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MULTI-AGENCY EMERGENCY RESPONSE

Large-scale emergencies such as the global COVID-19 pandemic, terrorist attacks, and environmental disasters require the coordinated efforts of several specialised and diverse teams.

Multi-agency emergency response teams are characterised as multi-team systems – that is, multiple component teams, each tasked with their own agency-specific priorities while simultaneously working towards shared overarching goals. For example, in a terrorist incident, all responders will be focused on saving life and reducing harm. However, each agency will also be working towards their own priorities – the Police are tasked with mitigating further threats (cordoning off the scene and collecting evidence), while the Ambulance service must quickly begin accessing and triaging casualties.

In practice, multi-agency working can present several challenges. For example, which agency's goals take precedence if there is a conflict in priorities? And how can effective communication across agencies be maintained when there are urgent tasks to attend to?

In the UK, several initiatives were introduced to overcome the challenges associated with inter-agency working. However, as highlighted in the report reviewing the Manchester Arena terrorist attack, poor communication and difficulties managing collaboration across agencies continue to permeate the response to complex emergency incidents.

RESEARCHING EMERGENCY RESPONSE TEAMS DURING A SIMULATED TERRORIST INCIDENT

In light of the ongoing challenges to multi-agency teamwork during emergencies, our research examined key team processes: communication and coordination during the strategic response to a simulated terrorist incident. The simulation was based on the response to a terrorist attack involving firearms at a shopping centre in the run-up to Christmas. Data collected from 30 senior commanders represented 11 agencies including Police, Fire and Rescue, Ambulance Service, Military, Local and Central Government, and the Red Cross.

A key element to our research was to examine how responders communicated and coordinated at different simulated time points in the incident response. Existing government guidelines state that the response to incidents is structured in two phases

– the Response Phase (neutralising the threat, saving life, and protecting the community) and the Recovery Phase (rebuilding trust in the community, supporting victims in the longer term, and helping to 'restore normality'). However, no empirical research has tested if the dichotomisation of Response/Recovery works in practice.

To address this, our study measured responders' behaviour at three simulated time points, with each time point classed as either Response or Recovery within government guidelines:

Phase 1: Incident ongoing (Response)

Phase 2: 48 hours after the incident (Response)

Phase 3: 3 weeks after the incident (Recovery)

Communication was measured through social network analyses. We used audio recordings of the simulation to generate communication networks and identify which team members communicated with one another and how frequently.

Coordination was measured by qualitatively coding the transcribed audio recordings to identify verbal indicators of coordination. For example, joint decision-making was indicated by team members actively working together to implement a decision, e.g., "Can I confirm that we all agree on this strategy before it is actioned?"

Based on existing government guidance, we expected to identify differences in how the teams communicated and coordinated in the response phases (Phase 1 and 2) and the recovery phase (Phase 3).

WHAT WE FOUND

In Phase 1 of the response, the communication network was highly centralised, with much of the information being shared by the Police. While it is usual for the Police to take charge of incidents that involve firearms, the data suggest that an over-reliance on the Police to maintain communication across the network led to coordination difficulties in this phase. The results suggest the Police were so focused on delivering the overall

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strategy of the response that they failed to attend to important information provided by other agencies and to manage the flow of communications across the network . This ultimately disrupted coordination as marked by delays and uncertainties in implementing decisions.

As the incident evolved across the simulated time points, the involvement of additional agencies increased and the communication networks became less centralised. The changes to the communication networks coincided with improved coordination across agencies as marked by increased joint decision-making, shared awareness, and reduced conflict and uncertainty.

Given the high cognitive load on central agencies (e.g., the Police) in the immediate aftermath of incidents, decentralised communication networks might be introduced earlier to make better use of the diversity of expertise across agencies and increase coordinated action.

HOW CAN WE IMPROVE MULTI-AGENCY WORKING UNDER PRESSURE?

Implementing boundary spanners

Mapping the communication networks demonstrated a disconnect across agencies and a reliance on central commanders to manage the flow of information and implement key decisions. One solution is to introduce "boundary spanners": specific team members tasked with ensuring that information is relayed and actions are coordinated across

agencies. Boundary spanners have the potential to reduce the load on central decision-makers and allow information to be transferred more easily between team members. In rapidly developing crises, such as the early stages of the COVID-19 pandemic, boundary spanners can communicate evolving plans quickly to ensure safe practice and a cohesive approach across inter-agency partners.

Introducing an additional phase

Our results showed a three-phase structure of "Response–Resolve–Recovery" more accurately described the behaviours of responders during emergencies than the existing "Response–Recovery" structure outlined in government guidelines. Implementing an additional phase would account for the shift in urgency between an ongoing incident (Response) and shortly afterwards when the immediate threat has subsided (Resolve).

Changing procedural guidelines to a three-phase structure may better prepare responders for the realities of incident response and empower other agencies to be involved in the decision-making before the response transitions into the recovery phase. This would increase opportunities for collaboration across agencies and reduce the load on central agencies, such as the Police.

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