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Systems, science, and populations

Effective early mental health intervention following mass trauma: the roles of government, clinicians, and communities

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Introduction

This paper discusses three main themes that need to be addressed for effective early intervention.

The first is *the examination, through a systems analysis*, of the factors that may impact on mental health through formal and informal organizational activity and behaviors, in the prevention, preparation, response, and recovery to disasters and terrorism.

These systems may be vehicles to support positive mental health outcomes, or may contribute to vulnerability; the identification and mobilization of these are critical for early intervention and more specifically for good mental health outcomes. Such factors may far outweigh the efforts of individual clinicians and specialist mental health programs, despite their valuable contributions overall.

The second is a more *thorough examination of the science of early intervention*, its conceptualization and current scientific underpinnings and rationale, and the necessary components of an effective early intervention strategy to inform the mental health response to mass emergencies.

Thirdly, it will draw *together these elements in a template for the delivery of "early intervention."* This review will highlight the significant further work that is needed to both build the scientific base and to translate it into real world policy and services for affected populations. This requires government and organizational support to lead to the delivery of effective early intervention across the range of potential disaster and terrorism scenarios.

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Systems and early intervention

There is a growing interest in systems and complex systems – systems in fields as diverse as molecular biology, information systems, emergency and the military organizations, health care systems, and many others. While the theory of complex systems is outside the scope of this paper, several themes it encompasses are relevant; for instance, the interest in collective patterns of behavior, the different observational processes that may describe a system, and the evolution of systems over time and their responses to challenge or threat (see New England Complex Systems Institute and Commonwealth Scientific and Industrial Research Organisation.) There are interacting systems, and more or less formal complex systems that evolve in response to challenges such as disaster or terrorism. The field of disaster prevention, preparation, response, and recovery needs to be better informed by systems analysis, including from societal, human behavior, and mental health points of view. Consideration of such issues is very relevant to a field where there are any of the following: high levels of demand and uncertainty; rapid change; disruptions of social and institutional functioning; high and unknown levels of ongoing threat; death and destruction; a vast spectrum of potential harms to those who may be vulnerable; and, by definition, there is a potentially overwhelming challenge to the resource base which is called upon to respond.

The *relevance of systems for early intervention* relates to the potential goals for early mental health interventions. These are, as highlighted by many important contributors to this field (Litz, 2004; Ritchie *et al.*, 2006), to lessen morbidity that might otherwise occur as a consequence of exposure to the diverse stressors affecting populations and individuals. Such outcomes have been well summarized by Norris in her critical reviews of disaster research findings (Norris *et al.*, 2002a, 2002b). The potential diversity of health, mental health, and other outcomes following terrorist incidents is also increasingly reported; as revealed for instance in Neria *et al.*'s (2006) compendium of research into, and program response to, September 11. What is clear from all this work is that some populations and some individuals are more vulnerable than others because of their nature, their genes, their history, and their experience during and after the incident; equally, some are more resilient than others.

The critical significance of *contexts and related systems*, both social and geographical, is highlighted by findings about the variable outcomes of different communities following trauma exposures (Kawachi and Subramanian, 2006). Social capital is one such community-level system variable that contributes to how well a community responds to trauma: it is protective where there are good pre-existing community organizations and social networks, or it may increase vulnerability where there is less functional organization with little

resilience. It is also clear that impacts may appear over a prolonged period or be delayed; that there may be impacts far from the site of disaster; that there may be "ripple effects" across populations; that there may be a "contagion" of distress and indeed strengths, particularly between children and parents, within the complex systems of diverse families, and through communities, organizations, collectives, and crowds. It is also apparent that there are dominating themes of goodwill, of regret, grief, anger, of hope, and compassionate humanity; and all this is likely even in the face of horrendous impact – be it through natural forces such as the Southeast Asian tsunami, or malevolent attack as with September 11.

Systems will be impacted by such catastrophe and systems will respond. Understanding and influencing these systems are essential for an effective mental health response to terrorism and disaster, and for early intervention.

