

The Limits to Our Capacity: The Realities of Community Engagement, Resiliency & Recovery in 21st Century Crises

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When asked, I openly welcomed the invitation to discuss resiliency as it relates to post-disaster and conflict community building. I accepted knowing, despite the fact that I have used this term often in my life (I'm also a psychiatrist), that it is a slippery term that can be misunderstood if not outright abused. I am stating this upfront because it is difficult to find a universal definition of resiliency that satisfies all the disciplines that claim ownership of the term and satisfies the one-definition rule that would measure its impact on individuals, communities and society itself. It has been labeled everything from a metaphor to a theory¹ and some authors, while they include acts of nature, such as hurricanes, floods, and earthquakes in their studies of resiliency exclude mass violence such as wars and terrorism, epidemics and pandemics.

First my biases: I am a clinician and pride myself on speaking from my experienced knowledge-base. I practice international health in war, conflict, and human crises (all of which are major public health emergencies) and played the diplomatic scene for a time, so I have witnessed tests of resiliency at every level. I am also an academician and scientist concerned that we all get the opportunity to read from the same script and understand its content. When it comes to vulnerability and resiliency, its apparent reciprocal, I recognize that not all that might be disclosed to society is being disclosed, especially the best available science and best practices of these threats that impact our well being and that of global health. Governance, and the lack of it, is a more compelling element in determining what is disclosed to the public and what is not. For almost four years now I have served as the Chairman of the National Disaster Life Support Consortium, an American Medical Association program that deliberates and debates on a daily basis how we can better communicate, educate and train our citizenry.

Most disasters are defined by the need for external assistance. The Center for Research on the Epidemiology of Disasters defines a disaster as a "situation (incident) or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance."² Disasters are further identified as natural disasters, human systems failures, and conflict-based disasters.³ Interestingly, the large majority of daily casualty events

common to every society are usually handled well by local emergency medical services resources in both developed and undeveloped countries.⁴ They will receive the usual press coverage at the time but both individual and collective recovery and rehabilitation of the community is the expected outcome. However, there are other categories of disasters such as Hurricane Katrina, the Indian Ocean Tsunami, the Haitian earthquake and its aftermath, and the frequent wars and conflicts that plague and challenge our global communities where outcomes may be quite different. A legitimate question is why are they different and why after the event do deaths (mortality) and injuries and illness (morbidity) continue long after the disastrous incident is over. In the scientific arena we refer to these disasters as ‘public health emergencies’ defined as those that “adversely impact the public health system and/or its protective infrastructure (i.e., water, sanitation, shelter, food, fuel, and health), catalyzing additional direct and indirect consequences to the health of a population.”⁵

Public health emergencies have shown an increased frequency worldwide, often exacerbated by a 21st Century decline in both physical and social public health infrastructure and protections following the onset of natural disasters, human systems failures, and conflict-based disasters. These protections declined because they have not been maintained, were destroyed by the event, purposely denied to certain ethnic, religious, and minority groups (especially during internal wars and conflict that followed the cessation of the Cold War), or failed to keep up with growing population demands, especially in rapidly urbanized conclave where the growing influx of fleeing refugees outstrips the essential resources to protect them.⁵ The recognition of this common thread of public health loss of structural and functional capacity is what identifies a major human catastrophe. A cornerstone of public health preparedness is community resilience; yet community resilience is not possible without strong and sustainable public health protections and a system to guarantee them.⁶

In part, we in medicine are at fault in not communicating effectively to the lay community about possible threats brought about by public health emergencies or the failures to prepare and prevent their occurrence. It is an art form of communication that few seem to do well or relish. The dangerous consequence of this gap plays out when society experiences a major crisis. In general, society and its political decision makers have been reluctant to disclose all that needs to be known about a crisis, either conscientiously ignoring it or giving it out in small increments to their constituents when they feel it is appropriate to do so. Society, more often than not, is simply asked to be “resilient.” Admittedly, there are expectations placed on those responsible for the health of a community, some self imposed, some not. As a first year medical student in 1960, an elderly and seemingly sagacious role model for the University spoke to our impressionable class about our responsibilities to “protect society.” Using a singular example of what we would soon experience with frequent psychiatrically deranged and often dangerous patients presenting late into the night at the emergency departments at local hospitals, that it was our obligation, he stated, to learn to manage them efficiently and rapidly house them on the psychiatric wards. All this he emphatically stressed must be completed well in advance of daylight when society awoke expecting that all was well in their community. That day, as you can imagine, few of us thought of venturing into psychiatry as a career. Admittedly, many of those same scenarios remain today and many decision-makers still consider that their role in

protecting society from the potential ills of the world remains an obligation of their profession or elected office. It is fair to question whether these cultural habits and expectations have actually impeded the development of functional resiliency at many levels and done more harm than good.

