The All Needs Approach to Emergency Response

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ABSTRACT

For decades, emergency planners have operated either under an approach termed "all hazards," focusing on the commonalities of catastrophes, or under scenario-specific planning rubrics that aligned actions with the particular cause of the disaster. While each method has its strengths and advocates, both have demonstrated shortcomings in execution and generated pervasive dissatisfaction among served communities. The authors contend this discontent derives from a failure to address the perceived needs within the impacted populations. Drawing upon classic theories of rationality and motivation, a new paradigm of "all needs" planning is proposed. This approach offers an effective planning matrix that is both flexible and robust in assessing the myriad needs of a disaster-stricken populace.

INTRODUCTION

This article presents a model for an All Needs Approach to catastrophic event preparedness and response. It advances the premise that the focus on threat elements needlessly truncates and Balkanizes the full role of government in a disaster, which is to provide immediate relief and to facilitate full recovery of the physical and social community infrastructures. By basing planning on the needs of the impacted population – the "all needs" approach – planners can better prioritize the full range of requirements and fully integrate both the government and non-government contributions.

This model is based on well-accepted scientific research and is aimed at understanding and integrating needs of all types of individuals in an emergency situation, including the need to care for others (e.g., family, pets, or patients). The article starts by outlining some basic principles of motivation and relates these to the human decision-making processes and behaviors in emergencies. We then show how special needs fit into this framework. Next we present a model for an All Needs Approach and demonstrate how it might be used to define emergency care.

The national approach to emergency response vacillates between two philosophies. The first parallels the mode of thought of the early days of emergency management, wherein each type of emergency is considered an independent entity with scenario-specific issues of planning, response, and recovery. In 1991, the fall of the Soviet Union eliminated central control of its considerable arsenal of weapons of mass destruction and generated concern over potential terrorist use within the United States. Planning shifted from a focus on a single, technologically advanced adversary to a mix of threats by non-state actors, disease outbreaks, and natural disasters. By the middle of the decade, a broader definition of emergency preparedness began to emerge. Hurricane Andrew in 1992 and the bombings of the World Trade Center in 1993 and Alfred P. Murrah Federal Building in 1995 provided deadly affirmation of the need for a shift in planning for emergency response.

"In 1996, the Nunn-Lugar-Domenici program established the first homeland security training programs to prepare U.S. cities to respond to terrorist attacks."[1] Created by the Defense Against Weapons of Mass Destruction Act of 1996 (an amendment to National Defense Authorization Act for Fiscal Year 1997), the Nunn-Lugar-Domenici program provided training and equipment to the nation's largest 120 cities. The authorizing legislation designated the Department of Defense (DoD) as lead agency and assigned participating agencies, including the Federal Emergency Management Agency (FEMA), the Federal Bureau of Investigation (FBI), the Department of Health and Human Services' Public Health Service, the Department of

Energy, and the Environmental Protection Agency.[2]

The 1996 publication of the *Guide for All-Hazard Emergency Operations Planning* by FEMA signaled a paradigm shift from a concrete, scenario-based emergency management perspective to a more abstract focus on the common response elements across emergency events. This focus on hazard commonalties represented disaster response issues as a family of general problems with common threat elements to be mitigated. This approach was designed to help emergency managers leverage efficiencies in planning for and responding to emergencies and detect gaps in plans and responses.

The events of September 11, 2001 and the ensuing postal anthrax attacks resulted in the creation of the Department of Homeland Security and the incorporation of FEMA into the department. The need to respond to acts of terrorism broadened the planning focus within the FEMA agenda. The 2005 *National Planning Scenarios* outlined fifteen likely natural and man-made disasters that were intended "for use in national, federal, state, and local homeland security preparedness activities."[3] These scenarios, in essence, represented hybridization of the two approaches, emphasizing an all hazards perspective but with the added dimension of specific threat scenarios as a preparedness framework. In theory, this set of scenarios should be sufficient to identify the all-hazards-based competencies required for capabilities-based planning. However, the focus on the immediate response to the specific, prescribed circumstances may come at the expense of neglecting a broader perspective that facilitates immediate relief while laying the foundation for long-term recovery.

The all hazards approach attempts to "optimize" (in a loose sense) institutional plans and actions across disaster scenarios by trading off specificity for a general reduction in hazard or risk. Following traditions of operations research, there has been a natural bias to use objective measures (e.g., economic loss, lives saved, and speed of evacuation) as benchmarks to guide optimization. However, these outcome measures are clearly too narrow. The effectiveness of response cannot be measured exclusively in terms of logistical indicators, but rather by the recovery and resiliency of the region. Much as body counts do not determine a military victory, traditional objective measures do not fully assess the effectiveness of the disaster response in restoring the perceived quality of life after an extreme event.

