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THE SPREAD OF DISINFORMATION ABOUT CBRN ATTACKS AND THEIR CONSEQUENCES

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Abstract. *Disinformation regarding chemical, biological, radiological, and nuclear (CBRN) threats can lead to serious and widespread consequences. This issue is particularly pressing in the current age of rapid information sharing, where the truthfulness and impact of content are often overlooked. Misleading or fabricated reports about CBRN events—such as terrorist attacks or pandemics—can misguide governments and global agencies, disrupt response operations, squander valuable resources, and trigger public panic. Misinformation and conspiracy theories can intensify fear and unease, especially when they portray CBRN incidents as uncontrollable. In some cases, they may even lead to civil unrest if people are convinced the event was intentionally caused as part of a conspiracy. Additionally, such disinformation can be used to radicalise individuals and support terrorist recruitment by spreading fear and deepening societal divisions. This paper explores the topic, with a particular focus on the effects of disinformation related to the radiological and nuclear aspects of the CBRN framework.*

Keywords: *disinformation, CBRN, rumours spread, terrorist attack, CBRN incidents*

1. INTRODUCTION

The idea of disinformation surrounding chemical, biological, radiological, and nuclear (CBRN) hazards has grown considerably, routinely being exploited for political gain during periods of conflict and upheaval. Advances in technology and the ubiquity of social media have magnified both the reach and complexity of these deceptive campaigns. Non-state actors—terrorist groups in particular—are now viewed not only as potential users of CBRN weapons but also as likely purveyors of manipulative narratives. Such messaging frequently draws on memories of past crises or atrocities to evoke powerful emotions, sway public opinion, and delegitimise opponents. The enduring and adaptable nature of CBRN-focused disinformation makes clear the need for sustained countermeasures to blunt its influence and mitigate associated risks.

CBRN disinformation specifically involves propagating false or misleading claims about genuine or alleged incidents. These efforts aim to stoke fear, undermine trust in domestic and international authorities, and distort political or military decision-making. In recent conflicts, for example, state-sponsored narratives have baselessly accused rivals of developing bioweapons or plotting "dirty bomb" attacks—claims that can erode confidence in non-proliferation regimes, skew emergency-response planning, or provide a pretext for aggression. Combating such tactics requires coordinated international action, including rapid detection and analysis of false narratives, public-awareness initiatives, and evidence-based policy responses that strengthen institutional resilience.

2. MEANS OF DISINFORMATION SPREAD

False stories about CBRN threats circulate through complex channels and social media. Their spread hinges on intertwined social, technological, and psychological drivers. Sites such as Facebook act as force multipliers: because content is easy to share and fact-checking is often weak, misleading stories travel quickly. Algorithmic feeds further magnify the problem by steering users into self-reinforcing "echo chambers," repeatedly surfacing posts that confirm existing beliefs and sidelining contradictory evidence.

Actors with strategic motives—whether governments, partisan groups, or other organizations—exploit these dynamics to undercut trust in authorities, undermine public-health measures, or advance political objectives. By distorting data or selectively framing events, they sow confusion and erode confidence, which can destabilize society and blunt the effectiveness of crisis responses.

Such operations frequently tap into pre-existing social rifts, leveraging institutional scepticism, conspiracy theories, and cultural grievances to widen their reach. In the aftermath of actual CBRN incidents, multiple, often contradictory narratives spring up, making it even harder for people to separate reliable information from fabrication.

One of the most potent techniques is the deliberate blending of fact and fiction: embedding kernels of truth inside false claims. This mix boosts credibility, prompting well-meaning users to share content that is distorted. The tactic clouds public understanding and accelerates viral spread.

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The fallout is significant. When misinformation undermines scientific guidance or official advice, public trust crumbles, collective action fractures, and responses to genuine CBRN hazards falter. By fragmenting perceptions of risk, disinformation campaigns weaken societal cohesion and impair effective crisis management.

3. Consequences of inaccurate CBRN dissemination

The dissemination of incorrect CBRN materials can lead to a range of devastating consequences, including widespread health impacts, environmental contamination, and significant disruptions to essential services and operations. CBRN events can cause both immediate and long-term health effects, psychological trauma, and societal disruption.

