Deliverable D5.3

Evaluation of available national and cross-sectoral guidance on implementation of non-pharmaceutical control measures in response to chemical and biological terrorist attacks

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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
JA Terror	Joint Action to Strengthen Health Preparedness and Response to Biological and Chemical Terror Attacks
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 Organisation

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 SANTE	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 MALAT-TIE INFETTIVE LAZZARO SPALLANZANI ISTITUTO DI RICOVERO E CURA A CARATTERE SCIENTIFICO	Italy
11	RIVM	RIJKSINSTITUUT VOOR VOLKSGE-ZONDHEID 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 SRBI-JEDR MILAN JOVANOVIC BATUT	Serbia
18	UKHSA	UNITED KINGDOM HEALTH SECURITY AGENCY	UK

Executive summary

This report provides an evaluation of Non-Pharmaceutical Control Measures (NPCMs, any control measure which excludes pharmaceutical interventions, for example, vaccines, antibiotics or antidotes) available in response to a biological or chemical terror attack, including guidance, examples of NPCMs, identified gaps and recommendations to implement good practice around NPCMs.

This document was produced using several information sources, including:

- an online survey, undertaken in conjunction with Work Package 6 (WP6), conducted in May 2022 (the survey included questions on available NPCMs for biological and chemical terror attacks and the strategy used for stockpiling such control measures),
- Evidence of good practice identified in the WP5.3 Non-Pharmaceutical Control Measures (NPCM) literature review,
- and face-to-face interviews conducted as part of WP5, providing additional context and depth into the availability and implementation of NPCMs.

This work identified many similarities in the chemical and biological terror response approaches taken by the participating countries, as well as good practice and common themes across the participants of the survey and interviews. However, there are gaps which remain, such as the sharing of lists of potential/high-risk chemical and biological agents, the variation in levels of preparedness, training and exercising between responders.

To assist Member States in improving and streamlining their response and promoting cooperation with neighbouring countries, a set of general recommendations are proposed to meet the gaps identified in this report, they have been summarised in the final chapter, with some highlights below:

- A common understanding of the definition of non-pharmaceutical countermeasures is essential to underpin the development of guidance, operational practices and streamlined response. They include public health and social measures for managing CBRN incidents, such as geographical restrictions, movement limitations, wearing face masks, decontamination procedures, and PPE usage. The emphasis is on risk mitigation rather than control, acknowledging that absolute control is not feasible.
- Effective communication is crucial for NPCMs, involving clear messaging to affected populations, healthcare providers, and policymakers. Health inequalities and language barriers need special consideration. Measures must be evidence-based and aligned across countries.
- Stockpiles for chemicals and biological agents need regular turnover to ensure materials remain effective. Adequate training on proper usage is emphasized.
- Continuous risk assessment and multi-agency responses are essential. Different response mechanisms exist for chemical and biological threats, with healthcare presentations often required for identifying biological threats.

- There are challenges in relying on international support during CBRN incidents. Self-sufficiency is necessary, recognizing supply chain and production limitations.
- Fixed and mobile laboratories are crucial for practical responses. The focus is on having a practiced response rather than theoretical stockpiling.
- Proper documentation, training, and practical exercises are necessary for effective responses. Coordination between local and national authorities is vital.
- Efforts are focused on improving coordination, training, and resource allocation. The significance of learning from past incidents to enhance future responses is noted.

1 Introduction

The European Commission co-funds the Joint Action TERROR (JA TERROR), through the European Health and Digital Executive Agency (HADEA). The main objectives are to address gaps in health preparedness and to strengthen cross-sectoral work between security, civil protection, and health sectors' response to biological and chemical terror attacks. JA TERROR involves 34 affiliated entities from 17 European partner countries of which 15 are European Union/European Economic Area (EU/EEA) Member States: Belgium, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Malta, the Netherlands, Norway, Slovenia, Spain, and Sweden. Additionally, one candidate country, Serbia, and one ex-Member State, the United Kingdom (UK), are also part of the joint action. JA TERROR is coordinated by the Norwegian Directorate of Health.

Workplan 5.3 was designed to develop guidance and a roadmap for non-pharmaceutical planning, preparedness and response activities when responding to chemical or biological terror incidents. It draws on the information gathered from the questionnaire developed by WP6 and WP5 to identify good practice and areas for development and through a process of sharing guidance on the implementation of non-pharmaceutical control measures and good practice/experience between countries.

This report summarises the key findings from the questionnaire and proposes a common framework which can be used to develop a consistent approach to the use of non-pharmaceutical control measures.

2 Methods

Information to support this element of the Joint Action is based on information shared by participating countries and was identified using a combination of survey, one to one interview and a literature review. The survey was used by both WP5 and WP6 and contained four discrete sections these being categorised as general response, security, civil protection, and health. WP6 was responsible for the design and analysis of the security and civil protection actions whilst WP5 focussed on the non-pharmaceutical response information extracted from the health component. The general section was pertinent to both work packages.

Information extracted from the survey was used to inform the development of a semi-structured interview framework. Interviews with representatives from a number of participant countries were used to supplement the questionnaire process and to provide additional context and understanding around preparation and response for chemical and biological terror attacks.

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

2.1 Survey

Information was collected 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 events. The questionnaire considered responses from three sectors.

- **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.

A total of 33 responses were collected from 14 partner countries. 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 2.

Interviews were analysed to identify common themes, concerns and findings. The question guide used for one-to-one interviews is attached as Appendix 1 to this report.

2.2 Interviews

The interview process used a semi-structured, qualitative process to identify additional information and contextual background to support the information gathered by the questionnaire. Interviews were carried out online, using Microsoft (MS) Teams. A copy of the interview guide is included in Annex 1.

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 the interviewees were from the health sector with seven from a chemical and one from a biological background. Interviews were thematically analysed to identify common themes and practices and this information was summarised into amalgamated findings.

2.3 Literature review

A literature review was conducted to identify current national guidance produced by JA Terror partner countries. In addition, documentation available online in the form of grey literature, or published literature thought to be relevant but not previously identified, were included. Accessible book resources from UKHSA library services were also reviewed for information. Overall, information freely available online was limited. Inclusion criteria included literature and documentation published in English within the EU or UK, which includes mention of a type of NPCM in response to a CBRN incident and which is available for review.

Given the low number of results identified by the scoping searches on the main databases, the bulk of the search was refocused to identify grey literature, particularly papers and publications from the world health organisation and government agencies. These were searched for using both Google Advanced Search and a standard Google search string.

It is acknowledged that some documentation may be missed due to accessibility to non-English language sources, which may impact the analysis of commonality and best practice of NPCM. Documentation on specific protocols which may pertain to management and response to CBRN events, particularly those with a focus on counterterrorism, may be considered sensitive and unlikely to be published widely. Additionally, it is acknowledged that the subjectivity of accessing grey literature, particularly within the confines of the English language, may impact the analysis of commonality and best practice between NPCM methods. Regardless of this bias, grey literature comprises a critical quantity of accessible resources and should be analysed for the most holistic view.

3 Key issues

The review identified many similarities in the chemical and biological terror approaches taken by the participating countries. Available literature was relatively sparse. Whilst many countries had documentation, they were unable to share it due to security considerations.

Analysis of the survey and interviews revealed several common themes, practices and potential gaps. These themes were supported by the findings of the literature review and are summarised in table 1.

Table 1 Common Non-Pharmaceutical Control Measures (NPCM) Themes

Theme	**Themes identified**
3.1	The definition of non-pharmaceutical control measures (NPCM)
3.2	Recognising the need for a NPCM response
3.3	Common NPCM (chemical and biological)
3.4	Agencies responsibilities
3.5	The need for clear command and control structures
3.6	Communications strategies (responders, government and public)
3.7	Availability of PPE
3.8	Impact on health and public infrastructure
3.9	Decontamination and residual hazards

3.1 Definition of non-pharmaceutical control measures

Interviewees identified that there is a clear need for a common understanding of the term "non-pharmaceutical control measure(s)" and interview participants were asked to define it in their own terms. It became clear that whilst there was no common wording there was at least a clear understanding of the term.

The literature search identified that there are several definitions for non-pharmaceutical control measures (NPCM) predominantly relating to epidemic and pandemic flu and covid responses[2, 3]. Non-pharmaceutical public health measures, also known as non-pharmaceutical interventions or Public Health and Social Measures (PHSM) are defined by the WHO as non-pharmaceutical interventions implemented by individuals, communities and governments to protect the health and well-being of communities affected by health emergencies[4].

In the biological context, non-pharmaceutical countermeasures are actions taken to decrease the spread of infectious diseases or contain emergency situations without the use of medicines or vaccinations. These measures include evidence-based strategies, and global evidence sharing. Effective early detection through surveillance, particularly for biological threats, involves engaging healthcare workers and primary care doctors. Communication and timely actions based on suspicions, before a definitive diagnosis has been reached[5].

Non-pharmaceutical public health measures, also known as non-pharmaceutical interventions or Public Health and Social Measures (PHSM) are defined by the WHO as non-pharmaceutical interventions implemented by individuals, communities and governments to protect the health and well-being of communities affected by health emergencies[6]. Measures include testing, contact tracing systems and vaccination programmes implemented by health authorities; personal protective measures, such as cleaning hands and physical distancing or wearing masks; to the rules applied to businesses and educational institutions[7].

[2] Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza
[3] Guidelines for the implementation of non-pharmaceutical interventions against COVID-19
[4] WHO Public Health and Social Measures Initiative
[5] Chemical, biological, radiological and nuclear CBRN incidents clinical management and health protection
[6] WHO Public Health and Social Measures Initiative
[7] What are public health and social health measures and why are they still needed at this stage in the COVID-19 pandemic?

The majority of the literature focussed on infectious disease and was particularly influenced by experience gained during the Covid pandemic. No equivalent definition for chemical responses was found in the literature but there are demonstrably some commonalities between chemical and biological NPCM including isolation (shelter in place), restrictions on area access, cordons and decontamination.

