EMERGENCY PREPAREDNESS PLANNING & POLICY AND

VULNERABLE POPULATIONS IN PUBLIC SCHOOLS: A

LITERATURE ANALYSIS

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Brook E. Brandon

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Approved by:

Dr. David S. Sawicki, Thesis Chair - CRP
Advisor
Department of City and Regional Planning
Georgia Institute of Technology

Dr. Jennifer J. Clark, PUBP Advisor
School of Public Policy
Georgia Institute of Technology

Dr. Paul M.A. Baker
Center for Advanced Communications
Policy (CACP)
Georgia Institute of Technology

Dr. Helena Mitchell
Center for Advanced Communications
Policy (CACP)
Georgia Institute of Technology

Date Approved: June 30, 2008

In honor of my maternal grandmother,
Pearl M. Babb,
who remains an exemplary model of inspiration.

In loving memory of my paternal grandfather,
Deceleman "Jack" Brandon,
who lived prosperously and independently against all odds.

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SUMMARY

 In recent years, surging growth rates of the U.S. disability population are occurring among adults and youth alike. During the same time period, a broad spectrum of crises incidents - ranging from student-initiated assaults to natural or man-made disasters - has become a well-documented and tangible reality with tragic impacts in schools today. These occurrences, coupled with the increasing numbers of potential evacuees with special needs, illustrate the pertinent need to incorporate reliable, inclusive preparedness planning at all levels of administration in public schools that strongly consider the needs of students and teachers with disabilities. While there is a plethora of literature available on emergency preparedness, literature addressing disability preparedness planning in schools as the primary focus is extremely limited. Therefore, the result of this research is a central policy document with a specific focus on disability preparedness planning in public schools. Emphasis has been placed on applying preparedness principles and planning considerations that will have an impact on students and teachers with disabilities. Concepts from three overlapping fields within emergency management - general preparedness planning, disability preparedness planning and school emergency management planning - were used to form a typological matrix to organize preparedness literature and policy.

CHAPTER 1: INTRODUCTION

The growth of the disability population in the U.S. is being observed at significant rates among adults as well as youth. As a result, there have been several federal-level responses addressing a broad range of disability issues. A broad spectrum of crises incidents, ranging from student-initiated assaults to natural or man-made disasters, are also a well-documented and tangible reality during which schools have experienced tragic impacts – sometimes as severe as mass casualties. These occurrences, coupled with the increasing numbers of potential evacuees with special needs, illustrate the pertinent need to incorporate reliable, inclusive preparedness planning at all levels of administration in public schools that strongly consider the needs of students and teachers with disabilities. Related literature contains concepts and principles that could be applied to preparedness efforts for this specific subgroup. However, while there is a host of literature on various facets of preparedness planning in the U.S., hardly any articles or other literature sources specifically address disability preparedness planning in schools as the primary focus. With increasing rates of impairment that stem from birth, life event, or aging today, the need to consider factors related to multiple disability types in emergency planning for school settings has grown in its sense of urgency. Therefore, this research focused on building a central policy document with a specific focus on disability preparedness planning in public schools. As is the intended purpose of this research, an emphasis has been placed on applying preparedness principles and planning considerations that will have an impact on students and teachers with disabilities. Concepts from three overlapping fields of emergency management have been merged into a single comprehensive matrix that will best attend to the crisis needs of the target

demographic: general preparedness planning, disability preparedness planning and school emergency management planning. One case study per reference field with components applicable to disability preparedness planning in schools for students and teachers with disabilities also has been incorporated to further illustrate the recommended strategies gathered from this literature analysis for optimally inclusive safety planning for policies and practice in public schools today.

Defining the Scope of Research

Per the U.S. Department of Education's *Practical Information on Crisis Planning: A Guide for Schools and Communities*, the term *crisis* is described as: "An unstable or crucial time or state of affairs in which a decisive change is impending, especially one with the distinct possibility of a highly undesirable outcome."[1] It goes on to further define it as a situation which: "…Range(s) in scope and intensity from incidents that directly or indirectly affect a single student to ones that impact the entire community…Can happen before, during, or after school and on and off school campuses…varies with the unique needs, resources, and assets of a school and community"[2].

Since crisis incidents have become more prevalent in recent years in the U.S. due to natural disaster and acts of terrorism, academicians and practitioners alike have engaged in utilizing topics related to it as a research and policy focus on a more frequent basis in recent years. The result of the heightened interest in this field has been an increase in the

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[1] *Practical Information on Crisis Planning: A Guide for Schools and Communities*. The Office of Safe and Drug-Free Schools, U.S. Department of Education. January 2007: 1-5
[2] Ibid.

literature and studies on subjects related to emergency management, more specifically in emergency preparedness. Though the amount of literature on emergency preparedness is still relatively limited in comparison to other more established, traditional planning and policy research fields, there is a plethora of emergency preparedness literature covering a broad scope of disaster origins and settings.   As demonstrated by the expansive amount of preparedness literature, the nature of both the onset and aftermath of disasters and crisis situations is complex and comprehensive in its impact on people and place. The methods of preparing for an urgent incident as well as the tasks required to respond and recover from its presence are divergent; in other words, the considerations and components used in addressing a potential or existing crisis incident varies significantly based on its scale, origin or type, location, the size of impacted site and those affected by it. Since the field of emergency management and the concepts and settings within it are so vast, the scope of crisis impacts to be referenced throughout this analysis have been defined.

