

# Interagency communication: A review of interagency emergency response teams (IERTs) and their communication when responding to vulnerable people

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## Abstract

*Interagency Emergency Response Teams (IERTs) play a crucial role in times of disasters or large scale emergencies. In a period of modern history where natural disasters are increasing and are having widespread community impacts, especially on vulnerable communities, there appears to be a lack of in-depth knowledge at the micro level of how IERTs work, particularly from a communication perspective. This paper critically reviews the literature on interagency communication, with a focus on what is known about IERT communication during emergencies and disasters and the communication competencies necessary to effectively manage the interagency interfaces in these interactive systems. The aim is to create an agenda for future research on IERT communication, especially in relation to vulnerable populations.*

*The examination concludes that, while there are some useful reviews of interagency communication in multi-system teams, most of the research addressed in these reviews is focused on participating organisations at the macro level. There is a paucity of empirical studies that address micro-level dynamics in IERTs and how these dynamics are experienced from the viewpoint of individual members. Not only is there scope to understand more thoroughly the communication roles and responsibilities of interagency team members and to examine how individual members communicate within a complex, evolving, and unstable environment but there is also considerable scope to explore further how different organisational identities and their spatial geographies contribute to the interactional dynamics. There is also significant scope to explore further the unique demands placed on the interfaces in those IERTS set up to respond to vulnerable sectors of the population.*

**KEY WORDS:** disaster, IERT (Interagency Emergency Response Team), interagency communication, interface, vulnerable people

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The effective and timely response to a disaster is an important concern for communities globally, especially given the increasing number and magnitude of natural disasters. The World Bank in its publication “Building Resilience – Integrating Climate and Disaster Risk into Development” states that “since the 1980s, there has been an upward trend in disaster losses” (2013, p. 5) with weather-related events accounting for 87% of disasters. There have also been large devastating earthquakes, sometimes with associated tsunamis, which have occurred in the last 10 years and have impacted significantly on many nations including Japan, China, Haiti, Chile, Indonesia and New Zealand. Internationally it is recognised that the elderly, people with disabilities, minority populations and those in low socioeconomic areas are often the most affected by a disaster and have the least ability to either prepare or to respond to them (World Bank 2013; WHO 2013; UNISDR 2013). Multiteam systems (MTSs) such as Interagency Emergency Response Teams (IERTs) are a crucial part of

preparing and responding to disasters and are often established to attend to post-disaster needs of these vulnerable groups. IERTs are likely to include a wide and diverse range of stakeholder agencies. For example, in the seismic events within the Canterbury region of New Zealand in 2010-2011, a multi-agency response was established to address the needs of vulnerable people and was composed of representatives from agencies such as St Johns, the military, the Ministry of Health (MOH) and clinical staff working with the aged residential care (ARC) facilities.

### **Defining terms**

The World Health Organisation's (WHO 2013) website states "vulnerability" is "the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters" which was used as the benchmark.

The term IERTs describes a number of different terms found in the literature. When searching the literature in relation to disaster and emergencies teams, terms such as multi-sectoral response, multi-agency coordination, multi-organisational response, MTS response, multi-discipline response and inter-organisational response were found. In this paper IERT is used to ensure the full meaning of the type of teams being studied is captured. The term "interagency" within IERT, refers to groups made up of different agencies, usually governmental but also non-governmental organisations (NGOs) including local, regional and national agencies that are formed in response to or for coordination in emergencies or disasters (dictionary.reference.com; thefreedictionary.com; oxforddictionaries.com). An MTS is defined as two or more teams interfacing together, often consisting of multiple organisations, working together on a common goal (Mathieu, Marks & Zaccaro 2001; Shuffler, Rico & Salas 2014).

Finally, macro level communication in this paper refers to communication at the larger scale patterns and trends within organisations. In contrast communication at the micro level refers to the individual people and face-to-face interactions that often occur at the local level (Kuhn 2012; Bachman & Inkpen 2011).