The interviews resulted in the suggestion of a simple term, "non pharmaceutical control measures are any control or mitigation measure that does not include medical intervention". Whilst a common definition is not specifically a control measure it was felt important that there should be a shared understanding of the term to remove confusion and prevent misunderstandings, between different agencies and sectors. This is of particular importance for operational responses involving multiple agencies or cross border incidents.

3.2 Recognising the need for a NPCM response

Interviewees were asked if there were differences between routine chemical and biological incidents and terror responses. Examples of routine chemical exposures include fires, chemical plumes, accidental chemical spills or leaks and deliberate chemical exposures. In both cases responders felt that there were many similarities but that a crucial factor would be in recognising that a chemical or biological terror attack had occurred. Identifying when a terror incident occurred was considered key to implementing a suitable NPCM response.

Participants identified that there are significant differences in the processes by which biological and chemical attacks may be identified. The different ways an incident would develop are summarised in Table 2.

Table 2 Potential means of recognising a chemical or biological terror incident.

Characteristic	Biological incident	Chemical incident
Lag / development time	There can be a significant lag between exposure and symptoms developing	Most chemical exposures cause immediate or rapid onset symptoms
Surveillance system	Most countries have an established national infectious disease surveillance system.	No specific chemical surveillance systems were reported BUT Poison Centres (where available) may potentially supplement this role where present. Syndromic surveillance

	Syndromic surveillance is widely implemented.	may also be relevant for the identification on slower onset chemical incidents.
Contained or isolated exposure location	Likely to be an unknown until contact tracing occurs	Likely to be a discrete scene / location
Detection equipment available	Possible for some biological agents	Possible for some chemicals
Routine emergency response	n/a	Initial response by emergency services likely to follow routine hazmat approach. Responders may recognise symptoms or circumstances indicating a chemical attack.
Good awareness of biological or chemical terror agents	Mixed – awareness of symptoms may vary	Mixed – lists may exist but circulation between agencies and training of staff may vary significantly
Authority to declare a CBRN incident	Varies – may be national or local – likely to be a time lag due to transmission / incubation delays	Varies – could be national (particularly in intelligence led) but likely to be emergency responders – typically fire service. Can require a political decision
Exposure restricted to one or more localised areas	Unknown for initial exposure but varies depending on characteristics of agent	Generally, chemical exposures will be related to specific incidents or locations
Exposure decreases with time / distance from source	Decontamination at scene can help but less useful for infectious agents. Secondary transmission chain can occur at different time and distance depending on the agent	Cordons, isolation, distance from scene and decontamination can significantly reduce the likelihood of off-site exposures
Sampling followed by Mobile or Fixed laboratory analysis	Unlikely to trigger response or early diagnosis. More of a confirmation once exposure identified	Unlikely to trigger initial response. Most responses would initially be Hazmat type and chemical testing / identification is likely to be used to confirm agents / areas contaminated / residual risk

Identification by situational assessment	Unlikely to have a single location with a large number of rapid onset casualties (unconscious, symptomatic, dead) for biological incidents	For chemical incidents there is the potential of large numbers of casualties / symptomatic persons in a localised area. This may allow rapid identification of a CBRN incident/
Identification of possible agents by medical diagnosis	Most likely route to identify possible biological exposure	Most likely route to identify possible chemical agents

A common factor in determining if an incident was a biological or chemical terror event was the need for medical professionals and first responders to be familiar with common agents and the symptoms persons exposed may present.

One possible method of detection is the use of mobile and fixed laboratory analysis. The survey indicated that 59% of responding countries had mobile laboratory provision for chemical and biological agents, with an additional 8% having only mobile chemical facilities. See figure 2. However, the interviews indicated that much of this laboratory provision was via the security or defence sector and that deployment may take several hours. The deployment was impacted by several factors, these being distance from base, the need for authorisation to deploy the laboratories and other geographical constraints.

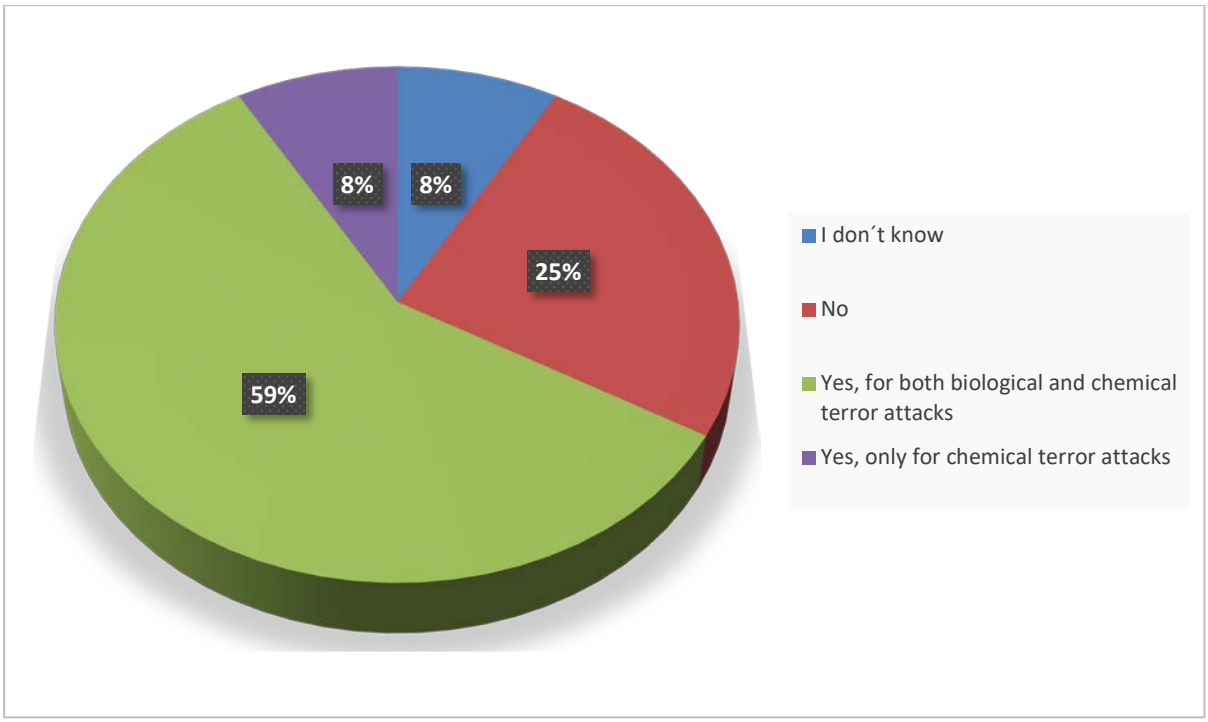

Figure 1 Mobile Laboratory availability (Survey results)

However, interviewees reported that laboratory identification was not expected to be the primary method of identification and it was more likely to be used as confirmation of the presence of specific agents, to confirm exposure levels and to validate decontamination. This conclusion was reached for several reasons:

1. Laboratories can have long deployment times (hours – days)
2. Laboratories cannot "sample for everything" they have to have a framework in which to operate.
3. There may be a delay caused by transporting samples to fixed laboratories.

In the absence of rapid mobile or fixed laboratory testing, decisions on response, treatment and mitigation require responders and medical staff to recognise possible chemical and biological exposures.

Interviews indicated that rapid identification of possible CBRN exposure relies heavily on the experience of emergency responders and medical staff. In the case of chemical agents, symptoms typically appear more rapidly and consequently an attack or exposure may be more apparent, diagnosis is still dependant on recognition that symptoms may be related to a chemical exposure.

Recognition requires that medical staff are familiar with symptoms associated with different agents (toxidromes) so that they can recognise possible exposures when they appear. As recognition is critical to both biological and chemical exposures it is essential that responders and medical staff receive primary and regular refresher training on the symptoms of agents that may be used in a CBRN attack. The regularity and content of training is likely to be based on risk and threat analysis.

One obstacle to early recognition, identified in the interviews and survey, is a potential lack of awareness, particularly in the health sector, of threat listed chemicals associated with terror events and the likely symptoms of exposure. In some interviews it become clear that the health sector was unaware of any such list, in others they were aware that a list existed but reported that it was not shared with the health sector. This problem was also identified for biological terror incidents. The responses are summarised in Figure 2.

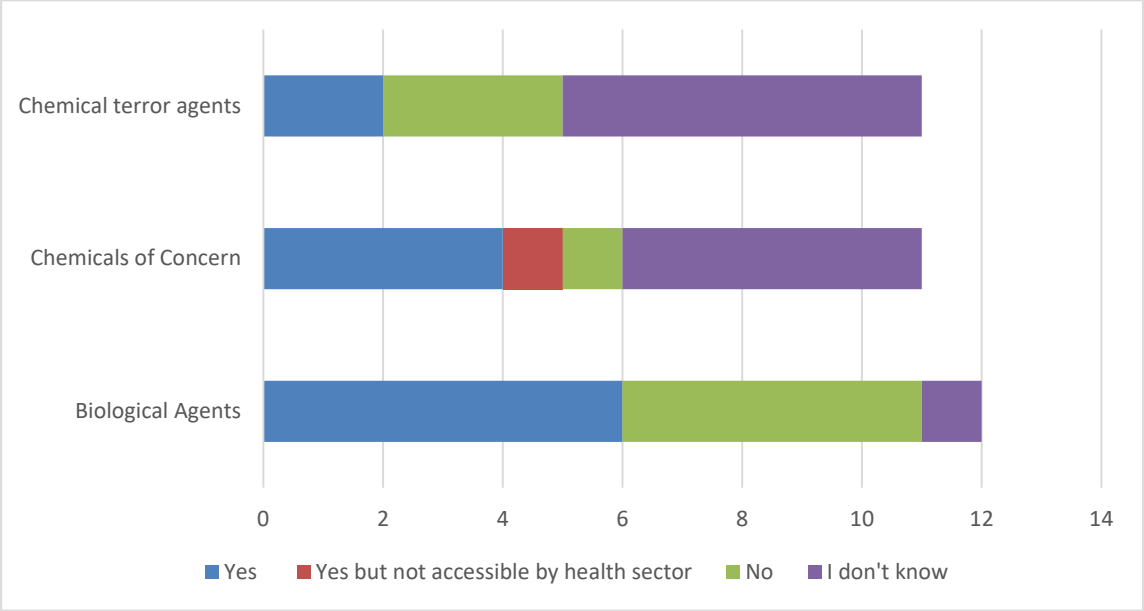

Figure 2 Reported awareness by health sector of documentation relating to chemical and biological agents.