The events surrounding more recent disasters, particularly Hurricanes Katrina and Ike, demonstrated these traditional measures and response strategies lead to suboptimal results because they are not completely congruent with the public's perception of needs and its ongoing concerns. Disaster response has long been viewed as providing maximum assistance to the greatest number of people, with the reluctant – if rarely voiced – acknowledgement that there will be those beyond immediate help. By that metric, the responses to these two hurricanes were adequate and, therefore, successful, albeit outwardly chaotic.[4] That 100,000 to 300,000 mostly poor could not be evacuated from New Orleans immediately following Katrina (which has come to symbolize failed emergency planning) has been attributed to faulty planning assumptions on the part of local officials.[5] Still, more than 60,000 people were subsequently evacuated by federal assets responding to the disaster, an indicator that the system seems to work *if* we make the appropriate assumptions.

The fact that the name Katrina remains synonymous with failed response some six years on demonstrates the enduring damage that can be inflicted by failure to address the hierarchy of needs within the impacted population. There has been a widespread perception that addressing a broader spectrum of needs is beyond the current responsibilities of government. Hence, emergency managers have focused on the concept of "citizen preparedness,"[6] which is based on the premise that citizens should be in the best position to determine and satisfy their own needs. It should not be a surprise to find that evacuees prefer to relocate to a relative's or friend's home or an alternate place of employment. Indeed, the data from Hurricane Katrina suggest this, identifying evacuee relocation to virtually every state.[7] Social systems at these evacuation

destinations would typically have the capability of and interest in providing for the evacuee's normal and special needs. Although emergency managers do not typically plan evacuation destinations chosen voluntarily by citizens, the data necessary to plan for them can be generated easily from population data or direct citizen surveys. Rather, an insensitivity to higher level citizen needs and the perceived benefits of managed evacuation centers drive the decision making process.

While immediate physiological needs are generally met, it is the perceived absence of attention to psychosocial welfare that generates long-term dissatisfaction, loss of confidence in institutions, and subsequent political and policy ramifications. When reinforced by emotionally wrenching images – wheelchair-bound victims, lost family pets, and the disproportionate impact on society's less fortunate – the expectations of the impacted population can drive future policy and operations. Special needs, including evacuation provisions for pets, are now included prominently in planning because they address the perceived needs and, hence, the credibility and trusted status of the responders for the affected populations.

This article outlines principles for an "all-needs" approach to improve responses from the perspective of the physical and psychological needs of the survivors, who include victims and persons displaced (or simply inconvenienced) by the event. This construct builds upon the authors' experience in healthcare and work integrating physical, psychological, spiritual, financial, environmental, and other factors into a robust delivery model.

One begins by accepting that benchmarks for the outcome of emergency care can be defined as satisfaction of the relevant subjective needs of the survivors of a disaster. By analogy, a person who falls overboard is saved by the provision of a life ring or preserver. That rescue falls short, however, if the individual is not brought aboard, offered warmth, drink, and food as necessary, and returned to shore. An ideal outcome can likely never be achieved, but it should not preclude improvement as a goal for integrated planning. In times of economic austerity, the pragmatic suggestion that one sets priorities before assessing needs reverses

the effective planning process and needlessly omits capabilities outside government that help meet the perceived needs of the affected population. Some of the most robust response derives from outside government but cannot be projected and requires facilitative official planning to occur. Following Katrina, the Southern Baptist Convention of the North American Mission Board supplied thirty mobile kitchens, contributing to the more than 8 million meals served by the American Red Cross.[8] The massive response from the Walmart Corporation was a spontaneous response to perceived needs.[9] This lies beyond government's mandate, but cannot be absent from government's planning.

The unprecedented evacuation of greater New Orleans met many objective measures of success. The global perception of a death toll increased to 1,836 by failure to address socio-economic and special needs and of an inept response that did little to foster the beginnings of recovery represented consummate failures in meeting the needs of victims. The lasting image is not of Louisianans whisked to safety, but of people abandoned and neighborhoods forsaken. In essence, emergency care is simply needs satisfaction and successful emergency response depends on the satisfactory identification and servicing of relevant needs.

Understanding the system of human needs is critical to defining emergency strategies because subjective needs determine both individual behavior in emergencies and effective response levels. Public perception of needs satisfaction is critical because it drives public opinion, trust, and confidence in response capabilities. It can impact multiple individual factors that influence the Threat/Efficacy Profile of individuals and communities, such as trust in government, civic engagement, and perceived societal norms,[10] to reduce barriers to preparedness behaviors and compliance with recommendations. Therefore, common sense suggests that a subjective, outcome-based overlay of the all hazards approach, an "all needs" approach, can take an enlightened look at the multitude of temporal, community, and special needs – what we term "focused needs" – and develop

strategies that address those needs in an effective and efficient manner.

