TERROR
Strengthened preparedness and response to biological and chemical terror attacks

Co-funded by
the Health Programme
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Deliverable 5.1

Identify good practices in current national structures for cross-sectoral collaboration in preparedness and response to a biological or chemical terror attack

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Consortium – List of Partners

Partner no.	Short Name	Name	Country
1	HDIR	HELSEDIREKTORATET	Norway
2	Sciensano	SCIENSANO	Belgium
3	NCIPD	NATIONAL CENTER OF INFECTIOUS AND PARASITIC DISEASES	Bulgaria
4	SUJCHBO	STATNI USTAV JADERNE, CHEMICKE A BIOLOGICKE OCHRANY VVI	Czech Republic
5	HZJZ	HRVATSKI ZAVOD ZA JAVNO ZDRAVSTVO	Croatia
6	MoH-FR	MINISTERE DES AFFAIRES SOCIALES ET DE LA	France
7	RKI	ROBERT KOCH-INSTITUT	Germany
8	EODY	ETHNIKOS ORGANISMOS DIMOSIAS YGEIAS	Greece
9	NNK	NEMZETI NEPEGESZSEGUGYI KOZPONT	Hungary
10	INMI	ISTITUTO NAZIONALE PER LE MALATTIE INFETTIVE LAZZARO SPALLANZANI ISTITUTO DI RICOVERO E CURA A CARATTERE SCIENTIFICO	Italy
11	RIVM	RIJKSINSTITUUT VOOR VOLKSGEZONDHEID EN MILIEU	The Netherlands
12	NIJZ	NACIONALNI INSTITUT ZA JAVNO ZDRAVJE	Slovenia
13	MoH-ES	MINISTERIO DE SANIDAD	Spain
14	FOHM	FOLKHALSOMYNDIGHETEN	Sweden
15	DH	DEPARTMENT OF HEALTH. UK HEALTH SECURITY AGENCY	United Kingdom
16	MoH-MT	MINISTRY OF HEALTH - GOVERNMENT OF MALTA	Malta
17	IPHS	INSTITUT ZA ZASTITU ZDRAVLJA SRBIJEDR MILAN JOVANO-VIC BATUT	Serbia

Abbreviations

ASHT	Alerting System for Chemical Health Threats
BBK	Bundesamt für Bevölkerungsschutz und Katastrophenhilfe
CBRN	Chemical, Biological, Radiological and Nuclear
CRCE	Centre for Radiation, Chemical and Environmental Hazards
C&C	Command and Control
DSTL	Defence Science and Technology Laboratory
EPA	United States Environmental Protection Agency
EC	European Commission
EHE	Environmental Hazards & Emergencies
EPRR	Emergency Preparedness, Resilience and Response
EU/EEA	European Union/ European Economic Area
EUSBSR	EU Strategy for the Baltic Sea Region
EWS	Early warning system
HART	Hazardous area response team
HAZMAT	Hazardous material(s)
IHR	International Health Regulations
IOR	Initial Operational Response
JDM	Joint Decision Model
JESIP	Joint Emergency Services Interoperability Programme
JOP	Joint Operating Principles
NPCM	Non-pharmaceutical countermeasures
MDU	Mass Decontamination Unit
OPCW	Organisation for the Prohibition of Chemical Weapons
ORCHIDS	Optimisation through Research of Chemical Incident Decontamination Systems
PHE	Public Health England
PPE	Personal protective equipment
PRISM	Primary Response Incident Scene Management
RASCHEM	Rapid Alert System for Chemicals
SCBA	Self-contained breathing apparatus
SGDSN	Secrétariat Général de la Défense et de la Sécurité Nationale
SHARP	Strengthened International Health Regulations and Preparedness in the EU
SIMEX	Simulation Exercise
SIP	Shelter-in-place
SOR	Specialised Operational Response
SPW	Shelter-in-place warning
UKHSA	UK Health Security Agency
WHO	World Health Organization

Executive summary

Deliverable 5.1 of Joint Action TERROR: Health preparedness and Response Planning to Biological and Chemical Terrorist attacks.

This report provides a review of national and cross-sectoral preparedness and response plans and guidelines, in response to chemical and biological terrorist attacks in participating countries.

This document draws on several information sources, as follows:

1. An online survey, undertaken in conjunction with Work Package 6 (WP6). This survey was conducted in May 2022 to identify existing structures for cross-sectoral collaboration within the participating Member States and to better understand the relative roles and responsibilities between public health, security and civil protection sectors. The survey included questions on preparedness and response associated with the health sector and addressed roles and responsibilities, existing structures and information sharing procedures.
2. Evidence of good practice identified in the WP5.3 Non-Pharmaceutical CounterMeasures (NPCM) literature review and documents from partner countries related to preparedness for terror attacks.
3. Face to face interviews conducted as part of WP5, providing additional context and depth.
4. National plans requested to the partners countries and integrated in the review.

From these literature sources and through analysis of the survey and interview responses from 14 countries, this report identified a number of potential gaps in biological and chemical preparedness. These include the absence of biological and chemical response considerations from a significant number of national cross-sectoral plans; The lack of a legislative framework to contextualise and prioritise chemical and biological preparation and response requirements; A lack of cross-sectional information sharing regarding chemical and biological agents of concern and a lack of operational awareness regarding bilateral co-operation and support.

A number of recommendations have emerged for both biological and chemical agents. These are summarised below.

1. **The need for a legislative and regulatory framework**
   The interviews highlighted the need for a regulatory framework to embed biological and chemical responses into emergency preparedness and response procedures.

2. **Share key information on chemical and biological agents of concern**
   The survey highlighted the need for the sharing of information on key agents of concern

between all agencies and responders. This would facilitate the recognition of symptoms associated with exposures and improve response times.

3. **Enhanced cross-sectoral collaboration:**
   The survey and interviews highlighted the importance of cross-sectoral collaboration between public health and the security/civil protection sectors. Effective coordination and information sharing procedures were identified as crucial for an integrated response to biological threats.

4. **Strengthened preparedness and response plans**
   Evidence from the review indicates that many Member States have robust preparedness plans in place. However, there is a need for continuous updates and improvements to address emerging biological threats. The integration of lessons learned from past incidents and exercises into these plans was emphasized.

5. **Non-pharmaceutical countermeasures (NPCMs)**
   The identification and implementation of NPCMs were recognized as vital components of the biological response strategy. These measures, including quarantine, social distancing, and personal protective equipment, which need to be tailored to specific threats and effectively communicated to the public.

6. **Training and capacity building**
   Providing regular training and capacity-building initiatives for health professionals and first responders was deemed essential. This ensures that the workforce is well-prepared to handle biological emergencies and can implement response measures promptly and efficiently.

7. **Public awareness and communication**
   Raising public awareness about biological and chemical threats and the necessary response measures is critical. Clear and transparent communication strategies should be developed to keep the public informed and to build trust in the response efforts.

8. **International cooperation**
   The review underscored the significance of international cooperation in managing biological threats. Sharing best practices, data, and resources among Member States and with international partners enhances the collective capability to respond to cross-border biological incidents.

9. **Research and development**
   Continued investment in research and development was highlighted as a priority. This includes the development of new diagnostic tools, vaccines, and treatments for biological threats, as well as the enhancement of existing technologies and methodologies.

These outcomes underscore the importance of a comprehensive and coordinated approach to biological and chemical preparedness and response, ensuring that all sectors work together to protect public health and safety.

1 Introduction

1.1 Background

The European Union (EU) plays an important role in counter-terrorism activities amongst members and international partners. While primary responsibility for security measures lies with individual Member States, the EU provides a borderless perspective that encourages cooperation and coordination through numerous policy frameworks and financial support[3]. The EU adopted two Action Plans in 2009 and 2017 with a view to enhancing and strengthening CBRN preparedness, within the 2009 EU CBRN Action plan is a comprehensive roadmap in-line with 2005 EU counter-terrorism strategy, and the 2017 EU Action plan on CBRN security risks builds upon stronger internal-external links in CBRN security with regional and international partners, amongst other objectives.

Since then, EU Regulation 2022/2371 (Council of the European Union, 2022)[4] seeks to build a more robust mandate for coordination and cooperation for a more effective response to serious cross-border health threats at EU and EU member state levels. The regulation aims to strengthen prevention, preparedness and response planning, reinforce epidemiological surveillance and monitoring, improve data reporting and to strengthen EU intervention.

Specifically, article 24 provides a requirement for a commission-established advisory committee to formulate a view, in addition to other aspects of response, on non-pharmaceutical countermeasures in the context of response to a specific threat. In addition, in 2009 the Commission adopted a 'Communication on Strengthening Chemical, Biological, Radiological and Nuclear Security in the European Union' with an EU CBRN Action Plan, including recommendations in the areas of prevention, detection and response. It identified that Member States' preparedness in health would benefit from sharing lessons learned and best practices in, among other issues, cross-sectoral support, and coordination[5].

A 2018 European Parliament study for the TERR committee (Special Committee on Terrorism) recognised that chemical and biological attacks have the potential to maim and kill on a much greater scale than conventional weapons, overwhelm medical responses, paralyse governments and transport systems, and severely impact economies[6] .

Joint Action TERROR's main objectives are to address gaps in health preparedness and to strengthen cross-sectoral work with public agency response to biological and chemical terror attacks. It develops work undertaken for the Health Programme and other relevant EU programmes and exercises in

[3] Understanding EU counter-terrorism policy
[4] Serious cross-border threats to health | EUR-Lex
[5] SANCO-2009-10424-00-00-EN-REV-00
[6] REPORT on findings and recommendations of the Special Committee on Terrorism | A8-0374/2018 | European Parliament

particular Joint Action "Strengthens International Health Regulations and Preparedness in the EU" (SHARP) and the Joint Action "Healthy Gateways".

As part of work package 5, available EU or national preparedness and response plans (or both) for Chemical and Biological terrorist attacks were evaluated. It focusses on strengthening the health sector response by identifying good practice at the ministerial/governmental level and national and/or subnational plans. It considers non pharmaceutical control measures (in coordination with task 5.3) and, when appropriate, also new threats investigated in WP8.

2 Method

2.1 Survey

JA TERROR partner countries were invited to complete an online questionnaire, developed in collaboration with WP6 leaders and co-leaders, Spain and Belgium, with input from the UK and Italy on the health sector. The survey collected information on country-specific planning and guidance; agencies involved in chemical and biological responses; training, exercising and the type of control or mitigation measures applied for both chemical and biological terror incidents. A pilot was undertaken between early March to the end of April 2022 by four other partner countries.

The final survey was sent via an email link on 16th May 2022 and was targeted at 51 recipients representing the three sectors in 17 countries. Representatives were identified as individuals having experience and responsibility for strategic planning and incident response relating to chemical and biological terror attacks. All participants were informed of the purpose of the survey and the topics that would be addressed. Confidentiality and data protection was managed in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016. All responses were collected electronically and then transferred to an excel file to facilitate analysis.

Countries were asked to provide responders from three sectors, health, security, and civil protection. Reponses were supplied from representatives working in different agencies. Agency names varied between countries. Some examples are included below.

- **Health sector**: representatives were part of different departments related to global health, microbiology, surveillance or public health emergencies within the Ministry of Health, National Public Health Agencies or General Directorates of Health.

- **Security sector:** most representatives belonged to different areas within the Ministry of Home Affairs such as national crisis centres or police directorates. Others were related to

policy development departments or belonged to forensic centres.

- **Civil protection sector:** is anchored in different ministries depending on the country, including the Ministry of Home Affairs, the Ministry of Justice and Security, Ministry of Defence, and the Ministry of Climate Change and Environmental Disaster.

Security and civil protection responses were analysed by WP6, while the health responses were analysed by WP5.

Information was extracted from the survey and supplemented by one-to-one interviews from country representatives to provide additional context and understanding. Interviews were analysed to identify common themes, concerns and findings. A copy of the survey questions can be found in Annex 1.

In addition, a literature review was undertaken to identify published guidance, evidence of good practice and available grey literature from across Europe.

The findings of the combined survey and interviews related to preparedness for chemical and biological terror attacks, are discussed in more detail in the report on deliverable 5.3.

2.2 Interviews

The interview process used a semi-structured, survey to identify additional information and contextual background to support the information gathered by the questionnaire. Interviews were carried out by video conference. All sessions were recorded and transcribed to assist with analysis. Data was analysed using a thematic analysis approach.

A copy of the interview guide is included in Annex 2. All Joint Action Partners were invited to participate in the interview process. However, there was a limited response resulting in information being gathered from only eight interviews with participants from six countries. All of the interviewees were from the health sector and from a chemical (7) rather than biological background (1). Common themes and practices were identified and this information was summarised into amalgamated findings. A copy of this summary is included in Annex 3.

2.3 Analysis phase

National and cross-sectoral preparedness and response planning (chemical and biological attacks) was considered in four stages: consideration of EU Guidance and Law, analysis of survey responses, summarisation of key information gleaned from interviews and lastly, an overview of national plans.

2.4 Limitations

Analysis of documentation focussed on English language publications. Online tools were used to translate other documentation, but this may have resulted in some information being missed or miss translated. In addition, documentation or information pertaining to security and counterterrorism may be considered sensitive and may not been made available for this review.

The same sensitivity limitations were encountered as part of the interview process resulting in a very limited pool of documents for review. This documentation has been supplemented, so far as possible, using published academic literature, grey literature and information obtained from the survey and interview process.

Additionally, very few countries volunteered to participate in the interview process (six countries / eight participants) with participants being from the health sector.

3 Analysis

The next section provides an overview of relevant EU legislation, projects and initiatives relating to preparedness and should be considered by Member States as resources which could contribute to improving their preparedness to biological and chemical terror attacks.

3.1 Review of EU legislation, projects and initiatives

The survey and interview process indicated that there was a limited awareness of chemical and terror related EU legislation, regulations, and initiatives among the responders. The literature search identified key documents, which have been supplemented by the detailed findings of WP4.2 "EU and international network mapping".

The EU has been developing its approach to CBRN preparation and response and has developed a number of approaches in the last fifteen years, adopting two Action Plans in 2009 (Strengthening Chemical, Biological, Radiological and Nuclear Security in the European Union – an EU CBRN Action Plan[7]) and 2017 (Action Plan to enhance preparedness against chemical, biological, radiological and nuclear security risks[8]).

Following a 2009 report of the CBRN Task Force, the EC presented a communication for strengthening CBRN security in the EU, including an EU CBRN Action Plan (2009)[9]. The CBRN Action Plan aimed to address and compliment national measures, addressing existing gaps, promoting best practice and exchange of information. The objectives included increased effectiveness of international co-operation, to raise awareness, increase knowledge and information sharing on CBRN, to reduce judicial barriers and constraints, to increase awareness of security implications in funding decisions and to reduce to a minimum the effects of terrorist incidents involving CBRN materials.

In response to growing threat of terrorist attack the EU developed in 2005 a holistic counter-terrorism response[10] – the EU Counter-Terrorism Strategy. This strategy includes strengthening CBRNe security. The activities of the EU in this field resulted among many in the development of following documents:

- Communication on strengthening CBRN security in the EU (2009);
- the EU CBRN Action Plan (2009); 2012 Progress Report on the Implementation of the EU CBRN Action Plan;
- Draft Council conclusions started a discussion on the new CBRNE Agenda (2012);
- European CBRNE Glossary; Communication on a new approach to the detection and mitigation of CBRN-E risks at EU level (2014);
- The EU CBRN Action Plan (2017); RescEU capacities in the area of chemical, biological, radiological and nuclear incidents (2021).

Key information is summarised below.