### **Methodology**

A review of the literature was undertaken to locate and assess literature on what is known about micro-level communication in IERTs established to address the needs of vulnerable populations like the elderly during disasters. Specifically, literature on disaster response, communication in disaster, interagency interfaces during disasters, response teams, and responding to the needs and relocation of vulnerable people in disasters was sought in order to identify what is already known and to establish a research agenda for further study. As such this review represents a much needed contribution to a burgeoning but rather disparate and poorly integrated body of literature on disaster communication.

This review was systematically undertaken using multiple online databases available through the writer's university library. As the review was exploratory it began broadly to ensure an extensive literature base was identified from which a more focused review could be conducted. This ensured the common trap of choosing too many words or being too specific initially was avoided (Croucher & Cronn-Mills 2015). The single key word 'disaster' was chosen as the starting point as it captures the general field of interest and is unambiguous, embracing all manner of natural and man-made events that have the potential to disrupt human populations. Nearly 900,000 articles and books were found. The key word "response" was then added to disaster and this reduced the articles and books to 360,000. An examination of the results of this search revealed the majority of the literature located

focused on the disaster response to large scale occurrences such as the New York terrorism event of September 11 2001, weather events such as Hurricane Katrina in New Orleans, and earthquakes such as the 2011 event at Tōhoku Region, Japan. Due to the significant number of literature sources obtained from this search, time limits were applied from the years of 2001 to the present day, and only peer-reviewed items were sought, thereby further reducing the hits to approximately 125,000. A further search was undertaken on “disaster response” and “response teams”. There is a wealth of books, reports, studies and discussion papers around this topic. It was not possible for the search to be exhaustive. Over 33,000 were initially located with the majority focused on recent disaster events such as the September 11 terrorist attack in New York, severe storm events such as Hurricane Katrina in New Orleans and the recent earthquakes in New Zealand and Japan.

A separate search was undertaken on communication in disasters with the same parameters in place. This produced approximately 74,000 hits. Following a careful examination of the sorts of sources located from this search, the key words “crisis communication in natural disasters” were then applied and the search refined with over 18,000 results.

An additional search was undertaken using the keywords “communication” and “interagency teams” to see what was already known about communication in interagency teams such as IERTs, resulting in over 5000 articles found. This was further refined using the keywords “interagency teams and interface communication” to examine communication in interagency teams such as IERTs that include members from organisations with different priorities, ways of operating and cultures. Specifically, the search sought to identify any studies that had explored the impacts of organisational identity and interagency communication. Over 3,150 articles were found. When this search was limited to peer reviewed articles this reduced the hits to 357 articles. Then a search was undertaken on “interagency interfaces in disasters” and 2000 articles were found. When the search was limited to peer reviewed articles this reduced the hits to 352 articles. The results of each of these searches were examined and found to include many of the same items.

Finally, the search for the use of terms “vulnerable people” yielded over 280,000 articles and combined with “natural disasters” generated nearly 24,000 results when time limits and peer review search refinements were added. The final articles reviewed were further narrowed to just over 350 by ensuring the only peer reviewed journal articles or reports commissioned by governments, organisations or NGOs on managing or preparing for disasters that had one or more of the following key words:

1. Disaster
2. Crisis communication
3. Interagency
4. Vulnerable populations

The collection of sources identified were then assessed more closely to establish how well they related to the overarching objective of understanding what is known about micro processes in IERTs during disasters. Approximately a third of the articles were judged as not useful. For example, many were more about disaster preparedness rather than disaster response or vulnerable structures rather than people. Also, the majority of government reports retrieved focused on disaster planning policy and process. A significant find, however, was a review of the New Zealand Civil Defence Emergency Management of the Christchurch earthquakes which examined each agency’s response to the events. Also obtained was the Canterbury District Health Board’s (CDHB) Emergency Operation Centre’s

Vulnerable People Location Manual (2011) used in the 2010-2011 Canterbury earthquake responses. In total, 56 sources were judged to be directly relevant and were examined in detail.