NEEDS

Developing a taxonomy of needs is the first step toward developing an All Needs Approach. As a starting point, one can begin with the classical hierarchy of needs schema of human motivation that was developed by the noted psychologist, Abraham Maslow (Table 1). This schema is based upon the premise that there are five sets of general goals, or basic needs that motivate human behavior.[11] Although the arrangement of these needs in an order or hierarchy reflects philosophical and psychological traditions (e.g., Aristotle's hierarchy of levels of anima),[12] the order is neither linear nor fixed. Reflective of the human behavior it is meant to model, the hierarchy is comprised of myriad supportive and supplemental needs that, in aggregate, determine the relevant stratus.

In fact, core tenets of the Maslow hierarchy – often overlooked by its critics – are "(a) there are multiple and independent fundamental motivational systems and (b) these motives form a hierarchy in which some motives have priority over others."[13] These simultaneously functioning dimensions can be represented by the modification of the classic Maslow pyramid (Figure 1) to depict overlapping goal systems (Figure 2). Rather than a unified linear progression, the hierarchy offers a multilayered model where an individual can occupy several levels depending on myriad factors, including the external environment.

Maslow discounted ecological impact. "It remains to caution the theorizer against too great a preoccupation with the exterior, with the culture, the environment, or the situation. Our central object of study here is, after all, the organism or the character structure."[14] A sudden shift in the degree of safety and security, though, is likely to produce a change in hierarchical focus.

If you are having lunch with your boss, and you discover a scorpion crawling up your leg, self-protection goals are likely to trump whatever food- or status-related goals were salient a moment earlier. But if it is merely an ant on your leg, and your boss has just asked you to consider a promotion, the self-protection goal is not likely to be foremost in mind.[15]

The schema is predicated on the concepts that each goal is satisfied to a variable degree in every individual and that the perception of current needs arises in terms of the relevance of unfulfilled goals. The significant change in needs and priorities wrought by a disaster is likely to realign multiple dimensions of the needs hierarchy.

An example that follows the hierarchical order is the starving person who will risk safety and debase self-esteem to acquire food, even by begging or eating decaying garbage. Conversely, a martyr can be motivated by self-actualization and devalue physiological needs and safety. In other individuals, the need for esteem can override social needs. These examples illustrate the point that the taxonomy of needs simply defines a multidimensional space for understanding the interplay of motivations and supporting and supplemental needs in personal decision making.
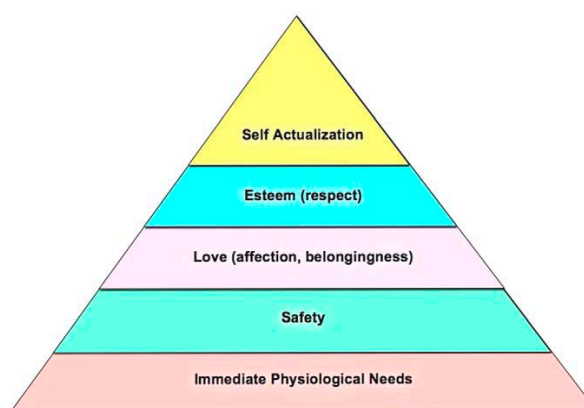
Figure 1. Maslow's classic hierarchy of needs
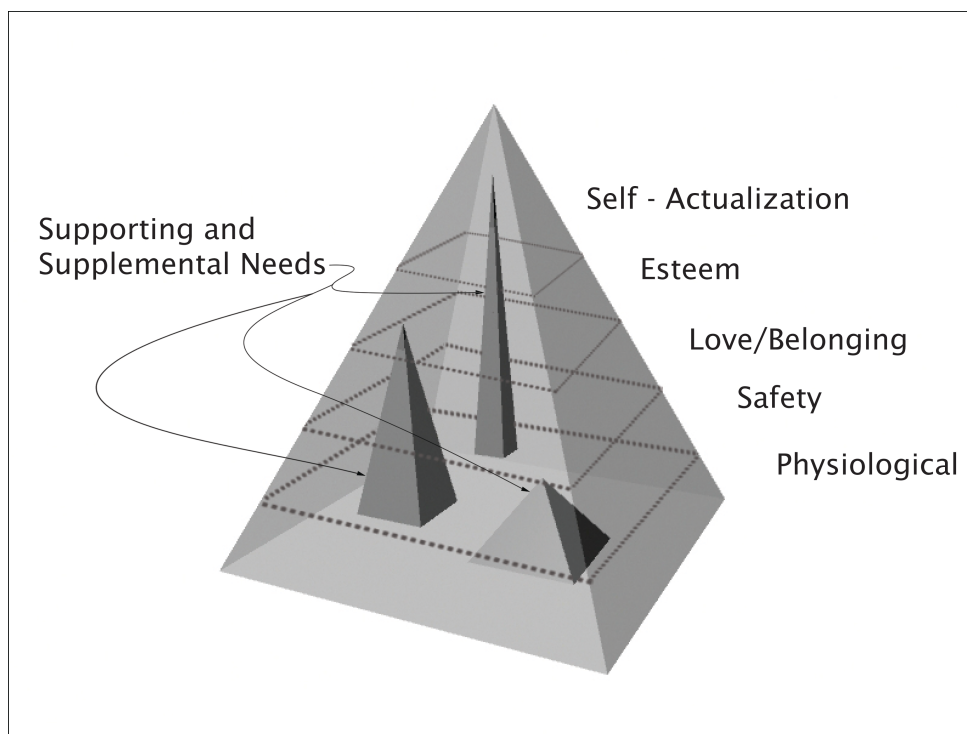
Figure 2. Maslow's hierarchy of needs modified to illuminate supportive and supplemental needs.