[7] EU action plan on chemical, biological, radiological and nuclear security (europa.eu)
[8] EUR-Lex - 52017DC0610 - EN - EUR-Lex (europa.eu)
[9] JLS-2009-00779-00-01-EN-REV-00 (europa.eu)
[10] https://encircle-cbrn.eu/resources/eu-cbrn-policy/

3.1.1 Legal Framework

The European Subcommittee on Security and Defence (SEDE) recognised that "there is no single piece of overarching EU legislation. Instead, since CBRN risk management is a cross-cutting, multisectoral and multidisciplinary matter, there is a complex array of different policies across different policy domains. The EU has established a legal framework for managing terror related threats. It has enacted legislation defining terrorism as a criminal activity and established procedures to maximise co-operation in cross border incidents and attacks. Legislation includes:

The Directive on combatting terrorism (Directive (EU) 2017/541) specifies a common legal framework across EU member states to define terrorism offences and establish jurisdiction for offences committed in their territory.

The Directive on the identification and designation of European critical infrastructures (Directive 2008/114/EC) specifies critical infrastructure in Europe, including those relevant to CBRN incidents.

The Decision on the improvement of cooperation between the special intervention units of the Member States of the European Union in crisis situations (Council Decision 2008/JHA) develops an approach and framework to maximise information exchange and cooperation on CBRN risks and incidents.

The Regulation on serious cross-border health threats (Regulation (EU) 2022/2371) strengthens the EU's preparedness and response to current and future health crises, by enhancing cooperation and coordination among Member States, EU institutions and agencies, and international partners. The framework to improve preparedness and to strengthen the response capacities to health emergencies of biological, chemical, environmental, and unknown origin. Article two mentions "threats of chemical origin" and article 20 links public health assessed chemical risks with the European Chemicals Agency (ECHA).

The Regulation on a framework of measures for ensuring the supply of crisis-relevant medical countermeasures in the event of a public health emergency at Union level (Regulation (EU) 2022/2372) Recognises the need for a framework of measures for ensuring the supply of crisis-relevant medical countermeasures in the event of a public health emergency. The regulation aims to establish an instrument of economic policy fundamental to avoid the adverse economic consequences of health crises, such as negative growth, unemployment, market disruptions, fragmentation of the internal market, and impediments to swift manufacturing.

The Regulation on the provision of emergency support within the Union (Regulation (EU) 2016/369) establishes the framework for the EU Civil protection mechanism, including CBRN events.

Health Emergency and Preparedness and Response (HERA)[11] HERA was established by commission decision (2021/C 393 I/02) as a response to the COVID-19 pandemic which demonstrated the need for coordinated action at Union level to respond to health emergencies. Its role is to strengthen Europe's ability to prevent, detect, and rapidly respond to cross-border health emergencies, by ensuring the development, manufacturing, procurement and equitable distribution of key medical countermeasures. It is a key pillar of the European Health Union and a fundamental asset to strengthen the EU's health emergency preparedness and response.

HERA anticipates threats and potential health crises through intelligence gathering and builds the necessary response capacities by addressing gaps in the EU's preparedness. When a public health emergency is declared, HERA coordinates the development, manufacturing, and procurement of critical medicines, vaccines, and other medical countermeasures – such as gloves and masks – and see to it that distribution is carried out on an equitable basis, ensuring availability and access for all.

[11] Health Emergency Preparedness and Response (HERA) - European Commission

3.1.2 Strategies, projects and initiatives

The EU European Agenda on Security[12] contained the principles of ensuring an effective EU response to terrorism and security threats and informed the EU security policy between 2015 and 2020.

The EU counterterrorism agenda (2020)[13] Communications from the European Commission to the European Parliament, the European Council, the European economic and social committee and the committee of the region outlined a counter-terrorism agenda and introduced four principles of countering potential terror threats (anticipate, prevent, protect against, and respond to terror attacks). It also highlighted the importance of co-operation between EU member states. The Commission prioritises in particular the threat from chemical agents. Taking inspiration from the approach used to regulate access to explosives precursors, the Commission studied the feasibility of restricting access to certain dangerous chemicals, the EU chemicals strategy for sustainability, finalised in 2021.

EU Civil Protection Mechanism (EUCPM)[14] outlines the EU approach to co-operation in the area of civil protection. It allows for the sharing and rapid deployment of teams, assets, and equipment to facilitate disaster relief.

RescEU[15] A €540.5 million worth strategic stockpile. The reserve will include response equipment such as personal protective equipment and detection, identification and monitoring devices, medicines, vaccines and other therapeutics. A decontamination reserve will also be created to provide decontamination equipment and expert response teams.

The stockpile will make a crucial contribution to build CBRN resilience in the EU as it will include equipment and medicines that may be hard to manufacture in times of crisis or that may be suddenly required in larger amounts than what is available in national reserves. The CBRN stockpile is a first step towards establishing better capacities in response to chemical facility emergencies, terrorist attacks or the spread of an infectious disease and many more.

The RescEU decontamination reserve includes staff and equipment to decontaminate people, infrastructure, buildings, vehicles or critical equipment that have been exposed to CBRN agents. Upon request of the affected Member State, the RescEU decontamination reserve can be deployed. The reserve will be developed and hosted by Croatia, Germany and Spain and will be 100% EU-financed with an initial budget of €66.7 million.

The EU CBRN risk mitigation[16] outlines a holistic approach to improve co-ordination of responses to CBRN incidents. IT addresses a wide range of measures including preparedness, response, international co-operation, risk communication and security measures.

The Atlas network[17] The ATLAS network is an informal cooperation structure between police units in the EU, designed to improve communication between police units in EU Member States, particularly in the context of an international, cross-border incident. Although the primary aim of the ATLAS network is mutual training for counter terrorism to a common standard, the network could be

[12] The European Agenda on Security - European Commission
[13] Security Union: A Counter-Terrorism Agenda and stronger Europol to boost the EU's resilience - European Commission
[14] EU Civil Protection Mechanism - European Commission
[15] rescEU - European Commission
[16] EU CBRN Risk Mitigation - European Union
[17] ATLAS Network | Europol

a means of communicating between Police in EU Member States, particularly in the event of a cross-boundary incident.

Alerting System for Chemical Health Threats (ASHT) project. The ASHT project helped develop a system for the detection of covert, malicious chemical releases in Europe and subsequently disseminates this information to relevant stakeholders. It included the development of an internet accessible EU-wide alerting system using a relational database. The "Rapid Alert System for Chemicals" (RAS-CHEM) was developed to improve data sharing between EU Member States with the aim to detect the deliberate (i.e. criminal or terrorist) or accidental release of chemicals.

The RAS-CHEM system described 5 alert levels of severity which can be ascribed to an event, from background information, to confirmed mass intoxication with potential danger for large populations within Europe. It also described the mechanisms in which the alert, which could only be sent from the EC, would be shared across the EU including by fax, email, SMS, or phone call[18].

ECHEMNET project. Following on from ASHT, the ECHEMNET project formed a network of chemical experts and poison centres from across the EU and developed methodology for rapid risk assessment of cross-border chemical incidents. ECHEMNET also undertook Event Based Surveillance for chemical incidents to post to RASCHEM and prompt a response from the network of experts.

The Cross-border Exposure characterisation for Risk Assessment in Chemical Incidents (CERACI)[19] Aims to strengthen the public health risk assessment for the acute phase of chemical incidents by improving the exposure assessment. The report recognised that cross-border communication between EU member states is relevant to both incident responses and emergency preparedness. It was recognised that there were challenges with in-country interagency communication and that there was limited connectivity between national experts.

There is evidence of collaboration and communication across borders is more likely to exist in situations where Member States have a shared interest. An example can be seen in the Mapping of Responsibilities for CBRNE Emergency Management in the Baltic Sea Region, undertaken by the EU Strategy for the Baltic Sea Region (EUSBSR) in 2017, that gives a better understanding of the specific role and allocation of responsibilities to departments within each country surveyed.

Fighting bioterrorism master plan in 2015[20] The EU worked on master plan identifying that if a bioterrorism attack was to occur, two information exchange systems are already in place within Europe: The Early Warning and Response System; The Rapid Alert System with the objective of supporting to connect the European Commission and national public health authorities in order to implement quick measures to control an outbreak.

EU Laboratory Capability Monitoring System (EULabCap)[21] In 2015, a survey of EU/EEA country capabilities and capacities was undertaken.

The ECDC public health microbiology strategy (2012–2016) and ECDC strategic multi-annual programme (2014– 2020) aim to strengthen the capability and capacity of the EU public health microbiology system to provide timely and reliable information for infectious threat detection, assessment and surveillance at the Member State and EU levels, thus ensuring effective prevention and control of infectious diseases. To ascertain how well this is delivered, ECDC, in close collaboration with its national microbiology focal points and the Advisory Forum, developed the EULabCap survey

[18] Schaper A, Desel H, Wyke S, Orford R, Griffiths MR, Edwards N, et al. Countering health threats by chemicals with a potential terrorist background--creating a rapid alert system for Europe. Eur J Intern Med. 2012;23(2):e63-6.

[19] Cross border Exposure characterisation for Risk Assessment in Chemical Incidents (CERACI) - European Commission

[20] Fighting bioterrorism – Europe works on master plan | Horizon Magazine

[21] EU Laboratory Capability Monitoring System

methodology for monitoring key public health microbiology capabilities and capacity for EU surveillance and epidemic preparedness on an annual basis. This assessment aims to help policymakers of EU/EEA (European Union/ European Economic Area) countries identify possible areas for action and evaluate the impact of capacity strengthening activities and health system reforms. The reports on the 2013 and 2014 surveys were published in 2016. This third report presents the laboratory capabilities and capacities measured in 2015 in comparison with previous surveys.

Joint Action on Strengthened International Health Regulations and Preparedness in the EU (SHARP JA)[22] In 2019 the SHARP Joint Action strengthened the implementation of Decision 1082/2013/EU on serious cross-border threats to health and supported the EU level preparedness and responses to health threats and the implementation of the International Health Regulations (IHR) (2005). Through the Joint Action, the common ability of the EU Member States and SHARP partners to prevent, detect and respond to biological outbreaks, chemical contamination and environmental and unknown threats to human health was strengthened. Special efforts were employed to narrow preparedness gaps that were identified in priority countries, in the areas where biggest gaps in the capacity required for full IHR capability existed. To improve clinical and biorisk management, hospital preparedness and response to high-consequence infectious diseases (HCID) in Europe mapping and assessment of country hospital preparedness and capacity for high-consequence infectious diseases were conducted. A feasibility study for an expert clinical support service for HCID defined the characteristics of an expert clinical consultation and support service. These actions are useful tools also for biological intentional events.

Chemical, Biological, Radiological and Nuclear (CBRN) Risk Mitigation Centres of Excellence[23] is a 2010 global Initiative funded and implemented by the European Union as part of its goal to promote peace, stability and conflict prevention. The aim of the Initiative is to mitigate risks and strengthen an all-hazards security governance in Partner Countries of the EU following a voluntary and demand-driven approach. Support is provided to implement CBRN risk mitigation activities, build capacity and promoting best practices, with a view to mitigating CBRN threats[24]

3.2 Analysis of survey

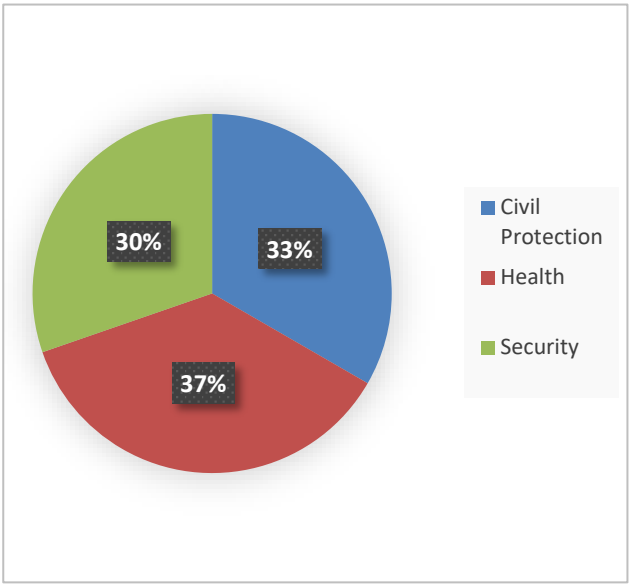
The survey responses were gathered and collated by WP6 and provided in the form of an excel spreadsheet. For the purposes of WP5.1 the sheet was imported into a SQL database to allow accurate analysis of the data, eliminating human error.

3.2.1 Number of responses

The survey was split into four sections. Part 1 was general information with other sections being specific to the Health, Security and Civil Protection Sectors. The general section of the survey received thirty-three responses from representatives of fourteen countries with wide representation from all sectors.

The breakdown of responses is shown below.

[22] Joint Action on Strengthened International Health Regulations and Preparedness in the EU (SHARP JA) - THL
[23] EU CBRN Centres of Excellence - European Union
[24] c9b67aa5-1cf0-4fa6-9ebb-17c585187498_en (europa.eu)



Number of countries	Number of Sectors responding
9	3
1	2
4	1

Figure 1. Country response to survey by sector.

3.2.2 National response plan

Respondents were asked if their country had a national cross-sectoral plan to cover CBRN responses. Of the thirty-three responses only one respondent was unaware of a plan with eighteen (55%) confirming that the plan exists and that it covers biological and chemical terror attacks. Twelve respondents (36%) identified that there is a relevant plan but noted that biological and chemical attacks are not specifically mentioned. Two responders noted that there was not a national cross-sectoral framework but that there were regional or national sector specific plans where the topic is covered. The responsibility for plan development varies by country with health only being involved in eight of the fourteen countries. The list of plans is included in appendix 4.

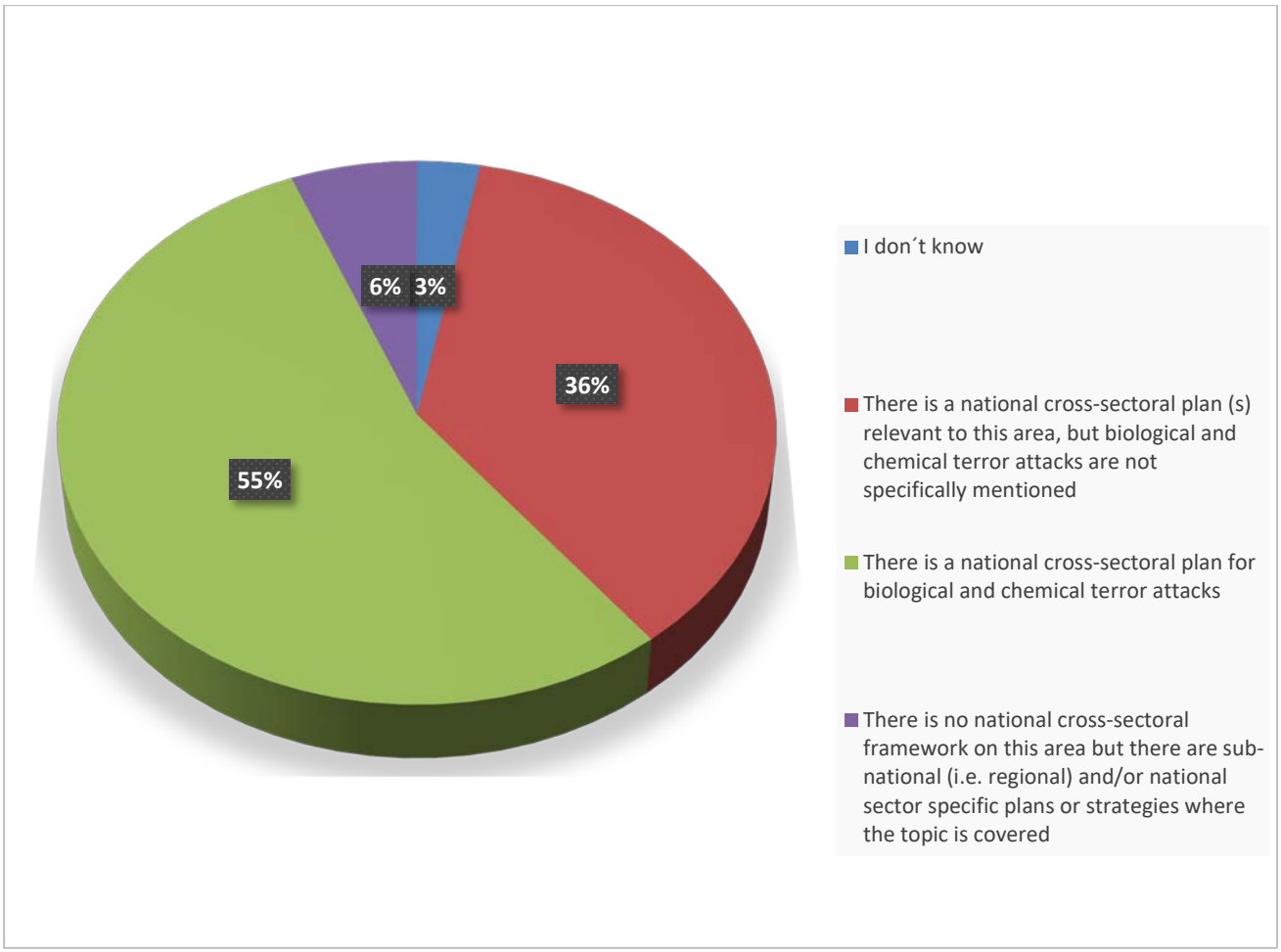


Figure 2. Existence of National Cross-sectoral Plan for Biological and Chemical Attacks.

