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# Weapons of Mass Destruction and the Secret Services

The threat posed by chemical, biological, radiological and nuclear (CBRN) weapons has been growing for years due to technological advances and the changing political environment. These weapons are attractive to states mainly because of their deterrent value, and non-state actors, especially terrorist groups, may use them causing an enormous psychological impact. The diversity of the threat is increased by the recent and highly unusual trend of attacks by state actors in Europe and Asia using CBRN weapons. How should states deal with this new threat? Does it imply a new set of tasks for CBRN protection?

**Keywords:** secret services, CBRN weapons, CBRN protection

## 1. Introduction

CBRN weapons caused hundreds of thousands of deaths in the wars of the previous century, decimating both soldiers on the battlefield and civilians in the cities of the hinterland. The images of the massacres are so deeply etched in the memory of societies that countries around the world have signed international treaties to ban toxic, infectious and nuclear weapons. Nevertheless, the proliferation of nuclear weapons remains a real threat and chemical weapons are still present in the war zones of the Middle East in the present times. Terrorists are also seeking to acquire weapons of mass destruction.

Even more worrying is the recent inclusion of chemical weapons in the arsenal of certain countries' secret services, but interestingly, they are not used to destroy the masses, but to eliminate target individuals. The nerve agent attacks in Europe and East Asia have led to a radical reassessment of the CBRN threat.<sup>2</sup>

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<sup>2</sup> Simon Schofield, 'Toxic Relationships: A History of CBRN Assassinations', 25 March 2018.

## 2. *The new threat: assassinations with weapons of mass destruction*

In addition to the emergence of chemical weapons in war conflicts, an unusual phenomenon has emerged in both Europe and Asia: assassinations with CBRN agents.

On 13 February 2017, a weapon of mass destruction was used to assassinate the half-brother of North Korean dictator Kim Jong Un, Kim Jong Nam, at Kuala Lumpur International Airport in Malaysia. Kim was about to board a plane when a Malaysian and a Vietnamese woman smeared two kinds of drugs in his face. The two components mixed together to form VX neurotoxin on Kim's skin, killing him within minutes. During the operation, at least four North Korean agents were waiting nearby, ready to intervene if anything went wrong. After the assassination, the four North Korean agents left the airport in a hurry to avoid being directly accused of the assassination by North Korea. The two women who sprayed the ingredients of the two-component poison in the victim's face claimed they knew nothing about the assassination, believing they were part of a TV hoax.<sup>3</sup>

The Russians have gone even further – as if the diversity of chemical weapons developed so far was not enough – by using the Novichok (Figure 1), born in the Soviet-era laboratories. The poison causes muscle spasms that stop the heart, causes fluid to build up in the lungs, which can also be fatal, and can damage other organs and nerve cells. In the 1980s and 1990s, a new family of nerve toxins was developed against NATO forces and exists in powder, liquid or aerosol form. For nearly three decades, since a Soviet informant told the world of the compound's existence, Novichok has struck fear into the hearts of U.S. weapons experts. The Pentagon has even sent special units to Uzbekistan to destroy abandoned laboratories that once produced the chemical.<sup>4</sup> Because the development was top secret, nothing concrete is known about the properties of the substance, but experts believe the new family of nerve agents, known in Russian as 'new guy', is orders of magnitude more deadly than Sarin or VX, which are well-known in the West. Until 2018, there was no sign that it had ever been used.

On 4 March 2018, however, Sergei and Yulia Skripal were poisoned in Salisbury, U.K.<sup>5</sup> Analysis of samples taken at the scene revealed<sup>6</sup> the discovery in Salisbury of a Novichok chemical weapon that was not on the CWC's list of prohibited substances.<sup>7</sup> Since then, a proposal has been submitted to the organisation to add a new family of chemical weapons to the ban list. But the case did not end there: on 30 June 2018, 45-year-old Charlie Rowley and his partner, 44-year-old Dawn Sturgess, were taken ill at their Amesbury home, 13 kilometres from Salisbury. According to Rowley's account, he found a perfume in a bin, took it home, opened it together and 15 minutes after using it, they were sick. Both were transported from their home in Amesbury to Salisbury Hospital a few kilometres away. Tests proved that they had the same

<sup>3</sup> Oliver Holmes and Tom Phillips, 'Kim Jong-nam killed by VX nerve agent, say Malaysian police', *The Guardian*, 24 February 2017.