Using literature with relevance to emergency preparedness planning and policy in the U.S., information has been gathered that can be directly applicable to the more narrow focus of public school settings with optimal preparedness outcomes for vulnerable populations – specifically, individuals with disabilities. This term used to describe the target population of this study is further detailed later in this work. This research focuses on emergency planning for single, or individual, events in schools as opposed to chronic, or recurrent events. The American Academy of Pediatrics offers a clear and concise definition of the type of single crisis event discussed in this analysis: "Natural disasters

such as earthquakes and floods and human-made disasters such as terrorist attacks and school shootings are single events."[3] As stated previously, the type of educational facility on which this analysis focuses is a secondary public school setting. Since public schools can be comprised of both K-12 as well as public institutions of higher education (i.e. college campus settings), it is important to identify not only this specific setting type in particular, but also the age range of interest to this setting. In fact, additional factors concerning the target population on whom this analysis focuses have also been defined in the interest of clarifying which components gathered from the literature review have the most relevance for its intended purpose.

Defining the Target Population

Often, the term "special needs" or "vulnerable populations" is applied broadly to a wide variety of groups which only have a common association in their exclusion from general emergency preparedness practices and policies. In order for planners and practitioners to formulate adequate plans and policies that will properly attend to the crisis needs of all potential evacuees, a bulk of disability preparedness literature states that the scope of definition for 'special needs' within their respective jurisdictions (i.e. school facilities or districts) was specified for optimal research outcomes. In her "Moving Beyond Special Needs" article, disability expert June Isaacson Kailes states: "Emergency action plans need to routinely specify exactly who will do what and when to address the logistical and function-based needs of people with a wide range and different combinations of physical,

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[3] Hagan, Jr., Joseph F. and the Committee on Psychosocial Aspects of Child and Family. **Psychosocial Implications of Disaster or Terrorism on Children: A Guide for the Pediatrician.** *Pediatrics* 2005;116;793

economic, and social challenges."[4] Additionally, in the Nationwide Plan Review Phase 2 Report - which also refers to a separate but related article by Ms. Kailes - the obstacles with achieving an integrated and universally feasible preparedness process is also noted:

> *"Although strides are being made toward fully integrating people with disabilities in community life, substantial improvement is necessary to integrate people with disabilities in emergency planning and readiness. While disasters and emergencies affect everyone, their impact on people with disabilities is often compounded by factors such as reliance on accessible emergency warnings, information, and communication; accessible transportation; accessible shelters; electrical power for mobility devices and other aids; and access to life-sustaining medication. These can be compromised in emergency situations."[5]*

Throughout preparedness literature and reference guides, such as the U.S. Department of Education's ***Practical Information on Crisis Planning: A Guide for Schools and Communities***, the special needs sections typically include a short section of tips or information applicable to disabled persons. It is important to note, however, that one or more disability type can be present in one person or among various persons within one setting. Therefore, there are subgroups within the 'vulnerable population' category to which components of preparedness planning must be customized to address. Even within

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[4] Kailes, June Isaacson and Alexandra Enders. Moving Beyond "Special Needs": A Function-Based Framework for Emergency Management and Planning. Journal of Disability Policy Studies. Austin: Spring 2007. Vol. 17, Iss. 4: 235

[5] Nationwide Plan Review – Phase 2 Report. U.S. Department of Homeland Security and U.S. Department of Transportation. June 16, 2006: 41-42

the 'vulnerable population' subgroup, it is necessary to clearly identify the demographic subgroups that serve as the research focus for this study, which are students and teachers with various types of disabilities within public schools.

Thesis Objective

The lens through which this research is rendered differs significantly than that of most disability literature, which addresses independence in function via accommodations for people with special needs. In this case, primacy was placed on gathering concepts and recommendations from the literature data which promoted, could be applied to, or otherwise emphasized planning and policy efforts that would likely achieve optimal safety and survivability rates of this demographic during crises in public schools. By drafting a central reference document to which those interested in this particular vein of preparedness planning could refer, the objective of making processes that are conducive to efficient and prompt egress options for special needs populations during the early stages of crises would be achieved. In the workplace and daily life activities, enhancing one's ability and function levels to foster independence is of the utmost relevance. However, in man-made or natural disasters and other crisis situations, the focal relevance is on successful egress, risk minimization, and survivability – be it obtained independently or with assistance.

A total of 169 sources with content relevant to at least one of the three identified fields in emergency preparedness and management – general preparedness planning, disability preparedness planning and school emergency management planning - were gathered as

data sources for this research. In this case, the literature base is comprised of scholarly journal articles, reference guides, federal reports, and study results. Newspaper and magazine articles were readily available for use in this literature analysis, and a few served as references throughout the analysis. However, the data collection process for this research opted to emphasize the use of reports and journal articles as a means of obtaining the most academically and professionally rigorous sources possible for use in the constructed typology. Legislation on preparedness policies in school and for people with disabilities, in addition to those which address general crisis planning and response efforts, also provided fundamental information from which shaped a number of the research sources used.

