers who would be in the front lines of the fight, but be returning home potentially infected to their families. Looking further afield, what kind of impact would energy or transport disruption have on the capability to respond? What would the impact be for business and the economy? Business Continuity Management has evolved to be far more than an IT tool and is now at the heart of enabling our national infrastructures to meet any disruptive threat.

The beauty of the opportunity here though is that it does not give just one benefit, investment is amplified, protecting and delivering resilience against a very wide range of other threats from the mundane to the serious, from terrorism to fire and it can be tailored to meet the needs of all organisations large and small, public and private, in delivering flexibility and value consistently to adoptees.

Concern though should be expressed that fewer than 25% of our corporates have fully developed their plans and across international boundaries the total is far lower.

### ***The Threat Perception***

A considerable part of the reason much of the general situation concerning pandemic and bio-risks exists comes from the mixed messages and perceptions communicated throughout our communities and societies. We have already illustrated the different focus given to healthcare deaths, and adding to the problem is

a general tendency to believe that risks are either overstated or simply not significant to individuals.

Over the course of ten years, The Continuity Forum has researched thousands of organisations that have been hit by 'disaster' events, from floods through industrial accidents to terrorism. One point continues to shine through for those worst affected ... They never thought it would happen to them!

As stated earlier, in the last century there were three pandemics killing upward of 50 million people; climate change is producing an almost seasonal increase in flooding, and terrorism is an ever present and increasing threat for a substantial number of countries. People, however, continue to think these factors won't impinge on their lives or organisations.

This attitude materially affects and undermines our capability to build our knowledge, skills and capability, which must all combine to deliver resilience to these threats. Presumed knowledge plays its part as people, and indeed organisations, enhance their denial of the threat with the notion that even if 'something' did happen then it 'wouldn't be too bad' or that 'somebody' would be able to fix it.

In our experience, when one examines the history of a disaster and looks at the timeline, there are often frequent opportunities where intervention could have mitigated or even helped to completely avoid it. In most cases these opportunities are not taken.

Our experience also shows we have a great capacity for deluding ourselves as to our real ability to cope during a crisis, and tend to underestimate the resources required, the impacts and stresses created; this is especially true in what are often unpalatable situations. This factor applies just as much to governments and official bodies as to the individual. The result is often a retrospective reaction, a raft of updates, a public inquiry, a change in legislation or regulation, all aimed at building future capability for reoccurrence of a past event. With a disappointing regularity, experts report the fact that warnings were given, yet unheeded, and consequentially the opportunities to influence the event scale and impact lost.

One other factor that has to be mentioned is our

# Raising Biopreparedness Levels in Europe—Experts' Report

## Analysis

capability to forget. Lessons hard learnt become obscured by time, the remembrance of the difficulties and impacts diminishing until such time as they are revisited upon us.

We have to learn from this experience and recognise that we do have the capacity and capability to prevent or substantially mitigate the worst of the threat before a price, potentially affecting millions, is paid.

### ***Calculating the impact ... Changing the framework?***

In trying to illustrate the impact, we are trying to derive the unknowable from the unpredictable; herein lies the problem and the heart of the matter. Most detailed predictions of the impact from either a pandemic or a biological attack are by their very nature flawed.

Often the range of impacts and the associated costs range too widely to be of much use to politicians and policy makers using a balance sheet or actuarial approach in their decision making. In financial terms, this makes it a difficult process, with no clear demonstrable return on the investment achievable, to justify policy or change - hence real progress is limited.

We would contend that a different way of assessing this particular type of threat is needed; one that fundamentally accepts the unpredictability and uncertainty surrounding the issues, but also reemphasises the responsibility and commitment needed to protect the people both within and beyond borders.

Much as the military provides security and is our shield against external threats of violence, our national and international healthcare agencies are at the forefront of a different but potentially greater campaign... the war against disease. By changing the framework against which we judge the value of our planning, we could and should develop a new level of 'health security', whose benefits could genuinely benefit the whole world.

We would contend that this is going to be a developing theme for the 21<sup>st</sup> Century, and one which provides the opportunity for developed and emerging nations to collaborate in union against a common and shared threat. Disease knows no borders, and building adequate defences requires an ability to be agile and adaptive, to react quickly and contest the threat as it emerges - not

allowing it time to build and grow in strength. This approach has more than a passing similarity with military doctrine, and this comparison can be taken one step further.

The investment rationale for military spending is fundamentally different to most government spending, and one that attracts a truly colossal amount of investment worldwide. In thinking of the situation with regards to pandemics and bio-threats, one point needs to be made. A significant novel virus outbreak, from either natural or manmade sources, could well cost tens of millions of lives, comparable to the losses seen during both World Wars. In addition, the economic impact would have the potential to run into the trillions of dollars.

Against this level of threat, surely the issues around pandemics and bio-threats change, becoming very much more of a national security challenge, and consequently becoming the clear moral duty of politicians and governments.

Addressing the risks requires creative solutions that reach out globally to confront the full range of potential emerging health threats. A more engaged international community, addressing the topic of bio-threats, also has the opportunity to deliver complimentary support to less well resourced developing and emerging nations, helping transform access to healthcare around the world.

We have a common interest in creating defences against viral threats and perhaps our current experience of H1N1 is highlighting the issues we have to address before it is too late. Perhaps by creating an international initiative that also knows no borders, that can create connections and amplified value through the sharing of knowledge and resources, we can not just minimise or at very least substantially mitigate the risks to our own local countries and communities, but also create a beneficial relationship that points to the shared responsibility we have to each other in developing global access to healthcare, as well as building effective 'health security'.