<sup>4</sup> Louise Hidalgo, 'World: Asia-Pacific US dismantles chemical weapons', *BBC News*, 09 August 1999.

<sup>5</sup> Ellen Barry and Ceylan Yeginsu, 'The Nerve Agent Too Deadly to Use, Until Someone Did', *The New York Times*, 13 March 2018.

<sup>6</sup> UK Delegation to the OPCW, 'Update on the Use of Nerve Agent in Salisbury, United Kingdom', 13–16 March 2018.

<sup>7</sup> Richard Pérez-Peña, 'What Is Novichok, the Russian Nerve Agent Tied to Navalny Poisoning?', *The New York Times*, 02 September 2020.

Novichok in their bodies as Scripal had had in his a few months earlier. Dawn Sturgess tragically died of poisoning. The perfume bottle is believed to have been one of the items used in the assassination attempt on Skripal.<sup>8</sup>

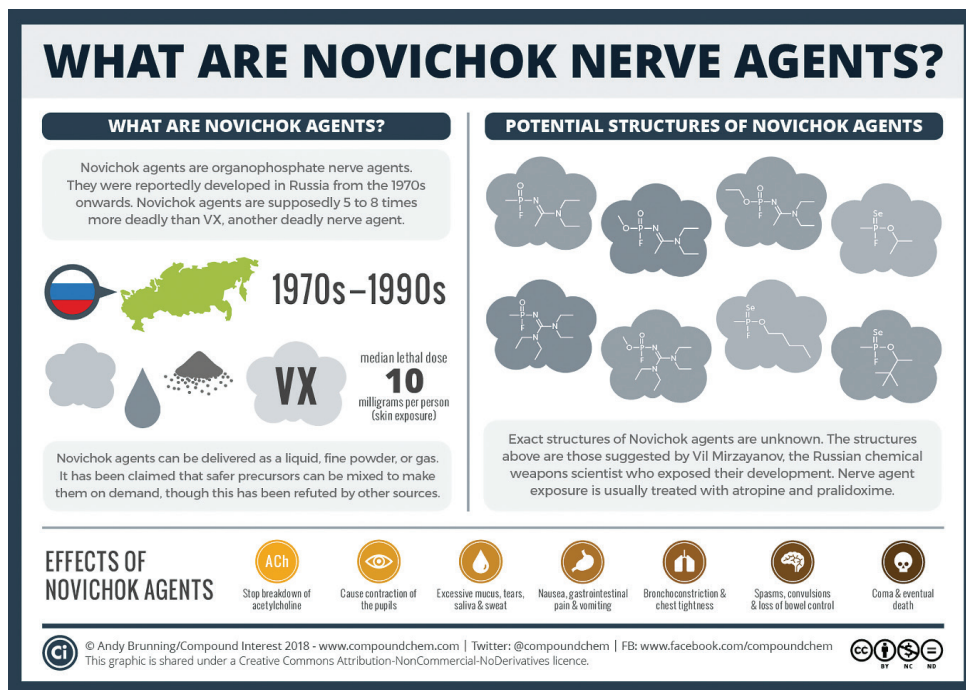


Figure 1

*All you have to know about Novichok*

Source: Compound Interest, 'What are Novichok agents? What we do (and don't) know about them', 12 March 2018.

That the use of poisons is a common tool in Russian politics is illustrated by the following incident: on the morning of 20 August 2020, Russian opposition politician Alexei Navalny suddenly fell ill on a flight from Tomsk to Moscow. On board of the plane, he started to feel strange and passed out. He went to the toilet to wash up, but by then he felt that he was in big trouble. When he came out of the toilet, all he could suddenly say to the flight attendant was: 'I've been poisoned. I'm dying.' Then he collapsed, and his last memory is of being asked if he had a heart disease. Alexei Navalny was then absolutely certain that he was going to die. He said the plan was that if he died on the plane and was put in a morgue, it would never be revealed that he had been poisoned. 'It was just going to be a suspicious death.' But the plane stopped in Omsk, where Navalny was rushed to hospital and put on a respirator.<sup>9</sup> After the politician, who was in a medically induced coma, was taken to Berlin for treatment

<sup>8</sup> Jordan Davis, 'Salisbury Novichok clean-up mission 'couldn't fail'', BBC News, 12 December 2019.