Disasters have the uncanny ability to immediately reveal and define the status of public health protections and expose its vulnerabilities.⁷ I say ‘expose’ because no one factor in society has had more success in toppling political regimes and revealing government’s hidden secrets and deficiencies than major natural disasters and other preventable crises. We must answer such questions like why, during Hurricane Katrina, did nearby Mississippi which took a harder hit than New Orleans, recover quicker, more smoothly, and without fanfare.⁸ We still ignore the fact that the hurricane, whilst a natural event, was clearly a preventable human-made disaster produced by a previously known and well documented failure of the walls (levees) that society assumed would protect them. Worse, to date, no one seems to admit that the city of New Orleans is in the wrong place. Skill and competence of a government, or lack thereof, can have profound effects on vulnerability and whatever resilience can be mustered to cope at the final hour, a process called ‘managed resiliency.’⁹ But there is a limit to that capacity. By using the background of what we know and don’t know about modern day disaster experiences, we must attempt to answer questions such as:

- How can we respond to disasters and other human crises with dignity and act in accordance with the lived experience of others;
- In community participation and governance, who is listening; and,
- What technologies and community engagements can benefit communities in a sustainable way?

To help answer these questions, and others, one must drill down deeper in understanding the nuances of crises that impact how vulnerability and resiliency plays itself out.

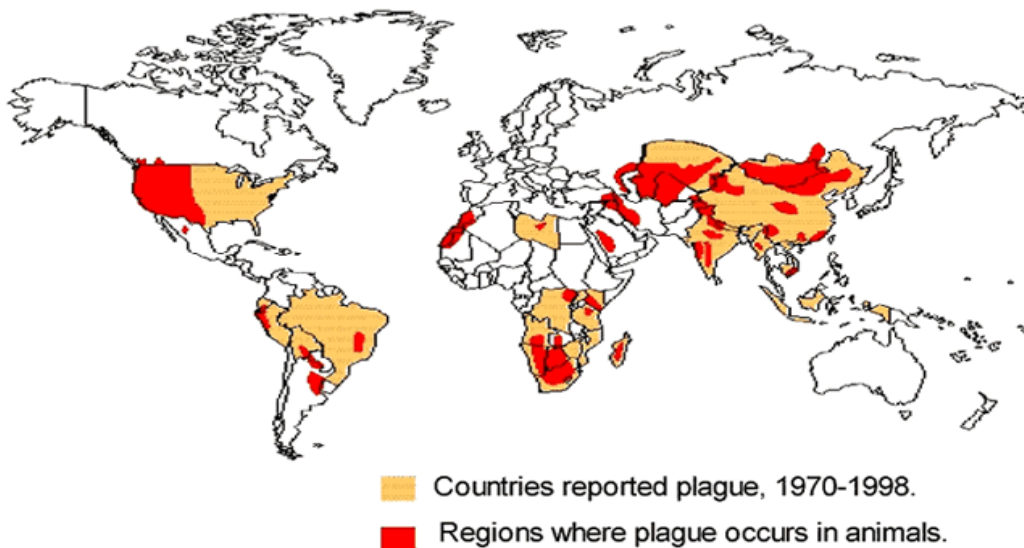
Infectious Disease Disasters

We’ve learned a great deal about human resiliency through infectious disease epidemics and pandemics. The core principles of community management has not differed from the 1950s and 60s when unvaccinated epidemics of measles, polio, German measles, mumps, and outbreaks of bacterial meningitis frequented communities. With the advent of modern day vaccinations and antibiotics, these problems are rarely seen today in the developed world. Every generation since has come to expect and demand these protections.

The first epidemic I had to manage was a major bubonic plague outbreak in a Vietnamese Province population of over 320,000 souls in 1968. Several thousand Vietnamese, mostly children, came down with the disease.¹⁰ Just the presence of the “plague” was so powerful that it stopped the war in its tracks. Literally, nothing moved in the villages; the silence more deafening than the usual weaponry that dominated our daily lives. Fear of the “black death” is part of all human history even in the most primitive of cultures. In September of 1994, the “very rumor of plague” in Surat, India prompted a frenetic exodus from the city of more than 300,000 refugees. Neighboring countries of Pakistan, Bangladesh, Nepal, and China rapidly