### **Disaster Responses**

Most articles on disaster response and response teams focused on providing a retrospective review of what had occurred and future requirements for planning, training, education and support for groups going into these significant events (Ardagh et al. 2012; Curry 2011; Danna et al. 2009; Garnett & Kouzmin 2009; Goldstraw et al. 2012; Kang et al. 2012; Pekovic, Seff, & Rothman 2007; Slepski 2007; Sugimoto et al. 2011; Tyler & Singh 2011; Yang, Prasanna, & King 2009; Zakour & Gillespie 1998). Prominent among the articles located were ones that focused on preparedness of both the response teams, organisations and populations based on the results of issues identified in previous responses (Ardagh et al. 2012; McLean et al. 2012; Bethel et al. 2011; Curry 2011; Eriksson 2009; Goldstraw et al. 2012; Janssen et al. 2010; Slepski 2007). An underlying theme in most of these articles was the need for response teams to be ready, responsive and flexible during disasters and a recurring recommendation was the necessity for strong interagency engagement and communication (Kapucu 2006; Williams 2011).

Prizzia & Helfand (2001) found that strong interorganisational interfaces for disaster response occur when partnerships with private providers, primary health centres, and the community work together on disaster preparedness, drills, and training. Their extensive review of their interagency coordination preparedness in emergency response from central government to local community level in Hawaii was undertaken to improve capability in an area fraught with natural disasters. There are similarities of processes they utilised in coordination and preparedness that were also witnessed in the New Zealand event. For example, Canterbury Civil Defence's role in taking part in multiple interagency emergency preparedness trainings prior to the earthquake events of 2010-2011. This training, like Hawaii's interagency coordination and preparedness training, had partnerships with private, primary and community providers and helped in readiness for future events. Another example was the New Zealand MOH intersectoral pandemic national exercise on influenza titled "Exercise Cruikshank" (MOH 2007), and the Canterbury Health System "collaborative system-wide response" to the H1N1 (swine flu) virus which was rated as an outstanding example of cross sectoral response by the MOH (CDHB 2010-11 p. 26). This no doubt stood the health sector and supporting agencies in good stead during the 2010-2011 earthquakes.

### **Communication in Disaster Response**

While there are thousands of studies that examine disaster response, those that address the nature of communication during disaster responses tend to focus more at a macro level (Kean & Hamilton, 2004; Comfort, 2007; Garnett & Kouzmin 2009, Kapucu, 2006). There are findings about media, information flows and organisational performance (Bharosa, Garnett & Kouzmin, 2007; Lee & Janssen, 2009; Steelman & McCaffrey, 2012) but the research rarely ventures into the more micro level analysis of the interpersonal communication between individuals at critical interface, such as those between emergency response agencies. We know little about the interpersonal communication practices by which interagency teams operate either effectively or ineffectively (Williams, 2011). There appears to be, therefore, a gap in the research around this approach to understanding interagency interfaces within a disaster.

### *The Realities of Interagency Communication*

The initial search on interagency interface yielded articles that discussed interagency, inter-organisational and multi-organisational interfaces (Arnaud & Mills 2012; Bachmann & Inkpen 2011; Bharosa, Lee, & Janssen 2010). Yang et al. (2009) focused more on internal communication but identified the need for examining interagency or multi-agency interface. Garnett & Kouzmin (2007 & 2009) in contrast examined the interactions and inter-relationships between each organisations involved in the response to New Orleans during Hurricane Katrina. Their article titled "Crisis Communication Post Katrina: What are we Learning?" (Garnett & Kouzmin 2009) proved highly relevant with regard to using a concept of multiple case-modelling for developing a conceptual framework to help understand crisis communication in a response. The authors identified four lenses: "crisis communication as interpersonal influence", "crisis communication as media relations", "crisis communication as technology showcase", and "crisis communication as inter-organizational networking" (p. 386). The authors showed the effectiveness of crisis communication is centred around the quality of interactions and interorganisational interfaces between key organisations involved in crisis management. Garnett & Kouzman (2009) describe the limitations to communication such as "turf fighting" (p. 388) and issues between the state and federal government working independently of each other.