<sup>9</sup> BBC News, 'Alexei Navalny, 'Poisoned' Russian opposition leader in a coma', 20 August 2020.

on 22 August, a sample of his body taken at a special Bundeswehr laboratory clearly showed the presence of a substance belonging to the Novichok family of neurotoxins.<sup>10</sup> German laboratory tests showed that Navalny was poisoned with a new type of Novichok combination, not the one used against Sergei Skripal in 2018. Novichok is a special neurotoxin that can only be produced in state-controlled laboratories with the most advanced equipment. The poisoning of Navalny has led to very serious diplomatic tensions between Germany and the European Union and Russia.

On 14 December, according to the German news magazine *Der Spiegel*, it was reported in the world press that Alexei Navalny, the most important figure in the anti-Putin Russian political forces, had been poisoned by a special unit of the Russian National Security Service in a covert operation. This in itself is not ground-breaking news: German military scientists, two independent European laboratories and the Organisation for the Prohibition of Chemical Weapons (OPCW) have already identified<sup>11</sup> the compounds found in Navalny's body as nerve agents belonging to the group of Novichok, developed in the former Soviet Union. Although strictly speaking they are new and not yet on the list of banned warfare nerve agents. European countries and the U.S. Government have accused the Russian Government of the poisoning attack on this basis – Moscow has denied the allegations all along, with official communications claiming that Navalny's sickness was caused by circulatory failure and that if any poison entered his body, it was not in Russia.

The European Union (EU) was unimpressed by it. In mid-October, senior Russian state officials close to Putin – Alexander Bortnikov, Director of the Federal Security Service (FSB), Sergei Kiriyenko, Deputy Head of the Presidential Administration, Andrei Yarin, Head of the Internal Policy Department of the Presidential Administration, and Alexei Krivorushko and Pavel Popov, two Deputy Defence Ministers, and the State Research Institute of Organic Chemistry and Technology (GosNIIOKhT) have been banned from the EU. Their assets<sup>12</sup> have also been frozen for violating international conventions on banned neurotoxins.

The case is essentially closed, the judicial system of neither country has officially addressed the question of who, why and how Navalny was poisoned, nor the Russian authorities have launched an investigation, as their version of events is that there was no poisoning in the first place. Then a few journalists and a little-known investigative portal founded a few years ago came along and in a single article they uncovered the movements of the secret agents of the Russian secret service, the FSB, specially trained in chemical warfare, and identified the members and leaders of the unit, including those who were active near Navalny on the day of the poisoning.<sup>13</sup> The entire Navalny operation was reconstructed going back years and even details of the operation of Russia's secret and banned chemical weapons programme, which according to the

<sup>10</sup> Summary of the report on activities carried out in support of a request for technical assistance by Germany. Online: [www.opcw.org/sites/default/files/documents/2020/10/s-1906-2020%28e%29.pdf](http://www.opcw.org/sites/default/files/documents/2020/10/s-1906-2020%28e%29.pdf)

<sup>11</sup> Organisation for the Prohibition of Chemical Weapons, The Hague, 03 March 2021.

<sup>12</sup> European Council, 'Use of chemical weapons in the assassination attempt of Alexei Navalny: EU sanctions six individuals and one entity', 15 October 2020.

<sup>13</sup> Bellingcat, 'FSB Team of Chemical Weapon Experts Implicated in Alexey Navalny Novichok Poisoning', 14 December 2020.

official version was closed by 2010 at the latest. It is a shocking article, giving the full names, photographs, drone footage of the eight-man from the FSB unit and exact address of a secret chemical weapons laboratory operating near Moscow. Although they had no direct evidence that these eight people had carried out the poisoning, Alexei Navalny, referring to this investigation, claimed that Russian President Vladimir Putin was behind the assassination attempt. The article mentions the 'Kaliningrad fiasco', the incident in which members of the task force accidentally poisoned Navalny's wife, Yulia Navalnaia, during a romantic beach holiday of the Navalny couple.

Based on call logs and personnel connections, it is claimed that the special unit belongs to the Institute of Criminalistics within the FSB, which was created in 1977 as a high-tech investigative sub-unit of the Soviet state security service, the KGB. In the legal institute, which still provides forensic tools for investigations, the secret laboratory has apparently continued to operate and is still located in the same place, at 2 Akademika Vargi Street. The main man behind the covert chemical weapons programme at the Institute of Criminalistics is Stanislav Maksakov, who until the official closure of the chemical weapons programme worked in the closed military town of Shikhan (as of 1 January 2019, the city is no longer closed), where experts believe that Novichok-type nerve agents used to be produced, and that this laboratory may have been the source of the nerve agent used in the Skripal assassination, but that the area also contains large quantities of other chemical warfare agents.