Review of Current Preparedness Legislation

Since the tragic events of September 11th and the formation of the U.S. Department of Homeland Security, there have also been several federal-level responses concerning various elements of emergency preparedness in the U.S. In terms of addressing disability and emergency preparedness, issues concerning evacuation planning and viable egress options – such as those raised during the Savage v. City Place Limited Partnership[6] case prior to its settlement – have come to the forefront of preparedness policy and related legislation. With President George W. Bush's introduction of a fully integrated community for disabled and nondisabled Americans via the New Freedom Initiative in 2001, several pieces of legislation have emerged through Congress that touch on everything from emergency communications and other infrastructure components to

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[6] Grady, John and Damon P.S. Andrew. "Emergency Preparedness for Individuals with Disabilities". Law Review, Journal of Physical Education, Recreation & Dance. Volume 77, No. 2. February 2006: 10

revising existing policies pertaining to preparedness practice on all levels of administration.

There are four pieces of legislation that provide the fundamental premise which guides all preparedness literature to date in some way, shape or form. First, the Robert T. Stafford Disaster Relief and Emergency Assistance Act ("Stafford Act"), also known as Public Law 100-707, was signed into law by President Bush on November 23, 1988. It is an amendment to the Disaster Relief Act of 1974, also known as Public Law 93-288, which was signed into law by President Richard M. Nixon, and was drafted for the purpose of providing federal support to states for emergency management planning and policies. The Stafford Act itself has also been amended in recent years in regards to issues concerning special needs populations, as detailed in Section 689 of Subtitle E (6 U.S.C. 773). This section addresses emergency preparedness and disaster relief for individuals with disabilities. It also "directs the Administrator to develop guidelines to accommodate individuals with disabilities, which include guidelines for: (1) the accessibility of, and communications and programs in, shelters, recovery centers, and other facilities; and (2) devices used in connection with disaster operations, including first aid stations, mass feeding areas, portable pay-phone stations, portable toilets, and temporary housing"[7]. In complement to this – and in light of the lack of coordination among response and recovery efforts during the storm, the Post-Katrina Emergency Management Reform Act of 2006 (Public Law 109-295)[8] – which was proposed by Senators Susan Collins (R-ME)

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[7] Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707. November 1988.
http://www.fema.gov/pdf/about/stafford_act.pdf
[8] Post-Katrina Emergency Management Reform Act of 2006, PL 109-295
http://www.dhs.gov/xabout/structure/gc_1169243598416.shtm

and Joseph Lieberman (D-CT) and called for the improvement of evacuation plans to include individuals with disabilities – was signed into law in October 2006 by President Bush.

The Homeland Security Act of 2002 (HSA, HR 5005)[9], or Public Law 107-296, is another fundamental piece of preparedness legislation and was enacted as the result of the terrorist attacks and subsequent tragedies of September 11, 2001. Individuals with disabilities were mentioned in several parts of it, including Section 507 which calls for regional offices to examine administration gaps on responding to special needs populations. The HSA also addresses the representation of disability interests on its National Advisory Council in Section 508 as well as by following the NOD and ICC's recommendation to include a Disability Coordinator in Section 513. However, the most directly correlated of these to the research focus is Section 512(b)(5) entitled "Evacuation Plans and Exercises" which states that State, local and tribal governments must "**develop procedures for informing the public of evacuation plans before and during an evacuation, including individuals - (A) with disabilities or other special needs**". All of the sections cited can be replicated at the local level as well and would address some of the oversights noted in preparedness literature concerning vulnerable populations in public schools.

The concept of the full integration of people with disabilities into mainstream America was reinforced by President George W. Bush's 2001 enactment of the New Freedom

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[9] Homeland Security Act of 2002, Public Law 296 http://www.dhs.gov/xlibrary/assets/hr_5005_enr.pdf

Initiative (NFI) and Executive Order 13217[10], but this concept was most demonstrably and actively applied to emergency preparedness in the U.S. with the signing of Executive Order 13347 in July 2004. This order, which promotes preparedness planning for special needs populations, is overseen in its implementation and administration by the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities (ICC) within the U.S. Department of Homeland Security. In its July 2005 Report entitled *Individuals with Disabilities in Emergency Preparedness*, the eight major areas of priority on which the ICC focuses are: emergency communications; emergency preparedness in the workplace; emergency transportation; health; private sector coordination; research; state, local and tribal government coordination; and technical assistance and outreach. Surprisingly, public schools – which not only host a significant number of Americans with disabilities on a daily basis but also have been the settings of notable crisis events with tragic and catastrophic outcomes – were not included on its priority list. Nonetheless, in terms of recommendations with relevance to disability preparedness planning in schools, four out of 8 of the suggestions listed in the 2005 ICC report could be directly applied to this specific type of effort:[11]

1. Increase the rate of participation of people with disabilities in emergency planning.

2. Increase the rate of participation of people with disabilities in emergency preparedness, response and recovery drills and exercises.