Given the importance of diagnosis as a tool to identify chemical and biological exposures (identified in interviews), this lack of awareness poses a significant obstacle to recognising potential exposure to a chemical or biological agent and may delay the appropriate NPCM response. Increasing awareness is primarily a matter of sharing information on the key agents and ensuring that medical staff and first

responders are trained to recognise relevant symptoms. Ideally training would be reinforced regularly by using desktop and live-play exercising.

In addition to local recognition by medical professionals and first responders, the importance of early alerting was recognised by interviewees. The differences between biological and chemical alerting systems were discussed. For biological exposures there are established surveillance systems in most countries which identify and report unusual outbreaks (unexpected diseases or unexpected numbers of cases). There are mechanisms in place to rapidly escalate these reports as necessary.

In the case of chemical exposures, the position was much less clear. No responder identified a dedicated system which was comparable to the routine surveillance and reporting approach used for disease. However, it was noted that most countries in Europe have established poison centres which could provide a similar function. There are proven benefits of establishing poison centres in any event but their potential to act in a surveillance role for CBRN incidents should not be overlooked. This approach will however only be effective if a robust reporting system is established to escalate unusual cases and if medical professionals are aware of the services offered by poison centres.

3.3 Common non-pharmaceutical control measures

The survey only identified NPCM reported by the health sector alone and consequently may omit information relevant to the security and civil sectors. Responders were asked to provide information on eleven common measures indicating if they believed the measures would be used in their country. There was also the facility to include additional measures. Only one responder provided additional information (veterinary first aid, the provision of basic living conditions, firefighting, rescue, and psychological assistance). Responses are summarised in table 3.

Significant numbers of responders considered that measures including the closure of schools, the restriction of mass gatherings, closure of sports and leisure facilities, promotion of home working, closure of factories and shops and travel restrictions would be used for both chemical and biological exposures.

During the interview process, it was recognised that chemical incidents and responses were likely to be more localised than those for biological agents and that the period of exposure / spread was likely to be relatively brief for chemical incidents and more extended for biological ones. For this reason, interviewees considered that widespread general restrictions on activity and mobility were less likely in the case of chemical incidents. In the case of chemical terror incidents, the use of cordons, evacuation and sheltering was identified as a more likely set of control measures.

In the case of biological incidents, several characteristics of the agent should be considered relevant for the implementation of non-pharmaceutical control measures. Main transmission routes; incubation period; infectious period; basic reproduction number; infectiousness by age; proportion of asymptomatic cases; transmission by asymptomatic cases; risk factors for transmission (personal); risk factors for transmission (setting); risk factors for severity (personal).

Interviewee responses on the nature and use of NPCM in their country are shown in Table 3.

Table 3 Reported use of different NPCM (number of survey responses).

Control Measure	Biological			Chemical		
	Yes	No	Unknown	Yes	No	Unknown
Evacuation and sheltering	8	1	2	9	0	1
Decontamination (people)	9	0	2	8	0	2
Decontamination (vehicles/equipment)	8	2	1	7	1	2
Decontamination (Buildings)	6	3	2	5	2	3
Use of personal protective equipment (PPE)	10	0	1	8	0	2
Closure of schools	5	5	1	4	3	3
Restriction of mass gatherings	6	4	1	6	3	1
Closure of sports and leisure facilities	5	4	2	3	4	3
Promotion of home working	3	4	4	2	4	4
Closing of non-key factories and shops	5	4	2	3	4	3
Restricting travel (regions / international)	6	2	3	4	3	3

The initial survey only considered some of the NPCM responses and did not include any detail or exposition. Additional information was obtained via the literature review and the interview process. Common non pharmaceutical control measures are summarised in table 4 (chemical) and table 5 (biological).

Table 4 Function of common non pharmaceutical control measures (chemical incidents)

Control measure	Typical uses
Cordon / exclusion areas	All incidents. Exclusion of public and non-essential personnel to minimise exposure and contamination. Ensure only appropriately trained and equipped personnel are in the hot zone.
Establishment of hot, warm and cold Zones	Isolate contaminated area and prevent spread / cross contamination by chemical agents. Should be proportionate to chemical hazard
Use of PPE	Appropriate PPE for Zone.
Evacuation of nearby premises	If necessary. This will depend on the chemical agent and logistical concerns such as site safety and access by emergency services
Containment of contaminated persons	This includes members of the public, employees and emergency responders.
Decontamination of persons at scene (mobile)	Dry / wet depending on agent and agreed protocols. Practicality depends on time taken to deploy decontamination facilities. Dry or improvised decontamination may be necessary to minimise impacts / exposures
Decontamination of casualties	Could be at scene or at hospital. Country capacity varies

Decontamination of vehicles	Includes civilian vehicles but is particularly relevant to emergency vehicles such as ambulances that have been used to transport casualties
Rapid establishment of command and control structures	Essential for the efficient interaction of emergency responders (all sectors) and to allow proportionate and accountable decision making. Key to ensure good communication between agencies, maximise information sharing and to facilitate defensible decision making
Public health risk assessment	Factoring in nature of chemical exposure, toxicology (if known), precautionary principle if not. Allows decisions on likely public impacts, nature and degree of hazard and proportionate control measures. Necessary for decision makers to take proportionate action.
Management of media	Need to establish clear, agreed, lines of communication to manage public concerns and expectations. Includes information on casualties as necessary. Key for providing advice on sheltering, evacuation and steps the public can take to minimise exposures or harm.
Development of decontamination profiles for vehicles, buildings and environments	This process may take some time for CBRN chemicals. The development of residual hazards data may be complex and be a key factor for recovery after the incident is over. Very chemical specific
Development of conceptual models for possible ongoing exposures and areas of effect.	Are there any pathways where the chemical can cause wider public health or environmental harms (air / land/ water/ cross contamination). Consider impacts on wildlife, foods and fish, water supplies etc. will require liaison with other specialist agencies.

Table 5 Function of common non pharmaceutical interventions (biological agents).

Intervention	Typical use
Diagnostic testing	Where available rapid testing could be conducted already on the scene.
Hand hygiene and respiratory etiquette	These measures aim to reduce the spread of droplets and aerosols containing pathogens emitted by coughing and sneezing. For example, use disposable tissues to cover the nose and mouth or sneeze into the inside of the elbow.
Masks and filters	Masks and face filters suitable for community use during respiratory or droplet-transmitted provide varying levels of protection: • Medical face masks (surgical) regulated by CE Regulation 2017/745, with UNI EN 14683-2019 defining two types: • Type I for patients to reduce infection spread • Type II for healthcare workers in operating or similar settings, including splash protection (Type IIR) Filtering facepiece respirators (FFP) considered personal protective equipment (PPE) as per UNI EN 149:2009. These devices, categorized as PPE (Category III), are designed to protect workers from respiratory risks and may also be used by the public during a pandemic to reduce transmission risks.
Isolation of cases	Isolation refers to separating infected or sick, contagious individuals from others to prevent the spread of infection and environmental contamination.
Cleaning surfaces and objects	Cleaning surfaces, floors, and objects with products recommended by national health authorities is a recommended hygiene practice.
Ventilation of indoor spaces	To combat the circulation and spread of a potentially pandemic pathogen, apply health prevention and protection recommendations for various indoor settings, both domestic and workplace. Indoor air quality is an integral part of risk management.
Contact tracing	Contact tracing involves identifying and managing contacts of confirmed cases to quickly identify and isolate potential secondary cases, thereby breaking the transmission chain.
Quarantine for exposed individuals	Quarantine involves restricting activities (e.g., avoiding work, school, and public places) and isolating individuals potentially exposed to the pathogen. The goals are to prevent

	asymptomatic transmission, monitor for infection symptoms, and promptly identify new cases.
Physical distancing	One of the most impactful prevention measures is social distancing, which involves avoiding direct physical contact and maintaining a distance of at least 1-2 meters, depending on the pathogen's transmission characteristics. Utilize posters, floor markings, and plexiglass barriers to maintain interpersonal distance in potentially crowded places.
Closure of non-essential workplaces	Based on the spread of the event, temporary closure of non-essential workplaces may be considered to reduce the risk dissemination.
School closures	Based on the magnitude of the event, this measure could limit gatherings in educational settings, which may include remote learning to ensure continuity of education and teleworking for school staff.
Limitation of gatherings	Crowded situations, including mass events and daily activities, can increase contagion risk. During an intentional event mass events could be limited in the affected area and also in larger areas to avoid any other possible attack. Mass events (concerts, fairs, sports events, etc.) can increase interpersonal contacts, especially in confined spaces. Strategies can range from cancellation to holding events with specific precautions, varying based on the event's characteristics.
Movement restrictions	These may include bans on leaving and entering specific areas such as municipalities, provinces, or regions.
Workplace measures	Workplaces pose a high transmission risk due to prolonged contact among colleagues and the public. Measures can include: • Modulating activities to reduce prolonged contact • Encouraging telework • Installing barriers (e.g., plexiglass) to block droplet spread • Using PPE and hand sanitizers
Stay-at-home measures	During an event, restricting citizen movement around the affected area and asking the population to stay home can be considered. These measures can be adjusted based on epidemiological scenarios (e.g., night-time movement restrictions or area-specific limitations).
Limit social interactions ("social bubble")	Some scientific studies propose an approach based on frequent interactions with a small number of people,

	potentially maintaining some social activity while reducing the risk of transmission.

Implementing appropriate prevention measures helps reduce community transmission, hospitalization rates, and deaths, thereby alleviating pressure on the healthcare system and maintaining essential services. Rapid implementation of these interventions is crucial for a swift response to prevent pathogen spread. NPCM are critical in a pandemic response due to their availability in stock or market supply and their organizational feasibility for quick implementation.