All the signs are that the Russian chemical weapons programme, which was supposed to have been dismantled, has in fact been dispersed into a network of state or state-related institutions, with the nerve agent specialists being taken over by laboratories or institutes that have a legitimate front.

It is believed that two laboratories, the St Petersburg-based Experimental Medicine Institute (GNII VM), part of the Ministry of Defence, and SC Signal in Moscow, are active in the Novichok programme. These are officially masquerading as laboratories for military defence purposes or as protein drinks development for athletes. They came under Bellingcat's<sup>14</sup> radar because both labs made a lot of calls to the Russian Military Intelligence, i.e. to the GRU, with phone numbers linked to the Novichok attack on Sergei and Yulia Skripal. The laboratories are likely to continue to be supported by the military facility 33 in Shikhan, also belonging to the Ministry of Defence, the Scientific Research and Experimental Institute.<sup>15</sup>

However, a fourth laboratory, the Moscow-based State Scientific Research Institute of Organochemistry and Technology is on the EU's banning list – the reason given is that it is responsible for the destruction of nerve agents left over from the Soviet era. In an earlier article, Bellingcat reports that the EU has sanctioned Institute 33 and GosNIIOKHT, but that the other two laboratories, which were involved

<sup>14</sup> Bellingcat is an independent international collective of researchers, investigators and citizen journalists that uses open source and social media to investigate a wide range of topics – from drug lords and crimes against humanity in Mexico to tracking the use of chemical weapons and conflicts around the world. Online: [www.bellingcat.com/about/](http://www.bellingcat.com/about/)

<sup>15</sup> Máté Pálos, 'Hogyan buktatta le pár újságíró a titkos orosz Navalnij-műveletet?', Magyar Narancs, 17 December 2020.

in the background work on the Skripal and Navalny assassinations, are apparently operating freely.

One interesting fact about the Bellingcat articles is that these texts are not summaries of Western intelligence material and intelligence reports, but the results of the journalists' own investigations. To prove this, the journalistic team<sup>16</sup> wrote a separate article entitled 'Hunting the Hunters: How We Identified Navalny's FSB Stalkers', which is a unique example of open source intelligence (OSINT) journalism and data use.

The journalists essentially exposed the Russian secret agents by cross-referencing the relevant databases, many of which were bought on the Russian black market. Lax Russian data protection legislation is the basis for all these (this is especially true for the civilian sector). There is a continuous leakage of data and a well-organised and active black market in leaked databases. With a few creative Google or Yandex searches and a few hundred euros of cryptocurrency in your virtual pocket, you can access mobile phone data (calls and geolocation), flight passenger lists, individuals' registered addresses or even the number plates of cars they have ever owned, through a simple automated interface. Many databases have long been circulating on torrent sites, but new data can also be ordered from various data brokers, the latter being somewhat more cumbersome.<sup>17</sup> The Russians have acted: in December 2020 they adopted the Law on the Privacy of Operatives' Data and their Activities, which further tightened<sup>18</sup> data protection for the GRU and FSB.

Bellingcat stresses that this investigation is made possible by the shortcomings of Russian data protection and data management practices and the booming data black market, which would not be accessible in other countries of the world – the specificities of the Russian system were used to expose the Russian system.

While it is highly doubtful that the phone numbers of the GRU can be obtained from open sources, as mentioned in the article, the pervasive corruption means that a lot of information can be obtained for money.<sup>19</sup> The Russian position, however, stresses that such results could not have been achieved by journalists without the powerful support of Western intelligence organisations. There is no investigation into the attempted assassination of Navalny, nor is Moscow investigating the matter. This may be partly because official requests for information from the Russian authorities (six official requests to German, Swedish and French authorities) have been systematically rejected. Neither the German doctors treating Navalny nor the Swedish and French laboratories carrying out the toxicology tests have been willing to cooperate. This information was intended to prove the fact of Novichok poisoning, on the basis of which the investigations could have been launched. This level of non-cooperation is truly incomprehensible. The Russians claim that no trace of poisoning was found before the transport of Navalny to Germany.<sup>20</sup>

<sup>16</sup> Aric Toler, 'Hunting the Hunters: How We Identified Navalny's FSB Stalkers', Bellingcat, 14 December 2020.

<sup>17</sup> Pálos, 'Hogyan buktatta'.

