

D4.4 JA TERROR Sustainability Report

Report from Joint Action TERROR WP₄

Sustainability and implementation in national policies

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Preface

Call for authorities and decision makers to consider implementation of the outputs from Joint Action TERROR

Joint Action (JA) TERROR have developed reports and recommendations for EU and its Member States on how to strengthen health preparedness and cross sectoral cooperation between health, security and law enforcement, and civil protection in response to biological and chemical terror attacks.

This report highlights the key recommendations that should be considered for implementation of outputs from JA TERROR by EU and its Member States. This will assist in making certain that outputs from the Joint Action are sustainable.

The report is developed to assist EU and national ministries, decision makers and authorities from health, security and law enforcement, and civil protection on how to make use of the outputs of JA TERROR nationally.

We urge partners to carefully consider the pathways for improving national preparedness against biological and chemical terror attacks that are highlighted in this report. This report can also be used to provide an overview of the key technical areas which require consideration for national implementation and use:

- Health Preparedness and response planning to biological and chemical terrorist attacks.
- Cross-sectoral collaboration: Security, Civil protection, and Health.
- Risk and crisis communication internally and towards the public.
- Novel threats.

The national authorities from these sectors need to set up a national joint stakeholder meeting so that consideration of the recommendations can be assessed in a strategic manner, considering cooperating sectors capacities and needs in response to a biological or chemical terror attack.

How to use the Sustainability Report

This report, JA TERROR deliverable D4.4, recommends approaches to implementation of the project outcomes. The intended audience authorities and decision makers involved in preparedness and regulatory development.

It is not the intention of this report to reproduce or summarise the actual project outcomes and conclusions; for that, all relevant stakeholders should familiarise themselves with the other deliverables emerging from JA TERROR.

Overview of and how to use the Sustainability Report:

- Preface: Overarching recommendations and messages to a possible sustainability approach. Use this as a starting point when establishing an implementation strategy for the project outcomes. Figure 1 outlines a recommended order of actions. Figure 2 contains the key

overarching messages to be considered by authorities and decision makers. Figure 3 explains how the deliverables may be used for increased preparedness and cooperation in response to chemical and biological terror attacks.

- Chapter 1: Introduction to JA TERROR.
- Chapter 2: Description of how sustainability and implementation was a topic throughout the JA TERROR project period.
- Chapter 3: A key to implementation progress, this chapter must be considered in detail by authorities and decision makers to understand how the project outcomes may be of use. It contains details on implementation of the JA TERROR main topics of 1) health response and preparedness planning, 2) cross-sectoral collaboration, 3) risk communication, and 4) novel threats.
- Chapter 4: The Sustainability Roadmap provides a collated overview of how and when each topic should be deployed for implementation.
- Chapter 5: Closing remarks.

STEPS FOR IMPLEMENTING JA TERROR OUTCOMES

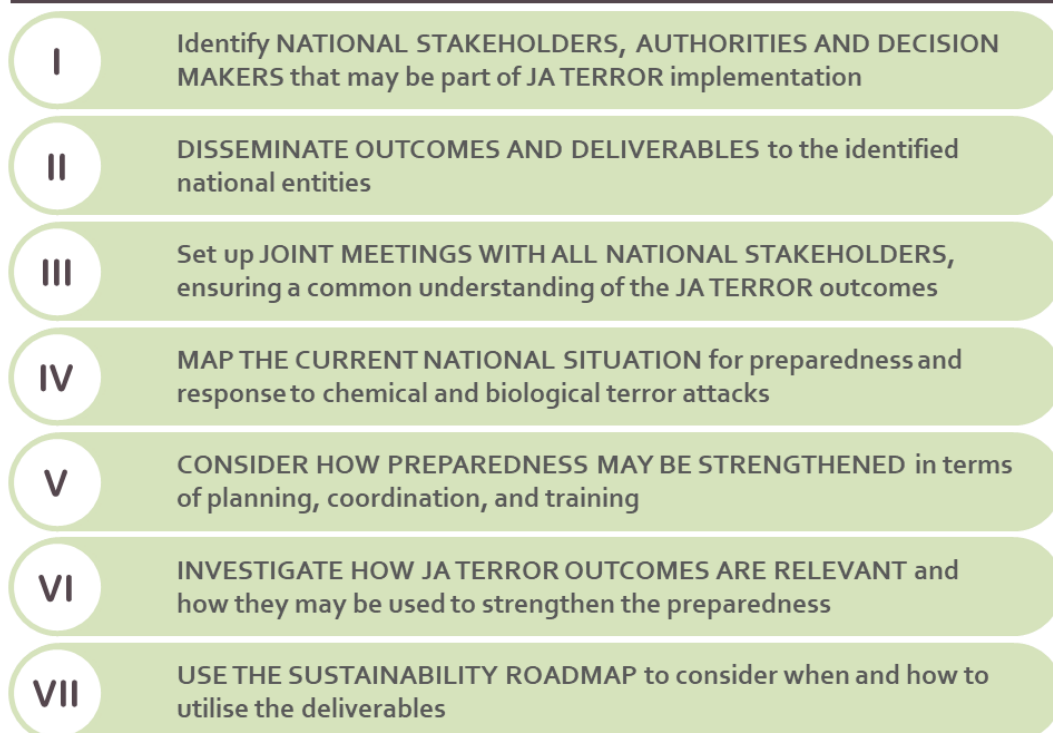


Figure 1 The recommended order of actions when implementing JA TERROR outcomes. The appropriate national authorities need to initiate implementation of the outcomes and ensure progress towards strengthened preparedness against chemical and biological terror attacks.