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[10] New Freedom Initiative: Fulfilling America's Promise to Americans with Disabilities. U.S. Department of Health and Human Services. http://www.hhs.gov/newfreedom

[11] Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities. Progress Report 2005-2006. http://www.dhs.gov/xlibrary/assets/icc-0506-progressreport.pdf

3. Direct homeland security funding to promote the full integration of people with disabilities in all aspects of emergency preparedness, response and recovery.

4. Integrate the needs of individuals with disabilities into the National Response Plan (NRP) and the National Incident Management System (NIMS).

These suggestions are congruent with the aims of the major pieces of legislation that have been described, and could possibly be replicated within the scope of disability preparedness planning in public schools.

Recently, several legislative bills with components applicable to disability preparedness planning were proposed but, for one reason or another, have yet to be signed into law. For example, in April 2007, the Ready, Willing and Able Act – or H.R. 1891[12] – was introduced by Rep. Patrick Kennedy (D- RI) to "promote the development of disaster plans that will protect the maximum number of citizens…and to encourage greater public participation in homeland security by allowing the American people to have a direct and influential role in developing and modifying community disaster preparedness, response, recovery, and mitigation plans in collaboration with government officials, emergency managers, health authorities, and professional responders, and for other purposes"[13]. With regard to emergency communications – another subfield of preparedness that has gained priority in recent years pertaining to disability preparedness planning in particular - The Warning, Alert, and Response Network Act of 2006[14] (S. 1753/H.R. 5556) was proposed by Rep. John Shimkus (R-IL) and four co-sponsors and remains in

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[12] The Ready, Willing and Able Act, H.R. 1891 http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.01891
[13] Ibid.
[14] The WARN Act of 2006 http://thomas.loc.gov/cgi-bin/bdquery/z?d109:HR05556:

Congressional debate. The 21st Century Emergency Communications Act of 2006, which mentioned individuals with disabilities in terms of infrastructure and preparedness, was also proposed but has yet to be enacted.

Since earlier this year, there have been several pieces of legislation proposed to Congress which include components that are applicable to one or more of the reference fields concerning disability preparedness planning and policy in schools. In April 2008, H.R. 6038, entitled The Integrated Public Alert and Warning System Modernization Act of 2008, was proposed by Representative Sam Graves (MO-6) as an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act with the intent to "modernize and integrate the public alert system to be accessible for individuals with disabilities and other vulnerable populations, such as people who speak English as a second language"[15]. During that same month, the Schools Empowered to Respond Act, or H.R. 5766, was introduced into Congress. The purposes mentioned of relevance to this topic are: 1. to establish an Office of National School Preparedness within the U.S. Department of Homeland Security, 2. to "promote the adoption of voluntary national standards in schools to prepare for and enable a collective response to acts of terrorism and other disasters"; 3. "to ensure school participation in such collective response (to preparedness plans)"[16]. The themes found throughout relevant legislation mirror several of those found throughout the existing pool of preparedness literature to date: employing a collective participation approach on preparedness processes for comprehensive

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[15] H.R. 6038 The Integrated Public Alert and Warning System Modernization Act of 2008. http://www.govtrack.us/congress/bill.xpd?bill=h110-6038
[16] H.R. 5766 Schools Empowered to Respond Act. http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.05766:

outcomes (H.R. 5766); increasing the degree of inclusion of individuals with disabilities in evacuation plans and policies, as promoted through Executive Order 13347; and, improving the usability of emergency shelters devices, alerts, and communications for special needs populations during various stages of emergency management (H.R. 5441 and Public Law 100-707).

PART I: OVERVIEW OF DISABILITY AND CRISIS EVENTS IN U.S.

In order to demonstrate the need for disability preparedness planning in U.S. public schools, background information was gathered from literature within each of the three overlapping fields that have been identified for the scope of this research analysis was gathered: general preparedness, disability preparedness, and school preparedness. Statistics gathered from U.S. Census data as well as related studies in school settings and from disability organizations are also cited to illustrated current disability population trends, and serve to introduce the presence of students & teachers with disabilities in public schools.

CHAPTER 2: DEMOGRAPHIC BACKGROUND OF DISABILITY IN THE U.S.

National Disability Population Trends

The term 'disability' is defined by the Americans with Disabilities Act of 1990 (ADA) as "one who is regarded as having a physical or mental impairment that substantially limits one or more of his/her major life activities; has a record of such an impairment; or is regarded as having such an impairment"[17]. According to the most recent Current Population Reports, approximately 54 million Americans – about 1 in 5 - are affected by the presence of a disability, and this number is projected to double in population size by the year 2030.[18] Per the U.S. Census 2000 data, 20.9 million American families have a least one family member with one or more disabilities[19]. Temporary or short-term disabilities, such as a broken limb or a surgical recovery period, should also be considered in conjunction with the preparedness challenges posed to those with long-term or permanent disabilities. There are a several factors to which the increasing disability growth forecasts can attributed, which support the belief that significant growth will occur in the youth, adult and aging populations in upcoming decades.