Respondents were asked to identify which health-related sectors would have a role in the CBRN plan. Figure 3 illustrates the response with 79% suggesting that Public Health would be involved and 70% identifying healthcare/hospitals to be involved.

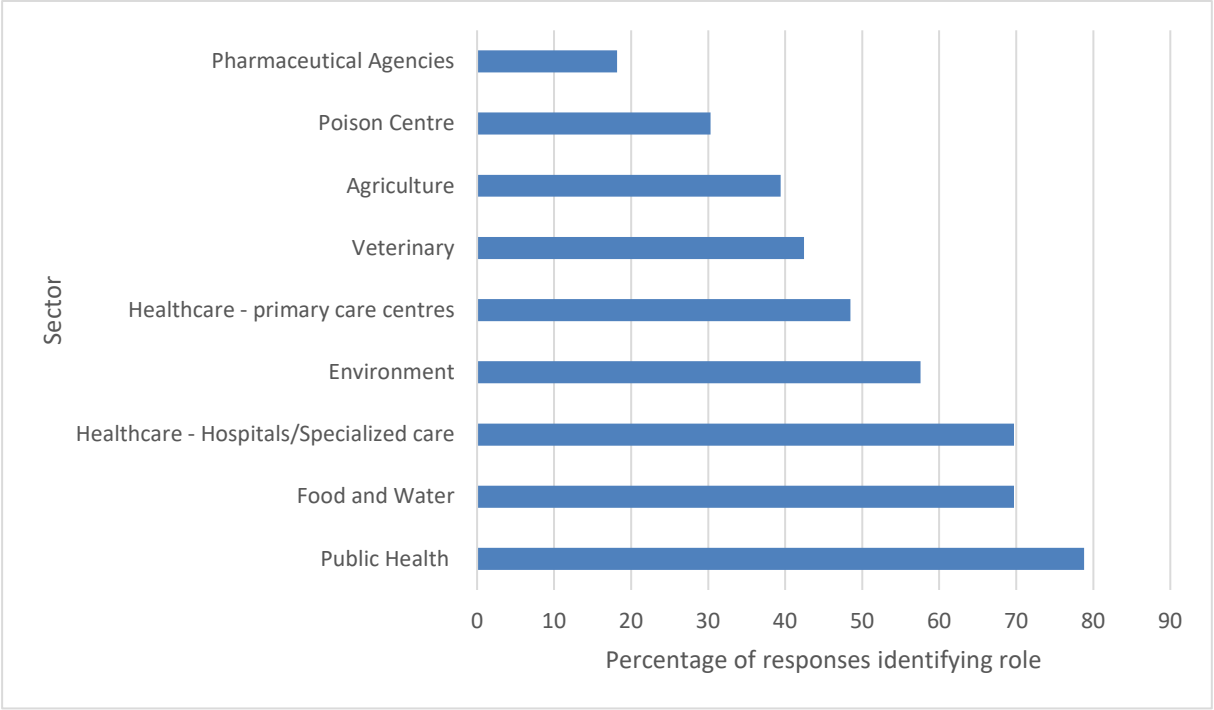


Figure 3. Health-related sectors with a role in the CBRN plan.

3.2.3 National legislative framework

Respondents were asked if their country had a legislative framework to underpin the CBRN response. Of the 33 responses, 22 (67%) confirmed that a framework existed. Of the remaining 33%, six (18%) did not know, four (12%) replied No and one (3%) did not answer. There was a consistency between sectors in all but one response.

3.2.4 Health sector section responses

Responses to the health section of the questionnaire were posted by representatives from 12 countries and the responses relevant to WP5.1 are summarised below.

3.2.4.1 Legislative framework

The respondents were asked if there is a legislative framework in their country requiring a hospital emergency plan that might be applied in case of a biological or chemical terror attack.

Half of the respondents confirmed that there was a legislative framework for both biological and chemical attacks, 17% advised the framework only applied to biological attacks, 25% advised they were not aware of any plans and one respondent (8%) did not know.

The results indicate that there is a lack of any legislative framework in almost 1/3 of European countries and that the issue is even more pronounced for chemical incidents with 50% of countries having no legislative drivers in place.

3.2.4.2 Biological and chemical agents of concern

Country representatives were asked if there was a national list of biological agents with potential dual use and/or a common list of chemical terror threat agents. For biological agents, half of the respondents were unaware of any such list.

For chemical agents, only 11 respondents replied but only four of them advised there was a list of priority chemicals available to the health sector; one reported a list existed but that it was not shared with the health sector, one advised that there was no list available and five were unsure.

In terms of chemical terror agents only two responders reported that a list was available, three advised there was no list and six were unsure.

The responses for both biological and chemical agents indicate that lists may not be available or not shared with the health sector.

3.2.4.3 National strategy for stockpiling of medical countermeasures / Non-Pharmaceutical Control Measures (NPCM)

Respondents were asked if there was a national strategy for stockpiling medical countermeasures against biological or chemical agents. Of the eleven respondents, eight (67%) advised there was a strategy for both biological and chemical terror attacks, one (8%) that there was but only for biological attacks, one (8%) that there was but only for chemical attacks, one (8%) advised there was no strategy and one (8%) was uncertain.

Respondents were asked to identify which non-pharmaceutical responses for chemical and biological agents were included in their national plans. The results are summarised in figures 4 and 5. For a more detailed comparison of the NPCMs used for biological and chemical agents, see D5.3: Report on the evaluation of available countermeasures for chemical and biological terrorist attacks.

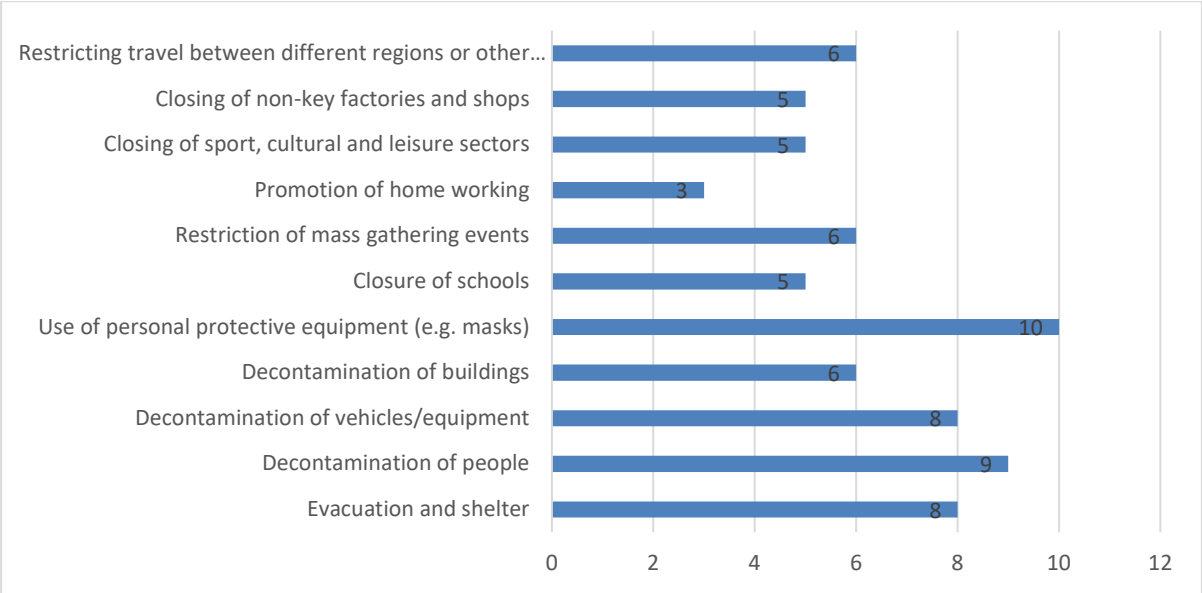


Figure 4. Biological NPCMs included in the national plan.

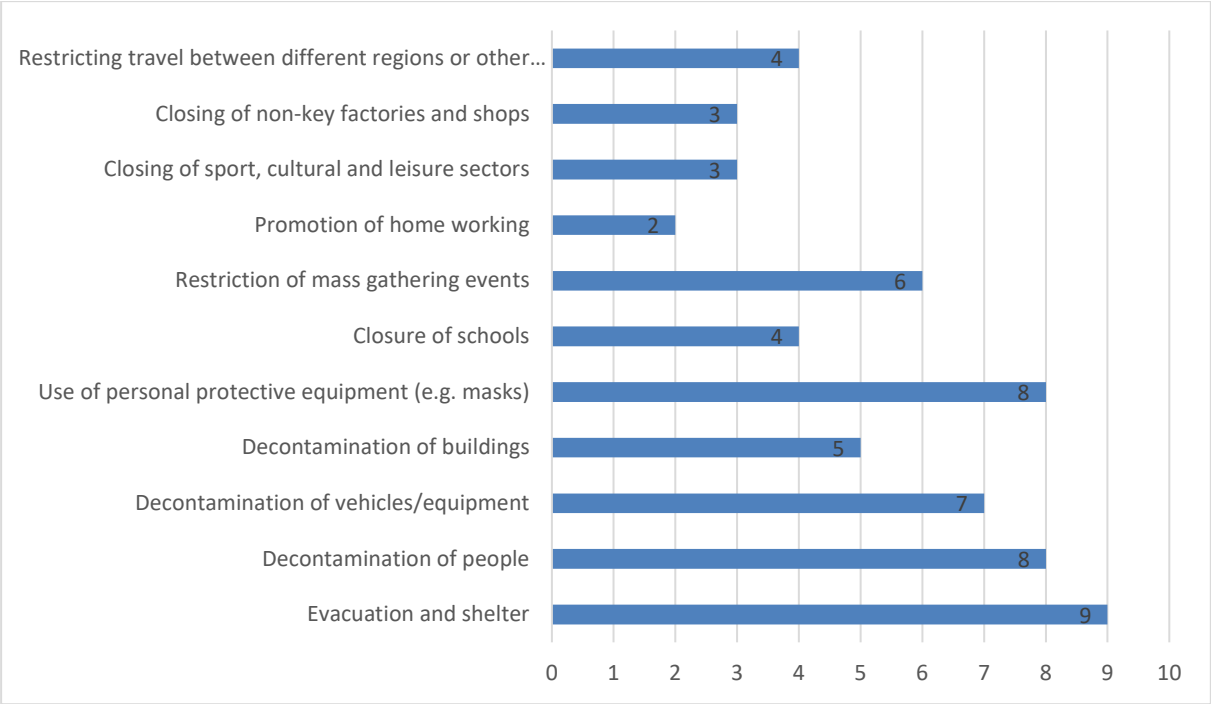


Figure 5. Chemical NPCMs included in the national plan.

3.2.4.4 Bilateral or multilateral agreements

Respondents were asked if their country has bi or multilateral agreements with other countries for cooperation in preparing or responding to biological and chemical terror attacks. For biological attacks a quarter of the respondents identified that a bilateral agreement existed with this falling to 17% for chemical attacks. In both instances a quarter of the countries reported that no agreement is in place; half or more of respondents reported that they did not know.

The results are summarized in Figure 6.

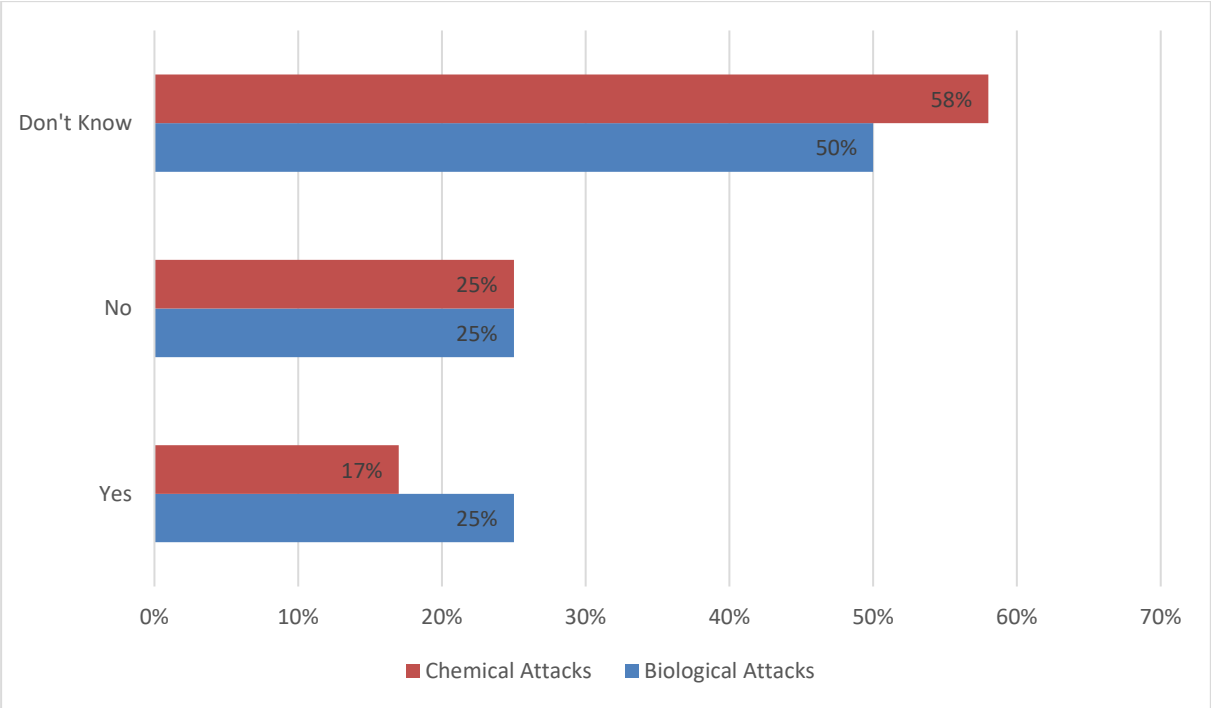


Figure 6. Bilateral agreements for chemical and biological attacks.

3.3 Face-to-face interviews

Whilst the face-to-face interviews did address procedural guidance, documentation, legislation and cross border co-operation, the predominant focus was on non-pharmaceutical control approaches, command and control issues, communication and laboratory capacity. Interviewees were asked to describe any procedural documents, guidance or legislation within their respective countries.

3.3.1 Procedural documents or agreements

The majority of respondents to the survey and interviews confirmed that procedural guidance is available, providing guidance on the roles of different agencies and how they work together. In some cases, the advice is legally binding and places a duty on the agencies whilst in others it is more advisory. Not all countries have an underpinning legal framework to enforce compliance with the guidance. Responses indicated that the lack of a legal framework may pose an obstacle to the development of local structures/frameworks as it is less likely to be prioritised politically or financially.