Key messages to authorities and decision makers

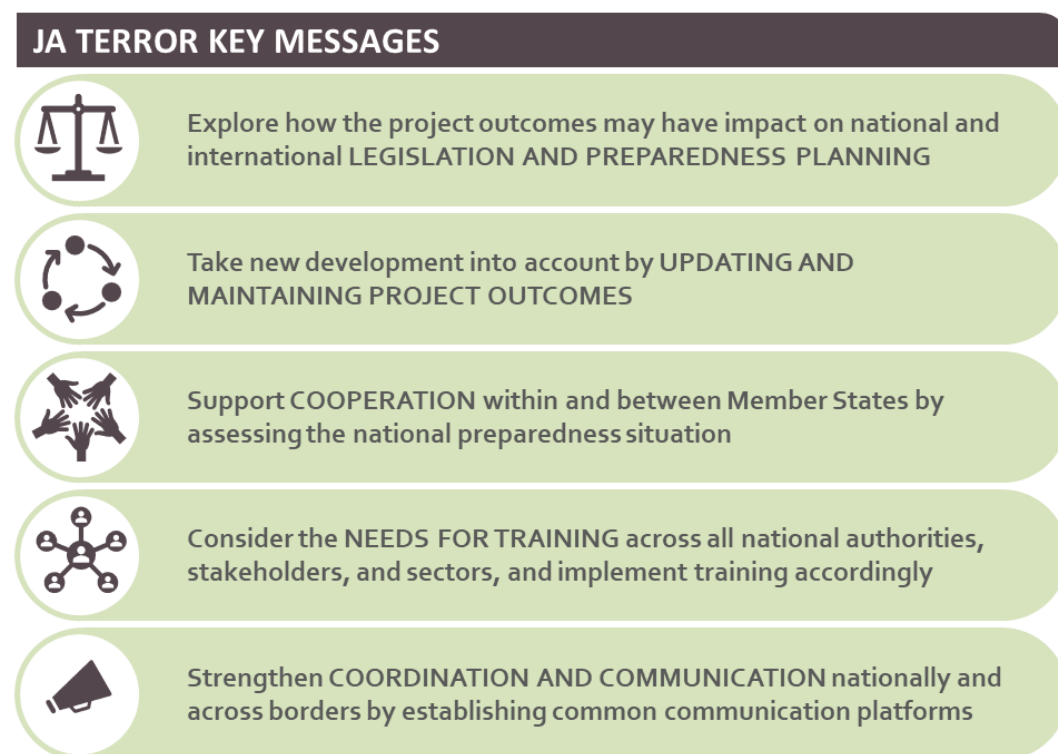


Figure 2 The key messages and recommendations for Authorities and Decision Makers when considering the implementation of outputs from JA TERROR.

How Joint Action TERROR deliverables could be of use to authorities and decision makers

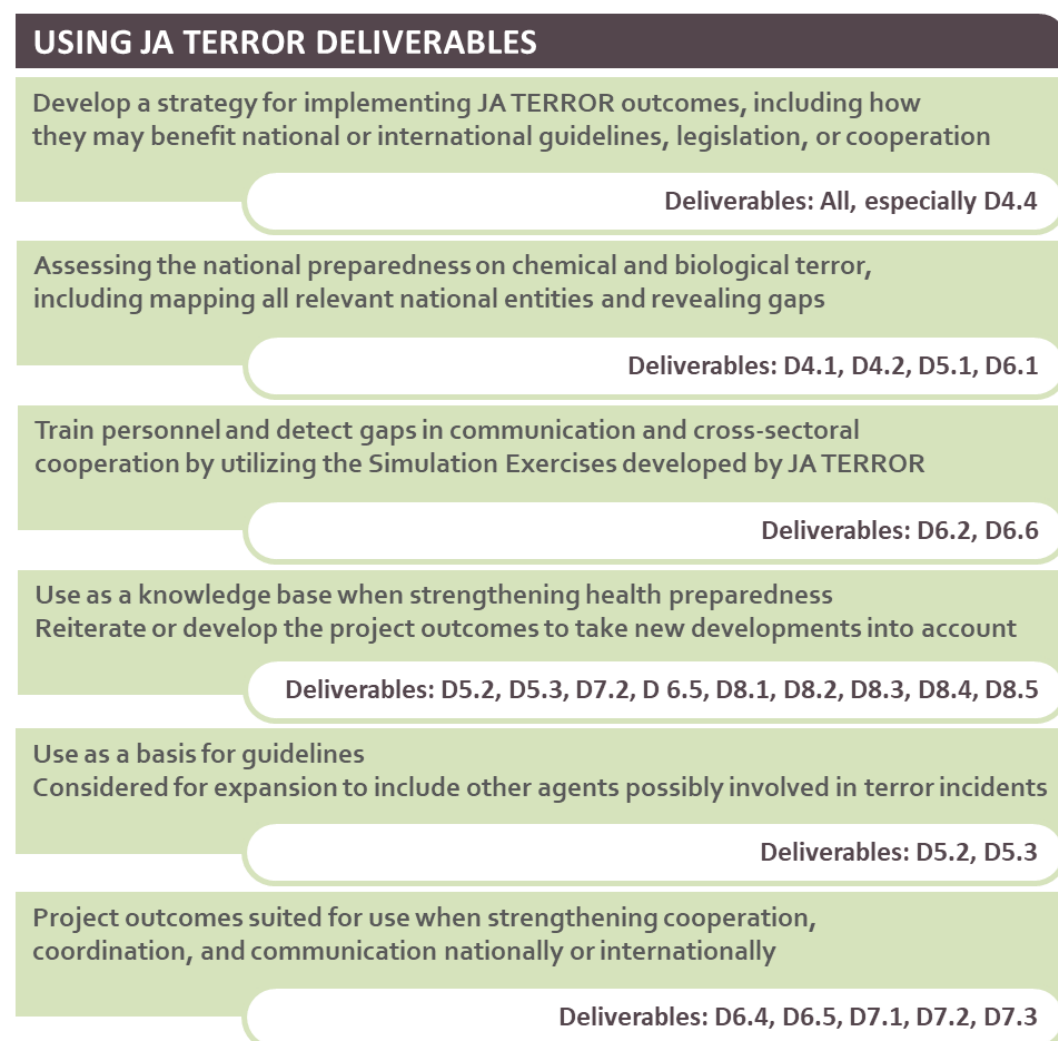


Figure 3 JA TERROR deliverables sorted thematically to aid authorities and decision makers when implementing the outcomes of JA TERROR.

Summary

JA TERROR has developed reports, recommendations, and guidelines for use in preparation or response to terrorist events involving chemical or biological agents. The aim is to aid EU Member States towards strengthened health care resilience in such incidences. Consequently, the outcomes of JA TERROR should be considered for possible impact on relevant national preparedness plans.

National authorities must take action to assess which national cooperative actors are needed to respond to a biological or chemical terror attack. Member States also need to **consider the requirements for cooperation, communication, and use of capacities across the relevant sectors** in a manner that makes national sectoral response to biological and chemical terror attacks effective.

JA TERROR has outlined **implementation objectives**, designed to ensure that deliverables and other outcomes may be useful to authorities and decision makers from the national government entities. The implementation objectives follow the topical setup of the project:

- *Overarching implementation:* **Maintain the cross-sectoral network established through JA TERROR** and consider the need for implementing outcomes in guidelines and/or legislation at the EU level. Assembling national stakeholders is strongly encouraged, such as Ministries of Health, Justice, Interior, and Civil Protection, supported by directorates, public health institutes, etc., to disseminate project outcomes and discuss future strategies.
- *Health preparedness plans against terrorist attacks:* **Disseminate knowledge on emergency clinical response** to deliberate release scenarios. Consider developing similar guidelines for other scenarios and agents.
- *Cooperation and coordination:* Raise awareness and contribute to the **development of cross-sectoral collaboration** facing chemical and biological terror attacks. Evaluate training needs and reiterate the status of national preparedness and cooperation.
- *Risk and crisis communication:* Raise awareness on crisis and risk communication during terror attacks, aiming for **strengthened communication both internally and towards the public**. The JA TERROR handbook on risk communication should be considered for national adoption or adaptation.
- *Novel threats that may be involved in terrorist attacks:* **Increase awareness about synthetic biology, synthetic opioids, and Dual Use Research of Concern (DURC)** and implement guidelines for such synthetic agents in governance documents. This field is constantly and rapidly developing. Hence, knowledge compiled by JA TERROR should be updated regularly.