<sup>18</sup> The State Duma News, 22 December 2020.

<sup>19</sup> Szabad Európa, 'Célkeresztben a Navalnij-mérgezésről szivárogtató orosz biztonsági tisztek', 07 March 2021.

<sup>20</sup> 'Mandates of the Special Rapporteur on extrajudicial, summary or arbitrary executions; and the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression', 30 December 2020.



Also according to an article in Bellingcat, Bulgarian arms dealer Emilian Gebrev believes that he was poisoned by Russian intelligence services in April 2015.<sup>21</sup> The Bulgarian entrepreneur and arms and ammunition dealer became increasingly ill on 27 April 2015 after a business dinner in Sofia. His eyes itched and bled all the next day, but the businessman refused to miss that day's business dinner, where he met Polish and Russian businessmen. During the dinner Gebrev started hallucinating and vomiting. He was immediately taken to hospital.

Shortly afterwards, his adult son and a manager of his business also became sick and were also taken to hospital.<sup>22</sup> The businessman recovered and sought help from international chemical laboratories to find the substance that had poisoned him. The Verifin laboratory in Finland took on the job and detected traces of two chemicals in the man's urine. One was identified as organophosphate. The group of organophosphate-type compounds includes various pesticides and neurotoxins developed for military purposes. This is an occasion for the conspiracy theorists to get really excited about, because even with a large dose of imagination, there are only traces of a Russian thread in the case.

What these attacks have in common is that state actors are invariably behind them. Although the suspected states consistently deny in all forums that they are involved in the attacks, the circumstantial evidence does not support this.

One such piece of evidence is the extremely limited access to nerve gases. Since the production and storage of nerve gases is a very complex process, access to the stocks is not easy for unauthorised persons. Historical examples show that VX or Sarin have only been used in war conflicts or through assassinations. The only exception to this is the terrorist attack with VX in the Tokyo subway in 1995.

Another example of such restricted material is radioactive polonium (Po210). The world's annual production of polonium is estimated to be about 100 grams.<sup>23</sup> This alpha-emitting material has certainly played a major role in one assassination, and only probably in another.

In November 2014, Yasser Arafat, President of the Palestine Liberation Front, died in a military hospital in France, a month after a sudden illness that started with diarrhoea, vomiting and abdominal pains. After Arafat's hospitalisation, a great many medical tests were carried out to find out the cause of his illness. Urine and stool samples were also subjected to radiological tests, but as all the results were negative, no diagnosis could be made. However, after his death, the clothes he wore in the hospital showed unexplained and higher than normal levels of radioactivity of polonium 210.<sup>24</sup> Some sixty samples of the remains were taken and distributed among the Swiss, French and Russian experts who were asked to take them. The tests were carried out independently and separately, in strict secrecy, and the results were contradictory. Russian and French medical experts reported that Arafat's death was not caused by polonium poisoning, while experts at the Institute of Radiophysics

<sup>21</sup> Bellingcat, 'Third Skripal Suspect Linked to 2015 Bulgaria Poisoning', 07 February 2019.

<sup>22</sup> Index, 'Engem is ugyanúgy mérgezték meg mint Szkripalt', 21 February 2019.

<sup>23</sup> John Emsley, 'Q&A: Polonium 210', Royal Society of Chemistry, 27 November 2006.

<sup>24</sup> Pascal Froidevaux et al., 'Po210 poisoning as possible cause of death: forensic investigations and toxicological analysis of the remains of Yasser Arafat', *Forensic Science International* 259 (2015), 1–9.

(CHUV) of the Lausanne University Hospital in Switzerland said that it could neither be confirmed nor excluded that Arafat had been poisoned by polonium.

The other such assassination took place in London in November 2006, the victim was former Soviet secret agent Alexander Litvinenko, whose tea was laced with polonium. When Litvinenko fell ill, he was immediately suspected of having been poisoned. The identification of the polonium was a coincidence, but by then it was too late and the victim's life could not be saved. Unlike in the Arafat case, the coroner's report clearly showed the presence of Po210.

There were some clinical differences between the Litvinenko and Arafat cases: unlike Litvinenko, Arafat did not show symptoms of osteoporosis and hair loss. However, these differences can be explained by the difference in age and the difference in the amount of radioactive material ingested. Small doses given regularly may produce completely different symptoms from a single high dose.<sup>25</sup>

Also common to the above cases are that they all occurred in public space.