The feasibility of implementing an All Needs Approach will depend upon the ability to identify a focused list of policies for needs satisfaction that will be perceived as adequate by a large segment of the public. An All Needs Approach must necessarily focus policy on consensus needs and goals – individualized needs obviously cannot be accommodated. In addition, one in five Americans presents some degree of functional or performance limitation, an array of circumstances loosely classified as "special needs."[16] Sensitivity to social needs and needs for self-esteem require some degree of group identification and personalization. Do we use a least common denominator approach, a population average, or a greatest common denominator approach in selecting levels of needs satisfaction? The

guiding principles for selection of these levels of needs satisfaction are not simple. Neither are attempts to quantify aspects of motivation and the results thereof. Another critique of Maslow relies almost solely on the fact that his level descriptors do not correspond to mathematically independent factors in questionnaire studies.[17] This fails to consider the myriad and constantly shifting dimensions of human motivation. Moreover, we would suggest some issues defy standard quantification. Statistically, and based on objective criteria, the United States prevailed in the war in Viet Nam. This would come as an amusing revelation to government leaders in Hanoi.

For our purposes, then, the hierarchy can be regarded as a "place holder" for a generalized or average relevancy rating that can guide public policy.

Table 1. Summary of Maslow's Hierarchy of Need.[18]

Goal (Basic Need)	Definition	Example
Self Actualization	To become everything that one is capable of becoming	External recognition, self fulfillment
Esteem Needs	Image	Respect, self-worth, status
Social Needs	Relationships	Communication, privacy, companionship, mental health, belongingness, role
Safety needs	Freedom from harm	Life, injury, threats
Physiological needs	Basic survival needs	Breathing, homeostasis, water, sleep, food, sex, clothing, shelter, mobility

The first step for an All Needs Approach to disaster management, then, is identifying the motivating goals and their relative values. It is assumed generally that actions of individuals in an emergency are typically consistent with the hierarchy of goals in Maslow's motivation theory. For example, we assume that at the lowest level, people make decisions with respect to sheltering in place or evacuating based on their perceptions of consequences in terms of both their physiological needs versus their safety needs. They will tend to shelter in place if they believe they have adequate resources for their projected basic survival needs or for the perceived consequences of the threat. In fact, a strong sense of preparedness for basic needs can create a bias toward underestimation of threat consequences and a reluctance to evacuate. Similarly, if the homeowner views the intrinsic value of the property as essential to long term survival, i.e. worth protecting even while placing self in danger, the risk perception/acceptance threshold shifts dramatically away from the evacuation option.

There are other considerations that may consistently alter the order of needs in the hierarchy. For example, a person with the responsibility for caring for others may place paramount value on acting for his or her charges. A parent will risk his or her own safety for a child or other dependent for care. In a similar vein, the relevance of a social need can explain seeming irrationality of emergency behavior with respect to pets. The pet can be considered as a family member, to the extent that the goal of caring for the pet

becomes so important that threats to survival become susceptible to devaluation, denial, or even a "martyrdom" mentality. In the latter case, caring for the pet can become a higher purpose for self-actualization. Combined with a sense of a modicum of preparedness for basic needs, the presence of a pet appears to strongly tip the balance toward a decision not to evacuate.

Needs may be activated by short- or long-term considerations. For example, a person may stay where her job is because she uses the job (pay) to satisfy physiological needs, or a resident may have an emotional affinity to his "hometown," as was widely witnessed in New Orleans. Need can also be triggered by circumstantial and temporal considerations. A woman late in her ninth month of pregnancy is not by definition disabled, but would require targeted consideration of conditional needs.