Identifying and reaching out to the appropriate stakeholders and policy makers was pinpointed by JA TERROR as key to implementation success. Competent authorities in every Member State must evaluate current structures, organisations, coordination efforts, and gaps in preparedness and response to terror events. JA TERROR outcomes should subsequently be considered as aids for mitigating measures when filling gaps and increasing the quality of national and possibly international preparedness.

EU authorities and initiatives such as the ECDC, the EU Health Security Committee, and the relevant Directorate-Generals (DGs) must consider including JA TERROR outcomes in coordinating, operational, and strategic efforts, e.g., within analysis capacity, coordination across sectors and borders, and communication internally and towards the public.

1 Introduction

The main objectives of Joint Action (JA) TERROR, co-funded by the EU 3rd Health Programme, are to address gaps in health preparedness and the urgent need to strengthen cross-sectoral coordination between health, security, and civil protection in response to biological and chemical terror attacks. Such events are unexpected emergencies of a high degree of uncertainty, urgency, and most likely severity, calling for cooperation between security, civil protection, and health. Existing organisations involved in preparedness and response planning need to prepare specifically for intentional terror attacks.

17 countries and more than 30 partners were involved in JA TERROR across Europe, in a project running for four years from 2021. Efforts were divided between eight work packages (WP); four core and four technical WPs (Table 1). The Norwegian Directorate of Health coordinated the project.

At the onset of JA TERROR, the legal framework to improve preparedness and strengthen the response capacities to health emergencies of biological, chemical, environmental, and unknown origin in the EU was provided by Decision 1082/2013/EU on serious cross-border threats to health [1]. During the course of the Joint Action, this was replaced by Regulation (EU) 2022/2371 of the European Parliament and of the council of 23 November 2022 on serious cross-border threats to health [2]. The threat from terrorist attacks is addressed in several EU regulations, e.g., Directive (EU) 2017/541 on combating terrorism [3].

The EU is an important security actor in numerous policy frameworks, e.g., civil protection, health security, food safety, infrastructure protection, hybrid threats, and disaster relief. Key initiatives exist at the EU level to prevent and prepare for terrorist attacks. Security threats are addressed in the context of the European Agenda on Security [4] and the Security Union. Many security threats are specifically addressed by the Commission Communication in the EU Action Plan to enhance preparedness against CBRNE security risks [5], the 2016 Joint Communication on the Joint Framework on countering hybrid threats [6], and the Joint Communication of 2018 on increasing resilience and bolstering capacities to address hybrid threats [7].

JA TERROR builds on work done by relevant projects and exercises under the EU Health Programme and other EU programmes apposite to the project objectives. It has also benefited from the Joint Action “Strengthened International Health Regulations and Preparedness in the EU” (SHARP). To support cross sectoral objectives of JA TERROR, an Advisory Board with representatives from DGs HOME, ECHO, HERA, SANTE, and HaDEA, ECDC, Europol, WHO EURO, Swedish Defence Research Agency, Finnish Institute for Health and Welfare, University of New England, ECHA, and EMCDDA was established as counsellors to the project group.

The outcome from any project of a magnitude and scope such as the JA TERROR is not only reliant on producing reports and deliverables; ensuring that the output is useful and comprehensible is also key.

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Albeit harder to quantify than reports and documents, the implementation of project outcomes in national policies is still of great importance. This report is the result of a combined effort between the technical and supporting work packages towards recommendations for JA TERROR sustainability and implementation.

Table 1 Overview of JA TERROR work packages.

WP	Topic	Leading institution	Co-leading institution
Core work packages			
WP1	Coordination	Norwegian Directorate of Health	
WP2	Dissemination	National Institute for Public Health, Slovenia	
WP3	Evaluation	European CBRNE Centre, Sweden	
WP4	Sustainability and implementation in national policies	Norwegian Institute of Public Health	French Ministry of Solidarity and Health
Technical work packages			
WP5	Health Preparedness and response planning to biological and chemical terrorist attacks	National Institute for Infectious Diseases L. Spallanzani, Italy	United Kingdom Health Security Agency
WP6	Cross-sectoral collaboration: Security, Civil protection, and Health	Ministry of Health, Spain	Sciensano, Belgium
WP7	Risk and crisis communication (internal and public)	Ethnikos Organismos Dimosias Ygeias (National Public Health Organisation), Greece	
WP8	Novel threats	Department of Health, United Kingdom	Norwegian Institute of Public Health

2 The road to sustainability

2.1 Sustainability in a Joint Action context

The term sustainability is traditionally seen as the impact of a given system on the environment and health. In Joint Actions, sustainability refers to the longevity of the project, and how the output should be sustained beyond the project period. Developing strategies as the project advances is essential and has indeed been a recurring and frequently revisited theme in JA TERROR, including a strong focus on designing deliverables with clear messages and appropriate recommendations.

2.2 Implementing project outcomes

The outcomes from JA TERROR in terms of deliverables should be disseminated to authorities, decision makers, and other stakeholders that are positioned to consider further implementation. Targeted dissemination is an integrated part of the implementation objective and is thus also a part

“[...] national implementation may be an important step towards international attention.”

of JA TERROR sustainability. National level implementation is possibly the obvious first step for any given Member State and is also the starting point for JA TERROR sustainability. Understanding and influencing relevant structures at a national level is critical, but nevertheless challenging to achieve within the confines of the project. It is not the intention of JA TERROR to make specific recommendations for national level implementation, nor is it viable to introduce or indeed propose new organisations or structures. Consequently, Member States aiming to implement any of the outcomes are encouraged to do so as seen fit, for instance

by including recommendations in existing guidelines for CBRNE preparedness. JA TERROR deliverable 4.1, the National Network Analysis, facilitates one possible gateway for mapping national resources. Outcomes from JA TERROR WP 2 Dissemination and WP 6 Cross- sectoral collaboration should also be considered as background material for national implementation.

Implementation at the international level, be it bi- or multilateral agreements, within the EU, or other regions, may be important to some aspects of the project outcomes. International processes may however take time, and national implementation should not be given lower priority awaiting international initiatives. To that end, national implementation may be an important step towards international attention.

2.3 Sustainability work in the project group

As the JA TERROR project partners know their work best, they are best fit to put it into the correct context of sustainability and implementation. Moreover, the affiliated entities are likely to take on a central role in national implementation. As such, sustainability and implementation were a recurring theme throughout the project period, aiming for all the affiliated entities to take ownership over the process of developing and designing viable implementation strategies. Close dialogue with the JA TERROR WP for dissemination has also been a priority, as dissemination and implementation are closely connected.

Several sustainability themed meetings and workshops involving the technical WPs (Table 1) were arranged during the project. The supporting WPs collaborated closely to develop a physical workshop in November 2023, concluding a series of meetings and digital workshops leading to the implementation objectives outlined in this report.