In closing we would remind readers of this report that if you try hard enough you can surely find reasons to doubt, disbelieve, procrastinate or ignore the threat we face, but we would ask that you consider these in light of the considerable evidence now assembled and balance it against the one reason we must act in union ... The price all our countries, communities and even families would pay should we fail!



The Security & Defence Agenda (SDA) is the only specialist Brussels-based think-tank where EU institutions, NATO, national governments, industry, specialised and international media, think tanks, academia and NGOs gather to discuss the future of European and transatlantic security and defence policies in Europe and worldwide.

---

Building on the combined expertise and authority of those involved in our meetings, the SDA gives greater prominence to the complex questions of how EU and NATO policies can complement one another, and how transatlantic challenges such as terrorism and Weapons of Mass Destruction can be met.

By offering a high-level and neutral platform for debate, the SDA sets out to clarify policy positions, stimulate discussion and ensure a wider understanding of defence and security issues by the press and public opinion.

SDA Activities:

- Monthly Roundtables and Evening debates
- Press Dinners and Lunches
- International Conferences
- Discussion Papers and special events

## SDA Upcoming Events



### NATO, THE CREDIT CRUNCH AND THE NEW SECURITY ENVIRONMENT

December 17, 2009 – 09:00-12:30 - *International Conference*

The rise of the G20 heralds a new economic and financial architecture, even if its shape is still indistinct. If globalisation is to be reinvented, what could be the implications for international security and defence relationships? Is NATO's post-cold war transformation the right basis for its further development in the coming decade? What sort of relationship will Russia pursue towards its neighbours and NATO? Will the US and the EU split the Alliance over policy towards Russia? Can NATO and the EU reinforce each other's efforts to overhaul and strengthen global security arrangements?

### SECURITY JAM

February 4-9, 2010

*Innovative Online Debate organised by the SDA and IBM*

### The Security Jam

No one person has the solution. We all do.

The Security Jam is an innovative 5-day online event, organised with the official support of the European Commission and NATO. It will bring together some 10-15,000 representatives and experts from around the world to brainstorm in a comprehensive and inclusive online debate. The aim of the Security Jam is to provide input into the strategic thinking being undertaken by a number of international actors today. This is not a debate about Institutions – it is an ambitious attempt to gather for the first time concrete suggestions and contributions from a variety of actors (civilian, political and military) in an increasingly complex international environment.



### CULTURE AND SECURITY

March 2, 2010 – 13:45-18:15 - *International Conference*

*Organised in partnership with NATO and the British Council*

There is increasing awareness in conflict theatres that cultural understanding and the forging of new links with societal and religious leaders is crucial to the success of a mission. What should be the principal elements of cross-cultural engagement? What role for educational aid? How should the culturally sensitive issue of equal rights for women be handled by western missions? How much attention is being paid to the cultural differences and misunderstandings at the root of armed conflicts and civil unrest? Can a more sensitive approach to cultural problems be integrated into the planning and implementation of military missions, and used to cement civ-mil cooperation more effectively?

# The Security Jam

4-9 February 2010  
No one person has the solution. We all do.

Brussels ■ Washington ■ Djibouti ■ Kabul...

A Global Brainstorm  
Anywhere. Anytime. Online.

Make Your Voice Heard.  
4- 9 February 2010

Organised with the official support of the  
European Commission and NATO

Register now at  
[www.SecurityJam.org](http://www.SecurityJam.org)

**A 5-day Internet Event**

The Security Jam is an innovative and ambitious brainstorm aimed at providing concrete solutions to the global security challenges of the 21st century

**Breaking Down Barriers, Building New Bridges**

Finding viable solutions requires input from NGOs, think-tanks, journalists, academics, as well as the military and political worlds

Brainstorm with leading actors from the entire spectrum of the international security community in online Discussion Forums



**Turning Ideas into Action**

High profile guests and experts will moderate the debate in real-time with 10 key recommendations stemming from the discussions to be officially presented to EU and NATO leaderships in Brussels

**Come Jam with us from  
February 4- 9 2010**

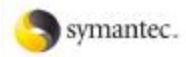
AFGHANISTAN ■ CRISIS MANAGEMENT ■ CLIMATE CHANGE  
CAPABILITIES & TRAINING ■ DEVELOPMENT ■ RUSSIA ■ CHINA  
COMPREHENSIVE APPROACH ■ HUMAN RIGHTS  
PIRACY ■ SECURITY

Register at  
[www.SecurityJam.org](http://www.SecurityJam.org)





The Security & Defence Agenda would like to thank its members and partners for their support.



Centre for Studies in Security and Diplomacy (University of Birmingham)



The SDA gratefully acknowledges the generous support from the following governments:



France



Romania



United States



Russia



Netherlands



Turkey



Czech Republic



Italy



Finland



Belgium

Interested in joining the SDA? Please contact us at Tel: +32 (0)2 739 1582

Fax: +32 (0)2 736 3216 Email: [info@securitydefenceagenda.org](mailto:info@securitydefenceagenda.org)

## **SECURITY & DEFENCE AGENDA (SDA)**

Bibliothèque Solvay, Parc Léopold, 137 rue Belliard, B-1040, Brussels, Belgium  
Tel: +32 (0)2 737 91 48 Fax: +32 (0)2 736 32 16 E-mail: [info@securitydefenceagenda.org](mailto:info@securitydefenceagenda.org)  
[www.securitydefenceagenda.org](http://www.securitydefenceagenda.org)