



eNOTICE-2

EU Network of Training Centres for preparedness to CBRN Events

D3.3 Final evaluation on the common procedure for SDS (AdInOS) creation

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Executive Summary

A key objective of the eNOTICE-2 project is to enhance First Responder preparedness and capabilities to respond to CBRN incidents. One of the ways the project set out to go about this was by the creation of SDS-sheets focusing specifically on the biological component. These were later renamed to “AdInOS” or Additional Information On Scene to better differentiate from existing SDS, which follow a fixed creation process that does not fit for biological agents. The focus of the AdInOS creation within eNOTICE-2 was not on the mass production of AdInOS sheets, but rather on establishing a working, qualitative methodology to produce the AdInOS. Throughout the lifetime of the project 3 AdInOS sheets were created, on Mpox, Anthrax and Ricin.

The aforementioned AdInOS sheets were used to gather feedback on the concept as a whole. After establishing the methodology, three distinct rounds of feedback were used to validate and evaluate the AdInOS. The first round consisted of individual, online feedback by FRs and Belgian CBRN experts, the second was a group discussion among international experts, and finally an AdInOS sheet was presented to a group of FRs and experts following a tabletop exercise. The results of these findings are presented in this report, including a brief conclusion and some recommendations for the way forward.

Important to note is that the further development of the AdInOS sheets does not finish after the completion of eNOTICE-2, but will continue within the Horizon Europe eNOVATION project (Grant No: EC-HORIZON-101168349-eNOVATION) and that the results of the feedback sessions will feed into this project.

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List of Abbreviations

Abbreviation	Definition
AdInOS	Additional Information On Scene
AGS	Advisor Dangerous Substances
CBRN	Chemical, Biological, Radiological, Nuclear
FR	First Responder
JA	Joint Activity
MS	Member State
SimEx	Simulation Exercise
TC	Training Centre
TTX	Tabletop Exercise
UCPM	European Civil Protection Mechanism

1 Introduction

1.1 eNOTICE-2 scope and objectives

Over the past years, the threat posed by intentional CBRN (Chemical, Biological, Radiological, and Nuclear) attacks, technological accidents, and natural hazards has driven governments and international organisations to implement comprehensive regulations and programs. This, in an effort to protect populations from CBRN associated risks, to complement national measures that address existing gaps, and to promote the exchange of information and best practices.

In order to enhance preparedness for CBRN incidents, either from deliberate, accidental, or natural origins, the eNOTICE Network of Practitioners project was launched in 2017 (and concluded August 2023). This initiative established an EU-wide network of CBRN civilian and military TCs (Training Centres), testing and demonstration sites, aligning with the general objectives of the EU Civil Protection Mechanism (UCPM). The eNOTICE Network of Practitioners is comprised of 53 TCs, across 22 countries, of which 17 are EU Member States and 5 are non-EU Countries, and emphasises multidisciplinary, multi-agency training to improve interoperability. It also fosters cross-border collaboration through standardised approaches that align with neighbouring countries' procedures, legal frameworks, administrative protocols, and organisational structures. Training scenarios address combined chemical, biological, and radiological threats, both accidental and deliberate, as well as hybrid and emerging threats, with a focus on testing and validating innovative technologies at various development stages.

The eNOTICE-2 project builds upon the foundation of the eNOTICE Network, supported by civil protection actors from participating Member States and UCPM Countries. eNOTICE-2 aims to enhance overall preparedness and rapid response capabilities for major cross border crises involving C, B or RN agents, individually or in combination. Drawing lessons from eNOTICE and from gaps identified during 17 field exercises, table tops, simulations and, serious gaming Joint Activities (JAs), held in collaboration with CBRN-practitioners, such as first responders, crisis managers, civil protection, training professionals, CBRN technology developers, policy makers and civil volunteers. The Project facilitates ongoing collaboration through four simulation exercises (SimEx), ensuring effective coordination, compatibility, and complementarity among all participants. Intensive knowledge-sharing activities promote the comparison of operational procedures, identification of best practices, and the strengthening of partnerships between civil protection and disaster risk management (DRM) actors. This cross-sector collaboration supports the integration of promising scientific research, innovative DRM tools, and enhanced training content.