Compulsory NPCM (e.g., quarantine/isolation) could adversely affect personal freedoms and must be supported by transparent decision-making processes based on available knowledge and evidence, as well as established legal and ethical frameworks during prevention, preparation, and risk assessment phases. Prevention plans should consider cultural and geographical contexts, implementation facilitators, and barriers to promote effective adoption.

Effective control of pathogen transmission can reduce healthcare system pressure, maintain essential services, and buy time to develop and deploy medical countermeasures like vaccines or therapies, offering greater individual and community protection.

Based on infection characteristics and epidemiological and microbiological parameters, implement actions deemed most suitable for containing or controlling contagion spread. Decision-making should be periodically reviewed based on the situation, adapting public health strategies to fluctuations in transmission rates. The impact of each measure on limiting pathogen transmission should be considered also accounting for social and economic repercussions. Protecting vulnerable populations should be central to decisions to implement, maintain, or revoke measures.

Effective implementation requires broad population awareness, acceptance, and intersectoral collaboration concerning community interventions (e.g., schools, workplaces, public meeting places). Community isolation or interruption of certain social activities (e.g., in-person schooling) may limit contagion but, as shown by the COVID-19 experience, is unsustainable for long periods without impacting population well-being and economic sustainability.

During the response phase, timely calibrated interventions with rapid, possibly standardized escalation and de-escalation mechanisms are essential based on epidemiological information from multiple sources. These could include risk/benefit assessments considering epidemiological characteristics, healthcare system response capacity, contextual considerations, and the overall strategic approach, including social and economic implications. Dynamic monitoring of NPCM effectiveness allows for the rapid adjustment of preventive measures.

3.4 Agencies involved in a chemical or biological terror response

The survey provided a list of key sectors and agencies that responders felt should be involved when responding to a chemical or biological terror threat. An agency's importance has been ranked by the number of responses received from the twenty-six responders. The percentage of responders identifying the need for different agencies is ranked in Table 6.

All participants in the survey identified first responders (police, fire and health services) as key in responding to a chemical or biological terror attack which requires a NPCM response. All responders also included public health, environmental agencies, civil protection and food and water agencies as important agencies. The need for political and military involvement was also noted. Interviews corroborated these findings and indicated a common recognition for a core of initial responders with additional resources being involved once a chemical or biological terror attack was identified. The additional resources would vary, depending on the nature, location, impact and extent of the incident.

Poison centres were not identified as a required agency, supporting the finding that they are not yet fully developed as an early alerting / surveillance tool.

The survey and interviews have identified that there is a common understanding of the key agencies core to an NPCM response and recognised the need to include a wider pool of resources and expertise tailored to individual incidents. The role of the agencies was explored during the interview process. Participants from all sectors recognised the need for efficient interaction and collaboration between the agencies during chemical and biological incidents to ensure defensible decision making and a clear understanding of roles and responsibilities. Information on the perceived roles of key agencies is summarised in table 7.

Whilst not a NPCM in its own right, an understanding of the roles, capabilities and responsibilities of different agencies is a key component for effective Command and Control decisions and incident management.

Table 6 Ranking of agencies and sectors required in a response (% of responders)

Agency / sector	Agency has a role in response (% of responders)
Police	88
Public Health	79
Law enforcement agencies	73
Civil Protection	73
Food and Water	70
Healthcare - hospitals/specialized care	70
Military/defence	70
Fire and rescue service	70
Political bodies and government units	67
National cross-sectoral crisis centre	64
Environment	58
Emergency call centre 112	58
Intelligence agency	55
Justice	55
Healthcare - primary care centres	48
Veterinary	42
Agriculture	39
Transport/customs	36
Poison Centre	30
Telecommunications	24
Industry/private sector	21
Pharmaceutical agencies	18
Energy	18
Mass media	18
Funeral services	12
Consular emergencies	6

Table 7 Summarised roles of key agencies during a chemical incident

Agency	Role during a chemical incident
Police	Outer cordon, exclusion of the public, managing transport implications. Also includes isolating the source and managing complex or combined threats. There may be specialist units such as counter terrorism or intelligence that would be involved in prevention of and response to CBRN incidents. Likely to work closely with security services. Involvement in pre-emptive communications advising public how to respond during incidents e.g., "Run, hide, tell" [8]
Fire services	Typically working in the hot zone and warm zones. Responsible for the initial response to the incident, protection of life and property. Typically manage initial decontamination of persons at scene
Health / Ambulance services	Recovering and transporting casualties. Potentially undertaking decontamination of casualties at hospital
Public Health	Undertake public health risk assessments, provide advice on toxicology, wider impacts, evacuation / shelter decisions and decontamination requirements
Poison centre	Providing advice to aid the identification of agents and treatment advice to medical staff
Environmental agencies	Consider wider environmental exposures – liaise with water companies as necessary
Security services	Once a CBRN incident is identified (by intelligence or diagnosis/testing the security agencies have a major role. May link to / overlap intelligence and counter terrorism activities of police.
Media cell / communications	Provide single source of messaging and updates to mass media and wider public.
Strategic / operational / advice structures	There is a need for a formal structure to take control of the incident. This will operate differently in different countries, but its role is to allow a forum for information exchange, decision making and managing the incident

[8] RUN HIDE TELL | ProtectUK

3.5 Command and control structures

The importance of the decision making, and interoperability process was identified as important during the WP5.1 and WP 5.3 interview process. This need for an integrated chain of command and standard operational procedures was also highlighted in recommendations 3.1 and 4.2 of WP 6.5. Effective command and control should minimise casualties during an incident, protect responders, ensure a proportionate and risk-based response, to allow learning from incidents and to allow for accountability post incident. A more comprehensive analysis of command-and-control structures across Europe has been undertaken by WP6.

Interview responses indicated an understanding that many non-pharmaceutical control measures require interaction and decision making involving the health, civil and security sectors. Whilst public health risk assessments may be largely driven by health considerations the practical and pragmatic considerations involved in implementing protective measures require input from all sectors.

Examples of the need for multi-agency collaboration, decision-making and control include the establishment of exclusion zones, cordons and quarantines, practical matters relating to communicating risk and measures the public can take to protect themselves and their families. Similarly, advice on decontamination measures, washing of clothes and vehicles, evacuation of hospitals, care homes and schools must be made with a view to practicality, likely compliance, public understanding, and operational logistics.

The need to establish command and control structures was identified as an output of WP5.1. However, in terms of NPCM responses it was also identified that that staff should receive training and practical experience in how command and control structures will operate. This can be achieved by specific training and the use of regular exercising. In the case of more routine chemical incidents, the responses are similar for hazmat and CBRN incidents so exercising for routine chemical incidents will still have validity in terms of a future CBRN response.

3.6 Communication strategies

A detailed review of risk and crisis communication has been addressed as part of WP7, but WP 5.3 has focussed on the impact communication has on an effective NPCM response rather than the principles and mechanics of the process itself.

The importance of good communication was recognised during the interviews. This included communication within and between agencies as well as communication with the public. Concerns

were raised that during the recent pandemic response messaging regarding public health was confused, with different countries making different decisions on the protective measures that should be implemented (e.g., separation distances, length of quarantine, duration of lockdown).

Interviewees opined that many of these decisions were felt to be based on economic and political factors, rather than sound scientific evidence. There were concerns that this inconsistency increased public distrust and caused reduced confidence in the official messaging. Some respondents believed that behavioural scientists should be included in design and development of communication strategies to maximise the likelihood of message penetration and compliance.

Operationally, the survey indicated that 83% of responders were aware of a process for information sharing at and between local, national, and regional levels. 8% reported having no systems in place with a further with 8% being unsure if any such systems existed.

Where communication systems were identified, information sharing included operational, technical and strategic information. Communication typically occurred via a number of approaches including face to face meetings, meetings (via a software platform), email and telephone conversations.

Six countries reported having specific platforms to exchange information between the civil and health sectors. These systems are country specific, and the mechanics and logistics are not clear from the survey responses.

The interview process revealed common themes with all parties acknowledging the need for the good management of communication between the health sector and other agencies. A range of target audiences were identified including local casualties, the local community, the wider community/country, between emergency responders, other agencies and government departments. Importance was given to the need for good communication with elected officials and political bodies at local and national levels.

There was common agreement that there should be a single point of information during incidents though the agency and mechanisms varied between countries. In practice smaller incidents were managed at a local level often by civil authorities or local administrators whilst for more significant incidents or for issues of national importance the lead communications were typically led by the government or a national agency.

All interviewees confirmed that there were communications experts available to assist with the development of messages. The need for clear, open, transparent, honest, influential and

proportionate messaging was highlighted by a number of interviewees and there was concern there was an increasing level of distrust of information shared from official sources as people sought information and reassurance from online sources and social media, especially after the COVID-19 pandemic.

Interviewees identified that information would be disseminated via a number of communication streams including official announcements, print media, broadcast media and social media. There was concern that traditional media was becoming less influential and social media was identified as particularly important (based on experience gained from the recent pandemic. (WP7 Deliverable 7.2 paragraph 1.2.5(2.2.5).

3.7 Use of personal protective equipment

Appropriate personal protective equipment (PPE) can reduce the likelihood of exposure to chemical and biological agents for first responders, health professionals. It forms a key element of non-pharmaceutical control measures.

Only 60% of countries responding to the survey reported having a national strategy for PPE stockpiling and distribution. The interviews also indicated a wide range of approaches to specifying type and managing the distribution of PPE regionally and nationally. Likewise, there was no agreement within responding countries as to the use of medical responders in the hot zone.

PPE should be considered as part of a hierarchy of control as it only protects the individual.

3.7.1 First responders

The availability of suitable PPE is crucial in allowing first responders to enter hot and even warm zones. The reliability of PPE depends on having appropriate and correctly certified equipment and ensuring that adequate and effective personnel training has been provided to those required to use it, noting the importance of risk associated with disrobing/removal.

The level of equipment provided to different responders will typically be driven by occupational health risk assessments relating to the scenario or chemical. The requirements may differ between countries depending on the choices made regarding access to cordon areas (hot, warm and cold), chosen decontamination protocols and decisions relating to the provision of casualty treatment / triage in or outside the hot zone.