The systems for disaster and terrorism prevention, preparation response, and recovery strategies

"Developed" countries have significant and indeed multiple *formal organizational systems of response*. In addition there are "*spontaneous*," *non-formal* groups which may evolve into organizations of action and advocacy. Government and non-government systems are involved, as well as private sector businesses and industry. In developing regions there may be fewer formalized disaster-specific organizations, possibly because survival priorities take precedence over resources for sporadic, even if potentially devastating, events. In international settings, as exemplified by the response to the Southeast Asian tsunami, the United Nations, the United Nations Children's Fund UNICEF, International Red Cross and Red Crescent and the World Health Organization, and many other groups, particularly major aid organizations and other non-govermental orgenizations (NGOs), are prominent response systems and have important roles in partnership with the leadership of affected nations and communities. For instance, over 200 NGOs were registered in Aceh in the aftermath of the tsunami. There is frequently the aim to build capacity in the longer term, as well as to respond optimally to the current episode.

Where repeated natural disasters occur, for instance hurricanes in the USA, bushfires in Australia, floods in Europe, earthquakes, and land slides, a "*disaster culture*" builds, with *belief systems* about what will happen and what can or cannot be done to deal with these threats. Such a belief system may influence the capacity of systems to respond, or lead to beliefs that the problem has been fixed. Impacts may be increased by a failure of preparation, greater "shock," anger, attributions, and poor resources for response, as systems are not ready, leading to delayed reaction times. Mental health outcomes may be worse in such circumstances. Or there simply may not be recognition of the potential for such overwhelming catastrophe, as with the tsunami, the Pakistan earthquake and Hurricane Katrina. A greater focus on prevention and preparedness

systems has been developed with respect to terrorist attacks, especially in countries where these had not been to the fore previously, e.g., USA, Australia. If there is not adequate and formalized preparation activity through systems developed for such purposes, then each group involved may act in a silo, untouched by its requirements for complex interfaces with other responder systems. Without preparation and collaboration, it will be difficult to implement early intervention.

There are the issues that surround disasters in any setting – *the convergence of response systems*. These range from traditional emergency sector providers such as police, fire, ambulance and health sectors, as well as defense/military, to the broader community, and many other organizations who believe they can contribute. While formal emergency response systems may be practiced in collaborative focussed effort, others may not. There is enormous diversity among individuals and groups wanting to help, to be there, and to make things better. Affected populations are most likely themselves to be in the first line of response, and actively involved in the matters of their own recovery. Informal responders may spontaneously organize themselves into an "emergency organization." Some may make up longer term groups focussed on "recovery organization."

These diverse formal and informal systems may add to the chaos, with potential for further disruptions that can unintentionally interfere with effective response. Critical for these multiple systems of acute and longer term response are the issues of governance, decision-making processes, roles and responsibilities, and the degree to which they are prepared for the range of catastrophes that may arise. Key systems variables identified more broadly by theorists in this field include system domains or elements; flexible repertoires of response; interfaces/interactive capacities with other systems; and thresholds of challenge/threat which, when approached or exceeded, *may "tip" organizational systems into more negative functional repertoires* from which recovery may be difficult. In response to specific challenges, systems may mobilize a repertoire of appropriate actions that lead to a new "regime" of stability and functioning. The system survives, evolves and develops for positive future identity: when negative thresholds are tipped, the system may be neither efficient nor effective, and its survival may not be of value.

Planning systems for terrorism and disaster

Governance and co-ordination will be key elements, particularly for pluralistic societies. In the emergency, it is likely that government agencies will be responsible for control, containment, and acute response, but this overarching management becomes more diffuse as time elapses. The degree to which co-ordination occurs, engaging affected communities, may be central to recovery trajectories. This is a challenge for mental health, particularly if there is

a wish to implement early intervention. There will be a need to define what it will involve, its potential benefits, who can provide it and who should receive it as a priority, and to negotiate how it will be encompassed by these systems and their processes, from the earliest stages.