Despite the availability of resources, expertise, and protocols, CBRN decontamination remains a significant gap in First Responders (FR) knowledge, as was identified during the first eNOTICE project. This is also a priority under UCPM's rescEU CBRN objectives. Currently, no standardised EU-wide guidelines or procedures exist for decontamination. Challenges include ensuring the safety of both first responders and affected individuals, especially during prolonged operations involving large groups. The emergence of new CBRN threats – such as

Novichok agents and evolving biological threats, including toxins – further complicates the landscape, necessitating regular updates to practices, guidelines and policies.

To address these challenges, eNOTICE-2 introduces several new dimensions aimed at producing tangible effects at both institutional and individual levels. The project adopts a comprehensive approach to CBRN decontamination, considering both conventional and emerging threats, and addressing the specific needs of vulnerable populations. A key focus is on decontamination of prosthetic and orthotic devices, used by individuals with disabilities (e.g. wheelchairs, hearing aids, breathing devices, and various prosthetic limbs). This broader perspective enhances the diversity of organisations contributing to DRM, and strengthens the UCPM framework, while supporting EU Member States's (MS) civil protection mandates.

Furthermore, eNOTICE-2 engages end-user communities, including advisory groups of individuals with disabilities, to guide project outcomes and provide critical feedback. This engagement raises awareness among citizens and authorities about CBRN risks, incorporates the needs and concerns of vulnerable populations, and identifies strategies to reduce their exposure and vulnerability.

1.2 Report scope and objective

This document reports on Task 3.4 Evaluation/validation of created AdInOS and common procedure, as described in the Grant Agreement:

“T3.4 Evaluation/validation of created SDS and Common procedure (M20-24). Evaluation and validation of created SDS via focus groups and SimEx focussing on cross-border operations and interoperability.

- usefulness and accessibility

- common procedure for drafting

Final Evaluation – at 4th SimEx on M24.

Participants: Vesta, input from ALL.”

This deliverable builds upon previous work done within WP3 of the eNOTICE 2 project, and follows the use of the term AdInOS, referring to “*Additional Information on Scene*”.

1.3 Link to other tasks

The work outlined in this deliverable is related to several tasks within the eNOTICE-2 project, namely:

[Task 3.1: End user requirements and topics for SDS creation \(M1-M6\)](#)

In Task 3.1, end-user requirements were collected through the organisation of focus groups in the MS of the consortium members.

[Task 3.2: Common procedure for SDS drafting \(M5-M12\)](#)

D3.3 Final evaluation on the common procedure for SDS (AdInOS) creation (PU)

In Task 3.2, a common procedure for the drafting of AdInOS sheets was created, by setting up a methodology that translates available information into an AdInOS sheet, and implementing user feedback.

Task 3.3: SDS creation (M13-M23)

In Task 3.3, several AdInOS sheets have been created as examples, such as on MPOX; Ricin; and Anthrax.

Task 4.4: Final CBRN SimEx (M21-24)

In Task 4.4, time will be allocated during the exercise to introduce relevant FRs to the AdInOS sheets.

2 Methodology

The next step in the process of establishing the AdInOS sheets as a useable means of helping FR's safely recognizing a biological risk, and handling accordingly, is to thoroughly evaluate the different AdInOS sheets that have been created. It is imperative that the created documents fulfil the gaps that were noted during the original focus groups and accomplish the set-out goals. This evaluation was done by collecting feedback on the Anthrax-AdInOS sheet and on the Ricin-AdInOS sheet. In order to ensure comprehensive feedback, a process of mixed-method feedback collection will be done.

The first method that was employed for the collection of feedback on the AdInOS-sheets was through individual FR review. This was done by providing individual FRs with the different AdInOS and asking them for specific feedback through online surveys. These offer the benefit of being easy to use, and are less time consuming than regular surveys. One notable risk stemming from online surveys, however, is that there is no control over the environment in which the participants fill in the questionnaire and that there is no way to deter certain distractions. At the same time, there is no clear way to reduce this risk. The survey was made in such a way that it is as short as possible, but as long as necessary. This was done to increase the probability that participants fill out the questionnaire. Further, the questions were formulated as open-ended questions to allow for more detailed response than "good" or "bad", or "agree" or "disagree". This thorough feedback is necessary to ensure that qualitative feedback is received, and that if any changes need to be made, they solve the underlying issue. These questions were articulated in a short, simple format to increase the chance that respondents will answer the questions and to prevent misinterpretations. In order to ensure more comprehensive results, different levels of FRs, from different FR organisations will be requested to provide feedback on the AdInOS sheets.¹

¹ Janet Salmons, 'Pros and Cons of Online Survey Research', Sage Research Methods Community, 6 februari 2023, <https://researchmethodscommunity.sagepub.com/blog/ug3bdxjx4z3669waoagm5hi2pq5wc8>.