Interviews identified that there was variation in the approach to patient treatment between countries and potentially between regions of the same country. These variations are dependent on the emergency planning and preparation decisions made and implemented in each country or region. These variations impact the choice and provision of equipment and the training provided to staff.

In practice there is no right approach, but there should be a systematic, risk assessment-based approach to decisions surrounding provision of PPE and the associated training. There needs to be clarity between agencies and responders, and an understanding of the roles, abilities and limitations of partners. This should be underpinned by a clearly documented and exercised approach to treatment, decontamination and handling of casualties and exposed persons.

Likewise, assessments must be made on the type and quantities of equipment routinely carried by responding agencies with consideration of provisions to provide adequate quantities of replacement or additional equipment as necessary.

3.7.2 Medical professionals

Medical professionals typically respond to cases involving injury, medical conditions, and infectious disease. They will also be routinely involved with chemical incidents because of industrial, accidental or deliberate exposures. Standard barrier PPE offers a reasonable level of protection to many biological agents and chemical agents, but specific equipment will be needed if BSL 3 and 4 agents are involved or in the case of chemical agents which pose a secondary exposure hazard.

Interviews identified that in the majority of chemical CBRN exposures medical responders may only have basic PPE. In practice the focus is on removing casualties from the hot zone for treatment by the best appropriate means. Very few countries have ambulance or paramedic crews with access to full body / breathing apparatus protection and consequently medical professional are unable to enter the hot zone. For this reason, casualties are likely to be removed by fire services prior to any assessment / treatment.

Exposure assessment in these circumstances relies on

1) Good general practice and procedures
2) Recognising symptoms that may point to possible chemical exposures during initial response / diagnosis.
3) Implementation of agreed protocols for moving decontamination and triaging patients prior to medical staff being allowed access.
4) Exercising and training to ensure all responders understand their role and the role of other agencies.
5) In many cases CBRN agents may not be initially identified so it is vital that a precautionary approach to the use of PPE, cordons and decontamination is adopted.

In the case of biological agents, interviews indicated that there may be a delay in recognising that an exposure has occurred. Whilst there may be specific triggers to a response (such as white powder incidents) it is likely that symptoms may not have an obvious origin. Cases may appear in a range of locations and over a wide timescale (agent and transmission route dependant). The response is likely to be informed by surveillance data and differential diagnosis of multiple cases. Contact tracing may assist in identifying likely exposure locations / routes of exposure and intelligence gathered by the

security services may provide additional information re likely agents. In these cases, the choice of PPE is likely to be more targeted and evidence based.

As with chemical agents it is important that medical professionals have access to appropriate PPE and appropriate associated training. Selection of PPE should be based on a risk assessment process and the quantities available / access to national resources should be established based on national or regional threat analysis.

3.7.3 Wider public

The survey and supporting interviews identified clear differences in the measures needed to protect the public from chemical and biological threats due to the different transmission and exposure characteristics. Chemical incidents will typically be location based and consequently PPE for the wider public is less likely to be a crucial control or mitigation measure. Generally, the non-pharmaceutical response should ensure that wider exposure to the public is managed by the use of cordons, exclusion zones, sheltering/evacuation advice and public messaging.

In the case of biological agents, similar measures can be applied to known hot zones, but to minimise wider spread in the population, additional control measures may be necessary, such as those used during the Covid-19 pandemic. These measures may include the use of masks, gloves, hand washing, hand sanitisers, disposable aprons, and eye and face protection.

Population wide use of the PPE would not be feasible (face coverings are not considered PPE) [9, 10, 11], and would be used in conjunction with other measures such as quarantine, closure of public spaces, schools, businesses etc. Issues and challenges identified during the recent pandemic identified by interviewees stressed that the effectiveness of non-pharmaceutical measures would need careful risk and cost / benefit analysis combined with an effective public information campaign to maximise compliance.

[9] COVID-19 - Frequently Asked Questions | OSHA.gov | Occupational Safety and Health Administration
[10] Guidance for manufacturers and makers of face coverings to comply with the General Product Safety Regulations 2005
[11] Considerations for the use of face masks in the community in the context of the SARS-CoV-2 Omicron variant of concern

3.8 Impact on health and public infrastructure

Experience across Europe (as discussed in the interviews) has highlighted several issues that complicate the response such as those of chemical and toxicological properties of the agent. Issues of possible secondary or cross contamination were identified and these result in challenges during the response. These are summarised below:

1) The need to remove emergency vehicles from service for decontamination / disposal
2) The need to restrict public access to certain areas, buildings and businesses
3) The need to close some health and civic infrastructure due to the possibility of cross contamination by responders and other staff resulting in pressure on health systems.
4) The need to provide clear instructions and training to responders to minimise the chance of secondary exposure / inadvertent accidental spread of the agent.
5) The need for significant amounts of specialist PPE.
6) The need to collect and dispose of large amounts of clothing and other materials that may have come into contact with the agent.
7) The need to set up contact tracing arrangements to identify persons who were potentially exposed.
8) The need to provide long term advice to local residents re the use of public parks.
9) The need for health reassurance for local people
10) Social and long-term economic impacts on the local area

Whilst these issues were agent specific the case highlights the need for a wide range of non-pharmaceutical control measures and the significant impact even a localised case can have on the ability of civil and health services to respond to this and other incidents.

3.9 Decontamination protocols

The ability to decontaminate individuals, buildings, public areas, equipment and vehicles is a key non-pharmaceutical response. Details of decontamination processes are beyond the scope of this report, but an understanding of the different approaches used by participant countries is useful.

The survey reported that 90% of countries were aware of national strategies for decontamination, material availability, maintenance and deployment. The strategies were generally developed at a national level but responsibility for implementing these strategies was a mix of national and local agencies. In most cases there was a reliance on specialists from the security sector supporting the local response (typically fire).

Interviewees reported a mix of dry and wet decontamination approaches, with decontamination typically being focussed on chemical agents. Where biological agents required decontamination wet decontamination was exclusively recommended.

The decision on specific decontamination protocols is clearly a matter for individual countries. A gap identified is the need for specific guidance which is understood by responding agencies. All countries should review any current policies in line with current literature relating to decontamination effectiveness and produce / update guidance as necessary.

4. Conclusions and recommendations

The survey and interview process identified many commonalities of approach to the management of chemical and biological terror attacks across European countries. Responding agencies, equipment and methodologies were broadly comparable with differences typically being due to geographic features or differences in political approaches (federal vs central management of responses). However, the overall levels of preparedness in participating countries appeared broadly comparable.

The survey and interviews highlighted that participating countries had a broadly similar approach when responding to chemical and biological terror incidents. These can be considered under several categories and are summarised in Table 8. Recommendations for the implementation of good practice for NPCM are included at the end of the document.

Table 8 Gaps and good practice

Issue	Gaps in response	Good practice
Sharing of lists of likely chemical and biological agents	The sharing of information on likely chemical and biological agents was not universally shared between different agencies and responders. This may result in delays in recognising the use of agents and implementing appropriate NPCM and decontamination protocols	Where lists are based on risk assessments and intelligence, are shared with all sectors, and supported by regular training and exercising
Recognizing that a chemical or biological terror incident has occurred	Awareness by responders of terror attack characteristics varied. Levels of preparedness, training and exercising varied between responders.	Regular training and exercising for chemical and biological incidents aids recognition of low probability / high consequence CBRN attacks and makes rapid recognition more likely
Relationship between normal incident response and CBRN	-	Responders identified that the response for chemical incidents would be the same for accidental / routine incidents and that normal practices (cordons, isolation, decontamination) would be protective.

NPCM response requirements		Response can be scaled up as necessary for CBRN responses
Responsibility of preparedness and exercising	Some countries had delegated planning and preparation to local municipalities. In this case the exercising, levels of equipment and training may vary significantly between different areas / countries	Clear responsibilities defined via a legislative framework requiring municipalities / agencies to meet minimum levels of preparedness, planning, training and funding.
Command and control / decision making processes	-	Clear guidance and regulation specifying command and control hierarchies and structures and decision-making processes. Including requirements for recording and reporting decisions.
Decontamination of people, land, vehicles and equipment	-	Clear protocols for decontamination (chemical and biological) should be created with participating agencies regularly training and exercising their use.

Due to the complexity of a CBRN response it is not appropriate to produce a single set of recommendations as different countries may have different priorities and capabilities. There is certainly potential for all countries to improve and streamline their responses and to maximise the potential for co-operation with neighbouring states or across wider Europe. Other initiatives such as the Proactive project[12] can help with harmonisation of preparedness procedures amongst CBRN practitioners in Europe. To assist in this process a set of general recommendations is included at the end of the document. The following section includes a summary of the key findings and actions identified following an analysis of the literature review, survey and interview responses.

[12] Proactive project - PReparedness against CBRNE threats through cOmmon Approaches between security praCTItioners and the VulnerablE civil society

4.1 The need for a common definition of non-pharmaceutical control measures

To ensure a shared understanding of the context and scope of non-pharmaceutical control measures between agencies and organisations a simple definition is beneficial. The proposed definition is **"A non-pharmaceutical control measure is any control or mitigation measure that does not include pharmaceutical interventions".**

4.2 Recognising the need for a NPCM response

Non pharmaceutical control measures can only be implemented for chemical and biological terror attacks once an agent is suspected or identified. Certain events such as explosions and unexplained or mass casualties may trigger the implementation of NPCM. Where situational evidence is not a trigger the study highlighted the importance of medical diagnosis and recognition by emergency responders. The following recommendations emerged.

- Ensure that first responders are trained to recognise situations that may indicate the existence of chemical or biological terror threats.
- Ensure that lists of biological and chemical agents of concern are generated, including likely symptoms and aids to recognition / diagnosis.
- Ensure that medical personnel and first responders are trained to spot symptoms of exposure to chemical and biological agents. Provide regular training and exercising to reinforce and embed this information.
- Ensure current biological surveillance systems are alert for potential terror agents and that appropriate systems for reporting and escalation are in place.
- Countries without poison centres should seek to either establish them or ensure access via cross border arrangements as soon as practicable.
- Ensure poison centres are trained and aware of chemicals of concern and terror and have tested procedures and processes to report and escalate concerns.
- Ensure medical staff are aware of the benefits of consulting poison centres for cases with suspected chemical exposure.

