

The changing face of disaster management: implications for healthcare providers in the Pacific Islands

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The Post-Cold War era brought new challenges and new conflicts to the modern world. These took the form of what is now commonly referred to as "complex emergencies," characterized by internal nation-state wars, high levels of violence and civilian loss of life, the destruction of essential national infrastructure, and the competition of ethnic and religious groups for limited natural resources.¹ From within, these nation-states ceased to function and resulted in the massive migration of political refugees fleeing persecution. Complex emergencies are also referred to as *catastrophic public health emergencies* for the severe health consequences they have produced, not only within the national borders but also transnational and regional.^{1,3}

Health care providers are usually invisible participants in traditional disaster management, staying content to deal with the medical consequences of the event. However, in complex emergencies, out of necessity, health care providers became major spoke persons and stakeholders in professional activities and political attempts to bring order to chaos. By defining the limits of human tolerance for war and conflict, healthcare professionals moved from silent participants to major peace builders. The disaster medicine literature is replete with documentation of multi-sectoral programs practitioners of health initiated to stave off the continuing threats on the survival and security of existing basic public health care systems. In the new lexicon of disaster management there are terms such as "days of tranquility" and "zones of peace" referring to special cease-

fires and conflict-free regions negotiated between warring factions and health practitioners.^{4,6} This allows basic immunizations and health surveillance for polio, measles and neonatal tetanus to continue for vulnerable populations caught up in the war. Similar efforts by healthcare providers were directed on sustaining basic food, water, shelter, and sanitation. In each instance a major public health requirement was in jeopardy of collapse or extinction. As noble as these efforts were, they were rarely recognized for the Sisyphean-like desperation they represent. Many were only band-aid efforts waiting for a political solution.

It took almost a decade for world leaders to recognize that the United Nations Security Council interventions, needed to quell these conflicts, must be human rights based with the ultimate duty to provide assistance to those with the right to receive it. Currently the right to health, as a human right, serves to guide intervention programs and projects implemented by relief agencies. In this regard, healthcare providers actively participated in the education, political debate, and negotiations of the international leadership process that ultimately led to cessation of many conflicts.

The epidemiological characteristics of complex emergencies also revealed the inextricable interdependence of politics, populations, the environment, and economies in these disastrous events.^{2,7} This type of thinking led many to see public health survival as a major goal and to include, as sacrosanct, the security of basic health infrastructure and the moral integrity and capacity of governments to protect it. World leaders began to recognize the critical status of public health in political debate. In the United States, the Presidential Decision Directive on the management of complex emergencies cites the "health of a nation" as the most valued benchmark and indicator-measure in determining whether intervention with humanitarian assistance is both effective and successful.⁸ Furthermore, disaster managers and health care providers expanded their knowledge base to include in their definition of "public health" issues of integrated management, transportation, logistics, communications, negotiation and mediation, security, and international law.¹ As a result, all disasters (natural, technologic, and human-generated) are appreciated in the same manner

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and are now commonly defined by a governments' public health capacity and capabilities and the vulnerabilities and weaknesses, in that governance, that the disaster exposes. In a word, disasters keep a government honest in terms of its capacity to protect the human welfare of its citizens. Indeed, among the few but noteworthy factors that bring warring factions to the peace table is the "public health" argument that openly reveals the catastrophic consequences and risk of non-recovery if conflict were to continue.

The influence of complex emergencies on disaster management in general has been great. On the one hand, those dealing with health care and disaster research have a greater appreciation for the fragile interaction between individual host, environment, public health infrastructure and infectious and noninfectious agents capable of producing diseases or illness. On the other hand, inability or unwillingness to provide equal attention to the complex social, political, economic and environmental factors that led to the disaster in the first place, and influence the manner in which the population responds to assistance, can ultimately lead to failure. The consequences of these relationships, including real and potential vulnerability of populations, have become the *critical indicators* of security for a nation and its people.

Security itself has become a "buzzword" in disaster management. Reference to "food security, "population and human security" and "environmental security" are commonplace. Environmental security refers to "changes and threats to the environment that present the potential for both instability and cooperation throughout a region."^{9,10} Various indicators of security are factored into modern vulnerability and sustainability analyses, which have become a standard tools performed regionally and nationally by professional disaster managers. From these analyses, disaster policies, plans and legislation emerge and prevention and preparedness initiatives are supposed to anticipate and correct any deficiencies. Whether this ever occurs depends increasingly on political priorities, economics and the triage of resources. Uncomfortable as it might be, essential funding for disaster management and prevention by international donors depends both on perceived risk, as seen by responses to the 9/11 tragedy, and the economic interdependence of governments involved in finding a solution.