The second method that was used for feedback collection was through an in-person focus group. The focus group is a qualitative method for gathering feedback that allows ideas to be given in a less structured format. This allows the participants to give their feedback more freely, and to give context to their feedback by means of story telling. Next to this, it also allows participants to “piggyback” of each other, and to stress certain points, or to give feedback they otherwise might have forgotten to disclose. These two benefits make it so that the participants do not only say what is good or bad, but give the context and reasoning behind it. This context is important to ensure that any adjustments that are made, are focussed on the underlying issue and do not miss their mark. However, there are some reservations that need to be made considering the use of focus groups. One important reservation regards participant selection, which may skew results if there is no representative spread of participants. Another weakness that needs to be kept in mind is that one or more very vocal participants may dominate the discussion and drown out the input of more timid participants. To minimise this effect, extra focus was placed on properly moderating the discussion to ensure all participants are able to give their feedback freely.²

A third, and final form of feedback collection took place during the final exercise SimEx 4. Here, participating players were offered a relevant AdInOS sheet and asked if this information would direct their response to the scenario.

3 Feedback collection

A call for feedback was sent out through various of Campus Vesta’s networks, with the aim to collect feedback on the AdInOS sheets from the intended end-users. In order to achieve an as comprehensible as possible amount of feedback, several different types of first responders were contacted. These can be largely divided into two groups: First Responders and CBRNe experts; and international experts. The first group was asked to provide individual feedback, based on a series of questions. The second group, of international experts, participated in a group discussion.

3.1 Group 1: FRs and CBRN experts

As mentioned above, the first group consisted of mid- and high-level first responders, as well as CBRN-experts. Several mid- and high-level First Responders (n=9) were contacted directly with a request to provide feedback on the AdInOS sheets. Apart from this, a call for feedback was also launched through the AGS-network (Advisor Dangerous Substances).

Respondents were asked to provide feedback, based on three open ended questions, namely:

- *To what degree do these AdInOS have added value to you?*
- *Which changes have to be made (if any), to make them adhere to your needs?*
- *Do you have any suggestions?*

² ‘Conducting Focus Groups’, Sage Research Methods Community, 27 april 2023, <https://researchmethodscommunity.sagepub.com/blog/131625>; Fok-Han Leung en Ratnapalan Savithiri, ‘Spotlight on focus groups’, *Canadian Family Physician* 55, nr. 2 (2009): 218-19.

In total, 7 mid- and high-level FRs, as well as CBRN-experts, from different disciplines and backgrounds provided feedback. While the number of respondents is limited, their varying backgrounds (police, fire fighters, medical), as well as their CBRN-expertise still allowed for multi-disciplinary feedback, and their response were very substantial.

The general impression among the FRs who answered the call for feedback was positive, stating that the AdInOS sheets are a good initiative, that offers much needed information to help support and protect FRs. Apart from the positive first impressions, several first responders also gave more concrete feedback aimed at improving the AdInOS sheets. One important first point raised regards the use of QR-codes. One respondent (Police), explained that while the QR-codes lead to useful information on decontamination and first steps, a lot of this information is critical in the first minutes and therefore would best not be hidden behind a QR-code. Another respondent (Fire Department) noted QR-codes often take time to scan that FRs do not have, and it would be best to limit the amount of QR-codes to maximum one.

Building upon this first point of feedback, a second point relates to the type of information represented on the AdInOS. Some respondents (Police and Fire Department) noted that the information is too technical. Explaining that this technical information is less relevant and contains terminology that is not known to all First Responders. They elaborated that for them, practical information on recognising symptoms, treatment and decontamination, as well as information on how to ensure own safety is more important as First Respondent. Other respondents (Medical and Fire Department) did not make these comments, and that for them the information is clear. One possible explanation for this difference in how they are received is responder background. Some responders have more CBRN experience and medical knowledge through a Medical Background than others, making their needs different than those of responders that do not. When creating the AdInOS, the expertise and background of the target FRs have to be taken into account to make sure the right information reaches the intended FRs.

3.2 Group 2: International experts

Finally, a second group, consisting of international experts, was also asked to provide feedback on the AdInOS sheets through a focus group. Contrary to the first two groups, the third group was not contacted individually, with a request to provide feedback based on written, open-ended questions, but was rather asked to provide feedback through an in-person, open-discussion format.

