

**Threats from chemical and biological  
weapons a Swedish view.  
Roger Roffey  
Swedish Defence Research Agency FOI  
Division of NBC Defence, Umeå, Sweden**

Presented at the Conference Exploring Functional Security: National Responses and Prospects for Nordic and European Collaboration, at the Swedish Institute of International Affairs, Stockholm, October 24-25<sup>th</sup> 2002.

**Introduction**

The threat from biological and chemical weapons is not new and this should be kept in mind when we now mostly discuss biological and chemical terrorism. There is a legacy from the huge chemical and biological warfare programmes in the former Soviet Union. The Soviet biological weapons programme was enhanced after having signed the BTWC (Biological and Toxin Weapons Convention) as a depository state in 1972 and in the middle of the 1980s the programme consisted of around fifty facilities and involved around 60 000 people. The Soviet Union produced on a massive scale and maintained a large stockpile of BW-agents. After the Soviet Unions fall and due to pressure from the US and UK president Jeltsin issued a decree 1992 banning continued offensive BW activity (1, 2, 3, 4). There are though still concerns of residual activity in Russia. The chemical weapons programme was extensive with many facilities involved and a declared stockpile of 40 000 tons of chemical warfare agents to be destroyed. Russia has so far not been able to keep the time frame according to the CWC (the Chemical Weapons Convention) that has recently had to be extended for Russia. It is depended on international support to be able to fulfil its commitments in this regard. The proliferation of knowledge or technology that can be misused to develop biological and chemical weapons is today a serious problem. Enhanced efforts are being made to prevent this and recently the G 8 decided to enhance their efforts and support for this. Nordic initiatives could also be considered in this area.

The problem is that a large number of scientists in the former Soviet Union republics are not able to get a decent income. There is therefore a risk of temptation to go to countries of concern that want to get hold of their chemical and biological weapons knowledge. In order to meet this threat a number of initiatives have been taken by the world community. Examples of this are what the United States is doing through the Department of Defence Co-operative Threat Reduction Program (DOD CTR) as well as other US agencies. Economical support is also given through the International Science and Technology Centre (ISTC) in Moscow and the Science and Technology Centre Ukraine (STCU) in Kiev, which are financed from USA, EU, Japan and others. In June 1999 the EU agreed on a common strategy for Russia which includes measures in order to limit the proliferation of weapons of mass destruction and promote disarmament, support weapons control, implement international treaties and support export controls. In Sweden the Ministry for Foreign Affairs has supported destruction of chemical weapons and some research co-operation in the biological area between the Swedish Defence Research Agency (FOI) and the Swedish Institute for Disease Control (SMI) with Russian scientific institutes.

Other programmes of concern are of course the Iraqi CW- and BW-programmes. It is well known that Iraq since the 1970's has had a well-developed biological and chemical weapons program including filled bombs and SCUD-missiles (4). After the war the United Nations Special Commission (UNSCOM), under Rolf Ekéus worked hard to identify and destroy weapons and facilities used for producing biological and chemical weapons. When Iraq stopped further UN inspections as a result of US and UK bombing of Baghdad no further inspections has yet been carried out since 1998. The new United Nations Commission (UNMOVIC) under Hans Blix has so far not been able to initiate inspections again. The present programmes are not known today. After ten years of inspections there are still many unanswered questions concerning these and especially the BW programme.

There have also been a number of allegations of alleged BW/CW use or possession. There are indications that around 20 states are now trying to acquire CW- and BW-capability. This is an assessment based on intelligence information mainly from the US. Countries named are Iraq, North Korea, Iran, Syria and Libya for example. This claim has been the same for many years but very few facts have been disclosed to support these so far. Another aspect is the rapid developments in science and especially biotechnology that could be a driving force for promoting this type of programme opening new possibilities for future potential military misuse.