What has a decade of complex emergencies taught us? First, complex emergencies fit no one mold. They are best defined by the complexity of multiple contributing factors that undermine the sustainability of livelihood of populations. This seems to be more common with populations' increases, environmental insults, and economic failures. Similarities with complex emergencies exist. I find it more than coincidental that Leo Falcam, as President of the Federated

States of Micronesia would cite, in an International Herald Tribune article of August 2001, that the Tulavu government has asked that the entire population, numbering over 10,000, be accepted as "environmental refugees" in New Zealand and Australia to escape the sinking of their island to global warming and rising waters. He warns that other islands are equally vulnerable to "extinction" and that this event serves notice to the rest of the planet of the severity of such neglect.¹¹ In many respects, island-based disasters can be seen as complex emergencies characterized by similar public health consequences, attributed to both environmental as well as political factors.

Clearly, self-serving political factors are a major contributor to complex emergencies of the 1990s. In island-based disasters, environmental causations are primary. It is also valid to assume that the human hand plays a major role in all disasters, and that the lack of political awareness, education, motivation and will in recognizing the influence the environmental plays in causation defines the limitations of most governments to appropriately respond. Indicators

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of risk, specific to the uniqueness of island-based disasters, have emerged. For example, dengue fever, recently cited by *The Economist* as a major and sensitive indicator of infrastructure decay,¹² has spread throughout the Pacific Islands.¹³ The availability and

quality of South Pacific health indicators vary considerably within the region. These indicators represent a wide range of variables that define the vulnerability of that specific county or territory and the specific risk it provokes, depending on the nature and impact of the disaster. These indicators provide the data bank required for decision-making at multiple levels.

Public Health Surveillance Programs provides for the systemic collection, analysis, interpretation and dissemination of data.¹⁴ To be successful data gathering and analysis must be a two way street. It must have support from healthcare providers and others at the community level to ensure compliance and accuracy, but also includes the timely, multidimensional and integrated assessment of data that sensitively and specifically defines the risk, impact and recovery, no matter what the emergency or disaster might be. By understanding the true impact of these indicators on a society, intelligent and moral decisions can be made.^{14,15} Such surveillance concepts support initiatives such as the "Healthy Islands" integrated approach that effectively mobilize communities, both urban and rural, around health protection projects that are multi-sectoral and respectful of cultural characteristics.¹⁶

Unfortunately, often in the political process health indicators take a back seat to other indicators such as economic

ones. The manner in which health indicators are dependent on or better reflect the real health of a nation is poorly understood by most decision-makers. The process that allows healthcare providers to become engaged as effective decision-makers starts with reliable and timely indicators that speak volumes in defining the disaster impact. Whether such decision-making will influence the existing political process depends on the ability of the health care providers, and the health system, to actively participate, interpret, articulate, and advocate for the greater public health. As with complex emergencies, an expanded definition of the public health will likely occur. A multi-sectoral definition would be one that reflects the uniqueness of the cultural and epidemiological nuances of the Pacific Basin, and be country, territory, and disaster specific.

The science of disasters recognizes the uniqueness of island-based disasters. This is not to say that the science has accurately defined the threats, the indicators, or the requirements to respond. The study and understanding of island-based disasters, and the uniqueness of them, remains a frontier in disaster management, one that has not, to date, found itself high on the agendas of major national and international disaster conferences. Much needs to be done. Increasingly, advances in the science of disasters provide for a greater knowledge base to work from in solving problems. In most natural, technological and human-generated disasters, the science has translated into more efficient responses, improved funding, and declining mortality and morbidity indicators. However, to reach this point in complex environmental disasters takes much research, education and training and a multi-sectoral commitment not seen in other disaster settings.

The history of complex emergencies has taught valuable lessons in disaster management. No one professional group has had more impact on mitigating the consequences of complex emergencies than health practitioners. As was seen this last decade in the humanitarian response to complex emergencies, there is an inherent generosity in the human spirit. Whether similar emotion will ever apply to the land of the Pacific Basin nations remains to be seen. In order to make informed and pragmatic decisions for the benefit of the people of the Pacific Islands health care providers need to build a more informed decision-making capacity through public health and epidemiological tools available to them. This expansion of the health mandate is consistent with the "guardianship" concept of island resources.¹⁷ I suggest that steps leading to a solution can be found in the evolution of the science and understanding of disaster management of complex emergencies, specifically where health care providers became effective change agents for public health.

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