closed their borders to both trade and travel from India. The Bombay Stock Exchange plunged and soon other countries began to restrict imports from India and impounded goods in quarantine. Physicians who fled the area were forced to return under a threat of legal prosecution.^{11,12} The Centers for Disease Control and Prevention (CDC) reported that the strain of the plague microorganism was possibly a new strain causing Indian authorities to interpret this information as possibly representing a bioweapon.¹² Looking at the World Distribution Plague figure below,¹³ it may surprise you that every state west of the Mississippi has at least one case a year in animals. Human cases also occur. The difference between Viet Nam (during war) and other developing countries and that of the US is that the CDC, state and local public health departments have adequate surveillance and management systems that keep the disease in check. Whether this disease and many others (e.g., cholera) depend primarily on the strengths and weaknesses of existing public health systems and protections. Other factors, such as poor governance, poverty, lack of education, access to and availability of basic health care, malnutrition, and corruption also determines whether they become simple outbreaks or result in epidemics and pandemics.

World Distribution of Plague, 1998



The experiences of the 2002-03 SARS (Severe Acute Respiratory Syndrome) pandemic were not dissimilar and taught us a great deal about the capacity of community engagement and resiliency. The modern world, with easy air travel worldwide, has made everyone equally prone to the risk of a pandemic, especially that of a highly transmissible virus. SARS originated in Guangdong Province in Southern China where dense human populations live among equally dense populations of farm animals. Once established in metropolitan Hong Kong, it rapidly spread to 37 countries in 10 days. Few countries were prepared.¹⁴

We don't have much information on the SARS in developing countries other than dense populations and close living allowed for rapid transmission of the virus. In the developed world, Ontario Province, and specifically the city of Toronto, experienced the brunt of the SARS outbreak in North America. Resiliency at every level was tested and retested. In a pandemic everyone in a community either has the illness or is susceptible to getting it. Immediate resources must be robust in managing the illness as well as informing and protecting the public who remain at risk. Every decision that is made, medical and otherwise, must first ensure that it will not lead to the unnecessary transmission of the virus. Early in the outbreak, the large majority of people rushing to the emergency departments in the first 10-14 days of the outbreak were, although not exposed, those fearful that they had the illness. Total numbers were never counted but authorities reported that the health system was "inundated"¹⁵ and included emergency medical personnel and others who developed multiple unexplained physical complaints out of fear they had the disease.¹⁶ It taught us the importance of a well informed population as early as possible, one bolstered with clear details of the disease, how it is spread, how to protect oneself, and most of all, knowledge of how individual responsibility is crucial for the well being of the entire community and a sense of resiliency. The safest place was to stay at home, turn on the TV, the radio and the Internet for the latest information and instructions. In every country where SARS struck multiple arrests were made under emergency health care laws to prevent unnecessary transmission through proper quarantine and isolation of those infectious.¹⁷ Every virus and most bacteria will cease to exist if they are prevented from transmitting themselves to a susceptible human host. It is the organisms 'Achilles heel' that has contained epidemics for centuries. Yet, this simple fact of knowledge essential for every community is understood by too few. Where did we fail?

The more rapidly the public health system can mobilize accurate health information systems the earlier the control of any outbreak. The established 1-800-telehealth system in Toronto to handle daily health questions expanded from 2,000 to over 20,000 daily calls during the pandemic.¹⁴ This system proved so successful that it became the first level of triage for all of Canada. Similar telephone systems proved invaluable during the recent H1N1 outbreak in New Zealand, the UK, and China, where in the latter, over 300,000 calls both informed the public and triaged patients to the best facility for their need. Agencies like the Canadian Red Cross had to adapt by outreaching to homes bringing information, medication, food, and protective masks to over 20,000 homes of the most vulnerable, fragile, and isolated of patients.¹⁸ Tragically, only developed countries with good surveillance, communications and social protection systems benefited. Poor countries, especially those where the disease was more likely to have originated, had none of these protections, actively spread the virus and suffered many preventable deaths.

Based on these experiences (SARS, the Plague and the current epidemic of Cholera in Haiti and many others) the World Health Organization (WHO) found that a priority challenge for governments is to *"move fast and decisively to communicate incredibly well to the public."* Resiliency begins with open and honest information, trusting that knowledge-based communication will be the decisive first step in building community engagement, trust, and confidence.

The International Health Regulation Treaty: Finally a Global Solution!

