

Peer Review

Review of: "The Limitations and Challenges of Researching Mass Casualty Incidents and Disasters in Europe"

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Review of "Best Practices for Data Collection and Coordination in Mass Casualty Incidents in Europe"

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This paper is a timely and valuable addition to the literature on disaster preparedness and response in Europe. By focusing on data collection, interoperability, and standardization, the authors address an issue that directly affects the effectiveness and fairness of response across borders and agencies.

Strengths

The manuscript brings together a wide range of perspectives, from technological tools such as GIS, drones, and artificial intelligence, to organizational models like unified command systems, as well as governance structures at both European Union and national levels. This breadth reflects the reality of mass casualty incidents and makes the paper a useful resource for both practitioners and policymakers.

The discussion of projects such as IDIRA, VALKYRIES, NIGHTINGALE, and Search and Rescue places the review firmly within the context of ongoing European efforts. This makes the paper more than just a survey. It acts as a roadmap grounded in tested models that can be scaled and adapted across different contexts.

The focus on GDPR, privacy, and responsible data handling is especially important. Ethical concerns are often overlooked in technical discussions of disaster management, but here the authors highlight the need to balance efficiency with fairness and respect for patient dignity. Despite the complexity of the subject, the paper is written in clear and straightforward language. It is accessible to academics as well as practitioners who may draw directly from it when planning or training.

Suggestions for further improvement

The paper includes a wealth of detail, but readers may benefit from a summary table or figure that highlights the most important best practices, technologies, and policy recommendations. This would make the paper even more useful for decision makers. The discussion of barriers such as funding, training, and interoperability is strong. Expanding slightly on realistic strategies for overcoming these challenges, such as phased adoption, regional funding models, or entry-level platforms that can scale, would strengthen the bridge between theory and practice.

The conclusion notes the importance of sustained funding and training, but a short section outlining priority research questions would be valuable. Questions might include how artificial intelligence performs in live incidents or how harmonized data sets impact outcomes.

Overall assessment

This is a strong and well-organized paper that successfully weaves together literature, practice, and policy into a coherent and forward-looking review. It highlights the urgency of harmonized data collection and sharing in European mass casualty incidents, while also giving appropriate attention to ethics, governance, and technology.

I commend the authors for producing such a thoughtful and wide-ranging review. The suggestions for refinements, particularly around synthesizing recommendations and identifying future research directions, are just icing on the cake. This paper has the potential to serve as an important reference for both scholars and practitioners working to strengthen Europe's disaster resilience.

Example Table: Strategies to Overcome Funding and Training Barriers in MCI Data Management (just some quick thoughts)

Barrier	Strategy	How It Helps
Funding	Phased implementation	Introduce systems step by step (start with triage and patient tracking, expand later), reducing upfront costs and showing early impact.
	Shared cross border funding models	Pool resources through EU mechanisms (Civil Protection Mechanism, Horizon Europe) and joint procurement, lowering individual country costs.
	Public private partnerships	Involve technology providers who co fund pilots in exchange for testing opportunities, reducing public sector burden.
	Open source or modular platforms	Use adaptable, low cost systems that can be scaled incrementally, avoiding expensive overhauls.
Training	Embed training in existing exercises	Incorporate data management tasks into standard disaster drills, eliminating the need for extra standalone training events.
	Simulation based e learning	Provide online, interactive training environments that allow responders to practice safely and at low cost.
	Train the trainer approach	Build capacity by equipping a smaller group of experts who then train colleagues locally, spreading skills efficiently.
	Cross border exchanges	Facilitate short workshops or placements where responders learn directly from peers in other countries, strengthening interoperability.
	Micro credentialing	Offer short, skill specific certifications (e.g., secure data sharing) to encourage adoption and provide recognition.

Best Practices Table Example

Domain	Best Practice	Technology/Method	Policy or Governance Link	Example Project
Data Collection	Standardized triage forms	Mobile apps, QR codes	EU Civil Protection Mechanism	NIGHTINGALE
Interoperability	Shared cross border platform	Cloud based data sharing	European Data Space	IDIRA
Coordination	Unified command structures	Common Operating Picture (COP) dashboards	EU interoperability framework	VALKYRIES
Ethics and Privacy	GDPR compliant patient tracking	Encryption, anonymization	National health data laws	National pilots

Declarations

Potential competing interests: No potential competing interests to declare.