The *World Health Organization* (WHO) in its guidelines for the disaster planning for mental health has provided a template linked to mental health systems more broadly, identified as the WHO AIMS-E, E for Emergency (Assessment Instrument for Mental Health Services, see WHO Kobe Centre, 2005). It emphasizes the importance of two levels of planning and their necessary co-ordinating processes and governance. These two levels are a *preparation plan* for readiness, and a *response plan* geared to shape the response to a particular incident or incidents. For mental health, there are many key stakeholders within health and welfare systems who may be engaged in such planning. The World Health Organization acknowledges that both psychosocial and mental health interventions may contribute to positive mental health outcomes. Multiple other systems may impact positively or adversely. The degree to which an emergency response saves lives and lessens injury rates is likely, as a consequence, to lessen the impact on mental health of tragedies such as deaths, losses, and injuries. Defense, police, and fire services are also complex systems of response that interface with mental health. The media, political systems, and information systems may be powerfully influential. Furthermore "trauma," and "psychological trauma" are popular causes and many agencies that are not specialized mental health providers may believe that they have something to offer. This is aside from the more complex motivations to respond felt by individuals (e.g., facing one's own fear of death, triumph of survival) or organizations (e.g., profile, rationale for existence, "doing good"). Additionally, there are the mental health needs of these formal and informal responders and systems, in terms of the impact of the catastrophe on them and their preparation for, and response to, it.

Even looking at the international response, many formal organizations, including WHO, hold a brief for response in emergency (van Ommeren *et al.*, 2005); for example, the International Red Cross and Red Crescent Societies; the United Nations, UNICEF, International refugee and humanitarian groups, Médicins Sans Frontières, diverse NGOs, and among others more recently the World Psychiatric Association. Then affected countries have their own organizations. Each of these organizations will have specific and more general contributions to make, but unless there are opportunities for collective understanding and knowledge within and across these complex political and social systems, there may be little potential for effective early intervention. Furthermore, the challenge is to ensure coherent and scientifically informed responses, that are culturally appropriate and adaptable to local systems for intervention (including primary care and indigenous healing), and that are effective and do no harm.

In the USA there are organizations such as FEMA (Federal Emergency Management Agency), the American Red Cross (Weaver *et al.*, 2000), US Department of Defense, and Centers for Disease Control, to name a few. Specialized mental health groups include the American Psychiatric Association Disaster Response Committee, the Disaster Response Network of the American Psychological Association, and the All Hazards Disaster Planning Group of the National Association of State Mental Health Program Directors; there are also professional groups such as the National Association of Social Workers and no doubt many others, including for instance crime victims groups and veterans associations. There are also many NGOs, and many faith-based groups with strong pastoral care as well as disaster response commitments. How these and other key groups are governed, tasked, and co-ordinated for a mental health response either broadly or specifically for early intervention is not clear, at least to someone who is not a US citizen. Nor is it clear who has which role, what sanctions exist for their organization to provide mental health care, and of course the whole issue of financing in public and private sector managed health care systems.

The USA, as Australia, has very *complex state and federal systems*; jurisdictions of "ownership"; legislative responsibilities; accountabilities; as well as the interaction of such systems. While a *whole-of-government* response is often the ideal, it is very difficult to achieve. These complex systems, with diverse motivations, governance and decision-making, have many components, are dynamically interacting, and give rise to a number of levels at which they may variably operate. The most likely time of co-operative action is in the acute emergency, for such is a "life/death" time. This time and the immediate aftermath have collectively been called the "honeymoon phase," in terms of affiliation and altruistic behaviors, goodwill, collaboration, and intense reparative responses (e.g., political promises). Next the ongoing realities beyond survival come to the fore, such as the loss, destruction, the financial costs of the disaster and who will foot the bill. At this point, bitterness, anger, grief and bureaucratic requirements may overwhelm co-ordination and collaboration, adding stressor components related to both the aftermath and the systems' response to it, i.e., the phase of "disillusionment." Such a chronic phase may move to recovery, and regeneration systems, or tip actions over a negative threshold into a "second" disaster.