Sustainability and implementation in JA TERROR to a large extent builds on the experiences from the SHARP JA, and certain aspects from the SHARP Sustainability Report is highly relevant to JA TERROR implementation at the international level. The Sustainability Guidance Tool (SGT) developed in SHARP was adapted to fit JA TERROR, its purpose to ensure a common understanding of

sustainability across the project members, with the objective of all technical WPs considering implementation and longevity of their outcome as work progressed.

While project outcomes are understood as products, i.e., deliverables emerging from the project, implementation objectives developed by the project group encompass methods to ensure the results having impact. Activities accompanying the implementation objectives were derived from the process and placed on a coarse timeline from short to medium term. The exact timeframe is dependent on the nature of the outcomes and the urgency of the identified gaps. This should be addressed by each country by adapting the implementation to national requirements.

3 Sustainability plan

3.1 Implementing Joint Action TERROR

Key messages for overarching implementation

A few sustainability principles emerged as overarching for JA TERROR and should be considered for all the project outcomes (Figure 4). Sustaining the network of stakeholders established within the JA TERROR project group as well as cooperation with external stakeholders and policy makers is particularly relevant. Three key points were outlined to ensure sustainability:

- Every EU Member State should disseminate the project outcomes to relevant national authorities and policy makers, i.e., Ministries and other entities responsible for health, security, civil protection, and any other appropriate stakeholders.
- Authorities and decision makers within the EU and every Member State should be informed in such a way that they can take the outcomes into consideration in future development of national and international planning.
- Each Member State and the EU should maintain and build further on the network of experts and decision makers established through JA TERROR.

Impacts of JA TERROR on the EU level

EU as a key provider of international health and civil security coordination should consider JA TERROR outcomes and how they may fit into existing or developing policies and strategies, for instance:

- The JA TERROR reviews on novel threats and dual use research should be useful when considering restricted access to goods for possible terrorist purposes, specifically related to the 2020 Counter-terrorism agenda [8] and the EU P2P export control programme.
- ECDC may play a key role in detecting and tracking outbreaks due to biological terror agents and providing epidemiological expertise. ECDC will also most likely have a role in coordination between the EU, WHO, and other stakeholders in certain terror events, as well as providing advice and risk assessments to, e.g., Europol.

- A closer consideration if existing communication systems, such as the ARGUS rapid alert system, may be suitable for communication and cooperation between the Member States.
- EU authorities such as the ECDC and ECHA should consider developing common guidelines for patient treatment along with assessing the need for strengthening analysis capacity and specificity in response to novel substances that may be used for terrorist purposes.
- EU Reference Laboratories should have interest in JA TERROR outcomes when considering analysis capacity, particularly information about novel threats.
- Structures and authorities involved in security and civil protection across the EU, like the EU Civil Protection Mechanism and Europol, should consider if JA TERROR outcomes may be relevant in the case of large cross-border terror events.
- The PESCO initiative to enhance defence cooperation may benefit from certain aspects from JA TERROR, especially for improving cross-border cooperation and communication.

OVERARCHING IMPLEMENTATION

IMPLEMENTATION OBJECTIVES

Maintain the cross-sectoral network established through JA TERROR.

Consider the need for implementation in guidelines and legislation at EU level.



Short term activities

- Establish national partnership and stakeholder meetings.
- Continued dialogue on cross-sectoral collaboration within the CBRN field.



Medium term activities

- Assess the need for implementation of JA TERROR outcomes in EU legislation.
- Consider further efforts within the scope of JA TERROR.



Long term activities

- See the outcomes of JA TERROR in connection with the EU regulation on cross-border health threats – Regulation (EU) 2022/2371.

Figure 4 Parent implementation objectives and associated activities that are relevant for all project outcomes and should be considered in addition to the implementation objectives for the outcomes from each topic.

Decision maker engagement

JA TERROR has mainly involved experts in relevant fields spanning the scope of the project. The dialogue established across the participating Member States may prove beneficial to preparedness during terrorist attacks. However, the project group has little or no direct influence on national or international policies, and countries not participating in the project also need to be informed of the project result. To that end, decision makers across all Member States need to get involved. Ministries or agencies responsible for guideline and legislation development must be presented with the outcomes of JA TERROR on a level that establishes an understanding of how the outcomes may impact the national or international level.

Translating project outcomes, such as the clinical guidelines developed by JA TERROR WP 5, the WP 6 guidance on cross-sectoral collaboration, or the WP 7 guidance to crisis and risk communication, into national guidelines or law is a concrete way of ensuring sustainability. The same can be said for designating a competent authority with the task of reiterating certain outcomes, for instance the literature review on novel threats from JA TERROR WP 8. The EU Commission will be informed of the project outcomes; however, sustainability success is expected to strongly depend on national activities. Thus, each Member State should initiate contact with relevant national decision makers.

“[...] it is highly recommended that a suitable entity initiates national stakeholder meetings within each country.”

Continued networking

The JA TERROR network of project partners was established to solve a set of project tasks, and its direct involvement ends with JA TERROR. It could, however, benefit the longevity of the project to utilise this already established network for future implementation and possibly projects. Maintaining and even expanding the network to continue experience exchange, support, and academic and administrative development is hence strongly encouraged. This may on a longer term contribute to assessing whether JA TERROR outcomes should be included in national or EU guidelines as well as lead to regulatory adaptations.

Stakeholder meetings

Several project partners arranged partnership and stakeholder meetings during JA TERROR, which proved to be highly useful for information sharing about the project progress and to address national issues related to sustainability and implementation. Thus, it is highly recommended that a suitable entity initiates or proceeds further with national stakeholder meetings within each country. The format should be adapted to national conditions in terms of requirements for formalisation. Identifying the appropriate national stakeholders is key and may nevertheless be challenging. JA TERROR recommends addressing this by performing a mapping of national stakeholders, as depicted in JA TERROR deliverable D4.2 the National network analysis or similar methods. WP 6 also approached this topic through survey mapping (deliverable D6.1) and recommendations resulting from its various activities.

Possible impacts on the national level

Results from JA TERROR should be considered for implementation on several administrative levels (Table 2) and have the potential for impacting national and possibly international guidelines, for instance improving first responder guidelines on treatment of victims to chemical or biological agents and communication in the case of terror events. The exercise material and in-depth analysis of cross-sectoral collaboration from JA TERROR 6 should be considered to strengthen preparedness before and during such events. Information about novel threats should be well suited to raise awareness on emerging substances of concern, as well as a call for regulatory constraints to limit the access to such agents. This is elaborated in the thematic implementation sections in this report.

Table 2 Outline of expected impact from JA TERROR based on thematic output of deliverables.