The review showed that disasters often happen in locations that do not have adequate resources to respond, or if they do, these resources may have been damaged or rendered ineffectual by the disaster (Bennet 2010; Garnett & Kouzmin 2009; Janssen et al. 2010; Kang et al. 2012; Stephan 2007). Such conditions have implications for communication generally and the operation of IERTs in particular. For example, in the Canterbury event, power supply was unavailable or unreliable for a large proportion of the population following the worst of the earthquakes and this impacted on phones, the ability to charge cellphones, internet access and landlines. Estimates were that 75% of the city had power disrupted on the day of the quake (Brookie 2012) with electricity restored within three days of the event (McSaveney 2014). Bigger essential services such as hospitals had back-up power generators to ensure services could be delivered to the more than 7000 injured, but damage had also occurred to the back-up generator lines and to storage facilities. This created challenging conditions to deliver care to patients with complex injuries and to communicate issues and alerts throughout the health system both locally and nationally (Ardagh et al. 2012). Clinicians at a number of sites were unable to retrieve clinical notes with vital information including family contacts due to the power outages (Ardagh et al. 2012; Carswell 2011). Similarly, emergency services and local authorities faced communication challenges as available communication channels became overloaded (McLean et al. 2012). Thus, access to communication media and effective use of this media was an issue at both personal and agency levels as people tried to link to others and coordinate their responses. For this reason IERTs often involve agencies from outside the disaster zone or personnel from in-zone agencies who work in other regions (Comfort, 2007), for example, Red Cross, Armed Forces and Urban Search and Rescue teams often are agencies that can participate in MTSs such as IERTs but involve people from outside the disaster zone. Furthermore, such agencies may have remote headquarters and so communication is geographically distributed. Garnett & Kouzman (2007, 2009) provide a critical framework to examine crisis communication with multiple lenses which enables more thorough inspection and understanding of disaster events and their complexities such as those experienced in Canterbury. Garnett & Kouzman describe within each communication lens grouping the "focal actors" (2007, p. 173), their roles, communication mode, key issues, and strengths and limitations. They also outline what they see as "interorganizational networking" (2007, p. 180) and the complexities involved in multiple agencies responding to an emergency and the difficulties experienced in the exchange of communication and networking in a complex changing environment. During

Hurricane Katrina there were multiple failures between agencies and within agencies both at federal and state levels, and the problems that existed of trust, turf boundaries over jurisdiction at the local, regional and national levels and lack of consistent boundary spanning (Garnett & Kouzmin 2009). These same researchers go on to write about further learnings warning of the dangers of utilising only one lens as a framework to examine crisis communication as it can lead to an erroneous focus on one lens rather than an opportunity to have thorough review, transparency and visibility to “explain crisis communication” (2009, p. 386). There are also salient points on the impact of spatial distances where key decisions were being made at central government level without the face-to-face liaison and cooperation within the local level response. These experiences were echoed to some degree in the Canterbury earthquake events with the National Controller not initially being in Christchurch (McLean et al. 2012) and the subsequent confusion that occurred when there was a departure from the normal Coordinated Incident Management System (CIMS) structure with the merging of two different agencies within the response centre causing a number of inefficiencies, disorganisation and duplication as well as role confusion.