The US Department of Health and Human Services through Substance Abuse and Mental Health Services Administration (SAMHSA) and its Center for Mental Health Services (CMS) has provided *Mental Health All Hazards Disaster Planning Guidelines* (US Department of Health and Human Services, 2003) for state and local planners. It emphasizes the importance of preparation and planning beforehand, and integrating this with other response agencies. It also describes systems involved and the importance of engaging with these, "Ideal plans identify a clear decision making structure and articulate the

authority of each plan participant" (p. 13). Those who should be involved are delineated within their systems, as is the need for *response logistics*, such as *mobilization capacity* and *deployment strategies*. Basic elements are outlined, including the organization and assignment of responsibilities in times of emergencies (e.g., relation to FEMA, State Emergency Management Agency (SEMA), SAMHSA/CMS and so forth). As well there is delineation of necessary administration, record keeping, logistics, and the management of volunteers. The content deals with formalizing needs assessment – for instance, the numbers of dead and injured, homes destroyed, priorities for service, and monitoring changing needs overtime, and the administrative and legal instruments that support the plan's implementation. Specific issues also addressed in context include communication, public information, identification of roles and responsibilities, mobilization in relation to mental health system priorities, mass casualties, evacuation, health and medical systems, and resource management. Quite specific issues are also identified in this all hazards approach, including terrorism, continuity for the ongoing functioning of mental health systems, and links to other organizations, public, private, academic, business, and so forth.

There is also the need for additional components of guidance such as *standard operating procedures*. This useful volume also carries the template for a plan (pp. A1–A9). Nevertheless, as in most systems, disaster plans for mental health may not be adequately exercised with other emergency and recovery systems, may not inform response in the real world, or may not even be known to, and owned by, those required to implement them. It is frequently the case that mental health may not have the same level of priority for all those involved in planning and response. Nor is it always clear whether a national plan for mental health response exists. Early intervention is not a specific priority in this plan, and neither are the education, training, and accreditation of potential providers for such an early intervention response capacity, or indeed clear sanctions for implementation.

Response systems for terrorism and disaster

The "readiness" for response, delineated above, may be variably tuned to the extent and nature of particular catastrophes. Since September 11, 2001 the repertoire of potential scenarios has been greatly increased, with *preparations to prevent, or counter, a wide range of terrorist events* – from bombing of transport, such as in Madrid or London, to potential hostage and siege situations such as Beslan, and the possibility of "dirty bombs," and bioterrorism. Enormous investments have been made to develop health protection systems, to increase security, and to exercise counter-terrorism strategies. Each emergency and counter-terrorism system has delineated responsibilities both for those it would protect, and for its personnel. While it might be recognized that *natural*

disasters may also have catastrophic impacts, there tends to be a belief that these can more readily be managed by existing disaster response systems even though this has recently been challenged by events such as Katrina and the Southeast Asian tsunami.

Mental-health-related issues have been identified as priorities by many response systems, because of both demonstrated long-term consequences and the high levels of anxiety generated by some scenarios, with the potential to block resource systems, for instance triage, health and emergency systems, communication, and other critical infrastructures. *Sustaining the effectiveness of response personnel* in the shorter and longer term and protecting their health and mental health are system requirements. Challenges exist with such dynamically interacting multicomponent systems operating at a number of levels, so that while mental health is a recognized need, as is dealing with such issues "early," the demands for effective operations take precedence.

Strategies required are those that would *enhance positive mental health as opposed to increasing morbidity-oriented trajectories.* Mental health systems have long existed in relative isolation. Despite the emerging demands of the broader medical interfaces, generic knowledge and skills to protect mental health have not been systematically built into responding emergency systems. The longer term recovery systems have close interfaces with social domains, health care systems, welfare, and familiarity with mental health systems and services. Strategies to promote early intervention may be more readily adopted in these latter contexts when there are knowledge and skills in other responding systems.