4.3 Common non-pharmaceutical control measures

There is a need to recognise that there may be differences in the optimal control measures for biological and chemical terror agent exposures. The differences arise from the likely exposure and transmission characteristics. Generally, chemical incidents are expected to be in identifiable areas (one or more) and more rapidly recognised as a potential incident. This would allow relatively easy containment and management of those exposed when compared to biological agents that may affect

wider populations and rapidly spread to other areas and regions (depending on the agent encountered). For this reason, chemical control measures would not typically include widespread closures of public areas or facilities and are unlikely to justify widespread lockdown or quarantine. First responders, medical staff, public health staff and command and control staff should be trained in the available NPCM options and on the need for a proportional response.

The possible control measures are summarised in Table 9 below.

Table 9 Summary of available NPCM control measures

Control measure	**Biological**	**Chemical**
Evacuation and sheltering	**Y**	**Y** **likely to be very localised**
Use of cordons (hot warm and cold zones)	**Y**	**Y**
Use of PPE	**Y** **medical / responders and public**	**Y** **Medical and Responders**
Containment of contaminated / infected persons	**Y**	**Y**
Decontamination (people)	**Y**	**Y**
Decontamination (vehicles/equipment)	**Y**	**Y**
Decontamination (buildings)	**Y**	**Y**
Use of personal protective equipment (PPE)	**Y**	**Y**
Establishing command and control structures	**Y**	**Y**
Public health risk assessment	**Y**	**Y**
Management of media (local and national)	**Y**	**Y**
Closure of schools	**Y**	**Localised only**

Restriction of mass gatherings	**Y**	**Localised only**
Closure of sports and leisure facilities	**Y**	**Localised only**
Promotion of home working	**Y**	**Unlikely**
Closing of non-key factories and shops	**Y**	**Localised Only**
Restricting travel (regions / international)	**Y**	**N**

4.4 The need for command-and-control structures

Effective command and control structures were recognised as essential to the successful operation and integration of non-pharmaceutical control measures. Effective command and control should minimise casualties during an incident, protect responders, ensure a proportionate and risk-based response, to allow learning from incidents and to allow for accountability post incident. For this reason, three recommendations have been identified.

1. Countries should develop a clear command and control protocol for inter-agency cooperation and operation during incidents.
2. Ensure there is a decision-making process to ensure protective measures are practicable and that there is the capacity and ability to implement / enforce them.
3. Ensure that key responders and agencies are trained and regularly exercised in the operation of the command-and-control procedures and understand different agencies abilities and responsibilities.

4.5 Communications strategies

Clear communication within agencies, between agencies, between tiers of government and the general public have been identified as a control measure. Good communication can increase efficiency, minimise exposures and errors and increase public compliance with control measures. There are challenges in producing effective communications that will maintain public trust. The following recommendations have been developed.

1. Ensure there is an established, exercised, and familiar process for sharing information between agencies and government during incidents with clearly defined roles and responsibilities.
2. Establish clear protocols specifying who is responsible for information provision during incidents with clear identification of the lead agencies for different scales and types of

incidents. There should be a single point of contact established for all media and public announcements.

3. Ensure there are clear, defensible, understandable, and proportionate reasons to underpin public messaging to increase public confidence and maximise compliance.
4. Ensure consistent messaging between different areas and across country boundaries. If this is not possible then explain and justify any differences in approach.
5. Ensure messaging is undertaken using all appropriate media and mechanisms, not just via printed or broadcast media.
6. Utilise communications experts and consider the use of behavioural scientists to develop messaging strategies with maximum impact and likely compliance.

4.6 Availability of Personal Protective Equipment (PPE)

Appropriate PPE is essential to both chemical and biological terror responses and with different sectors having potentially different needs (health, civil protection, security and the wider public). It is necessary to identify the types of equipment available, to ensure adequate training of staff in the use of the equipment, to ensure adequate stockpiles of equipment for incident use and to establish co-operation and sharing protocols between country municipalities, with neighbouring countries and via EU stockpiles.

1. Undertake a risk-based analysis to determine the types of PPE needed for chemical and biological response.
2. Audit PPE types and availability at a national level to establish capacity and identify any shortfalls.
3. Ensure all relevant staff are trained and certified for the provided available PPE.
4. Identify and develop possible support arrangements with neighbouring countries and the EU (e.g., RescEU).
5. Ensure that a precautionary approach is taken, and suitable PPE is used when responding to chemical incidents.

4.7 Impact on health and public infrastructure

Chemical or biological attacks can result in contamination of emergency vehicles and equipment, buildings, public areas and other public or national assets. This contamination can result in areas, equipment and vehicles being unavailable for further use with a corresponding impact on the

emergency response (e.g., loss of ambulances, fire vehicles etc). Countries should consider how these risks and impacts can be managed during an ongoing incident.

1. Develop protocols and standards for the assessment and management of contaminated vehicles. Develop protocols to manage the impact on health and civil protection services.
2. Develop protocols for the assessment, storage, decontamination, and disposal of contaminated vehicles.
3. Develop protocols to manage the closure of public buildings such as hospitals, ambulance stations, fire stations and civic facilities that may be subject to cross contamination.
4. Develop protocols and waste management plans for the collection and disposal of contaminated possessions and clothing from first responders and the wider public.
5. Design contact tracing arrangements for chemical and biological exposures.
6. Ensure recovery plans are integrated into response protocols to minimise long term social and economic disruption.
7. Develop plans and protocols for decontamination of people, premises and land.

4.8 Decontamination and residual hazards

The ability to decontaminate casualties, persons working in the hot zone and affected buildings and infrastructure are clearly a key element of a non-pharmaceutical response. Most countries already have clear decontamination strategies for exposed persons involving a mix of wet and dry contamination. A detailed comparison of decontamination protocols falls outside the scope of WP5.3 but it was noted that the following general recommendations apply.

1. Regularly review the evidence surrounding different decontamination approaches and update national protocols accordingly.
2. Produce or update guidance on decontamination approaches / requirement / protocols and ensure that responders and agencies are trained and exercised appropriately.
3. Establish decontamination standards for a range of chemical and biological agents. These standards can then be used to inform the management of contaminated vehicles and buildings.

4.9 Sustainability

The gaps and good practice examples (and the recommendations proposed below) identified in this report require engagement in, and support from, national stakeholders and other relevant governmental departments/agencies to allow these findings to be used beyond the life of Joint Action TERROR.

Coordination with the different sectors on a national level is required to ensure these recommendations are implemented across all three sectors and that they are written in to cross-sectoral response plans at the national level.

EU agencies must also house and maintain these recommendations (i.e., be responsible for the distribution and uptake of recommendations, house them on an accessible website past the life of JA TERROR and update as required) to allow sustainable, long-term use of the outputs of JA TERROR.

Recommendations

The recommendations below are for all those who participate in some aspect of preparedness and response against biological and chemical terror attacks. This could include:

- National public health officials and authorities
- Representatives of security and civil protection sectors
- Other national authorities and decision makers
- Government departments and policymakers
- EU agencies and policymakers (e.g., DG HERA (health emergency preparedness and response), DG SANTE (health and food safety)

The recommendations are directed primarily at a national level, with some of them requiring coordination between Member States at an EU level e.g., a driving force is required to ensure that the recommendations are distributed and implemented in Member States, that they are reviewed, maintained/updated regularly as required.

Recommendation 1: Recognition of a chemical or biological agent

Proposal Number	Proposal	Reason for Proposal
1	Ensure that lists of biological and chemical agents of concern are generated, including likely symptoms and aids to recognition / diagnosis.	Aide memoir to ensure that medical responders and agencies are familiar with the more common agents
2	Ensure that medical personnel and first responders are trained to spot symptoms of exposure to chemical and biological agents. Provide regular training and exercising to reinforce and embed this information.	Regular training and exercising will increase the likelihood of early detection of a chemical event

3	Ensure that countries have implemented surveillance programmes for disease and biological agents	There is a need for early detection and recognition of biological incidents. This would typically be achieved using routine surveillance systems. If not present, then the development of these systems would increase effectiveness and resilience.
4	Countries without poison centres should seek to either establish them or ensure access via cross border agreement as soon as practicable.	Unlike biological / disease-based incidents the majority of countries do not have a surveillance system for chemical incidents. Detection would rely on diagnostic recognition. However, poison centres could act to provide a basic surveillance system increasing the likelihood of detection and reporting for unusual or dispersed incidents
5	Ensure poison centres are trained and aware of chemicals of concern and terror and have tested lines to report and escalate concerns	Poison centres may not be familiar with CBRN chemical agents as they will not be routine occurrences. Consequently, the centres would require training so likely toxidromes can be recognised.
6	Ensure medical staff are aware of the benefits of consulting poison centres for cases with suspected chemical exposure	The role of poison centres for detection and surveillance is dependent on cases being reported by medical or public health professionals. Awareness of role of poison centres is essential to maximise reporting.

Recommendation 2 : Requirements of Implementing clear command and control structures

Proposal Number	Proposal	Reason for Proposal
1	Develop a clear command and control protocol for inter-agency cooperation and operation during incidents	Implementation of non-pharmaceutical controls is dependent on effective information, decision making and delegation of roles. For this reason, it is essential that command and control structures are established, recognising the value and effectiveness of public health based non-pharmaceutical controls.
2	Ensure there is decision-making process to ensure protective measures are practicable and that there is the capacity and ability to implement / enforce them	Decision making is vital to the implementation of NPCM and decontamination. Structured, transparent, accountable and recorded decisions allow learning from incidents and are essential to justify actions for enquiries and investigations post incident.
3	Ensure there are clear, defensible, understandable and proportionate reasons to underpin public messaging to increase public confidence and maximise compliance	Accountable, defensible and proportionate responses are an essential part of a non-pharmaceutical response. This is essential to provide justification and context for post incident reviews and significantly to drive communication strategies to increase public confidence and engagement.
4	Ensure that emergency planning and preparedness considers the wide range of impacts on civil, security and health systems that may result from even a localised CBRN incident. Develop suitable management and mitigation approaches which should be incorporated into national and local guidance	Chemical and biological incidents can have a huge impact on routine operations and local economies. Understanding these potential impacts is essential to ensure proportionate responses, to minimise impacts on essential services and to ensure "business as usual".