There was evidence that some countries have a central government approach where approaches and structures are specified in detail with regions and municipalities being expected to comply with the guidance. It was noted however that some countries have a more federalist approach with responsibility to develop plans and guidance being delegated directly to the municipal or regional level. One interviewee noted that a federal approach can be a strength (e.g., more beds and capacity), but also a weakness due to delays in escalation, info sharing and support from a national level. There was some concern that this can result in significant variation in approaches and levels of preparedness and exercising between different regions in the same country.

In some cases, there is legally binding guidance on the health sector but no equivalent guidance for the civil or security sectors. Within the health sector, it was also noted that in some cases there is

legally binding guidance for biological incidents and infectious disease but that there is no equivalent for chemical.

Development of guidance and procedures is acknowledged as resource intensive and in the case of smaller, less well-resourced countries, documentation may be less intensive. One example was provided where a country acknowledged that no such formal documentation exists as the responsibility for creating it falls on a very small number of people who have other commitments and demands on their time.

3.3.2 Guidance on cordons, isolation and decontamination (chemical incidents)

Several national guidance documents were identified with relation to the use of cordons, isolating exposed persons and decontamination protocols. Published examples of the guidance include national health preparedness plans (Norway)[25], JESIP (UK)[26], Civil Contingencies Act (UK)[27], Generic Roadmap for the management of infectious disease (Netherlands)[28] and the Emergency plan on dealing with a terrorist hostage-taking or terrorist attack (Belgium)[29].

All participating countries also reported additional national guidance which could not be shared with the project for national security reasons. Available information broadly covered the following.

1) Police procedures for investigating and managing chemical incidents.
2) Health strategies to protect public health during chemical and biological incidents.
3) The need to isolate and manage casualties.
4) Decontamination protocols for casualties, responders and others exposed.
5) Decontamination of buildings and land.
6) Control measures including cordons, isolation and access / travel restrictions.

3.4 Review of available national plans

As previously noted, most responders indicated that whilst national plans existed, many of the documents were of a high security classification and could not be shared with WP5. Consequently, there were a very limited number of documents available for review.

[25] https://www.regjeringen.no/no/dokumenter/a-verne-om-liv-og-helse/id2583172/
[26] JESIP. Responding to a CBRN(E) Event: Joint Operating Principles for the Emergency Services. 2016.
[27] Civil Contingencies Act 2004 (legislation.gov.uk)
[28] Generic Script | LCI guidelines (rivm.nl)
[29] 18/05/2020 - Royal Decree establishing the national emergency plan to deal with a terrorist hostage-taking or terrorist attack - Crisis Centre (crisiscentrum.be)

3.4.1 Slovenia

In 2019 Slovenia published comprehensive operating guidelines for emergency medical aid services with chemical, biological, radiological and nuclear incidents[30]. These provide specific guidance on the treatment of chemical exposures, biological agents and radiological exposures.

The document outlines a response framework including actions before arrival at the scene, priorities upon arrival, advice on identifying agents, safety procedures, PPE, management of casualties, decontamination protocols and risk assessment advice.

There are specific sections covering chemical exposures including information on a range of chemicals including oxidants, irritants, cyanides, anticholinesterase inhibitors and a range of other common chemical weapon agents.

Biological advice is provided for a range of common disease agents (CBRN and otherwise), including anthrax, botulism, smallpox, polio, yellow fever and others.

3.4.2 France

France produced a document relating to relief and care following a terrorist action (2019)[31]. This is an extensive document covering multiple facets of NPCM usage in the context of CBRN attacks in France, as well as some mention of pharmaceutical usage.

The document addresses new and established forms of terrorism, the use of controlled zones, information on the organisation of emergency response in France, general principles including PPE. The roles of Fire and rescue services, civil security, police and judicial capabilities. It provides detailed information on triggers for a CBRN response, the use and management of exclusion zones, management of casualties (including those with disabilities), risk assessment, population control, decontamination and the need for psychological care of victims.

3.4.3 Malta

Malta has a Civil Protection Act (1999)[32]. This addressed natural disasters but would also be applicable for CBRN incidents. It established the department of Civil Protection and outlines their duties including the provision of contingency plans for disasters and other emergencies, the organisation of training, the establishment of infrastructure to allow co-ordinated responses, the development of guidance on vulnerability and risk assessment and the promotion of public awareness of civil protection issues.

3.4.4 United Kingdom (UK)

The UK has published a range of guidance documents and protocols, (see section 3.4.4.1 to 3.4.4.4). Its approach is underpinned by the Civil Contingencies Act 2004[33]. The act defines civil emergencies and creates a duty on agencies to assess, plan and advise on a range of emergency situations including CBRN terror attacks. The act clearly defines the roles and responsibilities of government

[30] Šarc, Lucija / Emergency Medical Aid Service 2019 Operating guidelines – emergency medical aid service with chemical, biological, radiological ad nuclear accidents. (Slovenian) VSEBINA (gov.si)

[31] Circular relating to the national doctrine for the use of relief and care means in the face of terrorist action using chemical materials (French) 2019 France Premier Ministre Circulaire 700/SGDN/PSE/PPS du (sante.gouv.fr)

[32] https://www.ifrc.org/docs/IDRL/Laws/Malta%20Civil%20Protection%20Act.pdf

[33] Civil Contingencies Act 2004 (legislation.gov.uk)

departments, emergency responders, local government and others to provide a cohesive and comprehensive response.

In addition to the enabling act, the UK has a range of guidance documents summarised below.

3.4.4.1 Joint operating principles for emergency services (JESIP)

JESIP[13] provides guidance on the operation of the joint operability framework in the UK[34]. It addresses response from the Initial Operational Response, through transition to the Specialist Operational Response and into the recovery phase of an incident. The document covers identification of an incident as CBRN, the principles of joint working and shared situational awareness, and includes the Joint Decision Model which provides a mechanism for different agencies to reconcile potentially differing priorities to inform effective decisions.

3.4.4.2 Evacuation and shelter guidance

In 2012 the UK government produced non-statutory guidance to complement Emergency preparedness and Emergency response and recovery[35]. It sets out the issues that local planners will need to consider and tailor to local circumstances and was produced to support responders in meeting their legal responsibilities. It is intended to help responders to develop flexible plans for evacuation and shelter that can be used in a wide range of scenarios. The guidance addresses public safety, co-ordination across boundaries, proportionality of response, the ability to scale the response, flexibility, loss of essential services, human behaviour issues, communication issues, recovery considerations, the need for informed decision making and the need for training and exercise.

3.4.4.3 The release of chemical, biological, radiological or nuclear (CBRN) substances or material: Guidance for Local Authorities[36]

This document was released in 2003. It was designed to:

1) provide local authorities with an overview of the multi-agency response to a deliberate release of CBRN material by terrorists;
2) summarise the characteristics and effects of widely available CBRN agents;
3) provide a general overview of some of the consequence management problems arising from terrorist and accidental releases of hazardous materials;
4) highlight key areas of pre-planning activity and resource management which should be considered by local authorities; and
5) indicate where local authorities can obtain further technical or specialist information or advice.

[34] About JESIP - JESIP Website
[35] Evacuation and shelter guidance - GOV.UK (www.gov.uk)
[36] The release of chemical, biological, radiological or nuclear (CBRN) substances or material: guidance for local authorities - GOV.UK (www.gov.uk)

4 Gaps in preparedness

4.1 Final considerations and limitations

The key limitation of this assessment was the lack of publicly available documentation due to the security sensitive nature of the project. This was accentuated by the small cohort of participants in the face-to-face interviews, resulting in a relatively small sample size in that element of the data collection.

Positively, the survey and interviews have provided evidence that most countries have a broadly similar approach to identifying and managing CBRN incidents within their boundaries and that there are clear lines of responsibility and an understanding of the different agencies' capabilities and roles in a response. There are differences in the development and management of guidance with a combination of national proscription and regional responsibility but broadly the approach is consistent.

Below in section 4.2 is a summary of the gaps identified through the work described in this report.

4.2 Identified gaps

Several gaps have emerged through the work described in this report. These include:

- The omission of chemical and biological attacks in approximately half of countries cross-sectoral plans,
- Uncertainties regarding legislative frameworks in 1/3 of the responses,
- Lack of provision of information on chemical and biological agents of concerns to health sectors,
- Uncertainties surrounding the stockpiling of medical and non-medical counter measures,
- The lack of knowledge regarding bilateral agreements regarding CBRN responses.

The interviews identified that a sound legal framework, with very specific duties on agencies and/or regions, was beneficial in ensuring that CBRN preparation and preparedness was adequately funded and resourced and that this would also ensure more comprehensive training and exercising.

4.2.1 Gaps identified through the survey

4.2.1.1 National response plans

Although most countries had national response plans for CBRN response, it was apparent that chemical and biological issues were not specifically mentioned or addressed in approximately 1/3 of the responses (36%). Whilst it is likely that chemical and biological responses are addressed in other documents, strategies and procedures, the omission from the overarching plans is significant. The individual or cross-sectoral responsibility for developing the national response plans varied between responders.

4.2.1.2 National legislative framework

Respondents were asked if their country had a legislative framework to underpin the CBRN response. Approximately 2/3 of responders (67%) confirmed that a framework did exist in their country.

There appeared to be some inconsistency in the legislative requirements for chemical and biological response planning. Half of the responders confirmed that there was a legislative framework for both biological and chemical attacks but significantly, 17% advised the framework only applied to biological attacks, 25% advised they were not aware of any plans and one respondent (8%) did not know.

The lack of a legislative or regulatory framework in a country has the potential to adversely affect the funding and prioritisation of CBRN related response planning and exercising.

4.2.1.3 Agents of concern

Awareness of biological and chemical agents of concern is vital for surveillance and early recognition that a CBRN incident has occurred. Responders were asked if they were aware of lists of chemical and biological agents and if they were shared between different agencies.

For biological agents, half of the survey respondents were unaware of any such list. For chemical agents only 11 respondents replied but only four of them advised there was a list of priority chemicals available to the health sector (36%) meaning that in approximately two thirds of responder's health sectors no lists of chemicals of concern were provided.

Awareness of chemical and biological agents is key to early recognition of a CBRN incident with delays in identification being a contributing factor to delayed or inappropriate response / containment / mitigation and decontamination. The survey indicates that there are significant gaps in awareness of agents of concern and training across the responding countries.

4.2.1.4 Bilateral Agreements

For biological attacks a quarter of the respondents identified that a bilateral agreement existed with this falling to 17% for chemical attacks. In both instances a quarter of the countries reported that no agreement is in place while half or more of respondents reported that they did not know. This is a concern for cross-border terror incidents where a consolidated response is required from all countries involved.

4.2.1.5 Procedural Documents and Agreements

Not all countries have an underpinning legal framework to enforce compliance with the guidance. Responses indicated that the lack of a legal framework may pose an obstacle to the development of local structures/frameworks as it is less likely to be prioritised politically or financially. In some cases, there is legally binding guidance on the health sector but no equivalent guidance for the civil or security sectors. It was also noted that in some cases there is legally binding guidance for biological incidents and infectious disease but that there is no equivalent for chemical. This presents a gap where the three sectors are not bound by the same rules and requirements required for a collaborative inter-sectoral response.

4.2.2 Gaps identified via interviews

4.2.2.1 Procedural documents or agreements

Some countries have identified a lack of guidance as a key issue to be resolved. The interviews noted that there was a mix of central and federal approaches to the implementation of chemical and biological preparation and response. This meant that in some cases there was the potential for significantly different approaches to the risk assessment process, the provision of equipment, training and exercising across different regions or municipalities. This issue could potentially be addressed by placing legislative or regulatory requirements on the regions to ensure more consistency in budgeting and prioritisation decisions and the need for training and exercising.

4.2.2.2 Decisions on evacuation, cordon distances, decontamination

Cordon decisions were typically made by fire and rescue services, but in some cases the decisions were made by local mayors (following advice from first responders). All responders adopted similar approaches to decision making and public protection. Guidance used for making evacuation / cordon decisions was country specific and there was no standardised approach across the responders.

Recovery and decontamination of casualties / contaminated individuals varied between countries but there was a consistent approach to minimise secondary contamination and to protect public health. All countries utilise appropriate scene management to protect responders and the public. This involves designating three zones. The hot zone (red or exclusion zone) is the area immediately surrounding the incident site in which primary contamination may occur. The warm zone (yellow zone, contamination reduction zone, surrounds the hot zone and delineates an area where survivors and responding team members are decontaminated. The cold zone (green zone, support zone) is an uncontaminated area surrounding the warm zone where resources can safely be staged and assembled[37].

Some countries have trained and equipped ambulance crews to enter hot zones, but many have not. Fire and rescue services typically move casualties to the warm zone and provide decontamination before treatment can commence. In some cases, patients would be "double wrapped" to minimise the risk of cross contamination and then transported to hospitals for decontamination and subsequent treatment.

All responders used a mixture of dry and wet decontamination. WP 5.2 and WP5.3 provide further information on decontamination protocols. There was no common agreement across the responders on decontamination procedures. There was significant national variance on the interaction and interoperability between sectors. This may lead to inconsistent responses across Europe or significant differences in responses / decision making. The lead response was typically at a local level with national agencies / government becoming involved for national importance or large / sensitive issues. There is a clear need for guidance on interoperability between all sectors.

4.2.2.3 Training and exercising

Approaches to training and exercising varied significantly across countries and it was noted that most training exercises are chemical rather than biological. It was also clear that joint exercising among the

[37] 3.4. Site Localization of Decontamination | FEMA.gov

responding agencies was uncommon and that the needs of a chemical incident response are different to those for a biological one.

There was an acknowledgement that more cross-sectoral training and exercising would be beneficial but that the cost and resource implications were a barrier to this taking place. This was a particular issue if the exercise was cross boundary.

4.2.2.4 Laboratory capabilities for biological and chemical agents

Laboratory capacity and response varied between countries, particularly in terms of mobile laboratory capacity. In a CBRN incident there was predominantly a reliance on the deployment of security sector resources. Deployment times varied from hours to days depending on political and geographic factors.

Different constraints were identified for biological and chemical laboratory capacity. A combination of health, public and private sector laboratories were used in most countries. It was not always clear how this capacity was managed and optimised during an incident response. The national picture of the total laboratory capacity available is not always clear.

4.2.2.5 Accessing support

Some countries identified a definite need to access support from other countries when a large or protracted incident occurs. There was particular concern if a large or widespread incident would reduce the inclination or capacity to share resources and hamper cross border personal, operational support and PPE sharing. This was a particular concern in the hypothetical case of an incident triggering an alert in other countries, meaning there would be operational and political pressure to keep resources rather than to share them.

There was a significant lack of knowledge on the cross border and EU sharing support mechanisms, highlighting a need to plan and train for using support during large / extended incidents.

4.2.2.6 Stockpiles

Stockpiling of PPE and other equipment varies between countries. In some cases, there is a central agency responsible for supplying ambulance stations and hospitals, while in others it devolves down to individual areas / hospitals. There was uncertainty on the quantities and availability of PPE, particularly in the case of cross border events.

It was also noted that it is essential that responders are familiar with and trained on the use of specific PPE. This may pose a barrier with the sharing of PPE across state and country boundaries as there is no single specification applied across Europe.

Stockpiling of PPE and other equipment poses a significant logistical and financial challenge. There was an acceptance that stockpiling is necessary but concerns that large enough stockpiles to meet CBRN needs would result in significant wastage as equipment reached the end of its shelf life. Management of stockpiling was delegated to different sectors, departments and agencies with different stockpiling approaches at local, regional and national levels.

Funding of adequate stockpiling was acknowledged as a challenge, as was deployment and distribution. This was accentuated in countries with a less central, more federalized approach.

There were concerns that the recent pandemic has eroded public trust in advice relating to the use of face coverings, due to misinformation and conflicting approaches to quarantine / PPE between countries.