Aziz, Peña-Mora, Chen & Latz (2009, p. 35) state that “current disaster relief operations are characterized by numerous shortcomings that inhibit optimal decision making during disaster management operations.” They go on to cite (p. 35-36) that “obstacles in the disaster response process include no communication, miscommunication and misleading information and the inability to access information and the lack of standardization, collaboration, coordination, and communication.” This created challenges and misunderstandings for the individuals responding to the disaster. The 9/11 Commission Report (Kean & Hamilton, 2004) reported that during emergency response operations effective decision making was hampered by problems in command and control and in internal communications to an extent that “incident commanders from responding agencies lacked knowledge of what other agencies and, in some cases, their own responders were doing” resulting in “command, control, and communications” (p. 315) problems. Aziz et al (2009) emphasise that “all of the aforementioned problems points towards the need for an integrated framework which expedites communication and data transfer procedures in the field during disaster events (p. 36)”. Coordination relies on effective communication (Arnaud & Mills 2012). It relies on common understandings among those participating in the collaborative action.

In an article on civil and military relations, Sylves (2009) outlines the way communication took place between these authorities during Hurricane Katrina and how sophisticated the military communication was. Sylves makes a salient point that “military culture and civilian culture were highly incompatible” (p. 76) which is of interest in that there was military involvement in the initial response in the February 2011 earthquake in Canterbury. Sylves outlined how the military uses clear communication working within a “command and control structure” (p. 76) which would be similar to processes within New Zealand Civil Defence and the New Zealand Defence Force (NZDF) structures. It is important to note that these command and control structures may not always be as effective in an evolving complex emergency, with Kapucu (2006) finding that “hierarchical networks can work efficiently during routine operations, but they function very poorly in dynamic environments of emergencies” (p. 208). Members of these agencies identify with this way of controlling activity and the communication patterns it produces (Comfort, 2007). These communication patterns and the expectations they foster can contrast sharply with those in NGOs and voluntary organisations.

Combining these cultures and structures into MTSs or IERTs adds different dynamics and ways of working. It may be because of this that MTSs are an area of increasing research interest. MTSs are characterised by interdependence and often form in disasters or in emergency situations. For example, in the Canterbury quakes organisations such as health, St John Ambulance Service, New Zealand Ministry of Defence and ARC facilities worked together to evacuate vulnerable people out of Christchurch (McLean et al. 2012).

Williams (2011) maintains the importance of research examining these kinds of MTS members experiences as there are some assumptions made about MTSs, for instance that rather than being interdependent and reciprocal they work rather in parallel or side-by-side without interacting in the true sense. Research on MTSs is also often focused higher up within organisations or in a “laboratory setting” and the review determined that there is “the need for research identifying the underlying processes and success strategies and best practices of MTSs” (Shuffler, Rico & Salas 2014, p. 238-239). Williams (2011) states that “perhaps the most striking challenge to our current conceptualization is the lack of communication between individual members in the larger system” (p. 162) and that future research could be centred on a specific case study examining the teams involved in a specific response. We also understand little about how individuals navigate the interface between their identity as member of a MTSs and their identity as a member of their home organisation and there were recommendations to study and focus more clearly on the human interface as “human-centered approaches allow researchers to assess the inter-organizational communication links, processes, and information...” (Janssen et al. 2010, p. 4). Arnaud and Mills point out (2012, p. 453) that the research on the interface created by collaborating firms has not shed light on “the relationships between operational-level employees, and how these are manifested and sustained at a microinteractional level at the interfirm interface.”

Overall, the section of the review that looked at interagency interface literature located articles that specifically examined interagency or multi-organisational interface during disasters (Garnett & Kouzmin 2009; Janssen et al. 2010; Prizzia & Helfand 2001). With significant disaster events such as devastating earthquakes, responders are often faced with the challenge of working in physical surroundings with substantial communication problems (Eriksson 2009; Garnett & Kouzmin 2009; Garnett & Kouzmin 2007; Janssen et al. 2009; Kapucu 2005, Larson, Metzger & Cahn 2006; McLean et al 2012; Steelman & McCaffrey 2013).

The review located a range of studies on crisis communication in natural disasters. Some focused on technology, its availability, and use due to the impact of the disaster (Garnett & Kouzmin 2009; Stephan 2007). Others addressed effectiveness and efficiency (Slepski 2007; Yang et al. 2009) and were focused on internal communication and cooperation rather than the wider interface of crisis communication and management of vulnerable populations in a disaster across the sector.