Thematic output	Deliverables	Possible impact and/or involvement
Clinical treatment of victims to chemical or biological terror event agents	D5.2, D5.3	National guidelines for first responders and others treating victims of terrorist attacks
Overview and guiding documents on cross-sectoral collaboration, and preparedness and response planning	D5.1, D6.1, D6.3, D6.4, D6.5	Policy makers at appropriate national and international administrative levels involved in preparedness planning and response
Table-top and simulation exercise material	D6.2, D6.6	All organisations dedicated to preparedness planning and response from the Security, Civil Protection, and health sectors
Internal and public risk communication guidance	D7.1, D7.3	Organisations involved in preparedness planning and response in each country, and at any administrative level.
Platform for secure and unified communication	D7.2	Policy makers, nationally or internationally, responsible for overall planning of preparedness planning and response.
Literature reviews of novel and synthetic agents of concern	D8.1, D8.3	Policy makers, the scientific community, and industry with relevance to production and distribution of such agents.
Risk assessments and recommendations on novel and synthetic agents of concern	D8.2, D8.4	Policy makers with regulatory capacity, scientific community, laboratory networks.
Candidate substances for civilian and military applications (dual-use substances)	D8.5	Policy makers with regulatory capacity, scientific community, laboratory networks.

Each Member State must consider what organisational or legislative systems may be influenced by the JA TERROR outcomes. National conditions are likely different. Where some Member States should adjust already established and functioning systems, others may need to consider developing

novel plans and arrangements altogether. While the JA TERROR mapping of cross-sectoral cooperation serves as a starting point, further national considerations of establishing or developing existing organisational and legislative platforms are crucial.

Financial impact and support

There are no financial means accompanying implementation activities beyond the project period. Nor was it the mandate of JA TERROR to perform in-depth assessments of potential financial consequences linked to such activities. Consequently, the topic is not commented on in this report. Costs for planning, organisational modifications, or assignments are left to the individual Member State. Evaluating the need for budget changes or applying for external grants is strongly encouraged as part of JA TERROR implementation.

3.2 Topic: Health preparedness and response planning

Preparedness and response strategies against terrorist attacks with chemical and biological agents was the focus of JA TERROR WP 5. The population is rarely exposed to such substances or pathogens other than when used to cause deliberate harm. Hence, health care personnel may have little experience with treatment procedures, making comprehensible guidelines essential to facilitate treatment of exposed persons. The clinical management guidelines developed by JA TERROR should be considered for inclusion into existing national guidelines, or as novel guidelines where none exist, at the appropriate level, as reflected by the implementation objective and accompanying activities (Figure 5).

The clinical management guidelines treat a limited number of biological and chemical agents, outlining a methodology that may prove useful to design similar guidelines on other compounds and agents that are candidates for use by terror purposes. To that end, dissemination of the clinical management guidelines to clinicians and first responders is crucial. The guidelines emerging from JA TERROR should also be revisited for update and refinement to include future research or operational progress.

Deliverables

D5.2: Clinical management guidelines for the recognition, management, and containment of patients exposed to chemical and highly pathogenic biological agents.

D5.3: Report on the evaluation of available non-pharmaceutical countermeasures to chemical and biological terrorist attacks. Recommendations for improving and developing further mechanisms.

Key messages on health preparedness and response planning

- The EU and its Member States should consider developing harmonised guidelines on agents with the potential for use in biological and chemical terror events. Relevant deliverable: D5.2.
- Non-pharmaceutical countermeasures are key in limiting the extent and preventing the spread of an event and should be incorporated in preparedness plans. Relevant deliverable: D5.3.

TOPIC IMPLEMENTATION: HEALTH PREPAREDNESS AND RESPONSE PLANNING TO CHEMICAL AND BIOLOGICAL TERRORIST ATTACKS

IMPLEMENTATION OBJECTIVES

Disseminate knowledge on emergency clinical response to deliberate release scenarios.

Short term activities



- Disseminate JA TERROR D5.2 clinical management guidelines for selected biological and chemical agents to competent authorities and EU institutions in addition to project partners, for information on available infrastructures, tools, guidelines, and expertise relevant to managing a terrorist attack.

Medium term activities



- Transfer the methodology from JA TERROR D5.2 and D5.3, developing guidelines in response to other agents.
- Disseminate the guidelines further to, e.g., scientific societies, representatives of sectors other than health and national and international levels of infection control agencies.

Long term activities



- Revisit and update clinical guidelines.
- Seek buy-in and support from other EU agencies and bodies in terms of sustaining the WP outputs.
- Implement new or updated clinical guidelines into national structures.

Figure 5 Implementation objectives and associated activities as outlined for the project outcomes related to health preparedness and planning for responses to terrorist events involving chemical or biological agents.

Legislation and organisational levels that may benefit

The outputs from JA TERROR on the topic of health preparedness and response are complementary and potentially impactful to the regulations of serious cross-border threats to health (Regulation [EU] 2022/2371). For example, Articles 5-10 on prevention, preparedness and response plans and Article 12 on procurement of medical countermeasures.

A harmonised response guided by documents agreed at the EU level can foster agreement between countries for a collaborative response. Mutual technical support between countries can be facilitated by common guidance documents. Additionally, the project deliverables could provide a template to facilitate an improved response to terror attacks, where current guidance is insufficient or non-existent.

The clinical management guidelines should be considered for adoption or adaptation by different organisations involved in the response to an intentional release, from first responders to public health professionals. The document provides a comprehensive and user-friendly tool to be consulted during an event or may be used for guiding preparedness activities in peace time. Further developing the guidelines to fit national, regional, or international conditions is encouraged.

Stakeholders to consider

- Ministries of Health, Ministries of Justice, Ministries of the Interior, Ministries of Defence, etc.
- Other national directorates and government authorities and decision makers across the relevant sectors.
- The scientific community.
- National and international institutions working with infection control.
- Final users: Government entities from all relevant sectors, Police, security, civil protection, health, public health officials, clinicians, laboratories, and first responders.
- Representatives of other agencies and sectors outside of the health sector.

Ways of conveying the messages

- Arranging national stakeholder meetings for CBRN and Emergency Operations Centres.
- Scientific publications.
- Presentations in relevant events, consortiums, and scientific conferences.
- Targeted dissemination to decision makers and end users including poison control centres at national levels.
- Arrange seminars and webinars to be available for later viewing.
- Share with ECDC for further distribution.

3.3 Topic: Cross-sectoral collaboration

JA TERROR WP 6 has developed an extensive methodology that may be applied by all Member States to understand how sectors and organisations cooperate, hereby representing an opportunity to evaluate the need for changes and introduce improvements. Deliverable D6.1 presents the status of cross-sectoral preparedness cooperation in a selection of European countries. All countries are encouraged to perform a similar mapping, and to reiterate it regularly, ensuring the inclusion of administrative or organisational changes.

Identifying gaps in cross-sectoral collaboration between health, security, and civil protection is a central result from JA TERROR, underlining the importance of the topical implementation objective (Figure 6). Improved dialogue on any organisational level, be it formal or informal, can only be seen as beneficial to the national preparedness. The simulation exercises developed by JA TERROR aimed to bring together representatives from all sectors and train them in chemical and biological terror response scenarios.

The exercise results yielded valuable knowledge on challenges and experiences as well as being well suited to identify gaps. In fact, the simulation exercises proved so useful that some of the project partners immediately adopted the concept and ran national exercises during the JA TERROR project

period. Member States should consider using the deliverables resulting from the exercises and adapt them into national or even international tabletop or drill exercises. To that end, D6.2 and D6.6 are particularly interesting to consider. Deliverable D5.1 should also be relevant. JA TERROR recommends an appropriate EU body or authority to consider taking on a coordinating role in this venture.