4.2.2.7 General concerns

It was noted that different sectors had different approaches to information sharing and that this can pose a challenge to a response during a live incident. Generally, health systems share information widely and as a routine measure whilst security agencies are perhaps less likely to widely disperse information and intelligence. There are challenges in managing these different cultures during a live incident if unnecessary delays and errors are to be avoided. It was felt that improved training and exercising would help to address this issue.

In smaller countries, low numbers of specialist staff can pose a barrier to developing documentation, training and exercising. In more federal countries there may be challenges with different areas (municipalities) taking different approaches to the same problems. This suggests there is a need to develop training and scenarios to raise awareness and to ensure responses are proportional.

There is a need for risk assessment for different agents. Responders identified that the ECDC risk prioritization process would be a possible basis for standardisation of this process.

The biggest barriers to non-pharmaceutical response are the time it would take to scale up the response, and pressure on workforces (medical and other responders). Delays in identifying both chemical and biological agents were identified as a concern. A specific example was the identification of plague, as it is now categorised as a lower risk and so mandatory quarantine would not be recommended.

5 Recommendations

Key recommendations have emerged, to address the gaps identified in section 4.

5.1 Establish a national legislative framework

National legislative frameworks need to be established (where they are not already in place) for both chemical and biological incidents. This would ensure compliance with existing guidance between health and the security/civil protection sectors and ensure consistency between intentional/unintentional incidents.

Legislation should place specific requirements on municipalities, regions and agencies including:

I. The establishment of a national risk register including possible CBRN threats.
II. A requirement for regions or municipalities to undertake local risk assessments re CBRN incidents.
III. The identification of funding and resources to allow cross sector / agency training and exercising for CBRN responses.
IV. A requirement for regular cross-sector exercising re CBRN responses.
V. Establish national standards and expectations re shelter in place, evacuation, the use of cordons, decontamination, casualty treatment and evacuation, stockpiling and management of PPE.

5.2 Develop and share information on agents of concern

Countries should develop documents outlining biological and chemical agents of concern, informed by an annual risk assessment. The purpose of these documents is to raise the awareness of medical staff and first responders who are likely to be on the frontline of identifying that a CBRN incident has occurred.

The documents should include the physical characteristics of the agents, clinical symptoms, information on the severity / threat posed by the agents, reporting and escalation procedures. The documents should also be supported by regular training (ideally linked to the wider requirement for cross-sector CBRN exercising).

5.3 CBRN detection and response activation

The majority of countries reported well-established surveillance systems for biological threats both nationally and internationally. However, in the case of chemical CBRN incidents systems are not as robust. Detection is likely to rely on medical staff or first responders associating symptoms with possible CBRN agent exposure or on poison centres (where present) identifying unusual exposures or patterns of symptoms.

5.4 Stockpiling of medical and non-medical countermeasures

Produce strategies for the purchasing, stockpiling and management of medical and non-medical countermeasures, including PPE. This should consider country specific requirements such as geography and political / operational response systems.

Investigate and establish protocols for cross border and EU support mechanisms and ensure staff are trained and exercised to reinforce knowledge surrounding the availability and accessibility of this resource.

5.5 Training and exercising

Training and exercising of terror attacks should be prioritised, particularly live play exercises for both chemical and biological terror attacks. This would also help in increasing the collaboration between sectors and increase the understanding of the roles of each sector. Improved development and training on agents of concern combined with exercising and cross sector engagement is required to develop more robust systems.

5.6 Develop bi or multilateral agreements for support

Foster bilateral agreements between countries in the case of chemical or biological terror attacks, by providing assistance, support and resources to neighbouring affected countries.

Consideration should be given to the additional needs and support requirements of smaller or more poorly resourced countries.

Most have procedural guidance available providing guidance on the roles of different agencies and how they work together. In some cases, the advice is legally binding, placing a duty on the agencies, in others is more advisory. Not all countries have an underpinning legal framework to enforce compliance with the guidance.

5.7 Develop national guidance to formalise interoperability requirements and procedures between all sectors (Command and Control)

Develop country specific guidance specifying the roles and duties of different sectors during an operational response. This guidance should include:

I. A list of the key agencies and agencies / sectors that could provide support.
II. Detailed specifications of the roles and responsibilities of different agencies.
III. Details of command-and-control structures to be implemented during a CBRN incident.
IV. Operational and location requirements to be implemented during a CBRN response.
V. Details of the decision-making process to be followed during CBRN incidents.
VI. Details of communication procedures, information sharing requirements and situational awareness procedures.
VII. Detail the risk assessment approach to be followed during a CBRN incident.

6 Conclusion

The findings of the survey, literature review and subsequent interviews have identified a generally robust and similar approach to biological and chemical CBRN incidents across the participating countries. Capacity, response times and organisational approaches did vary significantly between countries, but this is likely to be due to the significant geographic, political and logistical differences between countries.

The common findings, particularly from the interviews, were that there was a need for a legislative framework to drive CBRN preparedness, particularly when delegated to regions or municipalities, a need to improve information on common agents to formalise interoperability between agencies, and a need for significantly more training and exercising.

Although the report aimed to identify good practice in preparedness and response to biological and chemical terror attacks among the 17 European JA TERROR partners, only nine countries provided a full overview of their three sectors. Consequently, the results obtained in this report cannot be extrapolated to EU/EEA or European JA TERROR as a whole. This situation is further exacerbated by the small number of countries that participated in the interview process.

Annex 1 – Extract of general and health sections of the WP5 / 6 Survey

Co-funded by
the Health Programme
of the European Union

Joint Action TERROR survey: Mapping of current national preparedness & response framework to biological and chemical terror attacks

Fields marked with * are mandatory.

Introduction

Joint action TERROR is a joint effort by health authorities in European countries to improve health preparedness and cross-sectoral cooperation in the event of a biological or chemical terror attack. The start was in May 2021 and it will run for three years. Joint Action TERROR brings together **31 partners from 17 European countries from EU Member States, EEA Countries, and the Participating States** and is coordinated by the Norwegian Directorate of Health.
Joint Action TERROR's main objectives are to address gaps in health preparedness and to strengthen cross-sectoral work with security, civil protection, and health sectors' response to biological and chemical terror attacks.

See here for more information regarding the JA terror project.

This survey aims to map the current national preparedness and response framework to biological and chemical terror and focus on cross-sectoral collaboration. It has been jointly developed by two Work Packages within the Joint Action.

- WP5 "*Preparedness & Response planning to biological and chemical terrorist attacks*" led and co-led by the Italian National Institute of Infectious Diseases (INMI, Italy) and the UK Health Security Agency (UKHSA, UK).
- WP6 "*Cross-sectoral collaboration: Security, civil protection and health*", led and co-led by the Ministry of Health in Spain and the National Institute of Public Health, Sciensano, in Belgium.

The survey focuses on three different sectors (health, security, and civil protection) involved in preparedness and response to biological and chemical terror attacks and mainly in their collaboration among sectors. The information collected will serve to establish the baseline and develop further activities in the frame of the Joint Action TERROR. As the expected outcomes of this survey are a key aspect of future JA activities, high-quality and accurate responses are highly valorized and appreciated.

This survey has been distributed to the European partner countries taking part in the Joint Action. It is intended to be responded by stakeholders representing each of the sectors at the national level with direct responsibility in preparedness and response to biological and chemical terror attacks. **You are receiving it**

1

as you have been proposed as a representative of one of these sectors in your country in the context of the stakeholder mapping conducted by the Joint Action TERROR. We have distributed the survey to three persons by country, one per sector. Please, respond to the general part of the survey and to the specific section focused on your sector. **Please, feel free to engage or consult with any other experts within your sector for additional information if you need it. At the end of the survey, we ask you to provide us with the details of the organization(s) the contacted expert(s) belong to**. Unless otherwise specified, the provided answers should be validated by the organization to which the responders belong.

Survey results will be compiled in a report and will be used as a starting point to guide Joint Action tasks and activities aiming to improve cross-sectoral collaboration in this area. As we are in the mapping phase, we want to know about what is currently in place in your country. The information you provide will not be used for any purpose outside of the TERROR Joint Action without prior written consent from you.

Data Protection: We inform you that, in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016, regarding the protection of natural persons with regard to the processing of personal data and free movement of these data, the treatment of the personal data provided by you in this survey will be carried out solely and exclusively for contacting you on the follow-up of this survey and the JA TERROR related activities. In no case, the data will be communicated or transferred to third parties, without the express consent of the affected party, except in those cases provided by law.

As you may need to answer the survey in different time slots you can use the "save the draft" button that you will find on the right side of the survey if you need to stop and continue later enabling you to create a temporary link to continue the survey later.

*If you have any questions, difficulties or comments, please contact Berta Suárez Rodriguez from the Ministry of Health in Spain: **jaterror@sanidad.gob.es***

About you

The personal information about you such as your name and email address which will only be used by us to contact you for follow up, if needed.

* Name:

* Is your country a Joint Action TERROR participant country?
  - ○ Yes
  - ○ No

* Country:
  - ○ AT - Austria
  - ○ BE - Belgium

- ○ BIH - Bosnia and Herzegovina
- ○ BG - Bulgaria
- ○ HR - Croatia
- ○ CY - Cyprus
- ○ CZ - Czechia
- ○ DK - Denmark
- ○ EE - Estonia
- ○ FI - Finland
- ○ FR - France
- ○ DE - Germany
- ○ EL - Greece
- ○ HU - Hungary
- ○ IE - Ireland
- ○ ISL - Island
- ○ IT - Italy
- ○ LV - Latvia
- ○ LT - Lithuania
- ○ LU - Luxembourg
- ○ MT - Malta
- ○ NL - Netherlands
- ○ NOR - Norway
- ○ PL - Poland
- ○ PT - Portugal
- ○ RO - Romania
- ○ SRB - Serbia
- ○ SK - Slovak Republic
- ○ SI - Slovenia
- ○ ES - Spain
- ○ SE - Sweden
- ○ UK - United Kingdom

* Sector:

- ○ Health
- ○ Security
- ○ Civil Protection

* Organization (ex. ministry, Agency...). Please provide full name without abbreviations:

* Unit/ Department:

* Job position:

3

* Email address:

Phone number with country code:

General

* 1.- Select the option that better reflects the situation in your country related to the preparedness and response framework against biological and chemical terror attacks.

- ○ There is a national cross-sectoral plan **for biological and chemical** terror attacks
- ○ There is a national cross-sectoral plan **only for biological** terror attacks
- ○ There is a national cross-sectoral plan only **for chemical** terror attacks
- ○ There is a national cross-sectoral plan (s) relevant to this area, but **biological and chemical** terror attacks are **not specifically mentioned**
- ○ There is **no national cross-sectoral framework** on this area **but there are sub-national** (i.e. regional) and /or **national sector specific** plans or strategies where the topic is covered
- ○ No, there is not a plan relevant to this area
- ○ I don´t know

1.-cont. If you have any comments or would like to clarify your answer related to the previous question do it here

1.-cont. If possible, could you share with us the name of the plan/s?

Questions 2 to 6 refer to the plan you referred to when selecting the answer in the previous question.

2.- Is the plan underpinned in a legislative framework?

- ○ Yes
- ○ No
- ○ I don´t know

3.- Which of these sectors and organization/agency/political body is leading and responsible for the plan **development**?

(Please, mention the organization/agency/political body within the leading sector)

Sector	Organization/agency/political body (please provide full name in English with no abbreviations)
Health	
Security	
Civil protection	
Presidency/Head of Government level	
Other (specify)	
Explain if overlapping/shared responsibilities	

5

4.- According to the plan: which sector would in general be in charge of the **activation** of the plan?

- Health
- Security
- Civil Protection
- No specific sector is in charge
- Other
- I don´t know

4.-cont. Please specify the entity if one sector or "other" was ticked in previous question.

5.-Which sectors and areas have a role in the plan?
(tick all relevant sectors and areas)

a) HEALTH	Role mentioned in the plan	I don´t know
Public Health		
Agriculture		
Veterinary		
Food and Water Safety		
Environmental		
Healthcare - hospitals/specialized care		
Healthcare - primary care centres		
Pharmaceutical agencies		
Poison Centre		

-

b) SECURITY	Role mentioned in the plan	I don´t know
Law enforcement agencies		
Intelligence agency		
Military/defense		
Justice		
Police		

-

c) CIVIL PROTECTION	Role mentioned in the plan	I don´t know
Civil protection specialized operational units		

6

Fire and rescue service	○	○

-

d) OTHER	Role mentioned in the plan	I don´t know
Industry/private sector	○	○
Transport/customs	○	○
Consular emergencies	○	○
Emergency call centre 112	○	○
Political bodies and government units	○	○
National cross-sectoral crisis centre	○	○
Telecommunications	○	○
Energy	○	○
Mass media	○	○
Funeral services	○	○

5.-cont. Please, specify any additional sectors or areas with a role in the plan not mentioned in the table above:

6.- In your country, has the plan been activated in the context of the occurrence of real event(s) in the last five years?

- ○ Yes
- ○ No
- ○ I don´t know

6.-cont. If yes, could you specify the event(s) and the year(s) of occurrence?

7.- Please, provide any additional comments or clarification regarding the previous questions here below:

** Please, select here the sector you belong to in order to continue the survey with the specific questions:

- ○ Health (from question 8 to 58)
- ○ Security (from question 59 to 102)
- ○ Civil Protection (from question 103 to 147)

7

HEALTH SECTOR

Kind reminder -Please, engage or consult with other experts within the health sector as required, to complete all relevant questions. We ask you to record the name of the organisation(s) and the department these experts belong to as well as their job position(s), as this will be asked at the end of the survey.

You can always save the survey draft and continue at a later stage, using the "save the draft" button that you will find on the right side of the survey. This creates a temporary link through which you can continue the survey later.

1.- Preparedness

1.1.- Roles and responsibilities and existing structures in biological and chemical terror attacks

8.- Are the roles and responsibilities **of the health sector** defined in the plan you referred to in question 1 in the general part of the survey?

- ○ Yes
- ○ No
- ○ I don´t know

8.-cont. For options regarding a plan only including biological or chemical terror attacks, please specify which:

8.-cont. If you have any comments or would like to clarify your answer related to the previous question do it here:

8

9.- Within the health sector, which is the organization/agency in charge of the following activities at the national level in **biological and chemical terror attacks**? (Please provide full name opf the organizations in English with no abbreviations)

Activity	Name of the organizations/agencies in charge in **biological** terror attacks.	Name of the organizations/agencies in charge in **chemical** terror attacks.
1.- Lead or coordinating organization/focal point		
2.- Surveillance, intelligence activities, threat detection and early warning *(Activities related to monitoring, collection and collation of data from relevant sources to early identification of potential health threats, their verification, assessment, and investigation in order to recommend public health measures to control them)*		
3.- Health risk assessment *(It aims at supporting the preparedness and response to a public health threat. It provides a timely summary about the likelihood and impact of a public health threat related to a specific event. It also includes potential options for response)*		
4.- Designated technical organization for expert advice *(Is there a lead agency/organization in charge of research and providing evidence based advice on the following topics:*		
- Environmental detection and analysis		
- Medical management		
- Non-pharmaceutical control measures		
- Post-incident management / recovery		
- Other topic (please describe)		

9

10.- Does the use of biotoxins *(e.g. ricin, abrin, aflatoxins...)* in a terror attack lead to the involvement of additional specific organizations/agencies not mentioned above ?

- Yes
- No
- I don´t know

10.-cont. If yes, please specify them:

11.- Is there a legislative framework in your country requiring a hospital emergency plan that might be applied in case of a **biological or chemical** terror attack?

- Yes, **for both** biological and chemical terror attacks
- Yes, only for **biological** terror attacks
- Yes, only for **chemical** terror attacks
- No
- I don´t know

12.- Is there any formalized network/arrangement **to access laboratory facilities for sampling and analyzing biological or chemical** terror agents in your country?

- Yes, **for both** biological and chemical terror attacks
- Yes, only for **biological** terror attacks
- Yes, only for **chemical** terror attacks
- No
- I don´t know

12.-cont. If yes, please specify:

12.-cont. If no, can your country access laboratory facilities through agreements with other countries?