It is not the responsibility of emergency response to address all needs at all levels. We would suggest that self actualization is well beyond the practicality for emergency response. Self esteem needs probably do not need to be addressed except that any emergency response must be respectful of the individual. However, these levels can be affected indirectly by response and messaging strategies that enhance psychological resilience in the face of traumatic experiences. Psychotraumatology uses the term "growth through adversity" to describe the emergence of positive adaptations and adjustments as we live through traumatic, catastrophic, and threatening situations.[19] The recognition of

and ability to operate under conditions of uncertainty, the development of a sense of connected detachment ("integration of affect and cognition"), and the recognition and acceptance of human limitations appear to be critical psychological factors in overcoming personal, and by extension communal, adversity.[20] Proactive education of individuals and community leaders, combined with appropriate messaging strategies, may be one way to nurture and engage these bases of psychological resilience in response planning.

If we provide rescued survivors with only safety and merely satisfy their physiological needs, their motivational basis will stem from their social needs. Success in satisfying needs will not eliminate need. The public (and media) focus will simply shift to other unsatisfied needs that had lower initial salience in the hierarchy. Thus, to better manage survivors we will need to address some of their immediate and pressing social needs. Interestingly enough, this is another place where companionship concerns (e.g., provisions for pets) re-enter the picture.

BOUNDED RATIONALITY

The standard hierarchy of needs theory presumes that people behave as rational agents when making decisions to meet their perceived needs. This view mirrors the prevailing notion in economics that humans behave as rational agents when making decisions to optimize needs fulfillment. However, the recognition that humans act as agents with bounded rationality has emerged from Herbert A. Simon's proposal to "replace the global rationality of economic man with a kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man, in the kinds of environments in which such organisms exist."[21] From this viewpoint, both human cognitive limitations and the limitations imposed by the structure of the environment and perceived solution space are conditions that constrain the selection of courses of action.[22] In fact, the criterion for satisfaction with a decision (or course of action) is often that it meets a threshold of being "good enough," or satisfactory, which is

consistent with Maslow's original concept that it is only necessary to achieve a level of relative satisfaction for any basic need.[23] One of the authors' experience as an emergency department administrator for an inner city hospital during a time of severe overcrowding noted that minimal needs patients were willing to wait inordinate periods – in essence while their medical needs were not being met – provided that the length and cause of the extreme delay was explained. Their need for medical attention was subjugated by satisfying the need for self-determination, a higher level within the Maslow construct.

The more general incorporation of bounded rationality in an all needs framework is now simple. If we align our resources and services to meet the perceived needs and decision space of the population (e.g., the response being "good enough" vis-à-vis each basic need), we will achieve a rational and robust model to drive an All Needs Approach.

CRITICAL COMPONENTS OF BASIC NEEDS

Our discussion to this point implies that the lynchpin of an All Needs Approach is the accurate estimation of the perceived hierarchies of needs in diverse groups of people. Response strategies and policies can then be designed to satisfy the broadest possible spectrum of perceived needs. The approaches can also include interventions to modify expectations of satisfaction of perceived needs that may be either impossible or impractical as outcomes, which could even be measures to modify the perceptions themselves.

BASIC SURVIVAL NEEDS

In an emergency context, one naturally thinks first of survival needs as the physiological needs that are necessary to sustain life, such as food, water, and shelter (which includes clothing). However, as discussed by Maslow's original 1943 paper, it is too restrictive to consider only those very rare situations when one is faced with a clear-cut life-or-death situation. Perceived basic

survival needs are likely to be fluid and difficult to define because they can include amenities related to items that are not essential for basic survival. Further, they will depend upon the degree of preparedness and perceived preparedness among the affected populations.

SPECIAL NEEDS

Special needs are not really new basic needs but conditions that alter the resources and services that are necessary to meet the basic needs of affected classes of people. Many of the current efforts focus on identifying and classifying populations that require specific accommodations for meeting their basic needs during emergency management. The table below shows one attempt to catalog this population in a study by the Oak Ridge National Laboratories.[24]

Table 2. Representative Special Needs Populations

Population Type	
With Disability	**Other**
Visually impaired	Transients
Hearing impaired	Tourists
Mobility impaired	Culturally isolated
Medically dependent	Migrants
Emotional problems	People without vehicles
Severe mental problems	
Institutions/Groups	**Vulnerable**
Hospitals	Elderly
Nursing homes	Socially isolated
Halfway houses	Children
Assisted care facilities	Low-income
Day-care centers	Homeless
Prisons, jails	Can't leave home
Homeless shelters	Non-English speaking
Spouse-abuse shelters	