Internationally work has also been in progress since 1994 to strengthen the Biological and Toxin Weapons Convention (BTWC) with a control regime. During the spring of 2001 the chairman presented a compromise final text that should be the base for the end-game of the negotiations. This proposal consisted of among other things an obligation to submit annual declarations of biodefence and specific biotechnology activities, carrying out of 50-100 visits to such facilities in order to check their declarations, selected at random on a global basis. Included was also a possibility to carry out challenge inspections in case of suspicions of a breach of the Convention (5,6). All states except the United States agreed to continue work on the chairman's text. At the final session of the negotiations in July 2001 United States could not agree on a final report of the negotiations to be forwarded to the 5th Review Conference of the BTWC to be held in Geneva in November 2001. This meant that the negotiations collapsed. At the Review Conference the United States stated that they could not continue work on a control regime based on the chairman's text and that the approach of the negotiations since 1994 were wrong and that the mandate for the Ad Hoc Group should be terminated. The United States presented new proposals instead which gained limited support. There was no agreement at the conference after three weeks of negotiations why the conference had to be postponed until November 2002. This means that more than six years of negotiations could have been a waste of time and it is at present not possible to say when or if it will be possible to agree on continued negotiations let alone some control mechanism for biological weapons. This result is most unsatisfactory as the threat from biological weapons is more real than ever and that the US has been in the forefront when it comes to raise awareness of this threat and especially bioterrorism.

Looking at the threat from a European point it should be remembered that it is not just a threat of use as aerosols in the traditional military way. One problem is that trade in

BW/CW-agents or precursors, know-how or equipment from the former Soviet Union or other places could use Sweden or other European countries for transfer or as a base. One area that has not been much discussed is product tampering to cause economic damage to businesses or governments. The potential use of agents against cattle or crops has not yet been much debated in Europe in order to identify vulnerabilities. Another aspect is that the focus has to be wider than the traditional BW- and CW-agents for example industrial chemicals or less serious infectious diseases like waterborne diseases. Comparing Europe with other parts of the world it can be argued that other parts, the Middle East and USA, are more likely to be the target for BC- terrorism (10). The threat is probably also less for Sweden and the rest of Scandinavia compared to Europe but is still of concern. Our preparedness in Sweden or the rest of Europe should be based on a realistic threat assessment that can focus measures and result in balanced countermeasures.

In Sweden the questions connected with NBC-weapons have recently been highlighted in the latest Defence Bills and by the Parliamentary Defence Commission's reports (7,8,9). From a Swedish perspective the BC-terrorism threat is not a major threat today for Sweden although of concern. There are at present no groups that as far is known have shown an interest or have capacity for these type of agents in Sweden. Groups could though use Sweden as a base and use could be directed against foreign interests mainly US, UK or Israel. It is also probable that some kind of state sponsor is required to be able to carry out a larger scale attack with mass casualties and deaths. The threat potential is though great and is enhanced due to the large media attention. It is also important to remember that there is a distinction between what one single person could achieve and a well-organised group.

It should be mentioned that many disease causing agents are handled in many hospitals and research institutes where there in many cases still are limited controls and security to prevent stealing. The same is the case for many chemicals as a large number of toxic chemicals are handled and transported everyday in businesses or institutes. A smaller scale production of agents is in addition not too difficult. Agents can also be disseminated with simple technology but with low efficiency and not causing mass casualties. To carry out an attack that would cause mass deaths technical knowledge and special equipment will be required.

The developments since the 11<sup>th</sup> of September 2001 and after that when in September and October some letters with Anthrax bacteria were sent in the United States the situations has changed. Five people died of pulmonary inhalation Anthrax and so far in all eleven confirmed cases of inhalation Anthrax. A total of 22 people were infected and got manifested pulmonary or cutaneous form of the disease (11). The Anthrax has been further spread via the postal distribution system in the Washington area, which has resulted in contamination in a number of localities like the US State Department, Pentagon and news media like ABC, NBC and the New York Times. At the same time a large number, thousands letters with suspected contents, were discovered and had to be analysed. Most of these had some type powder but no Anthrax. The situation in the Washington area became very difficult when very large quantities many tonnes of post must first be decontaminated as well as a number of facilities that had been contaminated. The same situation with a large number of suspected letters were found in many countries as well as in Sweden where around

400 letters have been found and most have been analysed. There are also lessons to be learnt, one of the postal workers in Washington who died from Anthrax was originally sent home from hospital with the diagnosis flu. The US Government has also conceded that its initial response to the Anthrax letters was too slow. Even this relatively limited attack has revealed strains in the US public health infrastructure. It is not after one year known who was responsible for the spread of Anthrax but the FBI thinks it has domestic origin. To this can be added that some intelligence information have indicated that Al Quida and the Talibans had showed an interest in acquiring and working on Anthrax and chemicals.