- Yes
- No
- I don´t know

13.- Are there mobile laboratories able to provide support in sampling or analysis of **biological or chemical** agents involved in a terror attack in your country?

- Yes, **for both** biological and chemical terror attacks
- Yes, only for **biological** terror attacks
- Yes, only for **chemical** terror attacks
- No
- I don´t know

13.-cont. If yes, please mention them, specifying the level and the responsible organization:

14.- Is there one or more BSL4 laboratory in your country?

- Yes
- No
- I do not know

14.-cont. If yes, please mention them, specifying the names and the locations

14.-cont. If no, can your country access laboratory facilities through agreements with other countries?

15.- Is there a national list of **biological** agents with potential dual use?

- Yes
- No
- I do not know

15.-cont. If yes, are there any relevant differences from the EU list established in 2021?

15.-cont. If no, are you using the EU list or any other international list?

- We use the EU list established in 2021
- We use another international list
- I don´t know

15.-cont. If other list, please provide the reference:

16.- Is there in your country a system to record the use or storage of high containment and/or potential dual use **biological** agents?

- Yes
- No
- I do not know

16.-cont. If yes, please mention the responsible organization:

17.- Is there a list of priority **chemicals of concern** in your country?

11

(Priority chemicals are those which are produced, transported, used or stored in high volumes in your country and carry a risk to public health. An example of a global list from WHO can be found here)

- ○ Yes, and accesible to the health sector
- ○ Yes, but not accessible to the health sector
- ○ No
- ○ I do not know

17.-cont. If yes, could you please share it with us?

18.- Is there a list of **chemical terror** threat agents?
(Terror threat agents are chemicals which have a potential use in terrorist attacks)

- ○ Yes, and accesible to the health sector
- ○ Yes, but not accessible to the health sector
- ○ No
- ○ I don´t know

18.-cont. If yes, could you please share this with us?

19.- Is there a poison centre in your country?
(What is a poison centre? WHO: A poisons centre is a specialized unit that advises on, and assists with, the prevention, diagnosis and management of poisoning. The structure and function of poisons centres varies around the world, however, at a minimum a poisons centre is an information service. Some poisons centres may also include a toxicology laboratory and/or a clinical treatment unit)

- ○ Yes, please complete the table below
- ○ No
- ○ I don't know

19.-cont. If yes, please, fill in the cells:

	Poisons centre name	**Poisons information service** (Yes/No/I don't know)	**Associated toxicology laboratory /laboratories** (Yes/No/I don't know)	**Clinical treatment unit** (Yes/No/I don't know)	**Other relevant information**
1					
2					
3					

13

20.- Is there in your country a surveillance system related **to chemicals**, or does your country have equivalent components of such a system?
(Surveillance involves the ongoing collection, integration, analysis and interpretation of data about environmental hazards, exposure to those hazards and the related human health effects. This includes chemical hazards, chemical exposures and chemical health effects)

- Yes
- No
- I do not know

20.-cont. If yes, please describe them:

21.- Is there any national strategy for stockpiling of medical countermeasures against **biological or chemical** agents?

- Yes, **for both** biological and chemical terror attacks
- Yes, only **for biological** terror attacks
- Yes, only **for chemical** terror attacks
- No
- I don´t know

22.- Which of the following non-pharmaceutical control measures are accounted for in the plan?

BIOLOGICAL TERROR ATTACKS	Included	Not included	I don´t know
Evacuation and shelter			
Decontamination of people			
Decontamination of vehicles/equipment			
Decontamination of buildings			
Use of personal protective equipment (e.g. masks)			
Closure of schools			
Restriction of mass gathering events			
Promotion of home working			
Closing of sport, cultural and leisure sectors			
Closing of non-key factories and shops			
Restricting travel between different regions or other countries			

-

CHEMICALS TERROR ATTACKS	Included	Not included	I don´t know
Evacuation and shelter			

Decontamination of people	○	○	○
Decontamination of vehicles/equipment	○	○	○
Decontamination of buildings	○	○	○
Use of personal protective equipment (e.g. masks)	○	○	○
Closure of schools	○	○	○
Restriction of mass gathering events	○	○	○
Promotion of home working	○	○	○
Closing of sport, cultural and leisure sectors	○	○	○
Closing of non-key factories and shops	○	○	○
Restricting travel between different regions or other countries	○	○	○

22.-cont. If other, please describe the non-pharmaceutical control measures:

1.2.- Information sharing procedures within and between sectors

23.- Does the health sector meet with relevant stakeholders **within the health sector** to prepare for biological and chemical terror threats/attacks?

- ○ Yes, regularly
- ○ Yes, but in an ad hoc manner
- ○ No
- ○ I don't know

23.-cont. If yes, at what level are these meetings?

- ○ High level cross-sectoral coordination committee (political)
- ○ Technical working groups
- ○ There are meetings in both levels

23.-cont. Which is the purpose and scope of these meetings?

- ○ Sharing information that could be of interest for those involved
- ○ Updating and developing the plan or related procedures and protocols/guidelines
- ○ Both: sharing information and updating and developing the plan or procedures
- ○ Other:

23.-cont. If other, please specify the purpose:

24.- Does the health sector meet **with other sectors**, with relevant stakeholders to prepare for biological and chemical terror attacks?

- ○ Yes, regularly
- ○ Yes, but in an ad hoc manner
- ○ No
- ○ I don´t know

24.-cont. At what level are these meetings?

- ○ High level cross-sectoral coordination committee (political)
- ○ Technical working groups
- ○ There are meetings at both levels

24.-cont. What is the purpose or scope of these meetings?

- ○ Sharing information that could be of interest for those involved
- ○ Updating and developing the plan or related procedures and protocols/guidelines
- ○ Both: sharing information and updating and developing the plan or procedures
- ○ Other

24.-cont. If other, please specify the purpose

25.- What channels are used by the health sector to exchange relevant information (other than event notifications), with other sectors involved in the plan?

- ☐ networks (describe)
- ☐ conferences
- ☐ bulletins
- ☐ emails
- ☐ others

25.-cont. If others, please specify the channel; if networks, please mention them:

26.- Is there an updated list of other sectors´ focal points with emails and phone numbers available at the health sector level?

- ○ Yes
- ○ No
- ○ I don't know

1.3 Training, exercises

27- Is there specific training aimed at the health sector, including simulation exercises, available to support preparedness and response to **biological or chemical terror** attacks?

- ○ Yes

- ○ No
- ○ I don´t know

27.-cont. What format is used? *(chose all the relevant)*

- ☐ Courses
- ☐ Exercises
- ☐ Workshops
- ☐ Other

27.-cont. Which organization(s) is arranging it?

27.-cont. Is there an cross-sectoral component included?

28.- Is the health sector informed of other preparedness activities *(such as training, evaluations, exercises….)* within each of the sectors involved in biological or chemical terror attacks?

- ○ Yes, we receive information on other sector activities
- ○ No, we are not aware on what others are doing in this area
- ○ I don´t know

29.- Free text box for overall comments on this section about preparedness

2.- Response

2.1 Roles and responsibilities in biological and chemical terror attack

Regarding the plan you referred to in question 1 in the general section, if an event in which a biological or chemical terror attack is suspected and detected by your sector:

30.- Does the plan include an algorithm describing the notification flow between health and other sectors?

- ○ Yes, always
- ○ Yes, under certain conditions (e.g. only biological or chemical, at only one geographical level…)
- ○ No
- ○ I don´t know

31.- In response to an event, who would the health sector notify to? (please specify entities for each sector)

Sector	organization/agency/political body
Health	
Security	
Civil Protection	
Presidency/Head of government level	
Other (please, specify)	

18

32.- Would a National Crisis Coordination Committee be convened when the plan is activated?

- Yes
- No
- I don´t know

32.-cont. Would the health sector be part of it?

- Yes
- No
- I don´t know

32.-cont. Who will represent your sector in the Crisis Coordination Committee?

32.-cont. Which sector would lead this Crisis Coordination Committee?

- Health sector: specify organization/agency/body
- Security sector: specify organization/agency/body
- Civil Protection
- Other
- I don´t know

32.-cont. Please specify organization/agency/body

32.-cont. Does this committee exist at different administrative levels? *(local, regional, national)*

- Yes, it is convened both at national and regional/local level, depending on the level of activation
- No, it is only at national level
- I don´t know

33.- In the **health sector**, if the event escalates, does the coordination of the response transfer from the local to regional or national level?

- Yes, the coordinating entity within the health sector would change depending on the escalation of the event
- No, it will always be coordinated from the national level
- No, it will always be coordinated by the affected geographical areas and the national level has only an advisor /supporting role
- I don´t know

34.- Which sector would be in charge of developing the situation reports?

- It would depend on the nature of the event
- It will always be health sector
- It will always be civil protection
- It will always be security
- There would be a situation report produced in each of the sectors
- I don´t know

35.- Does your country have a national strategy to ensure the secured transport of highly dangerous biological and/or chemical material?

- Yes
- No
- I don´t know

35.-cont. Which sector/organization would be responsible for this aspect?

36.- Does your country have a national strategy to ensure the secured transport of contaminated patients?

- Yes
- No
- I don´t know

36.-cont. Which sector/organization would be responsible for this aspect?

37.- Does your country have a national strategy for the secured health care for the perpetrators, in accordance with judicial decisions?

- Yes
- No
- I don´t know

37.-cont. Which sector/organization would be responsible for this aspect?

38.- Does your country have a national cross-sectoral online platform to monitor the relevant logistic preparedness aspects (such as the available material stocks)?

- Yes
- No
- I don´t know

38.-cont. Which sector/organization would be responsible for this aspect?

39.- Does your country have a national strategy for guidelines, legal framework and/or agreements for integration of judicial decisions into health sector response (e.g. embargo, forensics, data confidentiality, ...)?

- Yes
- No
- I don´t know

39.-cont. Which sector/organization would be responsible for this aspect?

40.- Is there a roadmap for post-incident management and recovery?

- Yes
- No
- I don´t know

40.-cont. Which sector is responsible for the post-incident/recovery phase?

- It would depend on the nature of the event
- It will always be health sector
- It will always be civil protection
- It will always be security
- Other
- I don´t know

40.-cont. If other, please, specify:

41.- What medical guidelines exist for treating those exposed to **biological terror attacks**? Please describe.

42.- What medical guidelines exist for treating those exposed to **chemical terror attacks**? Please describe.

2.2 Information sharing procedures within and between sectors

43.- Is there a system to guarantee the flow of information **within the health sector** during the response to a biological or chemical terror attack:

43.a.-cont. Between the local/regional/national levels ?

- Yes
- No
- I don´t know

43.b.-cont. Between the operational/technical and strategic levels ?

- Yes
- No
- I don´t know

43.-cont. If yes to any of them, what **mechanisms** are used to share information?

- [ ] Platform
- [ ] Meetings
- [ ] Email/ telephone
- [ ] Other
- [ ] I don´t know

43.-cont. Please, specify for platform and/or other

44.- Is there a system to guarantee the flow of information **between the health sector and the other sectors** at operational/technical and/or strategic levels during the response to a biological or chemical terror attack?

- ( ) Yes, at both levels
- ( ) Yes, but only at operational level
- ( ) Yes, but only at strategic level
- ( ) No
- ( ) I don´t know

44.-cont. What **mechanisms** are used to share information?

- [ ] Platform
- [ ] Meetings
- [ ] Email/ telephone
- [ ] Other
- [ ] I don´t know

44.-cont. Please, specify for platform and/or other:

45.- Free text box for overall comments on this response section:

3.- International aspects and collaboration

46.- Are you aware of the existence of international support mechanisms/platforms/systems relevant for a chemical or biological terror attack?

- ( ) Yes
- ( ) No
- ( ) I don´t know

46.-cont. Which ones?

46.-cont. For each of them, for which purpose would you use it?

46.-cont. Which service(s) is/are the focal point(s) for this mechanism in your country?

47.- Does your country have bilateral agreements with other countries for cooperation in preparing or responding to **biological terror attacks**?

- Yes
- No
- I don´t know

47.-cont. Does it include only European countries or also extra-European countries?

47.-cont. Who is in charge of the coordination of this agreement?

47.-cont. For which purpose would you use it ?

48.- Does your country have bilateral agreements with other countries for cooperation in preparing or responding to **chemical terror attacks**?

- Yes
- No
- I don´t know

48.-cont. Does it include only European countries or also extra-European countries?

48.-cont. Who is in charge of the coordination of this agreement?

48.-cont. For which purpose would you use it?

49.- Free text box for overall comments on this international collaboration section:

4.- Perceived effectiveness of current structures/procedures

Reply in scale format from 1 to 10, where 1 is the lowest score and 10 the best score.

50.- What rating would you give the **representation of your sector** in the preparation and updating of the plan?

Only values between 1 and 10 are allowed

51.- Please, rank the level of **information sharing you perceive** between the different sectors.

Only values between 1 and 10 are allowed

52.- Please, rank the level of **coordination you perceive** between the different sectors.

Only values between 1 and 10 are allowed

53.- Please, rank the level of **training quality and quantity you perceive** between the different sectors

Only values between 1 and 10 are allowed

54.- Please, list three **challenges or weaknesses** that you perceive in the cross-sectoral collaboration in the area of preparedness and response to biological and chemical terror attacks in your country.

54.a.- Challenge or weakness 1

54.b.- Challenge or weakness 2

54.c.- Challenge or weakness 3

55.- Please, list three **strengths or key successes** that you perceive in the cross-sectoral collaboration in the area of preparedness and response to biological and chemical terror attacks in your country.

55.a.- Strength or key success 1

55.b.- Strength or key success 2

55.c.- Strength or key success 3

56.- Free text box for overall comments on this section:

5.- Final remarks

* 57.- Did you require assistance from any other expert in your sector to respond appropriately throughout the survey?

- Yes
- No

57.-cont. Can you provide us with the name of the organization/agency/political body and the unit /department these experts belong to?

57.-cont. Can you provide us with his/her/their job position(s)?

58.- Were you aware of/familiar with the JA TERROR project activities and outcomes prior to receiving this survey?

- Yes
- No

58.-cont. Do you/your sector have particular expectations for JA TERROR activities or outcomes?

If you would like to clarify further some of your answers, let Berta Suárez know (jaterror@sanidad.gob.es) so that we can contact you.

END OF SURVEY

SECURITY SECTOR

Kind reminder - Please, engage or consult with any other experts within the security sector as required, to complete all relevant questions. We only ask you to record the name of the organization (s) and the department these experts belong to as well as their job position(s), as this will be asked at the end of the survey.

You can always save the survey draft and continue at a later stage. using the "save the draft" button that you will find on the right side of the survey enabling you to create a temporary link to continue the survey later.

1.- Preparedness

1.1.- Roles and responsibilities

59.- Are the roles and responsibilities of the security sector defined in the plan you referred to in question 1 in the general part of the survey?

- ○ Yes
- ○ No
- ○ I don´t know

59.-cont. For options regarding a plan **only** including biological **or** chemical, please specify which:

59.-cont. If you have any comments or would like to clarify your answer related to the previous question do it here:

60.- Within the security sector, which is the organization/agency in charge of the following activities at the national level **in biological and chemical** terror attacks? *(Please provide full name of the organizations in English with no abbreviations)*

Activity	Name of the organizations/agencies in charge in **biological** terror attacks	Name of the organizacions/agencies in charge in **chemical** terror attacks
1.- **Lead or coordinating organization/focal point**		
2.- **Lead of judicial investigations**		
3.- **Surveillance, intelligence activities, threat detection and threat analysis and early warning** *(Activities related to the monitoring, collection and collation of data from relevant sources for the early identification of potential threats, their verification, and investigation in order to recommend measures to control them)*		
4.- **Security risk assessment** *(It aims at supporting the preparedness and response to a threat. It provides a timely summary about the likelihood and impact of a threat related to a specific event. It also includes potential options for response)*		
5.- **Designated technical organization for law enforcement agents training**		
6.- **Designated technical organization for expert advice** *(Is there a lead agency/organization in charge of research and providing evidence based advice on the following topics- please, answer per item)* 1.- *Environmental detection and analysis* 2.- *Non-pharmaceutical control measures* 3.- *Post-incident management/recovery* 4.- *Other topic (please specify)*		

60.-cont.- Within security sector, are there any other stakeholders not previously mentioned with a role in preparedness in this field?