Current Federal Emergency Management Agency (FEMA) terminology eschews the term special needs in favor of "Children and Adults with Disabilities and Others with Access and Functional Needs,"[25] defined as:

> Children and adults with access and functional needs may have physical, sensory, mental health, cognitive and/or intellectual disabilities affecting their ability to function independently without assistance. Others who may have access and functional needs include women in late stages of pregnancy, elders and those needing bariatric equipment. Populations whose members may have additional needs before, during and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision and medical care.[26]

The tendency to focus on special needs populations creates some artificial partitioning. The definitions of groups are fuzzy. An individual might belong to one or more of these groups. More importantly, does the individual associate him or herself with these groups? A special needs college student thinks about him or herself as a college

student who happens to have special needs rather that an individual with special needs who attends college. Lists such as the one shown above tend to marginalize the myriad organizations that provide special services every day. Colleges and universities, for example, have food, medical, transportation, and countless other services to accommodate the needs of students. Getting the individual's affiliation group right is critical to communicating with him or her and effectively providing emergency services.

As in the earlier example of an expectant mother, extraordinary need may not be recognized until the disaster occurs. A person with auditory processing disorder may be fully functional in a normal environment but be unable to comprehend complex instructions given within the confusion of a disaster scene. Neither of these individuals could be expected to self-identify the situational need prior to a disaster. Conversely, what may appear as a shortcoming to a disaster planner might be an asset in situ: blindness would not hamper evacuation from a darkened subway tunnel for example, and could even foster better navigation skills than those of sighted individuals in the same environment.

These lists are also vague and tend to focus on the lowest level of needs. What are the actual needs of each of these populations? Questions such as "how are the needs of populations such as transients, migrants, tourists, and the homeless the same or different?" are key. Another central element is that the needs, their criticality, and their provision might be different if the emergency response strategy is to evacuate or shelter in place.

DOES LACK OF PUBLIC PREPAREDNESS CREATE ANOTHER SPECIFIC NEED?

It is logical to consider citizen preparedness in emergency planning. Procedures such as self-evacuation or sheltering in place rely heavily on the individuals' ability to conduct those actions and willingness to accept such official direction. The 2007 and 2009 Citizen Corps survey data suggest that there is a pervasive mismatch between the perception of personal preparedness and actual degree of preparedness.[27] It seems reasonable to

consider the possibility that the public is differentiated into three populations: Prepared, Chronically Preparing, and Refractory to Preparing, each characterized by a different level of anticipated needs in a disaster scenario. The Prepared group includes the third of the population who assert they have either recently finished preparing or have been prepared for at least six months (see Figure 5 of the 2009 survey). The Citizen Corps Personal Behavior Change Model characterizes the Prepared group as individuals who believe that preparedness is efficacious in the face of an understood set of threats.[28] The Chronically Preparing group includes the roughly 40 percent of the population who are either preparing or intend to prepare within the next month to six months. These Chronically Preparing citizens would correspond to the individuals who perceive significant barriers to preparedness activity, despite an understanding of susceptibility to a potentially severe threat. Finally, the Refractory to Preparing group is the remaining one-fourth of the population that is "not planning to do anything about preparing." The Personal Behavior Change Model characterizes this Refractory group as individuals who are unreceptive to preparedness messages because they dismiss or ignore their susceptibility to a potentially urgent and/or severe threat.

The very modest measures that seem to justify a self-reported perception of personal preparedness are an extremely disconcerting finding of these surveys. For example, among the select 56 percent of the population who report disaster supplies at home, the greatest level of evidence of preparation is that 77 percent (i.e. 43 percent of the total population) report that preparations include a home supply of packaged food and 71 percent (40 percent of total population) include a home supply of bottled water. Inclusion of such rudimentary items as a flashlight (43 percent of those reporting supplies at home; 24 percent of the total), first aid kit (39 percent; 22 percent of total), or a portable, battery-powered radio (20 percent; 11 percent of total population) is even less prevalent. Important personal items for evacuation such as medications, cash, and personal documents are included by

considerably less that 10 percent of the total population. Despite some improvement between the 2003 and 2007 surveys, these statistics remained stable in the 2009 survey. One point seems obvious: only a fraction of individuals in the self-reporting Prepared group may be prepared beyond the requirements for a short-term shelter-in-place strategy at home. The consequences of this misperception of projected needs in a disaster scenario may be significant when they prove to be inadequate during a real disaster.

Thus, what are routine functions during normal times become an added disruption and dynamic planning factor during a disaster. The acute alterations in the perceived hierarchy of needs may, in fact, create an expanded special needs population demanding psychosocial and material resources, both in person and through real-time media coverage. The unprecedented coverage of personal suffering – both real and imagined – during Hurricane Katrina marked the establishment of this expectation and clearly demonstrated the existing infrastructure's inability to identify, much less meet, this need.