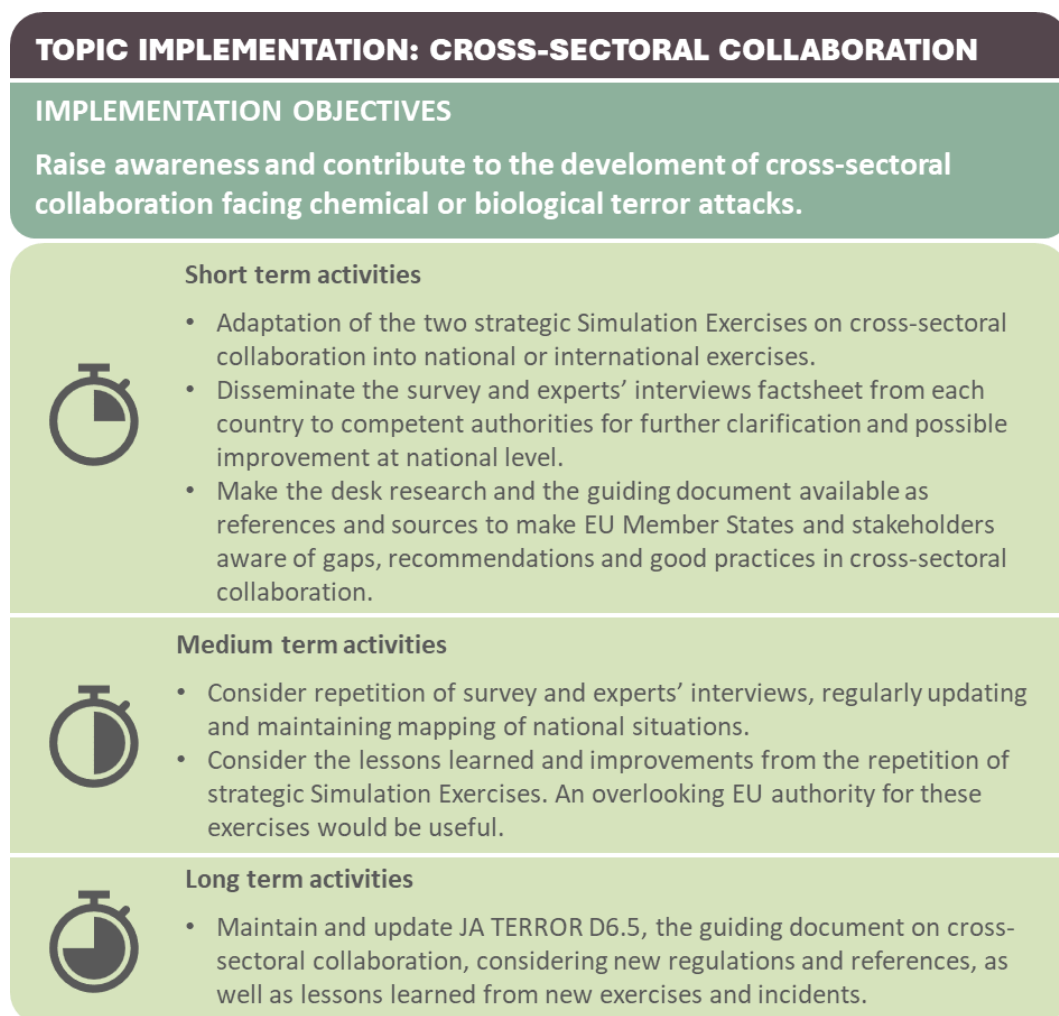


Figure 6 Implementation objectives and associated activities as outlined for the project outcomes related to cross-sectoral collaboration.

For a comprehensive overview of JA TERROR work on cross-sectoral cooperation, deliverable D6.7, the Final Report emerging from WP 6, is useful. The deliverable outlines the main results and lessons learned throughout the WP activities, summarises the main aspects of the guiding document, and presents feedback from the countries regarding effective or potential improvements in their cross-sectoral collaboration related to topical implementation. Finally, it includes a discussion around future priorities and way forward after the end of the Joint Action.

Deliverables

- D5.1: Report on the review and identified gaps in health preparedness and response planning components related to chemical and biological attacks.
- D6.1: Report concluding the results from a survey identifying best practices in current national structures for cross-sectoral collaboration on preparedness.
- D6.2: Report from baseline table-top exercise on crisis response related key biological and chemical agents possibly used in a terrorist attack.
- D6.3: Desk research reviewing existing documentation on cross-sectoral collaboration and relevant EU level legislation.
- D6.4: Report concluding expert workshops on experiences with preparedness from different sectors.
- D6.5: Guiding document on national cross-sectoral collaboration for information sharing on risk/threat assessments and joint incident management, between health, civil protection and security from the strategic to the operational level.
- D6.6: Report from final exercise designed at the EU level focusing on a threat scenario with biological and chemical agents, in order to ensure the implication of both biological and chemical experts and institutions.
- D6.7: Final work package report.

Key messages on cross-sectoral collaboration

- Member States should work towards a common understanding of the national preparedness organisation through surveys, desk research, and exercises. Relevant deliverables: D5.1, D6.1, D6.2, D6.3, D6.6.
- Cooperation and coordination should be improved by developing procedures and plans addressing gaps and possibilities in existing national and international structures. Relevant deliverables: D5.1, D6.5, D6.7.
- A common cross-sectoral environment, such as regular meetings, for communicating and conducting common activities should be considered by each Member State. Relevant deliverables: D6.4, D6.7.

Legislation and organisational levels that may benefit

JA TERROR lifts the principle of working in a legislative framework or designing procedures and plans addressing improved cross-sectoral collaboration as particularly important. The existing EU regulatory and organisational framework impacting the cross-sectoral collaboration to face a chemical or biological terror attack is broad, as detailed in JA TERROR deliverables D4.2 and D6.3. At the same time, the Member States maintain sovereignty over their national security strategies. In this context, coordination strategies are encouraged, such as the EU CBRN risk mitigation strategy [9]. Translating such strategies into a shared action plan across sectors is also important. Therefore, the action plan to enhance preparedness against CBRN security risks from 2017 should be updated and more closely monitored.

Shared initiatives across the EU DGs also have a direct positive impact on the cross-sectoral collaboration. The EU Civil Protection Mechanism and its RescEU initiative, where DG ECHO and DG

HERA collaborate to implement a CBRN strategic stock with relevant material for both civil protection and health sectors, is a good example. Although the fact that it was less often directly mentioned and identified during JA TERROR mapping activities suggests that it should be given greater prominence. The collaboration between the ECDC and EUROPOL for cross-sectoral awareness and training and joint risk assessment is another interesting interface for improved collaboration across sectors.

Stakeholders to consider

- Policy makers, administrative, and judicial authorities at the national level appropriate for each country.
- Existing cross-sectoral expert groups and networks.
- Institutions and European agencies such as the Health Security Committee, ECDC, WHO European Region, relevant DGs, and Europol.