The risk of terrorists using biological or chemical agents might well have increased after the attack on the World Trade Center and Pentagon in USA on September 11<sup>th</sup> 2001. A couple of reasons could be:

- The attacks have demonstrated that terrorists can and will go as far as causing mass deaths.
- A barrier has been passed when live Anthrax bacteria has been used.
- The large media impact and attention given to such terrorist acts.

One result is that there are a number of international initiatives to enhance preparedness in addition to the national measures states have taken. In the EU actions have been taken in fighting proliferation of know-how and technology that could be used to produce WMD. A number of measures have also been taken in connection with the fight against terrorism. At the EU Ghent summit of heads of states in October 2001 a joint Commission and Council programme was proposed to improve preparedness against bioterrorism. This has now been developed and includes CBR-terrorism and there are initiatives in the areas of research, public health, agriculture, energy, nuclear, transport and environment. This programme is to be finalised in preparation for the upcoming Copenhagen summit at the end of this year. In the public health there is also a task force on bioterrorism. The Commission has also through the Joint Research Centre carried out a study on vulnerabilities in EU on chemical and biological terrorism.

NATO has enhanced its efforts in the areas of fight against terrorism, preventing proliferation of WMD and protection against WMD. A centre has been established for WMD issues in Brussels. Special attention is given to improve protection against biological weapons. NATO is also opening these areas for partners in the EAPC (Euro Atlantic Partnership Council). In this later Sweden and Finland has proposed an initiative on the fight against terrorism. Sweden will also host an EAPC expert meeting in 2003 for discussions on risks of proliferation of WMD and protection against WMD.

When it comes to Nordic cooperation there are already a number of bilateral contacts and joint projects in this area. The health ministers have after the 11th of September attacks agreed on a formal cooperation on NBC-protection. This includes so far, strategies for smallpox vaccination, as well as for early warning in case of bioterrorism and medical preparedness. Other questions are standards for analysis and preparing samples. Cooperation on analysis of suspected dangerous pathogens between the BSL4 laboratory in Sweden and the other Nordic countries. The possibility to jointly develop and stockpile vaccines and pharmaceuticals if required is

being investigated. Other topics are training and the potential for military/civilian cooperation.

There is also a Swedish, Norwegian and Finnish working group on minimalist standards on protection of the civilian populations against WMD attacks.

Last a few examples of Swedish resources that could be of interest for Nordic cooperation. Sweden has at present four sets of rapid response teams:

- The Swedish Armed Forces are developing a new specialised NBC unit that will be operational 2004. The unit will be able to carry out risk evaluation and analysis. CBR and industrial chemicals detection, sampling and identification. Has a forward analytical laboratory (FOI NBC experts). The unit can also decontaminate, dismantle/destroy CBR ammunitions and prepare wounded for further transfer and medical treatment.
- The Swedish Defence Research Agency, Division of NBC-Defence has also set up a number of expert teams for risk assessment, detection, sampling, analysis, medical counter measures, decontamination and environmental questions.
- Sweden has set up a Chemical Support Team as a support for the international organisation for the Chemical Weapons Convention OPCW in the Haag. The team can be requested by States Parties to the CWC in case of CW use or chemical releases. The team which the Swedish Rescue Service is responsible for is self sufficient including transport, detection equipment and protective masks for 5000 persons can operate without support for 14 days in contaminated areas.
- A Field Epidemiological Team has been set up with specialists on infectious diseases that have international experiences. They can give expert advice and support in case of outbreaks or bioterrorism. The team can be used for national or international missions.