Youth Population in the U.S.

Impairments stemming from birth or life incident are also affecting children in the U.S. at increasing rates. According to statistics released by the Centers for Disease Control and Prevention (CDC), developmental disabilities affect approximately 17 percent of children

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[17] Job Accommodation Network, http://www.jan.wvu.edu/links/adasummary.htm
[18] Steinmetz, Erika. "American with Disabilities: 2002". May 2006. Current Population Reports. U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau: 70-107 http://www.census.gov/prod/2006pubs/p70-107.pdf
[19] Wang, Qi. "Disability and American Families: 2000", Census 2000 Special Reports. July 2005. U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau: 1

younger than 18 years of age in the United States[20]; cerebral palsy, hearing loss and vision impairments are included in this disability type, some of which have been attributed in part to cases of fetal alcohol syndrome. Additionally, organizations such as The Marcus Institute for Developmental Disabilities state that one in 166 children is diagnosed with autism, with estimated 67 children diagnosed each day.[21] As previously noted in the StatsRRTC statistics on youth and disabilities, mental impairments are also prevalent within this age cohort. Mental disabilities greatly affect American adults as well.

Adult Population in the U.S.

In addition to the prevalence of mental impairments cited in the previous age cohorts as well as health-related disabilities, conditions leading to impairments among adults are also attributed in part to the nation's veteran population, which is comprised of an estimated 23,816,000 persons[22]. This number includes all living veterans, ranging from the estimated 2.9 million[23] who served during World War II to those returning from the combat in Iraq and Afghanistan. As veterans return, it is anticipated that they will enter the workforce at some point; in fact, there are federal, state and local programs in place to assist them in this effort. Therefore, the entrance of veterans into the education workforce could logically occur and should not be omitted from this research scope. A GAO report on veterans' disability benefits illustrated the prevalence of veterans with

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[20] "Monitoring Developmental Disabilities". Center for Disease Control and Prevention. http://www.cdc.gov/ncbddd/dd/ddsurv.htm
[21] Autism Speaks www.autismspeaks.org
[22] VA Benefits and Health Care Utilization. Updated May 2, 2008. http://www1.va.gov/vetdata/docs/4X6_spring08_sharepoint.pdf
[23] Ibid.

disabilities in particular, citing that: "At present, over 30,000 servicemembers have been wounded in Operations Enduring Freedom and Iraqi Freedom. Due to improved battlefield medicine, those who might have died in past conflicts are now surviving, many with multiple serious injuries such as amputations, traumatic brain injury (TBI), and post-traumatic stress disorder (PTSD)."[24] It was also noted that "First, there has been a steady increase in the number of claims filed—including those filed by veterans of the Iraq and Afghanistan conflicts—from about 579,000 in fiscal year 2000 to about 838,000 in fiscal year 2007, an increase of about 45 percent."[25] Per this report, the federal agencies handling veteran disability claims and payments also forecast an increased rate of disability as well as resulting claims due to aging by stating: "VA anticipates the number of reopened claims will increase as compensation recipients - many of whom suffer from chronic progressive disabilities such as diabetes, mental illness, and cardiovascular disabilities - reopen claims for increased benefits as they age and their conditions worsen."[26] Aging into the disability population is another primary factor attributed to its forecasted growth in the years soon to come.

Aging Population in the U.S.

The "baby boom" generation, which consists of 78.2 million people born between the years of 1946 and 1964, are currently transitioning into the senior demographic. As a result, by 2030, it is projected that there will be about 58.7 million 'baby boomers' in the

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[24] U.S. Government Accountability Office. **DOD and VA: Preliminary Observations on Efforts to Improve Care Management and Disability Evaluations for Servicemembers**. GAO-08-514T. February 27, 2008: 1
[25] U.S. Government Accountability Office. **Veterans Disability Benefits: Claims Processing Challenges Persist, While VA Continues to Take Steps to Address Them**. GAO-08-473T. February 14, 2008:5
[26] Ibid, page 5

U.S. who will range between the ages of 66 and 84.[27] People 65 and older represented

12.4% of the population in the year 2000 but are expected to increase to comprise 20% of

the population by 2030[28]. To this end, it is important to reiterate that persons may not be

born with disabilities could quite possibly age into them. The rates of impairments that

affect the aging population are increasing today, and may result in disability types

ranging from those with physical (i.e. chronic arthritis, fibromyalgia) to mental (i.e.

Alzheimer's disease) effects. The growth of aging Americans as well as both the health

care and financial demands that are anticipated to grow were noted in one GAO report,

stating:

"Current problems with the provision and financing of long-term care could be

exacerbated by the swelling numbers of the baby-boom generation needing care. These

problems include whether individuals with disabilities receive adequate services, the

potential for families to face financially catastrophic long-term care costs, and the

burdens and social costs that heavy reliance on unpaid care from family members and

other informal caregivers create coupled with possibly fewer caregivers available in

coming generations. Long-term care spending from all public and private sources, which

was about $137 billion for persons of all ages in 2000, will increase dramatically in the

coming decades as the baby boom generation ages. Spending on long-term care services

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[27] "Oldest Baby Boomers Turn 60!" Facts for Features CB06-FFSE.01-2, U.S. Census Bureau. January 3, 2006.
http://www.census.gov/PressRelease/www/releases/archives/facts_for_features_special_editions/006105.html
[28] U.S. Department of Health and Human Services, Administration on Aging.
http://www.aoa.dhhs.gov/prof/statistics/statistics.asp

just for the elderly is projected to increase at least two-and-a-half times and could nearly quadruple in constant dollars to $379 billion by 2050, according to some estimates."[29] Statistically, across all age cohorts in the U.S., individuals with disabilities are one demographic with pressing needs of great importance in terms of emergency preparedness policy and planning.