Many major crises will only be solved once the communities of nations recognize they have a global responsibility beyond their own borders. During the SARS pandemic the UN's Assembly of Health Ministers became aware that China was preventing the true status of the epidemic from being known to the outside world. Without an immediate intervention this unknown virus could lead to a worldwide catastrophe. This led the international Assembly of Health Ministers to grant the WHO, based in Geneva, unprecedented emergency powers to actively investigate and assist in controlling the epidemic in all countries where reports of the outbreak occurred. This action which was instrumental in limiting the further global spread of SARS became a permanent International Health Regulation (IHR) Treaty in 2007 and a pivotal model for resiliency at the global level.¹⁹ The IHR Treaty requires compliance from countries to provide real-time surveillance of emerging and reemerging communicable diseases, and provides WHO authority with additional Emergency Response Teams ready to deploy to fragile countries where these resources are lacking. Despite some skepticism, this process works! These forthright global actions and the technological and administrative support they provide less advantaged countries have been instrumental in containing the highly lethal avian influenza as well as the 2009 epidemic of H1N1 from spreading. Confidence (resiliency) has increased greatly in countries which understand the protective impact of the IHR and come to expect its institutionalization within the global community.²⁰

Making Difficult Decisions when Resources are Scarce

While the first principle of medicine for centuries had been 'primum non nocerum' (first do no harm), it is increasingly obvious that in disaster healthcare the first principle should be 'do the most good for the most people with what you have now.' Education includes training in triage techniques that have as their goal of optimizing outcomes when demands exceed resources. The decisions involved in the triage and resource allocation process risk dissatisfaction and fear at many levels. I was a triage officer in a Marine Forward Casualty Receiving Facility in Viet Nam in 1968. I still dwell on many of the 'uncomfortable but real' life-determining decisions I had to make, actions I would never wish on another human being. Yet, in 2005, I participated in a Canadian study assessing a scored triage tool for SARS patients that clinicians would use in deciding who might survive and who would not in situations where lifesaving equipment, like ventilators, were scarce or no longer available. Admittedly it was the first study of its kind.²¹ The clinicians who took part in the anticipated publication of the study clearly understood the gravity of their recommendations and at the last minute experienced cold feet and trepidation over the possible repercussions that might arise from the community over the very thought of rationing of care. At the last moment they decided not to publish the study. Convinced by authorities to first query the community with a survey on the potential requirement for rationed care, the results showed that society clearly recognized that circumstances existed where rationing of care would be necessary. However, the community respondents made it clear that any rationing process would be completed with equity, accountability, and transparency by a community-based body of health experts that included ethicists and legal

guidance. The study was eventually published and widely reviewed in the popular press; it did receive some letters of concern from the public but clearly revealed that the community was much more aware and savvy on the possibility and nuances of rationing of care than the medical community thought existed. It was a beginning of an equally real, although uncomfortable, awareness that medicine alone could not satisfy all of societies' questions and concerns. New studies that have ventured deeper in using science methodologies in designing protocols and standards for survival determination have come under further scrutiny. For many, Dr. Sheri Fink, a colleague, Pulitzer Prize winning investigative reporter, and 2010 Woodrow Wilson Scholar has become the conscience of the dangers faced in restricting to science alone the complex decisions of the triage process. She challenges the status quo by emphasizing that we can no longer deny societies' role in participating in the dialogue and decision making that includes criteria for both excluding and withdrawing of scarce lifesaving resources.²² Easily said, the inclusion of society into that process is no easy task but a necessary one that communities need to accomplish to ensure opportunities for the basic tenants of resiliency to safely exist.

Large-scale Natural Disasters

The consequences of large-scale natural disasters differ as the countries and the cultures in which they occur. I can't help but recall the 1991 Bangladesh cyclone, clearly one of the deadliest tropical cyclones ever recorded. The storm surge killed over 138,000 people leaving tens of millions homeless...yet survivors quickly gathered up corrugated metal sheeting and other remnants of their former homes to restructure their lives. Societies that occupy disaster prone areas incorporate resilience into their cultures, a trait often lacking in more fortunate parts of the world.²³ Today, however, those same survivors are being driven out of those historical home sites by a rising ocean that has claimed those same low lands and many surrounding islands. Their long held resiliency is challenged by the necessity of moving to unfamiliar and security poor urban conclaves.

For the United States, which has prided itself on its capacity to resist the consequences of major catastrophes, Hurricane Katrina emerged as a major laboratory, welcomed or not, for the study of vulnerability and resiliency. Roberts Kates and Tom Wilbanks write of the 8 major findings on resilience gleaned from the history of New Orleans.^{9, 24} They acknowledge the history of multi-hazard threats, including 27 major floods over 290 years, yellow fever epidemics, 20th Century drinking water pollution, and a declining population-based economy since a population peak in 1960 that was further decimated and accelerated by Hurricane Katrina.⁹ Five years after the disaster only 70% of the population has returned to New Orleans, only 30% of building permits for residences have been issued; and, the leading economic sectors in medicine and education have not recovered.