#### *Communication and vulnerable communities*

The criteria that define vulnerable people or populations is debatable and a consistent definition appears somewhat elusive in the literature (Rouf 2004). The terms “vulnerable people” and “natural disasters” yielded articles focused on vulnerabilities during disasters, which impacted on infrastructure areas such as technology, roads, and housing, and how this impeded the disaster response (Bennet 2010; Garnett & Kouzmin 2009; Janssen et al. 2010; Kang et al. 2012; Stephan 2007). Articles were located that focused on the health care and/or social needs of different vulnerable groups such as elderly, children, disabled, those

in abusive situations, refugees and those living in lower socioeconomic conditions (Bennett 2010; Bethel et al. 2011; Fjord 2010; Goldstraw et al 2012; Rouf 2004; Sinclair 2014; Sugimoto et al. 2012; Tyler & Singh 2011; Zakour & Gillespie 1998). A contrast can be seen in Fjord's (2010, p. 13) description of vulnerable people as "certain sorts of people, grouped by their lack of particular physical, emotional, cognitive or social resources...", while Bennett (2010, p. 110) defines vulnerable populations as "individuals with a disability, individuals 65 years or older; and individuals with a combination of the two."

The term "vulnerable" was viewed by some researchers as categorising groups in a labelling or paternalistic sense (Fjord 2010, Rouf 2004). However, the terms "vulnerable people" and "vulnerable populations" are used throughout numerous disaster research articles (Bethel et al 2011; Bennet 2010; Klaiman et al. 2010; Garnett & Kouzmin 2009; Missildine et al. 2009; Paton & Johnston 2001; Pekovic, Seff, & Rothman 2007; Rouf 2004), though no set definition is used consistently by researchers. The term is mentioned extensively in local, national and international disaster response or preparedness guidelines (CDHB 2011; McLean et al. 2012; MOH 2008; UNISDR, 2013; World Bank 2013) and was also made use of in the Canterbury earthquakes as the health sector formed an IERT to respond to the needs of vulnerable people.

A helpful definition also developed by Flaskerud and Winslow and cited within several articles defines vulnerable populations as "social groups who have an increased relative risk or susceptibility to adverse health outcomes (Missildine et al. 2009, p.5 16; Rouf 2004, p. 419)." Vulnerable people not only have special needs that compromise their functionality in some way, but they may also need specialist care and may rely on specialist agencies to meet these needs. In times of disaster these groups may not be able to access their normal support networks or their needs may be much greater than what is able to be actioned through the support agencies working in a large scale disaster event (CDHB 2011). For example, some of the Aged Residential Care (ARC) facilities had liquefaction irretrievably damage their facilities requiring immediate evacuation. A significant portion of the patient notes were also damaged, which impacted on communication to families and next of kin, and communication issues occurred when transporting vulnerable people to different sites before evacuation. For the purposes of the review, the researcher based the review on WHO's definition of vulnerable people as groups or populations at increased risk impacted by disasters and unable to access their normal supports or care.

The majority of the articles that covered relocation or evacuation of vulnerable people were situated around major disaster events such as Hurricane Katrina, Gustav and Sandy (Danna et al. 2009; Missildine et al. 2009; Pekovic et al. 2007; Teperman 2013), Cyclone Yasi in Queensland (Woods et al. 2011) and on the earthquakes in both Japan (Sugimoto et al. 2011) and China (Kang et al. 2012). Studies of Hurricane Katrina, which killed over 1000 people, were particularly common. In this disaster, communication capability was destroyed, vulnerable people were badly affected and the storm forced the evacuation of many residents (Pekovic et al. 2007; Stephan 2007). In the 2010-11 Canterbury earthquakes, evacuations of vulnerable people occurred (Goldstraw et al. 2012) including the elderly, neonates, intensive care patients, and people with disabilities. Very similar processes occurred for those in New Orleans. In Christchurch there was a need to also evacuate those on dialysis because of the danger the sudden contraindicated chlorination of water would have on their care in the community, as well as the high need for equipment to provide ongoing renal dialysis to many crush injury victims in the hospital, due to the effects of nephrotoxic metabolites which were released into the blood stream on rescue (Ardagh et al. 2012).