Ways of conveying the messages

- Dissemination on a national level, with the intent to have impact on the EU.
- Involvement of EU entities during the JA TERROR project period.
- Attend conferences and aim for posters or other suitable presentations.
- Reach out to other Joint Actions or comparable projects.

3.4 Topic: Risk and crisis communication

JA TERROR aims to promote risk and crisis communication during all stages of risk management and response on national and international levels. To build trust, risk communication interventions should be linked to functions and accessible services, be transparent, timely, easy to understand, address the affected populations, facilitate self-efficacy, and be disseminated using multiple platforms, methods, and channels. Social media may be used to engage the public, respond to rumours, and address concerns during an emergency, and to facilitate local responses.

The specific objective of JA TERROR WP 7 was to address efficient risk and crisis communication, on both national and EU level. To that end, a handbook for risk communication addressing collaboration between heterogeneous sectors and related to chemical and biological terror incidents was developed. The handbook was disseminated by JA TERROR and should be disseminated further to relevant national and international institutions. Furthermore, maintaining the handbook to fit local requirements and future developments is recommended (Figure 7).

This part of the project also outlined the requirements for a technical communication platform. Its purpose is to have a common channel for communication between governmental agencies and authorities as well as towards the public. The communication platform describes a solution to communication challenges, including information gathering and sharing of classified information, and may be utilised as a basis for designing such a platform.

Deliverables

- D7.1: Common guidance tool for risk communication for biological or chemical terror attacks both between stakeholders and towards the public.

- D7.2: Technical documents for developing secured platforms for rapid information exchange, notifications, sharing and analysing information for the purposes of cross-sectoral threat assessment, threat profiles and incident evaluation: what can be communicated and how can it be communicated?
- D7.3: Assessment of the role of community preparedness and engagement in crisis communication as a guidance frame for authorities.



Figure 7 Implementation objectives and associated activities as outlined for the project outcomes related to risk and crisis communication.

Key messages on risk and crisis communication

- Unified and clear communication in times of crisis is important to avoid contradictions and information overload on the public. Messages should be easy to understand and compelling for the audience. Relevant deliverable: D7.1.
- Make serious and honest audience analyses and review periodically or when something changes in order to adapt your message to the appropriate audience.
- Communication on multiple platforms increases understanding and retention of information. Relevant deliverable: D7.2.

Legislation and organisational levels that may benefit

Risk communication is defined as a core capacity in the WHO International Health Regulations [10]. Capacities for effective risk communication regarding biological or chemical terror attacks should be overseen and secured. There are some important questions to keep in mind when developing plans for CBRNE threats: Is risk communication competence represented in strategic crisis management groups and do central organizations have the capacity for emergency communication like coordination between different governmental agencies in the health, law enforcement and civil protection sectors, understanding and handling the needs of the media, social media, web pages, and community engagement.

Risk communication during terrorist attacks should be considered when developing, updating, and revising preparedness plans and exercises. European countries should ensure that recommendations in JA TERROR deliverable D7.1, the guideline on risk communication, are exercised and implemented in preparedness plans on all relevant levels, both nationally on a policy level and within the different responsible entities. Both governmental organisations and other relevant stakeholders should be involved in national exercises. The media is crucial when it comes to communication to the public in a biological or chemical terror attack and should also be given the opportunity to build competence, e.g., by being invited to seminars or conferences regarding the topic.

Public awareness of biological and chemical terror attacks should be raised, for example by updating relevant national webpages or other suitable information channels with information about biological and chemical terror attacks and recommendations towards the public.

Work on easing public panic is essential, not leaving a perception in the population that officials may be withholding facts since trust can erode. Public administrators must demonstrate that they can adapt to rapidly changing situations and that they understand public concern, by carefully planning clear and simple-to-understand information that administrators and spokespersons must provide. This will help setting the tone for how the public will react.

Stakeholders to consider

- Communication specialists within health, civil protection, and law enforcement.
- Institutions involved in CBRN preparedness and protection.
- National intelligence services and law enforcement agencies.

Working effectively with communication towards stakeholders requires establishing an efficient flow of information. This process consists of several key components:

- Defining clear communication channels by establishing a media list and updating media databases and contact information.
- Building out the processes for collaboration between local, peripheral and national Authorities.
- Preparing key messaging aligned with the findings from medical and public health authorities and be careful not to misinform or change the message and thus creating a chaotic image.
- Selecting direct communication channels to reach stakeholders and their appointees at all times.

Ways of conveying the messages

- Dissemination to the relevant EU DGs and to the ECDC.
- Inform ECDC national focal points for communication.
- Possibly scientific papers.

3.5 Topic: Novel threats

The main interest of JA TERROR WP 8 was novel threats, meaning emerging substances of concern for possible use in chemical and biological terrorist attacks. Numerous ongoing technological advancements in synthetic biology and chemistry bring a wealth of potential benefits to multiple sectors. However, developments also bring risks in the context of potential biological and chemical terror attacks or warfare. Updated knowledge is essential to ensure preparedness. JA TERROR reviewed recent technological advancements, enhanced potency, and increased accessibility of synthetic and do-it-yourself biology and opioids as well as dual use technology suitable for civil and military purposes. The literature reviews of such agents should be iterated on a regular basis by a suitable authority, as what encompasses novel threats can be expected to develop and change rapidly (Figure 8).



Figure 8 Implementation objectives and associated activities as outlined for the project outcomes related to novel threats.

The collated knowledge on existing regulations linked to dual-use research of concern (DURC) should prove useful in the development of regulatory requirements to limit the access to the substances itself and materials for production. It may also be an important addition when developing national or international guidelines and practices. Likewise, the information compiled by JA TERROR is relevant to identify novel technologies capable of manufacturing and possibly to improve detection, diagnosis, and delivery systems of such agents.

Deliverables

- D8.1: Literature review summing up current knowledge on state of the art of synthetic biology.
- D8.2: Risk assessments and recommendations for developing governance guidelines to inform Member States on the most pressing risks posed by synthetic biology.
- D8.3: Literature review summing up current knowledge on state of the art of synthetic opioids.
- D8.4: Risk assessments and recommendations for developing governance guidelines on synthetic opioids.
- D8.5: Review of currently available dual use guidelines, including reporting the results of a questionnaire exploring how research institutions manage dual use research.

Key messages on novel threats

- Synthetic opioids and synthetic biology have the potential for misuse in terrorist attacks. Their enhanced potency and accessibility bring risks to first responders and to the public. Continuous surveillance, research, and policy development are needed to mitigate the risks. Robust analytical methods and suitable medical countermeasures in sufficient quantities will help to ensure preparedness. Relevant deliverables: D8.2, D8.4.
- Dual-use regulation and guidance for biological and chemical research sectors vary in European countries. Ensuring updated knowledge at any time will provide the foundation for harmonised recommendations of governance of DURC in both sectors, hence strengthening preparedness. Relevant deliverable: D8.5.
- Raising awareness and knowledge among scientists, stakeholders, and policymakers is crucial for minimising the potential misuse of novel threats.
- Reiterating literature reviews and risk assessments is important as most novel threats are only novel for a short time. Such reviews provide a snapshot of an area of science at a certain moment in time, but novelty is fleeting and may be commonplace by the time of publication. Relevant deliverables: D8.1, D8.2, D8.3, D8.4.