ALL NEEDS APPROACH

Both the situation-specific and the all hazards approach needlessly focus preparatory actions on discipline-specific communities: firefighters, law enforcement, public health, and others all attend to their responsibilities with limited coordination across functional boundaries. The considerable effort at all levels toward more integrated planning has opened many doors to integrated response. An examination of planning, exercises, and actual responses to catastrophic disasters will show that while the individual participant constituencies are improving in their ability to work outside their respective roles, that improvement has not completely broken down parochial barriers. It has been said that rather than working in silos, we now have "cylinders of excellence."

Such analysis will also reveal commonalities that can and should drive

planning and execution. In the absence of electric power, ice and water become priority needs. This addresses the immediate hazard (heat, spoilage, and dehydration), but not necessarily the overarching need. Proximate need rapidly gives way to the desire for a return to a reliable critical infrastructure. This progression replicates across multiple domains and functions of civil society. Gratitude for emergency shelter succumbs to want of a viable community and a return to normalcy – not as defined by the responders but based on the prevailing perspective of the locals. Our distinct history of local autonomy, local mutual aid compacts, and supportive federalism not only allows this, it is codified by the Constitution and the very structure of most government programs executed at the local level. Viewing response planning through the eyes of those being served will facilitate better integration of resources and quicker assimilation of the rescue effort into the fabric of the community. An all needs framework provides a strategy to integrate, compare, and resolve all of the issues with respect to populations, needs, emergency strategies, communications and providers.

The first phase of an all needs framework maps resources onto needs. It generates a cross-classification of populations with needs within different emergency response strategies. Populations can be defined that represent any relevant group whether those cohorts are special needs, geographic, ethnic, or affinity based. Because the current operating procedures of the full spectrum of responders implements these strategies, one can assess the capabilities of current resource allocation procedures during an emergency with respect to needs satisfaction. For example, service providers can be mapped onto this framework according to the needs they satisfy. Meals-on-Wheels would encompass some physiological and psychosocial needs across response strategies (rows in the matrix). Other providers (ethnic- and faith-based NGOs, for example) address needs specific to a given population (columns in the matrix). Some providers will address needs across levels and populations.

Needs	POPULATIONS									
	a	b	c	d	...	a	b	c	d	...
Psycho-Social		√	√	√		√		√	√	
Safety	√	√		√		√	√	√	√	
Physiological	√		√				√		√	
Strategies	Evacuation					Permanent				

Figure 3. All Needs Matrix
Note: Check marks are for illustration purposes only.

This matrix framework serves several purposes. Firstly, it provides a taxonomic structure for populations in terms of resources to meet common needs across populations. The fact that we use the term "special needs" does not necessarily require each group's need to be handled a special case by customized "cylinders of excellence." Rather, the inclusion of each population in the needs framework guarantees that appropriate accommodations are included in a coordinated delivery effort. For example, for public preparedness, we can tailor messages and media to specific targeted populations making our communication system more efficient and effective. A major failing of the evacuation of the Lower Ninth Ward in New Orleans was the inability to convey the message to the remaining population.[29]

Secondly, this framework serves as a template – a decision tree format – for various functions within disaster response. Consider the need to move or relocate a population. Such movement may be for a specified time period, an indeterminate time period pending some outcome, or a permanent relocation. Given these parameters, the overarching matrix can be modified as shown in Figure 4.

Needs	POPULATIONS								
	a	b	c	a	b	c	a	b	c
Psycho-Social	√		√		√		√	√	
Safety	√		√	√		√	√	√	√
Physiological		√	√		√	√	√		√
Strategies	Temporary			Indeterminate			Permanent		

Figure 4. Relocation Needs Template
Note: Check marks are for illustration purposes only.

This classification of needs supports delineation of requirements to serve designated populations, both in terms of fundamental issues within the Maslow hierarchy and in meeting the expectations of subgroups, which may rise to higher levels approaching actualization. The broad categories – in this example Psychosocial, Safety, and Physiological – would be expanded to include specific classifications of needs, indicators that could be used to group response requirements into functional cohorts to better meet the expectations of the impacted population.

Psychosocial needs may include addressing post-traumatic stress, reunification of families, and sharing of relevant information and instructions. Meeting safety needs can range from providing a haven from the disaster to limiting the spread of communicable disease to assuring the solvency of savings in impacted financial institutions. The reconstitution of pharmaceutical records and the subsequent provision of medicine to people dislocated by Katrina was an ad hoc reaction mounted by volunteer organizations, not a concerted government effort.[30] Finally, physiological needs may include shelter, food, sanitation, mobility assistance, and accommodations for required medical procedures such as dialysis.