As a result, there have been several legislative responses addressing disability issues in schools, such as the Individuals with Disabilities Education Act of 2004 and, in part, the No Child Left Behind Act of 2001. However, the scope of safety in public schools today has been redefined in the wake of crises that have transpired on school sites with tragic outcomes. Consequently, legislation has emerged that addresses impairment factors in both school emergency preparedness planning as well as disability preparedness planning – but not one that specifically address disability preparedness planning *in* public school settings. In present times, school administrators must prepare for potentially tragic situations of varying scales that must result from threats, violence (i.e. student-initiated shootings), natural or man-made disasters. Given the projected growth rates of the disability population, school personnel must also factor in optimal approaches to this policy and planning type that includes this specific vulnerable population to a reasonable degree. Thus, this research focuses on using available literature as data to assess relevant policies and processes used for school evacuation planning and other preparedness concepts in a manner by which special needs populations in public schools could benefit.

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[29] United States General Accounting Office. **Long Term Care: Aging Baby Boom Generation Will Increase Demand and Burden on Federal and State Budgets.** Statement of David M. Walker, Comptroller General of the United State**s.** Testimony Before the Special Committee on Aging, U.S. Senate. GAO-02-544T. March 21, 2002: 2

While disability growth trends have been steady increasing and are projected to continue doing so, there is one region in the U.S. that is experiencing higher growth rates of this demographic in particular. An estimated 35.5% of U.S. citizens reside in the southern region, and it is also home to the highest percentage of people with disabilities – a staggering 38.3% of the 2000 national total, or 19.1 million. Though this statistic is not cited to imply nor promote to the concentration of special needs considerations to this region alone, it does serve to illustrate the significant presence of reported disability in the nation as well as to depict current disability growth trends.

Disability Population Trends in U.S. Public Schools

STUDENTS

As a group overall, the youth demographic is designated as a vulnerable population in itself. Per U.S. Census statistics, there are an estimated 64,272,779 children aged 15 and younger; this comprises 22.84 percent of the total U.S. population[30]. Also, according to the 2006 Disability Status Report released by Cornell University's StatsRRTC, 6.3 percent of children aged 5 to 15 were reported as having one or more disabilities, with mental impairments having the highest rate of 5.1 percent.[31] Among youth who aged 16-20 years old, 6.9 percent were reported as having one of more disabilities, with mental impairments again having the highest rate at 4.7 percent.[32] GAO reports on youth and mental illness not only confirm this account of the prevalence of this impairment type

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[30] Kailes, June Isaacson and Alexandra Enders. Moving Beyond "Special Needs": A Function-Based Framework for Emergency Management and Planning. Journal of Disability Policy Studies. Austin: Spring 2007. Volume17, Issue 4; p. 231

[31] 2006 Disability Status Report: United States. Rehabilitation Research and Training Center on Disability Demographics and Statistics (StatsRRTC), Cornell University:8-10

[32] Ibid.

among American youth, but also note that more than one diagnosis is typically present in an individual: "This estimate of 2.4 million is likely to be low because certain groups that may have high rates of mental illness, such as the institutionalized, were not included in the NCS-R. Nearly 90 percent of young adults with serious mental illness had more than one type of disorder."[33]   Given the steadily increasing rates in autism and other cognitive and mental diagnoses in conjunction with the national trend in disability population growth, the number of disabled students in U.S. public schools – and even universities - is likely to follow a similarly increasing growth trend as that cited previously in the description of national trends.

TEACHERS

Not only are students with special needs affected, teachers with disabilities are as well. Evidence of this has been shown in findings from projects that focused on teachers with disabilities and workplace accommodations. Clearly, given the national statistics, one could deduce that disability rates among faculty and staff in public schools would follow this trend. Other studies have been conducted by disability organizations involving the presence of teachers with disabilities in schools today. According to the National Science Foundation, 7.1% (144,500) scientists and engineers employed in the educational sector (K-16) had a disability in 1999[34]. Georgia Tech's Work Rehabilitation Engineering Research Center (Work RERC) division of the Center for Assistive Technology and Environmental Access (CATEA) conducted a project entitled

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[33] U.S. Government Accountability Office. **Young Adults with Serious Mental Illness: Some States and Federal Agencies Are Taking Steps to Address Their Transition Challenges**. GAO-08-678. June 2008:2
[34] National Science Foundation, Women, Minorities, and Persons with Disabilities in Science and Engineering. 2002: Arlington, VA