Resilience for New Orleans in the past years was an offshoot of 'managed resilience' dependent primarily on very shaky short-term flood protection, rather than relying on a strategy of enhancing overall community resilience based on a more robust levee and water drainage system.⁹ In many ways their fragile luck ran out. Too many surprises emerged from a series of

“unanticipated events, correctly anticipated events but failed responses, and wrongly anticipated events.”⁹ In their failure to disclose, the best scientific and technological knowledge did not get used or widely disseminated. New engineering designs were written for improved protective structures that took into account effects of storm surge, land subsidence (out of sight shrinkage and settling of the original height of land brought about by accelerated extraction of groundwater), and the rising sea levels measured at that time sat on the shelf. Unwisely, these estimates were still being used 19 years later where sea levels had risen and land had lowered much more (10+ feet) than expected. Worse, the widely used FEMA risk assessment maps of the 100 year floodplain never included this new data.⁹

Partnerships essential to community based resilience facing unanticipated or unaddressed needs, usually “emerge from households, friends, family, neighborhoods, non-governmental and voluntary organizations, businesses, and industry.” These were repeatedly ignored. These so-called “shadow responders” were “refused or poorly used by government officials” even though they, when the disaster struck, “provided most of the initial evacuation capacity, sheltering, feeding, health care and rebuilding much of the search and rescue, cleanup, and post-Katrina funding.”⁹ Arguably, the political and governance system in New Orleans was embarrassingly inept. In neighboring Mississippi good governance, effective community level partnerships and preparedness defined the differences in how resiliency and recovery was experienced.

A post-disaster study one year later confirmed that New Orleans had experienced a 47% increase in deaths over the prehurricane baseline. It is important to mention that a “non-traditional” community source, the Times-Picayune Newspaper, was alerted by their readers of an inordinate number of published obituaries indicating an excess number of deaths were occurring. The antiquated and hurricane-disabled Department of Public Health information system in which disease and death surveillance would normally be detected was no longer functioning.²⁵ This emphasizes the critical role that citizen awareness can play, in this case the recognition of delayed indirect deaths resulting from compromised public health protections and services such as mental health.

Climate Change: Out of Sight, Out of Mind

Although globalization has made economic improvements in the developing world it has also led to greater gaps in health, education, and economic benefits among the “have and have not” populations in the same countries. These effects are often not demonstrable until inequities in pre-disaster protections and post-disaster health care are exposed. Climate change, arguably the ultimate example of a multifactor human systems failure, is predicted to result in more subtle direct and indirect consequences on disaster-prone populations in part because missteps and failures are tied to multiple complex interactions between a population’s health, behavior, socioeconomic and sociopolitical demographic (its human ecology) and its environmental ecology.²⁶

Much of the language of resiliency and adaptation to crises arose out of climate change literature. The combined geophysical and social vulnerability in New Orleans was built over decades from multiple causes, including questions over whether the frequency of more intense hurricanes would be enhanced by climate warming. New Orleans did not utilize the growing body of scientific and technological knowledge on climate change nor was this information factored into critical engineering designs.⁹

Witnessing extremes awaken anxiety and question ones capacity for sustaining resiliency in similar circumstances. You cannot talk about the global impact of disasters without addressing the dilemma that is China. It is an outlier in so many ways. What happens in China does *not* stay in China...the manner in which it manages and mismanages environmental crises has an impact on us all. A few months ago I spoke at a climate change conference in Chengdu the capital of Sichuan Province in Western China and home to a massive agricultural and industrial plain that butts up against the Tibetan Plateau. The southern edge of the Plateau captures all the coal pollution from India, Bangladesh, and other countries that flows north from their boundaries then creeps east where it is concentrated with the local toxic industrial pollutants of China and dumped onto the Sichuan Plain. Our Chinese hosts, openly shamed, admitted that little would be done to curtail the severe pollution that engulfed us and uncannily dampened any lingering sense of resolve, until an anticipated milestone was reached, presumably that of economically overtaking the US by the year 2020. By then they assert that all pollution will be reversed by China's bold accomplishments in green energy. But time is running out with their plans to reach these environmental plans. With large energy-intensive steel and cement projects it is increasingly difficult to shift way from a dirty, wasteful model of economic growth. Seventy percent of China's electricity is coal-generated. Radical decisions to cut electricity to homes and public buildings for 22 hours every three days or more affect homes, industrial estates and poor rural communities prompting outcries that these were "simple minded" and "unscientific approaches" from the central government. While China has overtaken the US as the world's biggest consumer of energy, it has also become the biggest emitter of greenhouse gases.²⁷