This focus group, was held during the eNOTICE-2 SimEx 3, that took place at Campus Vesta from the 5th till the 7th of June, 2025. The participants of the focus group consisted of several international CBRN experts and non-experts, first respondents, and non-first respondents. Among these were police officers, firefighters, medical personnel, but also technology providers and Training Centre personnel. This made it so that the feedback received came from stakeholders with very differing backgrounds and expertise, allowing for more holistic and comprehensive feedback.

Overall the AdInOS-sheets were well received, and feedback was positive, highlighting the importance of such a document which fills in a clear gap for FRs who lack basic, accessible information on biological threats. Further comments noted the ease of use of the document being one page, and QR-codes being used to link to further information. However, it was also noted that some FR's are not allowed to use their phone to scan QR-codes, and that using a phone during an intervention where a bio-agent might be present can lead to further contamination of the phone. It was however noted that this consideration needs to be made to allow for access to further information without over complicating the AdInOS sheet. A final comment that was made, addressed the target audience of the AdInOS. Some respondents noted that some of the information might not be applicable to FRs, but rather for second- and third-line responders with a more specialised focus.

4 Final exercise

A final round of feedback came in the form of a thinking exercise, following the final exercise. For the final exercise of the eNOTICE-2 project, a tabletop was held at the Calvarina base in Roncà, Verona. The scenario for this exercise presented FRs from different countries with a CBRN incident during the 2026 Winter Paralympics, more specifically on bio. In the scenario, anthrax spores spread during a busy dinner shift in a restaurant hosting athletes, their relatives, accompanying persons and dogs. Several of the infected people start showing signs of their infection after a day, prompting a response from different FR organisations present at the event. During the scenario, FRs were also able to call upon extra means provided through the UCPM's rescEU reserves.

After the exercise, both the participating FRs and the observers were presented with the AdInOS sheet on Anthrax and asked if access to this document would have changed their response or initial reaction to the incident. Respondents were asked to provide more concrete feedback based on three questions:

- *To what degree would this AdInOS have added value to you?*
- *Which changes have to be made (if any) to make it adhere to your needs?*
- *Give us at least one suggestion for future improvements.*

There was a very diverse group of FRs and CBRN-experts present at the TTX, which allowed for a strong and varied feedback.

The general impression among participants and respondents on the AdInOS sheets was positive, with several people noting that it would be a great asset to FRs who do not have access to this information otherwise. One participant responded that this information was already known to them. This however showcases well the goal of AdInOS sheet to provide "additional" information to FRs, on top of their normal scope of knowledge and workings, and as such it is to be expected that the AdInOS are more useful to some than they are to others.

The responses on the second and third question, both on changes and suggestions for further improvements, were fairly similar and will as such be covered together. One notable point of feedback regarded the information on decontamination. For some FRs, more information on

how to perform decontamination is more relevant, and they suggested also to add information on how to decontaminate animals. This response might in part be steered by the present of a guide dog in the TTX scenario, which also needed to be decontaminated. This request is understandable, since it is an exceptional scenario for which little information is available and little training is provided. Arguably, this also makes it less relevant for a large portion of FRs, since it is very unlikely and might take up space from other, equally relevant, information on a limited size document.

A second important point that was highlighted regards the taking of clinical specimens and treatment of victims by FRs. It was noted that only certain FRs are allowed to take samples and provide medical treatment to victims, and as such, the information on this might not be relevant to all FRs. Here, the respondents raised an important piece of feedback on the importance of relevant information. While it can be assumed that FRs are aware of what actions they are allowed to perform, and which actions are out of their own scope of activities, it can of course pose a risk that some FRs might go out of their lane when presented with this information. On the other hand, by making more FRs aware of sampling and treatment they might be able to answer questions that would otherwise be left unanswered, providing an enhanced sense of security to victims.

Some other, smaller remarks that came up, also came up during previous rounds of feedback. One such point that was made regards language. It was noted that in order to properly function and aide FRs, all information needs to be in their native language, so that they may easily access the information. Especially if they are not well skilled in the English language. This point was not yet addressed during eNOTICE-2, since the goal was to create the basis for the AdInOS sheets and the methodology and not yet create a fully finalised and *off-the-shelf* product. Adapting it into different languages is something that will come about once the AdInOS have been validated and if countries start the adoption process.