"Classroom Accommodations for STEM Teachers with Disabilities". According to its findings, teachers with disabilities who participated as survey respondents reported various degrees of impairment types, including physical (65%), cognitive (30%), hearing (17%), visual (10%), health (10%), and speech (5%). [35] Responses to one of the survey questions indicated the need for certain universally designed emergency accommodations: 76% used wheelchair accessible fire extinguisher, 66% could make use of emergency call systems and 53% could benefit from a strobe fire alarm.[36] Although both of these studies focused on educators within the fields of science, mathematics, engineering and technology, the results still indicate the presence of teachers with disabilities in schools today – private and public, secondary and post-secondary. In complement to the general disability population growth trends cited previously as well as the simple method projections that were derived during the course of this research, it is clear that planning and policies within schools must engage in the standard practice of ensuring that all systems and processes with in it are reasonable feasible for use by disabled persons.

Statistical evidence demonstrates that policies and plans associated with school emergency preparedness must include this particular demographic to be most effective in its implement as well as its survivability purposes. It is important that, as it is encouraged in workplace, emergency management in schools include components and tools that are universal in design. By using this typology, which utilizes the same color coding system

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[35] Classroom Accommodations for STEM Teachers with Disabilities. Work Rehabilitation Engineering Research Center, Center for Assistive Technology and Environmental Access, Georgia Institute of Technology. http://www.catea.org/teachersurvey/
[36] Workplace Accommodations for Educators with Disabilities. RESNA_07. http://www.workrerc.org/Presentations/RESNA07/RESNA07_Teachers_files/textonly/slide8.html

as the Homeland Security Advisory System[37] in Appendices C, D, and J through N, the extraction of relevant concepts through preparedness literature for application to the targeted focus of disability preparedness planning in schools will become a more reasonably achievable feat. Before engaging in the typological assessment, it is necessary to give an overview of factors that make this particular type of preparedness scope and setting so critically important to our nation's security and welfare today.

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[37] June 25, 2008 Press Release. Homeland Security Advisory System: Current Threat Level. http://www.dhs.gov/xinfoshare/programs/Copy_of_press_release_0046.shtm

CHAPTER 3:

CHRONOLOGICAL OVERVIEW OF CRISES INCIDENTS IN U.S.

Public safety in terms of threats stemming from war combat and terrorist attacks have long served as the catalyst for public preparedness efforts in the U.S., even since the World War II times[38]. Unfortunately, there is a legacy of 'unpreparedness' in general in the U.S.; when examining the inclusion of and considerations for vulnerable populations in this regard – particularly for individuals with disabilities and children alike – the level of preparedness is even more lacking. Perhaps due in part to this perpetual oversight, a heightened interest in the subfields of both pediatric preparedness and disability preparedness has been reflected in the increasing amount of scholarly journal articles, studies and news articles observed within the current pool of available literature. In addition to literary and research contributions from social science disciplines, such as public policy and administration and urban planning, a number of journal pieces and conducted studies that have contributed to preparedness literature originated in the public health field. The interdisciplinary makeup of the current pool of this literature type also signals that the same type of diversified input should be incorporated in standard preparedness practice in general. Several of these works are detailed in the History subsections pertaining to preparedness in the U.S. due to the impacts stemming from terrorism and natural disasters.

The occurrences of the tragic events in the U.S. or its global bases – whether stemming from natural or manmade disasters or terrorist attack - prove that crises can transpire

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[38] Redlener, Irwin and David A Berman. National Preparedness Planning: The Historical Context and Current State of the U.S. Public's Readiness, 1940-2005. <u>Journal of International Affairs</u>. New York: Spring 2006. Vol. 59, Iss. 2; p. 87

unexpectedly and even elevate in their scope of injury, death, and destruction without warning. Examples of both types of noted crisis categories are described to illustrate the importance and relevance of preparedness planning, overall, to the nation today. Since the probability of another emergency situation is more likely to occur in the near future than not, a thorough planning effort that considers a variety of needs and subsequent options for successful egress must be deliberately sought in a coordinated effort amongst local stakeholders prior to the onset of an urgent incident.

Terrorism and the U.S.

Since the days of World War II and the Cold War era, the perceived threat to national security has been a mainstay. With a nation at war, the anticipation of terror strikes or combat taking place on domestic grounds appears to be at an all-time high. In recent years, Thomas Kean - the former Republican governor of NJ and Chair of the 9/11 Public Discourse Project – has repeatedly called attention to the lack of preparedness in United States and has implored Americans to be aware of the likelihood of a terrorist attack.[39] Citing that the government "deserves more Fs than As" regarding the still yet-to-be-implemented 41 recommended changes from 2001, Chairman Kean also asserts that "people are not paying attention…God help us if we have another attack.[40]" In 2005, he also asserted that, "Every expert with whom we spoke told us an attack of even greater magnitude is now possible and even probable. We do not have the luxury of time."[41] Similar warnings were offered by the Project's Vice Chairman, Lee Hamilton, who