Legislation and organisational levels that may benefit

International cooperation and governance frameworks, well-developed healthcare systems, efficient diagnostic tools, medical countermeasures, and a strong international collaboration are important to build resilience. By ensuring a strong foundation of knowledge and capabilities, we can minimise the impact of chemical and biological incidents and help to ensure the health and safety of individuals and communities around the world.

Stakeholders to consider for WP 8 implementation

- Academia and the biological and chemical industry.
- Border control authorities.
- Decision makers at the appropriate national level, such as Ministries in charge of regulatory adaptations.
- Reach out to expert and laboratory networks and the ECDC.

Ways of conveying the messages

Outcomes from JA TERROR material on novel threats and DURC are well suited for adaptation into scientific papers. Publications in peer reviewed journals will further establish the quality and can reach out to the scientific community involved in the assessment of chemical and biological agents as candidates for terrorist attacks. Likewise, posters and presentations in relevant settings will have a similar impact and should be considered. This extends further than the key findings within the scope of JA TERROR; it should also be considered for future updates of the literature reviews and any other relevant outcomes.

4 Sustainability roadmap

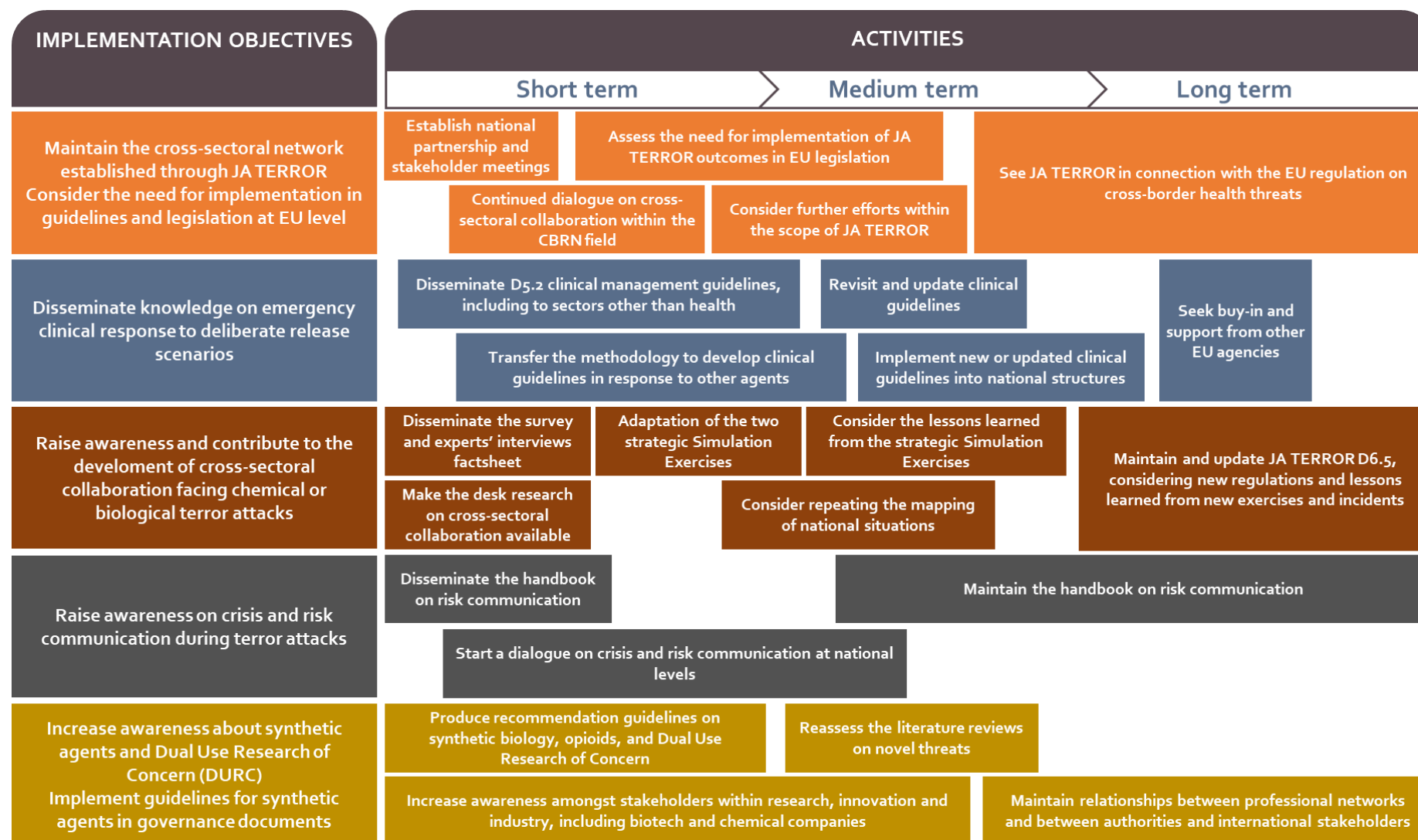


Figure 9 Schematic rendering of JA TERROR sustainability as described by the implementation objectives (far left), and the suggested activities distributed on a crude timeline from short to medium term. The timeline is meant as a guide and one activity should not be restricting the onset of another, as activities may be independent of each other.

5 Closing remarks

Albeit at first glance it may seem like JA TERROR is covering a rather narrow area, it goes into the vast topic of preparedness, hence involving multiple authorities, decision makers, and stakeholders, as well as preparedness plans, especially when including the international aspect. To have a chance of succeeding in times of crisis we need to ensure a high-quality preparation in peacetime. Coordination, planning, and communication, as addressed by JA TERROR, are topics that probably will never be covered too much in this process. Work towards a strong preparedness and a resilient society is also a continuous undertaking that should benefit from any available input, including the JA TERROR outcomes.

It is the belief of the JA TERROR project group that the resulting deliverables, guidelines, and recommendations may be a useful supplement for any EU Member State and indeed the EU in their preparedness planning. All the results will probably not be of equal relevance to every nation, however, depending on the starting point. The project group recommends that stakeholders get an initial overview of JA TERROR for a closer consideration of whatever outcome may support relevant national or international efforts and act accordingly to implement the selected project results.

Abbreviations and acronyms

CBRNE	Chemical, Biological, Radiological, Nuclear, and high yield Explosives
DURC	Dual Use Research of Concern
ECDC	European Centre for Disease Prevention and Control
ECHA	European Chemicals Agency
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EU	European Union
DG	Directorate-General
HERA	Health Emergency Response Authority
JA	Joint Action
SGT	Sustainability Guidance Tool
SimEx	Eimulation Exercise
WHO	World Health Organization
WP	Work Package

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