Another point that came up during the feedback was digitalisation of the AdInOS sheets. This could make consulting the AdInOS sheets more accessible by different FRs, since they would not need to carry around a set of physical sheets, but rather access things through their phone. During an informal discussion, another expert noted that AI might also be used to make the AdInOS easier to use, and to produce more AdInOS in a shorter timeframe. While this does not fall within the immediate scope of the eNOTICE-2 project it is important to state here that this is being developed within the eNOVATION project³, which in part builds on the results of this project.

5 Feedback on procedure

During the different rounds off feedback little to no comments were made on the actual structure of the AdInOS sheets. The different FRs acknowledged the need to keep the AdInOS as short as possible but as long as necessary. While some off the respondents noted that not all

³ EC-HORIZON-101168349-eNOVATION.

information is relevant to all FRs, the goal of the AdInOS is to provide a quick and easy way to provide “additional” information to all levels across the different disciplines. While indeed not all information will be relevant to all, it is important that there is something extra for most FRs and that by keeping it uniform all present services have access to the same information, enhancing interoperability.

Following a discussion with partners from UCL on the creation procedure of the AdInOS it was noted that the creation process was relatively fast and easy. Because the structure is straightforward and set out, it is only a matter of filling out the different points for the experts, and most importantly having it peer reviewed by another expert. The team at UCL did not highlight any difficulties when creating the different AdInOS, as such no further comment can be made on this.

6 Conclusion

From the feedback that was generated through the different feedback sessions, it can be concluded that the AdInOS sheets fill a definite need for quick and easy access to information on bio-agents. Important here is that the AdInOS focus on bringing “additional” information to both expert, and non-expert FRs. The goal of the AdInOS is not to change SOP’s, or to compete with other tools, but rather to provide quick, easy and correct information on different bio-agents. The AdInOS sheets have in this way succeeded in creating something, where before there was little to nothing. Still there is a long way to go in order to create the “best as possible” support document. Further steps are highlighted in the next section.

7 Recommendations and future steps

The feedback sessions have highlighted several important recommendations. A first of which is further digitisation of the AdInOS sheets. As mentioned before, several FRs highlighted this as an important next step. It allows for easier adoption by a wide array of disciplines and FRs, since they do not need to carry along extra physical documents but can rather use tools they already have at hand, such as their phone. An additional benefit of digitisation is that it allows a wider group of FR to adopt the AdInOS sheets, since not every agency is allowed to scan QR-codes for cyber security reasons.

Another recommendation that can be made, is to start a validation process of the AdInOS sheets by different FRs. Here the term validation does not so much point to the information on the sheets, which gets validated by a third party expert, but rather how it fits into the response of different FRs. This can best be done by giving very minimal training on the concept of the AdInOS and afterwards introducing FRs to training exercise where they may be able to use them. By giving minimal training, it can be ensured that the AdInOS serve as an easy, complementary source of information and do not become an extra SOP for which a lot of training time and resources need to be allocated.

A third recommendation stems from the recurring observation of the respondents to provide the documents in the native language of the FRs. This makes the document more accessible to a wider array of FRs. Implementing this will however be a logical step if and when countries chose to adopt the AdInOS sheets.

Regarding the development of future AdInOS, one responder recommended the use of AI to create AdInOS sheets quickly on a variety of topics. While this was not a part of this project, this is indeed something that can be considered in future steps. Recent years have shown a vast improvement in the quality of output from different AI systems. Still, by outsourcing the creation of AdInOS to AI, more emphasis needs to be placed on proper validation by an external expert to ensure that the information given to FRs is correct. For this, it may also be helpful to clearly monitor what information is used to train the AI and ensure input from high quality sources and to consider training an AI on non-public information to improve the responses. Further, it is important to note that the creation of AdInOS can best happen on a push-basis, since FRs do not have always now which agents they might encounter.

Regarding the future steps in the development of the AdInOS sheets, reference is made to the eNOVATION project. Similarly to eNOTICE-2, eNOVATION also builds further on the results off the original eNOTICE-1 project. As such, the results off this project will also be taken into account in eNOVATION. For further development of the AdInOS sheets, including incorporation of an AI tool, reference is made to the eNOVATION project.