In China it is difficult to determine whether 'resilience' as defined in the Western world exists. This may be understood by the fact that climate change is responsible for only 10-30% of the pollution in China. The widespread air and water pollution and the resultant major shifts in temperature and rainfall are human generated and clearly preventable. The single act of removing 1 million automobiles prior to the Olympics dictated whether the games would take place and the athletes could breathe. While they are openly proud of that accomplishment they take this as a sign that they can control their collective capacity and resilience if they chose to. One on one, Chinese scientists spoke of severe smog blocking the sun which the government declared "acceptable" while "defining pollution out of existence."²⁶ Major medical journals confirm the dramatic rise in severe acute and chronic respiratory illnesses among children and the elderly that are endemic and no longer tolerable.²⁸

Super dust storms have increased fourfold and deforestation is now within 40 Km of Beijing itself. China openly admits to 150 million citizens who need to be resettled; where they now live is "not fit for habitation."²⁹ Whereas China has 20% of the world's population, they can only

claim 5-7% of global freshwater. Water reserves are depleting at an “alarming rate;” but “the problem here is in orders of magnitude greater than anywhere else.” Ninety percent of groundwater is polluted, 60% seriously and in 2/3rds of China’s 600 cities water is scarce.³⁰ Raw sewage and pollution from agricultural runoff into the South and East China Seas is so severe that it has changed the ecology of the normally protective organisms inherent to water allowing giant beds of thick green algae to cover 85% of coastal waterways.³¹

Present food security strategies are unsustainable. Yet, with no lack of transparency the governmental response is: “I’m afraid you’ll have to live with it, it is a disease of civilization...there is no cure.”³² Other countries, seemingly intimidated by China’s economic power fall silent in any criticism of their globally ruinous policies. I find myself more aware than ever that on a cultural basis I know little of the parameters of what we define as resilience across cultures.

“If a Nation Disappears does it still exist?”³³⁻³⁵

There is little awareness of the consequences of climate change in the Western world, Yet as I write this paper several Polynesian countries are actively in the process of migrating their populations. Populations can no longer be sustained with the loss of coconut palms, taro plants, and fragile reef system food sources disappearing from acidification of the water. Cases of starvation have been reported by CDC investigators. Currently, populations are simply called upon to identify vulnerabilities and to “learn how to reduce them.” ‘Adaptation’ has become the new operative word for resilience, even if it is only a temporary measure. If this does not work countries, especially in Polynesia, are advised to have strong migration agreements.³⁵ Many of these immigration policies are already in place. President Tong of Kiribati, a nation which will be one of the first to disappear, spoke before the UN General Assembly insisting that their “people migrate on merit and with dignity.” He has reached an agreement with New Zealand and Australia to train 1000 nurses at a time. Once they have employment they are qualified to permanently immigrate the rest of their family. The President of the Maldives has taken a different tack seeking to purchase a new homeland for all his 300,000 residents.³⁶

Arguably, global negotiations on climate change have dragged on primarily because these issues are not addressed in International law. In 2004 questions were asked: would they still be a nation? Will they still have a seat on the United Nations? Who controls their fisheries and their undersea minerals? Will they enjoy citizenship in the country they are forced to migrate to? By 2010, and the recent Cancun Climate Summit, the same countries are asking that Summit proposals must build trust that developed countries recognize the situation of the most vulnerable countries have been betrayed multiple times, insisting that the must get something from the international process in their favor.³⁶

Conflict & Post-Conflict Disasters

Conventional wars are declared cross-border confrontations between nations, or blocs of nations. Unconventional wars, collectively referred to as complex humanitarian emergencies,

are hostilities that range from guerrilla warfare, prolonged political violence, terrorism, and wars of national liberation. Whereas the incidence of conventional warfare is the lowest in three decades, the number of people living in some level of post-conflict intensity, including intimidation, easy availability of weapons and economic, social, and public health stagnation is unprecedented.³⁸ In all these situations the direct battlefield deaths of war decline as do outside political and humanitarian intervention and interests of donors. Yet the indirect mortality and morbidities continue to increase from lack of access and availability of healthcare and other essential services and may not return to the pre-war baseline for more than a decade. Terror still exists but is now called criminality or banditry. The immediate post-conflict phase which we refer to as the transition phase leading to development is the most dangerous especially for populations such as women, children and those with psychosocial and behavioral risk.^{26, 39, 40}

In WWII 10% of the casualties were civilians. This increased to 70% in Viet Nam and 90% in Iraq. In the post-conflict phase many flee their surroundings most seeking security and work in urban settings, or to refugee camps of neighboring countries. Camps or “settlements” within Nairobi Kenya contain refugees from 8 different post-conflict African countries.⁴¹ In reality, the term “post-conflict” is somewhat of a myth. The differences between populations at war and during the post-conflict phase gets blurred.