Teperman's (2013) article on Hurricane Sandy and its impact on New York City found that three hospitals were evacuated, and 29 ARC facilities were heavily flooded requiring over 4000 hospital and 1500 rest home residents to be subsequently evacuated when the storm hit. Teperman described similar evacuation methods and disaster response issues around communication as those experienced in the Christchurch event. In this event, patients had to be transported down flights of stairs due to elevators potentially flooding and ambulances assisted in transferring patients to different facilities throughout the city in a similar process to what occurred in Canterbury. Staff then assisted with settling in the transferred patients before moving others. There were challenges with communication at some of these facilities and no medical records available because of the power outages. Information packs had to be created for each patient containing clinical information, care plans and medications (Temperman 2013). Similar issues around sewage also occurred and decommissioned wards were reopened for use of the patients in a comparable fashion to what occurred in Christchurch. Issues with back up power were also experienced from flooding, whereas Christchurch Hospitals was through damage from the earthquakes. Unlike Christchurch a special medical shelters was set up for patients who were medically vulnerable with high health needs, whereas Christchurch had shelters for the community and those vulnerable were triaged to either be evacuated or into temporary care.

These articles outline communication constraints akin to the Christchurch event such as loss of medical records, telecommunication disruptions, loss of power, and tracking of relocated vulnerable people and their families. Similar experiences to the Christchurch event were also evidenced in these disasters such as lack of access to appropriate toilets, showers and privacy of evacuees.

### **Discussion**

The aim of this review was to examine IERT communication in disaster at the micro level, especially in relation to vulnerable people. Throughout the articles key themes emerged that were significant to this review and included the importance of understanding the needs of vulnerable people (Goldstraw et al. 2012, Rouf 2004); sound across-sector communication and the importance of relationships (Goldstraw et al. 2012; Zakour & Gillespie 1998); the relevance of ensuring vulnerable people are included in national as well as local emergency response plans (Bennett 2010); and understanding the impact these events can have on vulnerable people (Goldstraw et al. 2012; Sugimoto et al. 2011) especially in relation to disaster preparedness (Bethel et al. 2011; Curry 2011) and the impact disasters can have on the health of vulnerable people. In Hurricanes Katrina and Sandy the vulnerable were acutely affected by the disaster and the communication varied hugely in both events. IERTs working in disaster must collaborate and communicate with interactants from multiple agencies when responding to the needs of vulnerable people, yet very little is known on the micro level communication that exists between these teams. Missildine et al. (2009, p. 516) states that "there is a gap in the literature in the emerging area of disaster response, especially from the perspective of the most vulnerable-the medical special needs evacuee" and outlined the importance for vulnerable people to be part of a planning process where their needs can be registered in the event of a disaster. With Williams' (2011) recommendation to focus on a specific event such as Canterbury, learning from all involved in this response combined with examining the micro level of collaboration that occurred may add further to our understanding of how communication in disasters can be more effective.

### **Conclusion**

While there are useful studies on interagency communication or on multi-system teams in disasters, most of the research located in this and other reviews was focused at the macro level of each organisation. There is a dearth of studies on earthquake response management, particularly in relation to the management of vulnerable populations that addresses the micro-dynamics of interagency collaboration. Those studies located that do address micro processes (i.e., interpersonal communication) did not address disaster response management. The literature is remarkably silent about what sorts of interpersonal communication practices stabilise team processes and how agencies can ensure their members are skilled in contributing constructively to ensure the effective functioning of the interagency processes associated with these teams. The review therefore concludes that there is a significant opportunity for researchers to employ the microanalysis approaches evident in the non-disaster organisational studies literature to the study of disaster responses.

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