### 3. CBRN terrorism threats

The intelligence methods mentioned above are not part of the intelligence functions of democratic states. The potential terrorist attacks<sup>26</sup> with this type of material, which only deepen the dimension of the threat posed by weapons of mass destruction, are even more so. Hungary's National Security Strategy formulates the fight against terrorism as follows: 'Hungary pays special attention to the fight against terrorism in all its forms: the most decisive action against this phenomenon is in our national interest. The fight against terrorism is based on both preventing terrorist acts, detecting and dismantling terrorist groups and organisations, dealing with the consequences of terrorist acts, strengthening defence capabilities and preparing for emergencies.'<sup>27</sup>

CBRN weapons are the deadliest weapons in existence today, taking their victims indiscriminately. In addition to physical injury, this type of weapon is capable of causing the greatest panic, and the effects of a single use can cause economic and social disruption. For this reason, it is very attractive to various terrorist organisations and they are keen to acquire it.<sup>28</sup> Scientific progress and market forces are driving the cost of DNA synthesis down faster than Moore's Law: more and more people in the world have access to biotechnological scientific advances that were previously only available to scientists. Depending on the type of WMD used, we can talk about nuclear, chemical and bioterrorism. Fortunately, the use of CBRN weapons by non-state actors is relatively rare, a fraction of terrorist attacks happen using CBRN weapons, according to the University of Maryland Global Terrorism Database (which contains over 190,000 cases).

<sup>25</sup> Fei Su and Ian Anthony (eds), *Reassessing CBRN Threats in a Changing Global Environment* (SIPRI, June 2019).

<sup>26</sup> In 2018, a coordinated operation by counter-terrorism organisations in Germany led to the arrest of a Tunisian extremist man in his apartment in Cologne who was planning to carry out a terrorist attack using ricin (Florian Flade, 'The June 2018 Cologne Ricin Plot: A New Threshold in Jihadi Bio Terror', *Combating Terrorism Center* 11, no 7 [2018]).

<sup>27</sup> 'Hungary's National Security Strategy', 23 April 2020.

<sup>28</sup> United Nations, 'Government, 'Islamic State' Known to Have Used Gas in Syria, Organisation for Prohibition of Chemical Weapons Head Tells Security Council', 07 November 2017.



### CBRN terrorist attack by type of weapon 1970–2014

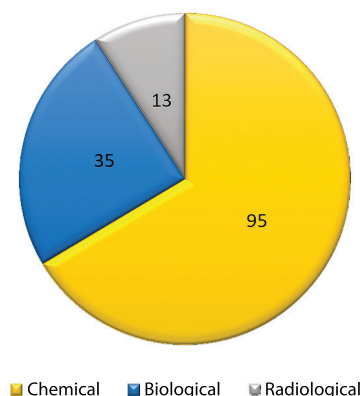


Figure 2

*Volume of ABV terrorist attacks in the world, 1970–2014*

Source: Lloyd's, 2016.

The likelihood of using CBRN materials is determined by the likelihood of terrorist organisations and sabotage groups being able to acquire these materials and the financial costs of acquiring and weaponising them. The CBRN threat posed by terrorist and sabotage groups is linked to a few factors: capabilities, intentions and limited access to materials.

Fortunately, our country is one of the lowest risk areas in the world in this respect.<sup>29</sup> Nevertheless, the risk of this hazard is not zero, and although the probability of such an extreme event occurring is extremely low, the consequences would have a huge impact on the functioning of the state.

#### 4. Summary

Chemical weapon attacks have been a recent cause for concern in Asia and Europe. Dealing with the aftermath of these types of CBRN incidents is currently not part of states' security protocols. This type of use does not only pose a threat to direct targets: the use of toxic agents in public areas is likely to result in collateral damage, and the consequences require inter-ministerial cooperation and involve multiple disciplines.

The fact that other countries can use weapons of mass destruction in peacetime, without any precedent, to achieve their political goals is a new and frightening prospect. In this area too, the methodology of hybrid warfare seems to be emerging:

<sup>29</sup> Global Terrorism Database, s. a.

the boundary between a state of war and a state of peace is blurring. The CBRN protection task force must be prepared for this eventuality: during the visits of some political actors, not only the bomb-sniffing dog but also the CBRN specialist with special detection equipment may be needed.

The situation can only be addressed in a comprehensive approach. Cooperation at both regional and international level needs to be made more effective, as addressing the challenges of CBRN protection requires international cooperation, as CBRN threats do not stop at national borders.

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