Recommendation 3 : Need to develop and implement clear communication protocols

Proposal Number	Proposal	Reason for Proposal
1	Ensure there is an established, exercised and familiar process for sharing information between agencies and government during incidents with clearly defined roles and responsibilities	Clear communications are essential to ensure inter agency understanding and efficient responses. This would typically be via command and control structures and by tested and routinely utilised communications platforms. This can include the use of shared incident response platforms
2	Establish clear protocols specifying who is responsible for information provision during incidents with clear identification of the lead agencies for different scales and types of incidents. There should be a single point of contact established for all media and public announcements	It is important that communications to the media and public are consistent, clear, accurate, timely and informative. Clear communications increase public understanding and the likelihood of compliance with any protective measures. For this reason, it is essential that different agencies or departments do not issue confusing or conflicting statements. Response strategies should be clear on how communications will be managed and who is responsible for drafting / issuing them
3	Ensure messaging is undertaken using all appropriate media and mechanisms, not just via printed or broadcast media	Response to the recent pandemic highlighted that significant parts of the community obtain information from social media and other online sources rather than via traditional print and broadcast media. Any communications strategy must embrace a broad communications approach to maximise the breadth and penetration of any messaging and

		to combat potentially false or misleading information from other sources.
4	Utilise communications experts and consider the use of behavioural scientists to develop messaging strategies with maximum impact and likely compliance	Good communications require a specialised skill set to ensure the wording is accessible and understandable to the wider population. The use of communications professionals to assist in the wording increases the likelihood of effective messaging. Similarly, there is a need to frame communications in a manner that ensures the maximum likelihood of acceptance and compliance. It may be beneficial to use behavioural scientists to assist in the framing, targeting and effective distribution of communications

Recommendation 4 : Typical Non-Pharmaceutical Control Measures (NPCM)(Chemical)

Proposal number	Intervention	Typical uses
1	Cordon / exclusion areas	All incidents. Exclusion of public and non-essential personnel to minimise exposure and contamination. Ensure only appropriately trained and equipped personnel are in the hot zone.
2	Establishment of hot, warm and cold Zones	Isolate contaminated area and prevent spread / cross contamination by biological agents. Should be proportionate to chemical hazard
3	Use of PPE	Appropriate PPE for Zone.
4	Evacuation of nearby premises	If necessary. This will depend on the chemical agent and logistical concerns such as site safety and access by emergency services
5	Containment of contaminated persons	This includes members of the public, employees and emergency responders.
6	Decontamination of persons at scene (mobile)	Dry / Wet depending on agent and agreed protocols. Practicality depends on time taken to deploy decontamination facilities. Dry or improvised decontamination may be necessary to minimise impacts / exposures
7	Decontamination of casualties	Could be at scene or at hospital. Country capacity varies
8	Decontamination of vehicles	Includes civilian vehicles but is particularly relevant to emergency vehicles such as ambulances that have been used to transport casualties

9	Rapid Establishment of command and control structures	Essential for the efficient interaction of emergency responders (all sectors) and to allow proportionate and accountable decision making. Key to ensure good communication between agencies, maximise information sharing and to facilitate defensible decision making
10	Public health risk assessment	Factoring in nature of chemical exposure, toxicology (if known), precautionary principle if not. Allows decisions on likely public impacts, nature and degree of hazard and proportionate control measures. Necessary for decision makers to take proportionate action.
11	Management of media	Need to establish clear, agreed, lines of communication to manage public concerns and expectations. Includes information on casualties as necessary. Key for providing advice on sheltering, evacuation and steps the public can take to minimise exposures or harms
12	Development of decontamination profiles for vehicles, buildings and environments	This process may take some time for CBRN chemicals. The development of tolerability of residual hazards data may be complex and be a key factor for recovery after the incident is over. Very chemical specific
13	Development of conceptual models for possible ongoing exposures and areas of effect.	Are there any pathways where the chemical can cause wider public health or environmental harms (air / land/ water/ cross contamination). Consider impacts on wildlife, foods and fish, water supplies etc. Will require liaison with other specialist agencies.

Recommendation 5 : Typical Non-Pharmaceutical Control Measures (NPCM) (Biological)

Proposal number	Intervention	Typical use
1	Diagnostic testing	Rapid testing (where available), conducted at scene or in hospital, allows identification of agents, subject to confirmation by a reference lab.
2	Hand hygiene and respiratory etiquette	Need to ensure the reduction and spread of droplets and aerosols containing pathogens emitted by coughing and sneezing. For example, use disposable tissues to cover the nose and mouth or sneeze into the inside of the elbow.
3	Masks and filters	Always at the scene. Based on the transmission mode of the agent involved, consider a broader use of these personal protective equipment (PPE) at public level. Reduce respiratory or droplet transmission using masks and face filters suitable for community use. Different masks provide varying levels of protection.
4	Isolation of cases	Ensure rapid isolation of infected or sick, contagious individuals from others to prevent the spread of infection and environmental contamination.
5	Cleaning surfaces and objects	Ensure cleaning of surfaces, floors, and objects with products recommended by national health authorities.
6	Ventilation of indoor spaces	Combat the circulation and spread of a potentially pandemic pathogen by ensuring compliance with health prevention and protection recommendations for various indoor settings, both domestic and workplace.
7	Contact tracing	Effective implementation of contact tracing to identify and manage contacts of confirmed cases and quickly identify and isolate potential secondary cases, thereby breaking the transmission chain.
8	Quarantine for exposed individuals	Consider the implementation of quarantine measures and restricting activities (e.g., avoiding work, school, and public places) and isolating

		individuals potentially exposed to the pathogen. The goals are to prevent asymptomatic transmission, monitor for infection symptoms, and promptly identify new cases.
9	Physical distancing	One of the most impactful prevention measures is social distancing, which involves avoiding direct physical contact and maintaining a distance of at least 1-2 meters, depending on the pathogen's transmission characteristics. Utilize posters, floor markings, and plexiglass barriers to maintain interpersonal distance in potentially crowded places.
10	Closure of non-essential workplaces	Evaluate the need for / effectiveness of temporary closure of non-essential workplaces to reduce the risk of dissemination.
11	School closures	Where necessary consider limiting gatherings in educational settings and the implementation of remote learning to ensure continuity of education and teleworking for school staff. This measure requires careful consideration of the societal impacts resulting from implementation.
12	Limitation of gatherings	Introduce controls to minimize contagion risk by preventing crowded situations, including mass events and daily activities. During an intentional event mass events could be limited in the affected area and also in larger areas to avoid any other possible attack. Mass events (concerts, fairs, sports events, etc.) can increase interpersonal contacts, especially in confined spaces. Strategies can range from cancellation to holding events with specific precautions, varying based on the event's characteristics. Social and economic impacts must also be considered.
13	Movement restrictions	Consider bans on leaving and entering specific areas such as municipalities, provinces, or regions. As with school closures and mass gathering controls social and economic impacts should be considered.
14	Workplace measures	Implement workplace controls to reduce transmission risk due to prolonged contact among colleagues and the public. Measures can include: • Modulating activities to reduce prolonged contact • Encouraging telework • Installing barriers (e.g., plexiglass) to block droplet spread • Using PPE and hand sanitizers

		Consider the social and economic impacts of this measure.
15	Stay-at-home measures	During an event, restricting citizen movement around the affected area and asking the population to stay home can be considered. These measures can be adjusted based on epidemiological scenarios (e.g., night-time movement restrictions or area-specific limitations).
16	Limit social interactions ("social bubble")	Some scientific studies propose an approach based on frequent interactions with a small number of people, potentially maintaining some social activity while reducing the risk of transmission.

Recommendation 6 : Develop regular training and exercising protocols

Proposal Number	Proposal	Reason for Proposal
1	Ensure that medical personnel and first responders are trained to spot symptoms of exposure to chemical and biological agents. Provide regular training and exercising to reinforce and embed this information.	It is likely that medical professions and first responders represent a first line of recognising potential CBRN incidents. NPCM may be implemented before an incident is identified as a terror event. These incidents are however relatively rare and without regular refresher training and exercising it is likely that there will be delays in recognition and reporting.
2	Ensure poison centres are trained and aware of chemicals of concern and terror and have tested alerting and communication protocols to report and escalate concerns	These incidents are relatively rare and without regular refresher training and exercising it is likely that there will be delays in recognition and reporting.
5	Ensure that key responders and agencies are trained and regularly exercised in the operation of the command-and-control procedures and understand different agencies abilities and responsibilities	Agencies and responders must have a practical understanding of the roles and activities of their own and other agencies. This knowledge requires training and exercising to foster good working practices, understanding of complementary roles and confidence in inter agency working
8	Produce or update guidance on decontamination approaches / requirement / protocols and ensure that responders and agencies are trained and exercised appropriately	Responders need to understand decontamination approaches and the purpose of other non-pharmaceutical control measures. This includes regular updates on changes in approach, capability and the underpinning science.
9	Undertake regular desktop and live training exercises for chemical and biological responses involving 1st responders and command and control structures	As for command-and-control functions it is essential that operational teams are familiar with joint and interagency working. This encourages co-operation, trust and confidence and provides synergistic benefits.

Recommendation 7 : Management of PPE

Proposal Number	Proposal	Reason for Proposal
1	Undertake a review of procedures and equipment available to first responders to ensure there is adequate availability of PPE for a chemical response, that precautionary principles are applied, and that first responders adopt protective measures by default	The choice of PPE for responders should be subject to regular review in terms of occupational health, operational practicalities, risk assessment and availability
2	Ensure staff are trained in use of specialist PPE	Training is essential for the safe use of PPE in CBRN situations.