Please, enumerate:

61.- Are there mobile laboratories able to provide support in sampling and analysis in the event of a **biologi cal or chemical terror attack**?

- Yes, **for both** biological and chemical terror attacks
- Yes, only for **biological** terror attacks
- Yes, only for **chemicals** terror attacks
- No
- I don't know

61.-cont. If yes, please mention them, specifying the responsible organisation:

62.- Does your country have a national strategy to ensure the secured transport of highly dangerous biological and/or chemical material?

- Yes
- No
- I don´t know

62.-cont. Which sector/organization would be responsible for this aspect?

63.- Does your country have a national strategy to ensure the secured transport of contaminated patients?

- Yes
- No
- I don´t know

63.-cont. Which sector/organization would be responsible for this aspect?

64.- Does your country have a national strategy for the secured health care of perpetrators, in accordance with judicial decisions?

- Yes
- No
- I don´t know

64.-cont. Which sector/organization would be responsible for this aspect?

65.- Does your country have a national cross-sectoral online platform to monitor the relevant logistic preparedness aspects (such as the available material stocks)?

- Yes
- No
- I don´t know

65.-cont. Which sector/organization would be responsible for this aspect?

66.- Does your country have a national strategy for guidelines, standards and/or agreements for multisectoral operational cooperation on the field (e.g. anthrax/suspicious object procedure; operational doctrine …)?

- Yes
- No
- I don´t know

66.-cont. Which sector/organization would be responsible for this aspect?

1.2 Information sharing procedures within and between sectors

67.- Does the security sector *(such as law enforcement agencies, judicial and intelligence partners)* meet with relevant stakeholders within the sector to prepare for chemical and biological terror attacks?

- Yes, regularly.
- Yes, but in ad hoc manner
- No
- I don´t know

67.-cont. At what level are these meetings?

- High policy level with political and judicial authorities
- Technical and operational working groups
- There are regular meetings at both levels

67.-cont. What is the purpose and scope of these meetings?

- Sharing information that could be of interest for those involved
- Updating and developing the plan or related procedures and protocols/guidelines
- Both: sharing information and updating and developing the plan or procedures
- Other

67.-cont. If other, please describe:

68.- Does the security sector meet **with other sectors**, with relevant stakeholders to prepare for biological and chemical terror attacks?

- ○ Yes, regularly
- ○ Yes, but in an ad hoc manner
- ○ No
- ○ I don´t know

68.-cont. At what level are these meetings?

- ○ High level cross-sectoral coordination committee (political)
- ○ Technical working groups
- ○ There are regular meetings at both levels

68 .-cont. What is the purpose or scope of these meetings?

- ○ Sharing information that could be of interest for those involved
- ○ Updating and developing the plan or related procedures and protocols/guidelines
- ○ Both: sharing information and updating and developing the plan or procedures
- ○ Other:

68.-cont. If other, please describe:

69.- What channels are used by the security sector to exchange relevant information (other than event notifications), with other sectors involved in the plan?

- ☐ Networks (describe)
- ☐ Conferences
- ☐ Bulletins
- ☐ Emails
- ☐ Others (describe)

69.-cont. For networks and "other", please describe

70.- Is an updated list of other sectors´ focal points with emails and phone numbers available at the security sector level?

- ○ Yes
- ○ No
- ○ I don't know

1.3 Training, exercises

71.- Is there specific training aimed at supporting the security sector, including simulation exercises, in preparedness and response to biological or chemical terror attacks?

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- ◯ Yes
- ◯ No
- ◯ I don´t know

71.-cont. Which format is used?

- ☐ Courses
- ☐ Exercises
- ☐ Workshops
- ☐ Other

71.-cont. Which organization is arranging it?

71.-cont. Is there an cross-sectoral component on it?

72.- Is the security sector informed of other preparedness activities (such as training, evaluations, exercises....) within each of the sectors involved in biological and chemical terror attacks?

- ◯ Yes, we receive information on others' activities
- ◯ No, we are not aware of what others are doing in this field
- ◯ I don´t know

73.- Free text box for overall comments on this section:

2.- Response

2.1 Roles and responsibilities in biological and chemical terror attacks

Regarding the plan you referred to in question 1 in the general section, if an event in which a biological or chemical terror attack is suspected and detected by **your sector:**

74.- Does the plan include an algorithm describing the notification flow between security sector and other sectors?

- ◯ Yes
- ◯ No
- ◯ I don´t know

75.- In response to an event, who would the security sector notify the detection of the event? *(please specify entities for each sector)*

Sector	Organization/agency/political body
Health	
Security	
Civil Protection	
Presidency/Head of government level	
Other (specify)	

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76.- Would a National Crisis Coordination Committee be convened when the plan is activated?

- Yes
- No
- I don´t know

76.-cont. Would the security sector be part of it?

- Yes
- No
- I don't know

76.-cont. Who will represent your sector in the Coordination Committee?

76.-cont. Which sector would lead this Crisis Coordination Committee?

- Health Sector, please, specify below organization/agency/body complete name
- Security sector, please, specify below organization/agency/body complete name
- Civil Protection
- Other
- I don't know

76.-cont. Please specify organization/agency/body

76.-cont. Does this committee exist at different administrative levels? *(local, regional, national)*

- Yes, it is convened both at national and regional/local level, depending on the level of activation
- No, it is only at national level
- I don't know

77.- In the security sector, if the event escalates, does the coordination of the response transfer from the local to regional or national level?

- Yes, the coordinating entity within the security sector would change depending on the escalation of the event
- No, it will always be coordinated from the national level
- No, it will always be coordinated by the affected geographical areas and the national level has only an advisor /supporting role
- I don't know

78.- Which sector would be responsible of developing the situation reports?

- It would depend on the nature of the event
- It will always be health sector
- It will always be civil protection
- It will always be security
- There would be a situation report produced in each of the sectors
- Other

78.-cont. If other, please describe

79.- Does your country have a national strategy for crime scene and aggression management with biological or chemical weapons involved?

- Yes
- No
- I don´t know

79.-cont. Which sector/organization would be responsible for this aspect?

80.- Does your country have a national strategy for measures for and to protect responders and the public – general assistance?

- Yes
- No
- I don´t know

80.-cont. Which sector/organization would be responsible for this aspect?

81.- Does your country have a national strategy for medical countermeasures stockpiling & distribution?

- Yes
- No
- I don´t know

81.-cont. Which sector/organization would be responsible for this aspect?

82.- Does your country have a national strategy for scene set-up, hot zone & security perimeters delimitation?

- Yes
- No
- I don´t know

82.-cont. Which sector/organization would be responsible for this aspect?

83.- Does your country have a national strategy for forensics (Crime Scene Investigation-CSI) on a chemical and/or biological contaminated scene?

- Yes
- No
- I don´t know

83.-cont. Which sector/organization would be responsible for this aspect?

84.- Does your country have a national strategy for agreements for multidisciplinary operational cooperation on the field (e.g. anthrax/suspicious object procedure; operational doctrine ...)?

- Yes
- No
- I don´t know

84.-cont. Which sector/organization would be responsible for this aspect?

85- Do you have guidelines, legal framework and/or agreements for integration of the health sector and/or civil protection response aspects into judicial response (e.g. embargo, forensics, data confidentiality, collection of evidence)?

- Yes
- No
- I don´t know

86.- Is there a roadmap for post-incident management and recovery?

- Yes
- No
- I don´t know

86.-cont. Which sector is responsible for the post-incident/recovery phase?

- It would depend on the nature of the event
- It will always be health sector
- It will always be civil protection
- It will always be security
- Other

86.-cont. If other, please describe:

2.2 Information sharing procedures within and between sectors

87.- Is there a system to guarantee the flow of information within the security sector during the response to a biological/chemical terror attack:

87.a.-cont. Between the local/regional/national levels?

- ◯ Yes
- ◯ No
- ◯ I don´t know

87.b.-cont. Between the operational/ technical and strategic levels?

- ◯ Yes
- ◯ No
- ◯ I don´t know

87.-cont. If yes to any of them, what mechanisms are used to share information?

- ☐ Platform (please describe)
- ☐ Meetings
- ☐ Email/telephone
- ☐ Other (please describe)

87.-cont. For platforms and other, please describe:

88.- Is there a system to guarantee the flow of information between the security and the other sectors at operational/technical and/or strategic levels during the response to a biological/chemical terror attack?

- ◯ Yes, at both level
- ◯ Yes, but only at operational level
- ◯ Yes, but only at strategic level
- ◯ No
- ◯ I don´t know

88.-cont. What **mechanisms** are used to share information?

- ☐ Platform (please describe)
- ☐ Meetings
- ☐ Email/telephone
- ☐ Other (please describe)
- ☐ I don't know

88.-cont. For platforms and/or other, please describe:

89.- Free text box for overall comments on this section:

3.- International aspects

90.- Are you aware of the existence of international support mechanisms/platforms/systems relevant for a biological or chemical terror attack?

- Yes
- No
- I don´t know

90.-cont. Which ones?

90.-cont. For each of them, for which purpose would you use it?

90.-cont. Which service(s) is/are the focal point(s) for this mechanism in your country?

91.- Does your country have bilateral agreements with other countries for cooperation in preparing or responding to **biological** terror attacks?

- Yes
- No
- I don´t know

91.- cont. Does it include only European countries or also extra-European countries?

91.-cont. Who is in charge of the coordination of this agreement?

91.-cont. For which purpose would you use it?

92.- Does your country have bilateral agreements with other countries for cooperation in preparing or responding to **chemical** terror attacks?

- Yes
- No
- I don´t know

92.-cont. Does it include only European countries or also extra-European countries?

92.-cont. Who is in charge of the coordination of this agreement?

92.-cont. For which purpose would you use it?

93.- Free text box for overall comments on this section:

4.- Perceived effectiveness of current structures/procedures

Reply in scale format from 1 to 10, where 1 is the lowest score and 10 the best score.

94.- What rating would you give the **representation of your sector** in the preparation and updating of the plan?

Only values between 1 and 10 are allowed

95.- Please, rank the level of **information sharing** you perceive between the different sectors

Only values between 1 and 10 are allowed

96.- Please, rank the level of **coordination you perceive** between the different sectors

Only values between 1 and 10 are allowed

97.- Please, rank the level of **training quality and quantity you perceive** between the different sectors.

Only values between 1 and 10 are allowed

98.- Please, list three **challenges or weaknesses** that you perceive in the cross-sector collaboration in the area of preparedness and response to biological and chemical terror attacks in your country:

98.a.- Challenge or weakness 1

98.b.- Challenge or weakness 2

98.c.- Challenge or weakness 3

99.- Please, list three **strengths or key successes** that you perceive in the cross-sector collaboration in the area of preparedness and response to biological and chemical terror attacks in your country.

99.a.- Strength or key success 1

99.b.- Strength or key success 2

99.c.- Strength or key success 3

100.- Free text box for overall comments on this section

5.- Final remarks

* 101.- Did you require assistance from any other expert in your sector to respond appropriately throughout the survey?

- Yes
- No

101.-cont. Can you provide us with the name of the organisation/agency/political body and the unit /department these experts belong to?

101.-cont. Can you provide us with her/his/their job position(s)?

102.- Were you aware of/familiar with the JA TERROR project activities and outcomes prior to receiving this survey?

- Yes
-

No

102.-cont. Do you/your sector have particular expectations for JA TERROR activities or outcomes?

If you would like to clarify further some of your answers, let Berta Suárez know (jaterror@sanidad.gob.es) so that we can contact you.

END OF SURVEY

CIVIL PROTECTION

Kind reminder: Please, engage or consult with other experts within the civil protection sector as requiered, to complete all relevant questions. We will ask you to record the name of the organization (s) and the department these experts belong to as well as their job position, as this will be asked at the end of the survey.

You can always save the survey draft and continue at a later stage. using the "save the draft" button that you will find on the right side of the survey enabling you to create a temporary link to continue the survey later.

1.- Preparedness

1.1.- Roles and responsibilities and existing structures in biological and chemical terror attacks

103.- Are the roles and responsibilities of the civil protection sector defined in the plan you referred to in question 1 in the general part of the survey?

- Yes
- No
- I don´t know

103.-cont. For options regarding a plan only including biological or chemical, please specify which:

103.-cont. If you have any comments or would like to clarify your answer related to the previous question do it here:

104.- Within the civil protection sector, which is the organization/agency in charge of the following activities at the national level in biological and chemical terror attacks? *(Please provide full name opf the organizations in English with no abbreviations)*

Activity	Name of the organizations/agencies in charge in **biological** terror attacks	Name of the organizations/ agencies in charge in **chemical** terror attacks
1.- Lead or coordinating organization/focal point		
2.- Risk assessment *(It aims at supporting the preparedness and response to a threat. It provides a timely summary about likelihood and impact of a threat related to a specific event. It also includes potential options for response).*		
3.- Designated technical organization for specialised training		
4.- Designated technical organization for expert advice *(Is there a lead agency/organization in charge of research and providing evidence based advice on the following topics)*		
-Environmental detection and analysis		
-Non-pharmaceutical control measures		
-Post-incident management/ recovery		

104.-cont. Within the civil protection sector, are there any other stakeholders not previously mentioned with a role in preparedness in this field? *Please, enumerate:*

105.- Are there mobile laboratories able to provide support in sampling and analysis in the event of a biological or chemical terror attack?

- Yes
- No
- I don´t know

105.-cont. If yes, please mention them, specifying the responsible organization:

1.2.- Information sharing procedures within and between sectors

106.- Does the civil protection sector meet with relevant stakeholders **within the sector** to prepare for biological and chemical terrorist threats/attacks?

- Yes, regularly
- Yes, but in an ad hoc manner
- No
- I don´t know

106.-cont. At what level are these meetings?

- High level Cross-sectoral Coordination Committee (Political)
- Technical working groups
- There are regular meetings at both levels
- I don't know

106.-cont. What is the scope and purpose of these meetings?

- Sharing information that could be of interest for those involved
- Updating and developing the plan or related procedures and protocols/guidelines
- Both: sharing information and updating and developing the plan or procedures
- Other, please, specify below
- I don't know

106.-cont. If other, please describe:

107.- Does the civil protection sector meet **with other sectors**, with relevant stakeholders to prepare for biological and chemical terrorist threats/attacks?

- Yes, regularly
- Yes, but in an ad hoc manner

- ○ No
- ○ I don't know

107.-cont. At what level are these meetings?

- ○ High level Cross-sectoral Coordination Committee (Political)
- ○ Technical working groups
- ○ There are regular meetings at both levels
- ○ I don't know

107.-cont. What is the purpose and scope of these meetings?

- ○ Sharing information that could be of interest for those involved
- ○ Updating and developing the plan or related procedures and protocols/guidelines
- ○ Both: sharing information and updating and developing the plan or procedures
- ○ Other
- ○ I don't know

107.-cont. If other, please describe:

108.- What channels are used sector to exchange of relevant information, other than event notifications, from the civil protection sector to the other sectors involved in the plan?

- ☐ Networks (please describe)
- ☐ Conferences,
- ☐ Bulletins
- ☐ Emails
- ☐ Others (please, describe)
- ☐ I don't know

108.-cont. For networks and/or others, please describe:

109.- Is an updated list of other sectors´ focal points with emails and phone numbers available at the civil protection sector level?

- ○ Yes
- ○ No
- ○ I don´t know

1.3.- Training, exercises

110.- Is there specific training available to support the civil protection sector, including simulation exercises, in preparedness and response to response to biological or chemical terror attacks?