Unfortunately 47% of countries return to conflict within a decade, with a rate that is 60% in Africa. It must be remembered that the post-conflict infrastructure and system is usually 10% of what it was before the war. Predictors of a return to war include stagnation of economic recovery and worsening of the infant mortality rate.³⁸

There have been some successes, East Timor, Rwanda, and Liberia being examples. Post-conflict failures are tragic and increasingly add to the list of “fragile states.” Successful progress requires a coordinated mix of military, government, health, education, economic, and other resources...all patiently working together from an agreed upon strategic plan. Humanitarian assistance must not cease, rather it must be escalated during the dangerous transition phase when deaths of the most vulnerable are the highest.

Rapid Urbanization: A Worsening Humanitarian Crisis

Too many of these vulnerable populations living in smoldering low and moderate states of violence, insecurity, and economic and health stagnation find conditions intolerable. They have become the internally displaced populations rapidly expanding urban settings. They have replaced the 53 million refugees that dominated the last 3 decades and who now number about 16 million. About 26 million internally displaced have fled to cities within their own countries;⁴² driven by false hopes of a better life and producing what I feel is one of the most dangerous, complex, and unmanageable humanitarian crises, that of rapid urbanization.

Rapid urbanization is a totally different situation from what we’ve seen in the past. It occurs when the population increases beyond the capacity of public health infrastructures and systems (e.g., food, water, sanitation, shelter, fuel, security) to protect them. *Rapid urbanization is*

unsustainable. Today, most of the world's largest megacities with populations greater than 10 million are experiencing rapid urbanization. But it is the density of the population that is the most sensitive indicator of an actual or pending human crisis. Mumbai, India has over 30,000 people per square kilometer and in some areas of the city there are over 1 million people per square kilometer.²⁶ Port au Prince (PaP), Haiti is probably a better example of the perils of dense populations. PaP at the time of the 2010 earthquake had a population of about 3.5 million but in 2 of 5 populations zones the most densely populated lived in disaster prone areas on the sides of hills and were killed outright.

In megacities new populations build where they shouldn't, in flood plains, on fragile beaches, in valleys, and on muddy hillsides destroying whatever the protective "natural infrastructure" exists. Some feel that we no longer correctly value the benefits of keeping people and development out of harm's way. Cheap land is to exploit and not appreciated for the protective barriers from storm surge or flooding they provide. Unplanned moves to land surrounding large cities in the developing world have placed over 900 million vulnerable to cyclones, flooding, and earthquakes.⁴³

In developed countries 6% or less of the population are urban squatters; this rate rises to 78% in the developing world. Sixty-two million slum dwellers are in India alone. Health for many has become a major security issue. Over 1600 new families enter Mumbai daily increasing health inequities and widening the gap between the 'have and have not populations.' Rapes are epidemic. Most urban enclaves can offer no more than 1 latrine for 150-200 people. The newly arrived often occupy disaster prone areas where sanitation is ignored and infectious diseases are prevalent. Some of the highest worldwide under age 5 and infant mortality rates are emerging from these enclaves.²⁶ Saunders takes a totally different view of urban migrants and the soaring world population. He sees cities as places where rural peasants, accustomed to raising large families to work in fields, learn the virtues of having fewer children and getting them educated and where the world's population actually stops growing. To those who want to tear down migrant's slums, he says we should protect them instead.⁴⁴

Large urban enclaves now determine their own climate. Each new percentage point in urban growth correlates with a decrease of 2.44 mm of rainfall. A public health emergency is inevitable when the majority of urban land becomes devoid of forests and parks, or is converted to asphalt and concrete causing 'heat islands' that strongly influence weather patterns and rainfall. Many large and sprawling megacities determine their own urban climate. Cities in Middle America are not immune to similar patterns of change; especially evident where water and sewage infrastructures can no longer handle any surge in rainfall. Several cities have recently experienced the sudden building of "ponds" of rainwater on highways that quickly coalesce causing steamroller like rapids.²⁶

In truth, all urban populations, even those in Western countries have shown similar warning signs at one time or another. Few paid attention. One concern is the suburban sprawls that some scholars claim are "damaging to the American mind and environment." Sprawl consists of the outward expansion of metropolitan areas, accompanied by the rise of communities with

increasingly lengthy commutes, which offer little in terms of civic cultural experiences, and result in the over-consumption of fattening foods, a myriad of health and emotional conditions, and chronic lack of enjoyment and elevated worry levels in their daily routines. These sprawling communities raise serious questions about the decline of “social capital,” seemingly a valid metaphor for resiliency, where there is a decline in “social connections and attendant norms and trust” that are vital to community-based living.⁴⁵ Preventive programs must be developed to re-identify these populations with community values and ownership, important prerequisites if resiliency is to be expressed beyond that of the individual.