8 Examples

Monkeypox (Mpox) Safety Data Sheet

I. Infectious agent

Name:
Monkeypox virus (MPXV)

Characteristics:

- Large brick-shaped virus
- Double-stranded DNA
- Family of Orthopoxvirus

Biological Agent Classification:

1

2

3

4

▲

For regular update

ECDC fact sheet

Hazards & Risks:

- Human-to-human transmission through respiratory droplets or direct contact with body fluids or lesions
- Fever, rash, swollen lymph nodes, followed by skin lesions

II. Safe handling and sampling

Stability & Survival:

- Survive for prolonged period in dry and cool environment, particularly in bedding and clothing

Samples:

- Scabs, swabs of skin lesion pustules, vesicles (primary site)

PPE & Exposure control :

- Gloves, coat, gowns, footwear covers, and surgical masks
- Surface disinfectant: sodium hypochlorite 1%
- Hands, surface and equipment disinfectant: ethanol 70%

Detailed Sampling Procedure

Chapter III

III. Prevention & Treatment

First aid & Treatment:

- Supportive care with antipyretics for fever and pain management (e.g. paracetamol)
- Keep skin lesions clean and dry to prevent secondary infections
- Antiviral Tecovirimat SIGA can be used in severe cases (compassionate use)

Prophylaxis:

- Smallpox vaccines offer cross-protection
- In areas with an outbreak, post-exposure vaccination is recommended for those at risk (e.g. Modified Vaccinia Ankara or MVA)

Complementary information

European Medicines Agency

 Anthrax Safety Data Sheet 	
I. Infectious agent Name: Bacillus anthracis Characteristics: - Gram +, rod-shaped bacteria - Spore-forming - Family of B.cereus Biological Agent Class: 1 2 3 4 ▲ CDC - Bioterrorism Agent Category A B C ▲ For regular update  CDC webpage	
Hazards & Risks: Infection via cutaneous, respiratory (inhalation), gastrointestinal or injectional routes. Inhalation: severe respiratory distress; Cutaneous: black eschar lesion; Gastrointestinal: vomiting, severe abdominal pain	
II. Safe handling and sampling Stability & Survival: - Spores are extremely resistant and can persist for decades in soil, animal hides, or contaminated surfaces Samples: Environmental: swabs or wipes from surfaces, soil, powder. Clinical specimens: Vesicular fluid (cutaneous), respiratory secretions (inhalation), stool (GI). PPE & Exposure control : - FFP3/N95 respirators, gloves, impermeable gowns, face shield/eye protection Surface disinfectants: Sodium hypochlorite 10%, formaldehyde or vapour hydrogen peroxide (VHP, less efficient on spores mixed with powder) Detailed Decontamination Procedure 	
III. Prevention & Treatment First aid & Treatment: Antibiotics: Ciprofloxacin or doxycycline are first-line treatment Antitoxin: Raxibacumab or Anthrasil in cases of systemic illness Supportive care: Intensive monitoring in inhalation cases Prophylaxis: Post-exposure prophylaxis (PEP): 60 days of oral ciprofloxacin or doxycycline + 3-dose series of Anthrax Vaccine Adsorbed (AVA; reserved for high-risk groups such as lab workers or military personnel) Complementary information  European Medicines Agency	

 Ricin Safety Data Sheet 	
I. Biotoxin agent Name: Ricin Characteristics: - Highly toxic protein - Non-infectious (Biotoxin) - Produced by the castor bean plant (<i>Ricinus communis</i>) Hazards & Risks: - Major concern when inhaled, ingested, or injected. No person-to-person transmission Inhalation: cough, respiratory failure; Ingestion: vomiting, abdominal pain, diarrhea; Injection: localised swelling, systemic toxicity leading to multi-organ failure CDC - Bioterrorism Agent Category  For regular update 	
II. Safe handling and sampling Stability & Survival: - Stable in dry conditions; degrades rapidly when exposed to heat, moisture, or UV light Samples: Environmental: dust, powder or surface swabs/wipes, Food & Water: samples from contaminated materials PPE & Exposure control : - FFP3/N95 respirators, full-body protective suits, gloves, eye/face protection - Surface disinfectants: sodium hypochlorite 10% or hydrogen peroxide vapor Additional information for ricin neutralisation  EPA overview	
III. Prevention & Treatment First aid & Treatment: No known specific antidote Supportive care based on exposure: Inhalation : provide oxygen, mechanical ventilation if needed. Ingestion: administer activated charcoal within hours of ingestion to reduce toxin absorption. Prophylaxis: - No approved vaccine currently available for ricin - Emphasis on exposure prevention and PPE compliance Basic preventive rules Maintain safe distance  Avoid direct contact with victims or contaminated materials  Use verbal instructions to guide victims safely 	