False information related to CBRN incidents can seriously harm public health by undermining trust in scientific knowledge and official advice. This distrust can obstruct effective responses to real dangers, causing confusion and weakening crisis management efforts. The intentional spread of misleading information increases the chances of misunderstandings, which ultimately disrupt coordinated action.

The widespread circulation of incorrect details about CBRN threats poses major challenges to public safety and international security. For example, during the COVID-19 pandemic, the surge of misleading stories intensified fear and led to improper reactions to CBRN risks. This situation emphasizes the critical need to combat misinformation, which can escalate public panic and reduce trust in government initiatives addressing genuine threats [1].

Social media platforms have become a prime avenue for spreading CBRN-related disinformation, where anonymity and wide reach allow actors to manipulate public opinion and political discussions effectively. For instance, the idea of "ex-ante content moderation" has been suggested as a preventative measure to evaluate and reduce the risk of false information spreading on these platforms. By assigning disinformation scores to user accounts, stakeholders can proactively detect and counter deceptive narratives before they become widespread [2-4].

Advanced technologies, such as artificial intelligence (AI), play a dual role regarding disinformation. While AI enables the creation and rapid propagation of false content, it can also be employed to identify and curb these threats. Social media platforms use AI-driven algorithms to boost user engagement, but these systems can inadvertently accelerate the spread of misinformation. Therefore, there is an urgent need to develop sophisticated technological tools to detect and fight misinformation, especially concerning CBRN threats. Disinformation about CBRN attacks has far-reaching impacts on public opinion, policy decisions, and health outcomes. Understanding these effects is crucial for creating effective counterstrategies.

One major effect of disinformation is the loss of trust in government and health organizations. During crises like the COVID-19 pandemic, false claims about vaccine safety and effectiveness fuelled public doubt toward health authorities, resulting in resistance to vital health measures. This increasing distrust can hinder responses to real CBRN threats, as those influenced by earlier misinformation may ignore legitimate warnings and guidance.

Additionally, disinformation can provoke fear, anxiety, and widespread panic, especially regarding potential CBRN attacks. For example, false information about biological threats can increase public distress and contribute to psychological strain. Such emotional reactions make public health efforts more difficult, as excessive anxiety may cause people to overreact or misinterpret actual risks due to the sensational nature of false information.

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4. Debunking disinformation

Often, disinformation can be identified quickly because certain indicators reveal that the information comes from an unreliable source or author. Besides concerns about the credibility of the source—like anonymous or unknown authors, absence of citations or references, questionable website reputation, and sensationalist headlines—there is usually another noticeable factor that raises suspicion. This concept is captured by the "red flag" method shown in Fig. 1 [5].

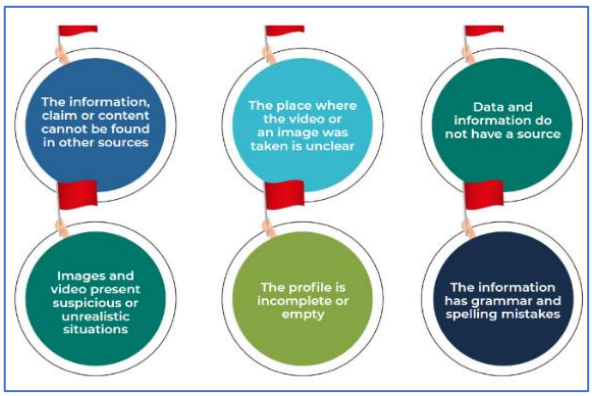

Figure 1. The red flags that may indicate unreliable or misleading content

There are, of course, some more indications that the message may be false, including poor writing and formatting, one-sided or extreme views, sounding too good (or bad) to be true, absence of verifiable facts, unusual domain names, out-of-context photos or

quotes, old news presented as recent, lack of updates, etc. Before trusting information online, always cross-check with multiple reputable sources, use fact-checking websites, and remain critical of anything that seems suspicious.

The spread of misinformation has always been a problem, but the Internet, social media, and other digital technologies have intensified the speed and ease at which misinformation spreads. Unfortunately, "debunking" misinformation is also often more difficult than merely telling people that information is inaccurate. Once someone has been introduced to false information, they often continue to believe it despite the correction. This is especially true when misinformation reinforces a person's pre-existing beliefs.

Another set of UNICRI criteria from the same source [5] is presented in Table 1.