Potential areas for enhanced international co-operation in the Nordic countries and not least in the European Union:

- Improve the disease surveillance system. There is already work in this area.
- In Europe there is a need to improve the central co-ordination in the NBC-area.
- Ensuring adequate specialised laboratory capacity in the Nordic countries and EU is a prerequisite to effective surveillance systems.
- There is also a need to further improve the network of BSL 3 and 4 laboratories in each country but also on a European level as no single laboratory or country can have specialists on all more exotic diseases that can possibly be used as biological warfare agents.
- Co-ordination and communication links also need to be strengthened to minimise response times.
- A biological attack will also result in the need for evidence preservation (it is a scene of a crime), a unified command system and a need to protect emergency responders against possible secondary devices intentionally placed to maim or injure them.
- Psychiatrists have an important role in the management of a chemical or biological terrorist incident.
- It might take too long to wait for diagnostic laboratory confirmation, instead, it will be necessary to initiate response based on the recognition of high risk syndromes. A syndrome description that should alert health care practitioners of

the possibility of a bioterrorism related outbreak. Epidemiological principles must be used to assess if a patient's presentation is typical of an endemic disease or is an unusual event that should raise concern.

- There should also be specialist teams on standby that can rapidly analyse any potential threat and give recommendations to responsible authorities. In a European perspective it can be questioned if each country can afford or motivate to set up qualified rapid response teams that could with short notice be deployed to a scene of a bioterrorist attack. Perhaps this could be one area for co-operation between countries. What could be a realistic ambition for such teams in a European context?
- After an incident there will be a need for decontamination of the effected area depending on type of agents and quantities released which is also an area for international co-operation as expertise is not always available in the country depending on the situation.
- In the area of R&D to enhance our knowledge of agents of concern and to develop rapid methods for identification and detection of agents international co-operation is a must today with scarce economic resources.
- Another area for co-operation over the borders is training of personnel in handling situations with threats or the use of biological or chemical warfare agents.
- Legislation is a central part of countermeasures.
- It is also essential to try and break the resent deadlock in the negotiations to strengthen the BTWC with a control mechanism and here the biotech industry and scientific community has a responsibility to pressure their governments to make every effort to come to a satisfactory solution on the problem of controlling biological weapons and prevent further proliferation.
- Steps could be taken in order to curb terrorism activities by agreeing to initiate negotiations on a multilateral convention banning BC-terrorism.

## References

1. Alibek K, Handelman S. Biohazard: The chilling true story of the largest covert biological weapons program in the world, Random House, 1999.
2. Lilja P, R Roffey and K Westerdahl 2000 Retention or disarmament, is the Soviet offensive BW-programme continuing, FOA Report February
3. Roffey R and K S Westerdahl, 2000, Conversion of former biological weapons facilities in Kazakhstan, a visit to Stepnogorsk, July 2000, FOI Repoert 0082-SE.
4. Miller J, Engelberg S, Broad W, Germs the ultimate weapon, Simon & Schuster, New York, 2001
5. Roffey R, 2000, Kontroll av biologiska vapen – en politisk stridsfråga, Internationella Studier, Nr 2 våren.
6. Roffey R, 2001, Implication of the Protocol for the BTWC for the control and verification of Biological Weapons, Seventh International Symposium on Protection Against Chemical and Biological Warfare Agents, Stockholm, June 15-10
7. Roffey R, 2001, Hotet från biologiska vapen – myt eller verklighet? Försvarsberedningens Debattskrift Nr 6.
8. Roffey R och T Larsson, 2001, Säkerhetspolitisk rapport från Försvarsberedningen, Gränsöverskridande sårbarhet – gemensam säkerhet, Kapitel 5 Nukleära, biologiska och kemiska vapen, s 99-111, Ds 2001:14.
9. Roffey R och T Larsson, 2001, Rapport från Försvarsberedningen inför 2001 års försvarsbeslut., Ny struktur för ökad säkerhet - nätverksförsvar och krishantering, Kapitel 13 Skydd mot nukleära, biologiska och kemiska vapen, s 197-211, Ds 2001:44.
10. Tucker Jonathan. Assessing Terrorist use of Chemical and Biological Weapons, BCSIA. Studies in International Security. MIT press, Cambridge, Massachusetts, USA, 2000.
- 11..Roffey R, K Lantorp, A Tegnell and F Elgh, 2002, Biological weapons and bioterrorism preparedness: Importance of public health awareness and international cooperation, Review, Journal of Clinical Microbiology & Infection, Supplement on bioterrorism, July 8: 522-528.