It is important to note the matrix format offers a construct within which to plan response, but it should not be viewed as a mechanism of compartmentalization. Indeed, perceived individual, family, and community needs can cut across classifications that are, by definition, arbitrary. Effective response to a communicable disease, whether naturally occurring or an act of bioterrorism, will equally address the psychosocial need for confidence in public health officials and mechanisms, provide for the safety of the population, and preserve the physiological integrity of the populace via prevention and efficacious treatment.

The All Hazards Approach has proven useful for defining emergency planning, but it has also produced significant shortfalls. The All Needs Approach helps prioritize response capabilities within an all hazards context. The All Needs Approach is applicable to all phases of emergency management – planning, response, and recovery. It promotes holistic problem identification, appropriate response definition and economy of response. The focus on satisfying individual needs addresses the most immediate concerns of the affected public.

CONCLUSION

The goal of this article is to stimulate innovative thinking about the satisfaction of population needs during emergencies. Current analyses and classification of needs focus on objective factors: metrics that measure quantifiable indices of response. However, these analyses have resulted in lists of needs disassociated from the nexus of needs of the needy. Furthermore, the systems developed to satisfy those needs are largely ad hoc, single- and basic-need oriented; e.g., meals, housing, medical, social, and immediate, limited psychological services. Shelters, soup kitchens, emergency clinics, and other needs-satisfaction facilities sprout up at event time.

In everyday society, needs are satisfied by institutions. Institutions are designed to meet the broad spectrum of needs of the population they serve. Hospitals, for example, meet the predominant need – medical care – and also housing, food, entertainment, and other requirements. No emergency manager would argue that we should not evacuate a hospital patient to another medical facility, if available, versus some other venue.

Identifying the specific nuances of need cohorts can point to viable solutions. Colleges and universities provide food, shelter, medical, entertainment, language, handicapped and other services (in addition to educational services) as part of their normal operations. The predominant need of a college student is to get an education. Evacuating students to another college or university will meet this primary need, as well as all associated needs of the student population. Indeed some colleges and universities have existing programs where students are regularly exchanged. This goal requires a targeted approach to evacuation of

identifiable population sets, versus mass movement.

The evacuation model makes use of the existing infrastructure to satisfy evacuee needs and can be extended to all sorts of other organizations (nursing homes, retirement communities, prisons, etc.). The model is attractive to the host organizations. They could make use of excess capacity. Emergency funds can be used to compensate the organizations. From an emergency management standpoint, we would be using existing resources rather than stockpiling emergency supplies. The needs of the evacuees would be more effectively satisfied by organizations similar to the ones that they were evacuated from. More effective emergency management can be facilitated because organizations and their constituents can be identified during preparation and their information used to plan routes, document them, and make other preparations. More of the emergency manager's time can be freed up to serve those who really need help.

Most members of the population satisfy their needs through jobs. They exchange their services for wages that they use to satisfy their specific needs in a way that they determine. The workplace often serves as a social milieu. In addition, job or profession is often an integral anchor of their personal identity. Hence, evacuating them away from their jobs can be a devastating blow to needs satisfaction.

Perhaps we should think about how to evacuate jobs. Certainly, a continuity of operation plan (COOP) accomplishes job relocation for organizations, albeit for a small portion of the employees. Organizations can be incentivized through tax breaks to include a larger number of employees in their COOP. We might also create job clearinghouses. Most organizations have "wish lists" of projects that they have not done because they do not have the appropriate funds. Incentives and direct emergency funding can be used to "employ" evacuees in temporary jobs that match their existing skills. For example, another municipality can use a municipal government employee with street paving skills.

Finally, the All Needs Approach provides a set of principles and goals for projecting both immediate and long-term requirements. More deliberate mechanisms, such as the Planning, Programming, and Budgeting System, delineate all requirements then allocate resources according to prioritization and availability. Disaster response is, by definition, spontaneous and dynamic. A requirements-based planning tool affords projections of immediate needs and provides a map against which to identify and prioritize subsequent assets to speed restoration and recovery. From an operational planning perspective, it is nothing more than including the needs of the population as an important consideration in implementing response logistics.

The preceding ideas lead us to several potential operating principles that are related to needs satisfaction. The different populations in society determine natural groupings of needs that are essential to consider in planning emergency responses. Satisfaction with our responses will be proportional to the degree that our responses recognize and fulfill the status quo ante for those needs. The opportunities for personal choice in the process also result in improved satisfaction. The implication is simple: we can improve satisfaction by considering continuity of needs satisfaction as integral to the emergency response.

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ACKNOWLEDGMENT

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