Researchers were amazed to find out that that the highest water threat levels are in the United States and Europe where rivers are in serious decline. Europeans have altered the landscapes, including the removal of 90% of wetlands and floodplains. Resilience hides itself under the false assumption that “Americans tend to think of water pollution problems are pretty well under control, but we still face enormous challenges.” More than 30 of the 47 largest rivers in the world showed at least moderate threats to water security, due to human impacts such as pollution and irrigation.⁴⁶

Mistakes, Myths and Recovery

Many common mistakes and myths, made in the name of preparedness, arise from ignorance. Too commonly the growth of resiliency is impeded by fears perpetuated by politician’s misplaced instincts to withhold information, and inability to admit to uncertainty, act transparently, issue guidance on diseases and disease protection, and disseminate information to the public as quickly as possible. We now know that with a modicum of education and training large numbers of non-critical victims can be well managed within a familiar environment, the community, by capable, non-expert caregivers, yet little is known about these resources.¹⁴ The majority of individuals (70% in one study), expected to rely on family members; less than half (48%) expected to rely on others in their neighborhood.⁴⁷ Emergency planners fail to recognize the myriad of inter-linked networks that people belong to within a community (e.g., ethnic, religious, businesses and institutions) and rely on for information and meaning in a crisis.⁴⁸ Communities must incorporate constructive cooperation of citizens into emergency plans rather than excluding them because they assume some lack of expertise. *CitizenReady*, a program developed by the Center for Disaster Medicine and Public Health Preparedness of the American Medical Association for the self-directed education and training of the citizenry at the community level, attempts to build confidence and depth in citizen-focused preparedness.

I wrote earlier that human crises, especially those that have the greatest impact on community survival, require the population to shift from strict individually focused needs to those of the population as a whole. It is the basis of daily public health protections, both physical and social, that we take for granted. These ‘assumed’ protections are the operative word for how we define community resilience. These protections must be rehabilitated and enhanced rapidly if recovery from disaster is to be realized. Resiliency begins in the individual, as it should. However, a certain degree of maturity and obligation beyond self allows one to appreciate

resiliency as essential to community recovery. Despite efforts to redefine the way we live, the sense of community is universal and essential to the human species.

It has been found that disasters associated with psychological impairment are those with at least two of the following:⁴⁸

- High prevalence of physical injury or loss of life;
- Widespread property damage;
- Serious financial difficulty; or
- Involvement of human carelessness or intent.

In general, the impact on children and adolescents are greater, and the middle-aged fair worse than the elderly. Many exceptions and nuances shape the discussions on these issues, but I have always marveled on how we ignore the elderly who, with experiences from past tragedies, are often the best teachers and model examples of resilience and recovery. I've never participated in a domestic natural disaster; my experience is skewed toward those who have witnessed unbearable brutality brought on by war or pandemics. International organizations, such as the Red Cross Movement have used Psychological First Aid (PFA) with great success in triaging large numbers of victims in a large variety of disasters.⁴⁹ PFA is a valuable skill that lay volunteers are trained to administer as a beneficial first intervention for victims who have witnessed the emotional trauma of a disaster. More severe cases will require additional professional interventions and treatments.

Citizens are faced with many challenges that require functional resiliency and a clear head. There are limits to that resiliency especially in extreme human-generated disasters where shock and awe are built-in elements of the technology being used. Ready examples are bioterrorism agents that defy both investigation and control and nuclear war where no one possesses the innate resiliency to survive. Sadly, in both, the desperate health consequences that would come of such scenarios are rarely part of the arguments that guide negotiations to prevent them.

Scientists have known for decades that many public health solutions can be politically unpopular. For example, it is generally accepted that there must be a reduction in population growth rates, but since this requires the empowerment of women, it has little chance of success in crucial countries in the Middle East, especially those with the fastest growing populations. The world is more complicated as are the ways in which we abuse it. Human crises and disasters have a larger and broader population base to affect. Rather than shy away from understanding the raw details of the causes and consequences of these events I humbly assert that it is wiser to learn and understand as much as one can, as uncomfortable as it might be, and become engaged in community dialogue and decisions. It will make one wiser and the discourse more effective. Lastly, colleagues and I recently published a study out of Australia that indicates that any successful response to a disaster situation, and the fear that can impede this performance, is directly related to ones familiarity and content based perception of risk of the threat itself. This study confirms that we cannot separate both personal and community resiliency or the way in which we perform during times of stress from how well we understand the knowledge-base of the threat itself.⁵⁰

December, 2010

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