Table 1. Some essential elements to consider when analysing disinformation

Identify sources and assess if they are reliable.
Recognise and exclude fake accounts and bots.
Confirm that images and videos are attributed to the original source.
Verify the uploading information and video.
Identify the geolocation of an image or video.
Spot false statistics or misleading data.
Access the reliability of a website by checking the sources, URL, phrasing and punctuation of the text, and general content.

5. An efficient way to minimise the impact of fake news in protecting against CBRN threats

The first and most important task in mitigating any accident or attack involving CBRN agents is to prepare for all possible scenarios of such an event. Thus, prevention is a key element in dealing with any situation where emergency management plays a key role (Fig. 2). In this context, five areas perform important functions: protection, response, recovery, prevention, and mitigation [5,6].

Prevention involves proactive measures to avoid or stop an incident before it occurs, as well as to protect people and property. This may include gathering intelligence and using relevant information to implement specific countermeasures and preventive actions.

Protection is an ongoing process that includes planning, organizing, training, equipping, exercising, evaluating, and improving capabilities to ensure effective coordination during incident management.

Response encompasses immediate actions taken to save lives, protect property and the environment, stabilize the situation, and meet basic human needs. It also includes the execution of emergency plans and mitigation strategies to minimize casualties, damage, and other adverse effects.

Recovery focuses on the development and implementation of plans to restore affected areas, resume essential services, and reestablish government functions. This phase relies on coordinated efforts among individuals, the private sector, nonprofit organizations, and public programs.

Mitigation activities are essential in reducing the damage and loss caused by natural or human-made disasters. Their primary goal is to lessen the impact of such events and enhance community safety. Mitigation aims to break the cycle of recurring damage by rebuilding more resilient systems and reducing future vulnerability. Key components of effective mitigation include comprehensive planning, established procedures, regular training and exercises, personnel qualifications and certifications, and properly certified equipment.

Figure 2. The primary mission areas of emergency management in any area, including CBRN

Special attention should be paid to biological agents, which are widespread in nature and frequently found in various workplace environments. These agents include bacteria, viruses, fungi (such as yeasts and moulds), and internal human parasites. While most are harmless, a small proportion can cause illness, with the most severe health effects. Due to their microscopic nature, the risks posed by biological agents are often underestimated.

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It is also important to clarify terminology regarding radiological agents. The term "radiological" is sometimes misleading, as it generally encompasses both radioactive substances (radionuclides) and devices that produce radiation, such as X-ray machines or particle accelerators. A more accurate term for the hazardous substance itself would be "radioactive."

In current usage, radiological agents refer to any radioactive material that, when released, may cause harm through external exposure to ionising radiation or through internal contamination via inhalation or ingestion. When exposure is significant, these substances pose serious health hazards and are therefore strictly regulated by national legislation and oversight authorities. They also represent a risk to animals, ecosystems, and the broader environment.

6. Conclusion

Manipulated or fraudulent information regarding CBRN emergencies—such as terrorist attacks or pandemics—can have a harmful impact on both the public and their leaders. The spread of disinformation about CBRN agents and related materials fosters mistrust, disrupts diplomatic efforts, and threatens progress toward non-proliferation objectives. Although CBRN-related disinformation is not a new phenomenon, its use in the context of current armed conflicts is particularly concerning. It has been used to justify invasions, escalate hostilities, and undermine global non-proliferation regimes. While there is a growing body of research and initiatives aimed at combating disinformation more broadly, many global and national leaders acknowledge that more targeted and coordinated efforts are needed to effectively address the specific threats posed by CBRN disinformation.

Although there is a growing body of research and various efforts to counter disinformation in general, most countries acknowledge that more must be done to effectively address the specific threats posed by CBRN disinformation. Given its unique and far-reaching consequences, the need for a comprehensive approach has been emphasised in numerous international forums, where consensus decisions have underscored the urgency of coordinated action.

Spreading false information, conspiracy theories, and propaganda is a long-standing tactic used to mislead the public, weaken opponents, and bolster one's own position or reputation. Some hostile states view disinformation as an essential component of their military doctrine, strategic planning, and wartime operations. In the pre-Internet era, it could take weeks, months, or even years for such narratives to reach a global audience. Today, however, the widespread use of the internet—combined with the global reach of social media and messaging platforms—enables disinformation to spread rapidly and influence public opinion in real time.

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