Recommendation 8 : Need to maximise international co-operation

Proposal Number	Proposal	Reason for Proposal
1	Ensure responders, medical staff, agencies and command and control structures are aware of available international support	The interview process revealed that there was limited knowledge of possible support mechanisms and how and when to activate them. Knowledge may vary between sectors. This situation can be combatted by adequate awareness raising and training.
2	Confirm and develop support networks and obligations with partner countries	Interviews revealed that there was uncertainty surrounding cross border support networks. Again, this may vary between sectors. Better understanding of available resources and support structures, particularly at a command-and-control level may allow more effective responses.
3	Exercise the use of cross border agreements and support	Exercising would raise awareness of the cross-border support available, how it would work in practice and how to engage and work co-operatively with cross border agencies

Annex 1 Interview guide

Semi Structured questionnaire

Introductory Statement

*"Thank you for agreeing to take part in these interviews. My name is ******* and ****** is also present as a note taker. We will be having a broad ranging discussion on non-pharmaceutical control measures which could be implemented during an intentional chemical or biological incident. The format is relatively informal but to allow us to get the best out of the information and the interview is being recorded and transcribed using Microsoft Teams. I can confirm that both my colleague and I have been security cleared (to the UK SC level) and that all recordings and potentially confidential material will be kept within UKHSA's secure computer systems).*

My colleague and myself will also be taking notes during the session and I wish to stress that all responses will be anonymised as we are looking at identifying common understandings and issues, not auditing any individual countries approach. Once the report is complete the recordings, notes and transcripts will be deleted.

Can I confirm you are happy to proceed on this basis?"

"The interview will consider several aspects of NPCM's and policies and documents available in each country to inform any response. We are looking at the process in five areas Preparation, Initial response, Extended response, Recovery and the Development of future guidance."

Part 1 Understanding of the meaning of non-pharmaceutical control measures (NPCM's) (5.3)

We are trying to determine their understanding of NPCM's, both in terms of a definition and the key components necessary. We are using a biological definition as a starting point, but we need to see if a more specific definition is needed.

Note - many covid and flu related documents (WHO and EU) refer to Non-Pharmaceutical Interventions (NPI). People may be more familiar with this term.

Q1 "W*hat is your understanding of the term non-pharmaceutical control measure's (NPCM)?"*

- We are more interested in their understanding of the term than ours but if prompting is needed, we will use a modified version of the definition from chapter 8 of the technical report on the covid 19 pandemic as a stimulus if needed.

> "Non-pharmaceutical control measures, also known as 'public health and social measures', are the measures to manage chemical exposures, contamination and transmission that do not depend on drugs, vaccines or other specific medical countermeasures."

Q2 *What do you consider to be the key components of NPCM approach during intentional chemical or biological incidents?"*

- Further explore their understanding of the term NPCM if necessary?
- Determine their understanding of the key components of a NPCM strategy?
- Identify in principle if their country has an NPCM approach to hazmat or *during intentional chemical or biological incidents*? Keep it simple at this stage as later questions will explore the detailed arrangements.

Part 2 Preparation

Introductory statement to set context for the participants.

"This section is exploring the preparations you have made for during intentional chemical or biological incidents in terms of how different agencies should interact during an incident, the existence of any pre-agreed documentation or working arrangements and information on how during intentional chemical or biological incidents are prepared for / exercised for."

Q3 *"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) should work together during a during intentional chemical or biological incidents incident?"*

- We are looking to identify and pre agreed approaches, similar to the UK's JESIP system and any specific legislation that defines how agencies should work (like the UK Civil Contingencies act).
- Need to establish how familiar the different agencies / actors are with the guidance and if it has been thoroughly tested in peacetime or during incidents.
- Particularly critical is data re national and cross sectoral guidance on implementation of NPCM, where support from non-PH organisations i.e security must be looked for.

Q4 *"In terms of a public health response. what guidance is available to you for establishing and managing, isolation, decontamination and exclusion of persons or areas during a intentional chemical or biological incident?"*

- How does current legislation support the adoption and implementation of non-pharmacological measures?
- We are looking to determine If guidance already exists
- Can the guidance be shared

Q5 *"how are decisions on the implementation of evacuation, cordon distances, decontamination requirements and quarantine made? Who leads the process?*

- Trying to identify command chain / decision train and familiarity with it.

Q6 "What training and exercising takes place to test and evaluate these plans?"

- Seeking to establish if the plans have been tested, how they work, any issues that have arisen and how these are being addressed.
- Has availability of equipment, testing and the disposal of contaminated materials been considered (supplementary question if necessary).

Q7 *"How do your plans and agreements manage communication with the media and general public? Are there prepared media lines / communication approaches?" (5.1)*

- *Want to explore how communications are addressed and the importance given to it*

Part 3 Initial Response

Here the focus is on the first few hours after a *during intentional chemical or biological incidents* incident occurs. We want to investigate how the *during intentional chemical or biological incidents* issue

would be identified, If there would be easy access to laboratories / analysis (fixed or mobile), How a specific *intentional chemical or biological incident* response would be instigated, Who would be able to declare it, What the command-and-control elements would be, who would be involved and how would decisions be implemented

Introductory statement to set context for the participants.

"This section includes questions relating to the first few hours after a during intentional chemical or biological incident occurs. We are interested in how command and control would be implemented, who would be involved in a response, who would lead and how appropriate non pharmaceutical responses would be identified and implemented."

Q8 "How would an *intentional chemical or biological incident* be identified, what actions would this trigger and who would be involved in the response?" (5.1)

- When would you implement NPCM?
- We want to draw out who would be able to activate a during intentional chemical or biological incident response
- What are the main differences in implementing non-pharmacological measures between a natural event and an intentional release
- what additional procedures are in place for a Major Event/incident
- Measures to minimise impact on healthcare systems
- Communication within health sector and other agencies

Q9 Question if NPCM involve other agencies civil and security, does it work and has it been exercised (5.1)

"What are steps would be taken to assist persons exposed and minimise further population exposure? How would control measures be agreed, implemented, and communicated".

- Looking for information on isolation, cordons, decontamination, and communication
- Any other innovative non-pharmaceutical responses.
- What is the approach to decontamination at scene.
- Who would carry out a risk assessment?

Q10 *"What stockpiles and equipment are available? Is there a mechanism to rapidly deploy it? (5.1)*

- Are there stockpiles of equipment and consumables, if so, are they adequate and how are they accessed?
- Do you have rapidly deployable response equipment e.g., barriers, decontamination shower, filter or flow attachments for improvised decontamination.
- Are there any arrangements to share equipment with other countries?
- How are risks to water supplies managed?

Q11 "what laboratory or analysis capabilities are available to identify intentional chemical or biological incidents agents? (link to 5.4, 5.1 and 5.3)

- Is there analysis capability for a wide range of *during intentional chemical or biological* chemical s?
- Is this fixed laboratory or is their mobile capacity
- How rapidly is analysis / identification available
- Is there any cross border or interagency support available

Q12 "What are the main challenges in implementing non-pharmacological measures in the community? (5.1)

- What strategies have you adopted to increase public awareness and adherence to non-pharmacological measures?
- How do you deal with public resistance or lack of cooperation in adopting non-pharmacological measures?
- How do you balance the effectiveness of non-pharmacological measures with their potential social and economic side effects?
-

Part 4 Extended response

This section addresses the need to consider that a response may need to extend over several weeks or may be in multiple locations. This can produce different stresses on the responders and the approach to cordons, evacuation and messaging may need to be different. Additionally, there may be demands for large quantities for PPE which may be problematic. This would be particularly problematic if the incident involved multiple localities or was co-ordinated to simultaneously impact different areas of the country simultaneously.

Introductory statement to set context for the participants
"We are now going on to consider incidents that become protracted over several weeks or happen in widespread locations. We are looking for information on how the non-pharmaceutical response may need to change in these circumstances."

Q13 "How would your response change if an incident continued over an extended timescale and/or was in several locations simultaneously? (5.1)

- Consider amount / access to PPE
- Consider impact on emergency services
- Would decision processes, command and control change / what about risk assessment
- How would the approach to communications change / managing public expectations.

Q14 "During an extended incident do you have access to extended support from the EU or via specific agreements with other countries and agencies? (5.3)

DO you have support arrangements with your internal agencies

- Tease in what might be provided as support (not just cash)
- Looking at mutual support arrangements or requests via the commission
- E.g., sharing equipment / ppe. Bi lateral mechanisms
- Arrangements between department sin country

Part 5 Recovery Phase / Getting back to Normal

This section addresses the return to normal and how this would be managed.

Introductory statement to set context for the participants
"I want you to consider how you would manage a during intentional chemical or biological incident as it moved from the active response towards returning to normal. What approaches are taken to protect the public and to manage expectations and worries."

Q 15 “What procedures or systems are in place to transition back to normal, how would this transition work in practice? (5.1)

- Would this transition back to local civic authorities, how would they cope
- How safe is safe, what decontamination threshold would be used and how are they selected
- How do you communicate with the public to manage concerns and provide confidence it is safe
- How do you manage public expectations?
- How do we educate people on proper use of interventions (particularly public communication) one health approach – economic and public confidence issues.
- What non pharma procedures in place do they protect environment, PH and animal health

Q16 Effectiveness of NPCM (5.1)

- How do you evaluate the effectiveness of the non-pharmacological measures implemented?
- How do you balance the effectiveness of non-pharmacological measures with their potential social and economic side effects?
- How do you evaluate the effectiveness of the non-pharmacological measures implemented?
- What are your recommendations for improving the implementation and effectiveness of non-pharmacological measures in the future?

Future Guidance

Q17 What additional guidance and procedures would you like to see developed?

Washup

“Thank you for participating in this process. At this point we have asked all our questions, but this is your opportunity to raise any issues you think we have missed or to bring up anything else you think is important in terms of a non-pharmaceutical response.

Annex 2 Copy of the survey questions

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:

* 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 **de velopment**?

(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?

(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?

30

- ◯ 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)	

32

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)	

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

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- ○ 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