"Institutional" systems may have complex, multiple components and levels of functioning that may be affected by any catastrophe. The degree to which these infrastructures are damaged, how they respond to the incident and throughout this period, and the services they put in place for their populations can be vital for mental health protection, and for early intervention. Their institutionalized systems need to adapt in the face of threat or disaster in such a way as to achieve their goals and responsibilities with respect to the communities they serve. For example, strong leadership, support, and the valuing and engaging of staff and user populations can all be deployed in active steps to return to effective functioning and achieve business continuity.

Organizational systems may provide their members and stakeholders with prevention or early intervention programs to deal with the impacts of a catastrophe, mobilizing an effective mental health strategy as part of the emergency and recovery process for its members or in some instances its client populations. This can be seen in some common systems likely to be affected by major community catastrophe; for example business, schools, emergency response systems, health care systems, media, information and communication.

Systems supporting protection of mental health

Core themes of systems that are likely to be *more positive or protective for the mental health* of members and those with whom they engage include:

- compassionate and effective leadership;
- forward preparation and planning for emergency response and exercising of such plans;
- engagement with, valuing of, and responsiveness to members and external stakeholders;
- the capacity to respond to challenge and emergency in systematic, effective ways that are nevertheless flexible and responsive to unanticipated threats and changing demand;
- the capacity for appropriate, knowledgeable, and flexible interaction with other relevant "external" systems with which they interface in the emergency and aftermath;
- effective mental health capacity-building systems for "looking after" the wellbeing including the mental health of their members, from leaders and high level managers to workers at the coal face, informed by the best available scientific expertise;
- systems of communication and information sharing that support response and provide for the needs of members and stakeholders;
- systems of acknowledging achievement and need;
- learning cycles and cultures of evaluation and building for the future.

Potentially traumatogenic systems

Potentially traumatogenic systems include:

- Systems that lack effective and compassionate leadership
- Systems that do not have clear lines of responsibility and accountability
- Systems that lack clear command, decision-making and appropriately consultative governance
- Systems that have not prepared, planned and exercised for potential catastrophes
- Systems which do not interact well with other relevant systems
- Systems which favor bullying, negative management strategies
- Systems which do not educate their members, and do not adequately inform and communicate with them about what is happening and what they will need to do
- Systems which have cultures of blame, and scapegoating rather than evaluation, learning, accountability, and improving future response
- Systems which are inflexible, resistant to challenge and change and cannot adapt to emerging needs
- Systems which do not value either their workers and members, or their clients, except in commercial or output terms

- Systems that do not provide for their mental health and wellbeing and cannot balance these requirements with growth, system recognition of members' achievements and of the contributions of all.

Systems may respond in ways which further traumatize workers and clients, by additional stressors related to system dysfunction or failure, abandonment or blame. Systems that demonstrate greater levels of deficits are more likely to be "traumatogenic" in the broad sense and contribute to greater vulnerability of members and possibly clients. This will challenge the resilience of those with whom there are interactions, and possibly lessen opportunity for effective early intervention.

System engagement

Many systems can contribute positively to the field of early intervention and some of these things are exemplified but not limited to the systems identified below.

Business

Well prepared business systems have leadership, plans for prevention and response, and strategies for business continuity and recovery. There are Employee Assistance Programs (EAP) or the like to meet the needs of workers, ranging from personal and family support, psychological first aid through to early intervention, treatment, and rehabilitation. As well businesses may provide support programs to their communities.

School systems

Schools have a primary commitment to the needs of children and their families, and their own staff. Effective plans, strong leadership, and rapid return to functioning for the benefit of students will all contribute to wellbeing. In addition early intervention system programs may be provided to staff to assist recovery from adverse impacts. Schools provide a valuable framework for specific early intervention programs for children and families from the communities they serve. It is estimated that schools are likely to reach up to 70%–80% of people in a given community; they may serve as a community focus and have authority with respect to their mission with children and families.

Emergency response systems

Emergency response systems such as police, fire and ambulance, as well as defense, have goals for management, response, and sustaining functioning and operational goals. Building the mental health aspects of occupational health and safety systems has been a major goal of many such systems, commencing with programs such as the Critical Incident Stress Debriefing (CISD) movement and with roles for chaplains, counselors and peer support