- ○ Yes
- ○ No

- ◯ I don´t know

110.- cont. Which format does it have?

- ☐ Courses
- ☐ Exercises
- ☐ Workshops
- ☐ Other

110.-cont. Which organization is arranging it?

110.-cont. Is there an cross-sectoral component on it?

111.- Is the civil protection sector informed on other preparedness activities (such as training, evaluations, exercises....) of each of the other sectors involved in biological and chemical terror attacks?

- ◯ Yes, we receive information on others activities
- ◯ No, we are not aware of what others are doing in this field
- ◯ I don´t know

112.- Free text box for overall comments on this section:

2.- Response

2.1 Roles and responsibilities

Regarding the plan you referred to in question 1 in the general section, if an event in which a biological or chemical terror attack is suspected and detected by your sector:

113.- Does the plan include an algorithm describing the notification flow between civil protection sector and other sectors?

- ◯ Yes, always
- ◯ Yes, under certain conditions (only biological or chemicals at only one geographical level)
- ◯ No
- ◯ I don't know

114.- Who would you notify the detection of the event? *(please specify entities for each sector)*

Sector	organization/agency/political body
Health	
Security	
Civil Protection	
Presidency/Head of gouvernment level	
Other (Specify)	

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115.- Would a National Crisis Coordination Committee be convened when the plan is activated?

- Yes
- No
- I don´t know

115.-cont. Would the civil protection sector be part of it?

- Yes
- No
- I don´t know

115.-cont. Who will represent your sector in the Coordination Committee?

115.-cont. Which sector would lead this Crisis Coordination Committee?

- Health, please, specify below organization/agency/body complete name
- Security, please, specify below organization/agency/body complete name
- Civil Protection
- Other
- I don´t know

115.-cont. Please, specify organization/agency/body

115.-cont. Does this committee exist at different administrative levels?

- Yes, it is convened both at national and regional/local level, depending on the level of activation
- No, it is only at national level
- I don´t know

116.- In the civil protection sector, if the event escalates, does the coordination of the response transfer from the local to regional or national level?

- Yes, the coordinating entity within the civil protection sector would change depending on the escalation of the event
- No, it will always be coordinated from the national level
- No, it will always be coordinated by the affected geographical areas and the national level has only an advisor /supporting role
- Other
- I don´t know

116.-cont. If other, please describe:

117.- Which sector would be responsible for developing the situation reports?

- ◯ It would depend on the nature of the event
- ◯ It will always be health sector
- ◯ It will always be civil protection
- ◯ It will always be security
- ◯ There would be a situation report produced in each of the sectors
- ◯ I don´t know
- ◯ Other

117.-cont. If other, please, describe

118.- Does your country have a national strategy for measures for and to protect interveners and the public–general assistance?

- ◯ Yes
- ◯ No
- ◯ I don´t know

118.-cont. Which sector/organization would be responsible for this aspect?

119.- Does your country have a national strategy for medical countermeasures stockpiling and distribution?

- ◯ Yes
- ◯ No
- ◯ I don´t know

119.- cont. Which sector/organization would be responsible for this aspect?

120.- Does your country have a national strategy for on-the-scene biological and/or chemical agents detection measurements capacities and deployment?

- ◯ Yes
- ◯ No
- ◯ I don´t know

120.-cont. Which sector/organization would be responsible for this aspect?

121.- Does your country have a national strategy for specialized lab analysis and monitoring capacities inventory?

- ◯ Yes
- ◯ No
- ◯ I don´t know

121.-cont. Which sector/organization would be responsible for this aspect?

122.- Does your country have a national strategy for personal protective equipment stockpiling & distribution?

- Yes
- No
- I don´t know

122.-cont. Which sector/organization would be responsible for this aspect?

123.- Does your country have a national strategy for decontamination material availability, maintenance & deployment?

- Yes
- No
- I don´t know

123.-cont. Which sector/organization would be responsible for this aspect?

124.- Does your country have a national strategy to ensure the secured transport of highly dangerous biological and/or chemical material?

- Yes
- No
- I don´t know

124.-cont. Which sector/organization would be responsible for this aspect?

125.- Does your country have a national strategy for guidelines, standards and/or agreements for multidisciplinary operational, cooperation on the field (e.g. anthrax/suspicious object procedure; operational doctrine …)?

- Yes
- No
- I don´t know

125.-cont. Which sector/organization would be responsible for this aspect?

126.- Does your country have a national strategy for guidelines, legal framework and/or agreements for integration of judicial decisions into civil protection sector response (e.g. embargo, forensics, data confidentiality)?

- Yes
- No
- I don´t know

126.-cont. Which sector/organization would be responsible for this aspect?

127.- Are there mobile laboratories able to provide support in sampling and analysis of biological and/or chemical agents involved in a terror attack?

- Yes
- No
- I don´t know

127.-cont. Please describe them, specifying the responsible organization:

128.- Is there a road-map for post-incident management and recovery?

- Yes
- No
- I don´t know

128.-cont. Which sector is responsible of the post-incident/recovery phase?

- It would depend on the nature of the event
- It will always be health sector
- It will always be civil protection
- It will always be security
- Other
- I don't know

128.-cont. If other, please describe the responsible:

129.- Does your country have a national strategy to ensure the secured transport of contaminated patients ?

- Yes
- No
- I don´t know

129.-cont. Which sector/organization would be responsible for this aspect?

130.- Does your country have a national strategy for secured health care of perpetrators, in accordance with judicial decisions?

- Yes
- No
- I don´t know

130.-cont. Which sector/organization would be responsible for this aspect?

131.- Does your country have a national cross-sectoral online platform to monitor the relevant logistic preparedness aspects (such as the available material stocks)?

- Yes
- No
- I don´t know

132.- Does your country have a national strategy for guidelines, standards and/or agreements for multisectoral operational cooperation on the field (e.g. anthrax/suspicious object procedure; operational doctrine ...)?

- Yes
- No
- I don´t know

132.-cont. Which sector/organization would be responsible for this aspect?

2.2.- Information sharing procedures within and between sectors

133.- Is there a system to guarantee the flow of information **within the civil protection** sector during the response to a biological/chemical terror attack:

133.a.-cont. Between the local/regional/national levels?

- Yes
- No
- I don´t know

133.b.-cont. Between the operational/ technical and strategic level?

- Yes
- No
- I don´t know

133.-cont. If yes to any of them, what mechanisms are used to share information?

- [ ] Platform (please describe)
- [ ] Meetings
- [ ] Email/telephone
- [ ] Other (please describe)

133.-cont. If platforms and/or other, please describe:

134.- Is there a system to guarantee the flow of information between the civil protection sector and **the other sectors** at operational/technical and/or strategic levels during the response to a biological/chemical terror attack?

- ( ) Yes, at both level
- ( ) Yes, but only at operational level
- ( ) Yes, but only at strategic level
- ( ) No
- ( ) I don't know

134.-cont. If yes, what mechanisms are used to share information?

- [ ] Platform (please specify)
- [ ] Meetings
- [ ] Email/ telephone
- [ ] Other (please specify)

134.-cont. If platforms and/or other, please describe:

135.- Free text box for overall comments on this section:

3.- International aspects

136.- Are you aware of the existence of international support mechanisms/platforms/systems relevant for a biological/chemical attack?

- ( ) Yes
- ( ) No
- ( ) I don´t know

136.-cont. If yes, which ones?

136.-cont. For each of them, for which purpose would you use it?

136.-cont. Which service(s) is/are the focal point(s) for this mechanism in your country?

137.- Does your country have bilateral agreements with other countries for cooperation in preparedness and /or response to terrorist attacks involving biological and/or chemical agents?

- Yes
- No
- I don´t know

137.-cont. Does it include only European countries or also extra-European countries?

137.-cont. Who is in charge of the coordination of this agreement?

137.-cont. For which purpose would you use it?

138.- Free text box for overall comments on this section:

4.- Perceived effectiveness of current structures/procedures

Reply in scale format from 1 to 10, where 1 is the lowest score and 10 the best score.

139.- What rating would you give to the **representation of your sector** in the preparation and updating of the plan?

Only values between 1 and 10 are allowed

140.- Please, rank the level of **information sharing you perceive** between the different sectors.

Only values between 1 and 10 are allowed

141.- Please, rank the level of **coordination you perceive** between the different sectors.

Only values between 1 and 10 are allowed

142.- Please, rank the level of **training quality and quantity you perceive** between the different sectors etc.).

Only values between 1 and 10 are allowed

143.- Please, list three **challenges or weaknesses** that you perceive in the cross-sector collaboration in the area of preparedness and response to biological and chemical terror attacks in your country.

143.a.- Challenge or weakness 1

143.b.- Challenge or weakness 2

143.c.- Challenge or weakness 3

144.- Please, list three **strengths or key successes** that you perceive in the cross-sector collaboration in the area of preparedness and response to biological and chemical terror attacks in your country.

144.a.- Strength or key success 1

144.b.- Strength or key success 2

144.c.- Strength or key success 3

145.- Free text box for overall comments on this section:

5.- Final remarks

* 146.- Did you require assistance from any other expert in your sector to respond appropriately throughout the survey?

- ○ Yes

- [ ] No

146.-cont. Can you provide us with the name of the organization/agency/political body and the unit /department these experts belong to?

146.-cont. Can you provide us with her/his/their job position?

147.- Were you aware of/familiar with the JA TERROR project activities and outcomes prior to receiving this survey?

- [ ] Yes
- [ ] No

147.-cont. Do you/your sector have particular expectations for JA TERROR activities or outcomes?

If you would like to clarify further some of your answers, let Berta Suárez know (jaterror@sanidad.gob.es) so that we can contact you.

END OF SURVEY

Annex 2 – Summary of Qualitative Interview Findings

Question	Summary Response
What is your understanding of the term non-pharmaceutical control measure's (NPCM)	General agreement with all parties includes cordons, isolation quarantine, use of PPE, provision of advice and information (people impacted and whole community). Identification of chemical or biological substances at scene. Everything that is not Pharmaceutical
What do you consider to be the key components of NPCM approach during chemical or biological incidents?"	Included Shelter in place, evacuation, exclusion using cordons, advice to minimise exposure. Use of PPE Includes exclusion and quarantine for biological agents. There will be a need to work with police and security forces. CBRN and Hazmat responses are broadly the same (for chemical)
"Are you aware of any procedural documents or agreements which provide guidance on the protection of public health using non pharmaceutical control measures, including guidance on how your different agencies (Fire, police, ambulance, health, civil authorities and security services) work together during a chemical or biological incident?"	Most countries appear to have such guidance in some form. Issues with difference between centralised and distributer (federal approach). Guidance may or may not be binding. Some countries have identified a lack of guidance as a key issue to be resolved. Some countries are more federal and guidance may be interpreted / implemented differently by region. Some countries updating guidance, different guidance for intentional and unintentional exposures. Netherlands has good practice separating expert opinion and political decision making
"What guidance is available to you for establishing and managing, isolation, decontamination and exclusion of persons or areas during a Chemical incident?"	
"How are decisions on the implementation of evacuation, cordon distances, decontamination requirements made? Who leads the process?	Generally local responders are in charge of Issues like evacuation, cordon distances. Typically, FRS have control on decisions of hot / warm / cold and initial risk assessments. Fire / military will work in hot zone. Some countries have trained and equipped ambulance crews to enter hot zone, but many

	do not. In those cases, Fire and rescue services move casualties to - warm zone where treatment can commence. Often a local lead for response with national agencies / government becoming involved for national importance or large / sensitive issues. Need for guidance on interoperability.
"What training and exercising takes place to test and evaluate these plans?	Most countries have exercising to a greater or lesser extent. Funding can be an issue as live play expensive. Exercising can be fragmented between sectors. Difference in exercising between chemical and novel biological threats with bio being much less common. Exercising typically covers local and national. May be issues where local exercises are not centrally recorded. May be more exercising in areas where there is a perceived security threat (often lead by or in conjunction with military)
"How do your plans and agreements manage communication with the media and general public?	All parties acknowledged a need for the good management of communication. Both to local casualties, local community, wider community/country and between emergency responders, other agencies and government departments. In most cases comms seem to be handled at scene for smaller incidents (typically the police) this can change for issues of national importance where central agencies seem to take charge. Need to consider social media and other communications strategy, not just traditional media which is less relevant for some groups. 1 2 3 4 steps to response (UK)
"How would a chemical or biological incident be identified, what actions would this trigger and who would be involved in the response?"	Common agreement that you may not know it is a CBRNe incident for several hours or days (chemical) possible longer and more difficult for biological. Would depend on symptoms, lab testing, reporting systems and any intelligence received. Biological agents are often picked up by clinical presentation and reporting / alerting systems. Needs a requirement on medical staff to report unusual or unexplained disease. Chemical may be picked up due to rapidity of onset and possible use of devices to deliver chemicals

"What stockpiles of PPE and equipment are available? Is there a mechanism to rapidly deploy it?	Varies between countries. In some cases there is a central agency responsible for supplying ambulance stations and hospitals in others it devolves down to individual areas / hospitals. Need to have equipment and medicines people are familiar with not something new introduced during an incident
What mobile lab capacity is present	Some mobile capacity but typically this is focussed from a central location. FRS may only have standard Health and safety monitors e.g., Hydrogen sulphide. (Redacted) seems to be unusual in having many local DIMM teams. (Redacted) has some capacity as well (white powders and common chemicals). some countries have air quality monitoring capacity but not all. Overlap between Civil and security capacity must be understood
"what fixed laboratory or analysis capabilities are available to identify chemical and biological agents?	There is access to one or more fixed laboratories, usually with 24/7 access. Results can take between 24 hrs and several days depending on agent involved and sampling / location issues. May be separate laboratory capacity for chemical and biological samples. Not always clear how they work together. May not be capacity to test all exposures during a chemical incident but toxidromes or biological syndrome diagnosis is important and allows a response without 100% testing. most countries also have military laboratory capacity that would be called upon as necessary during CBRN incidents. Not always clear on the national picture re amount of lab capacity available. If antigen or other quick tests available need to decide how large a stockpile.
"During an extended incident do you have access to extended support from the EU or via specific agreements with other countries and agencies?	(Redacted) HERA agreement regularly mentioned though this is more for medical countermeasures. EU Stockpile. some countries (Redacted)) identify they would need support from other countries with a large or protracted incident. Problem if incident triggers alert in other countries how likely are they to share resources. Need to plan and train for using support during large / extended incidents

Decontamination methodology	Most countries use a combination of wet and dry. for biological wet decontamination usually used. Biological focusses on powders and dusts, nothing for viruses. can be serious issues with compliance due to cultural / religious / language issues. questions re effectiveness of larger decontamination units due to several hour deployment delay. possible delays in medical intervention "therapeutic free interval" due to lack of medics with PPE for warm / hot zones
Challenges for response	Division of responsibilities between different departments and agencies. Finance for stockpiles. Finance for exercises, particularly cross sectional or cross border. need to ensure distributed / local arrangements are properly exercised and suitable plans are in place (for more federal approach countries). Challenges in building trust with populations due to politics and misinformation. Sometimes politicians make decisions with little or no health evidence for political or other reasons. Possible communication barriers due to increased security involvement. In smaller countries low numbers of specialist staff can pose a barrier to developing documentation, training and exercising. In more federal countries there is a problem with different areas (municipalities) taking different approaches to the same problems In smaller countries, low numbers of specialist staff can pose a barrier to developing documentation, training and exercising. In more federal countries there is a problem with different areas (municipalities) taking different approaches to the same problems. There is a need for risk assessment re different agents. Interested in ECDC risk prioritization as a basis for the process.

	Biggest barriers to non-pharmaceutical response is the time it would take to scale up the responses and pressure on workforces (medical and other responders). Identifying the agent rapidly and the type of agent. E.g. if plague used it is now categorised as b1 and so mandatory quarantine would not be available Need to develop training and scenarios to raise awareness and to ensure responses are proportional