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[39] Yen, Hope. *"U.S. Unprepared for Attack, 9/11 Panel Says".* Associated Press (December 4, 2005)
[40] Ibid.
[41] "9/11 Panel Report: We must act". CNN (July 23, 2004)
http://www.cnn.com/2004/ALLPOLITICS/07/22/911.report/index.html

stated, "We believe that another attack will occur. It's not a question of if. We are not as well-prepared as we should be.[42]" This vulnerability reflects the puzzling attitudes towards preparedness among Americans in general has actually been a long-standing issue in terms of U.S. national security, per Redlener/Berwin article entitled "National Preparedness Planning: The Historical Context and Current State of the U.S. Public's Readiness, 1940 to 2005". With the standard for preparedness in general receiving less than favorable assessments from experts, one can only assume that any type of special needs preparedness planning would fair even worse if evaluated. Though tangential to the identified research focus of this analysis, the content of preparedness literature would likely benefit and develop more applicable and replicable content with results from an evaluation with that particular focus.

The Impact of Natural Disasters on Preparedness in the U.S.

In the wake of Hurricane Katrina, the aftermath was devastation that still looms over the region even today – almost three years later. Vulnerable populations, particularly those within this research scope – children and people with disabilities, suffered immeasurably during the onset and in the aftermath of the storm due to displacement, limited or no safe egress options and an inept, uncoordinated response effort. The number of people affected by the occurrence of natural disasters has also increased dramatically in recent decades. According to Oxfam, the following statistics demonstrate the need to make more deliberate improvements to natural disaster preparedness in the U.S. in general:

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[42] Ibid.

- Floods and windstorms have increased from 60 events in 1980 to 240 in 2007.[43]

- Approximately 174 million people per year were affected by extreme natural disasters between 1985 and 1994; this statistic has drastically increased to 254 million people per year over the time period of 1995 to 2004.[44]

- During the early 1980s, there were about 120 natural disasters worldwide each year; currently, there are about 500 per year.[45]

For the southern U.S. region, which also has the most concentrated disability population in the nation along with this high-risk designation, one could deduce that use of a more integrated preparedness approach with an emphasis on special needs considerations would be a prudent and proactive step that best serves the needs of its residents – particularly those with disabilities. In fact, a significant portion of the literature – specifically, articles in the subfields of disability preparedness and school preparedness – conduct assessments of the impact of Hurricane Katrina on disabled evacuees and/or children. The content and recommendations in pieces such The Bulletin of the American Meteorological Society's 2005 article entitled "Looking Back and Ahead: Learning Lessons from Katrina" reaffirm the need to implement advanced planning in coastal preparedness efforts as well as to actively engage diversity in coastal preparedness planning efforts.

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[43] Yahoo/Agence France Presse (AFP): Natural disasters have quadrupled in two decades: study. November 25, 2007.
[44] Ibid.
[45] Ibid.

In terms of the pediatric effects of natural disasters on school-age children, Columbia University's National Center for Disaster Preparedness is conducting Operation Assist which is intended to "dealing with children in post-traumatic situations, is enhancing the capacity of mental health providers in the Gulf by providing training in coping and resiliency strategies, art therapy and specialized training for school-based health clinics."[46] While a significant portion of pediatric preparedness literature is either written from the perspective of or directs it recommendations to the physician, pediatrician or clinician as its intended audience, helpful strategies for school medical practitioners (i.e. school psychologists, nurses, counselors) can still be derived and applied in part to preparedness efforts. In fact, incorporating insight from the public health perspectives would further expand the diversity that is needed for comprehensive preparedness planning in order to optimize increase the number and types of crisis options for individuals with disabilities.

Crises and Mass Casualty Events in U.S. Public Schools

Ensuring safety in public spaces has emerged as critically important to the welfare of Americans today. In no place is this more critical than in the institutions in which our nation's youth congregate on a routine basis – U.S. public schools. There is historical evidence of a pattern of various scales of school violence that goes as a far back as the 1927 Bath Consolidated School bombing in Michigan during which a disgruntled school board member killed himself as well as 39 students and teachers.[47] Since that time, a number of mass casualty incidents initiated by students have transpired at schools and

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[46] National Center for Disaster Preparedness
http://www.ncdp.mailman.columbia.edu/program_resiliency.htm
[47] "Bath School bombing remembered". http://www.wzzm13.com/news/news_article.aspx?storyid=73960

universities, such as the April 1999 shootings at Columbine High Schools in Jefferson County, Colorado in which 12 were killed[48], the 2005 Red Lake High School shootings in Minnesota in which 7 people were killed[49], and the 2007 Virginia Tech in which 32 were killed[50]. Sometimes, as were the cases in 2004 Chechen rebel attack on School No. 1 in Beslan, Russia[51] and the 2006 Amish school shooting in Pennsylvania[52], schools are the intended targets of attack of outside assailant.

In addition to monitoring academic performance, educational institutions and their administrators must also include crisis planning and preparedness in its agenda since the survivability of its students and staff is a prime concern. Disaster preparedness for youth cohorts has unique characteristics that must be considered, as children and adolescents are more vulnerable as a group in crisis situations. They are more susceptible to the physical affects of chemical and biological agents, and would require different doses of medications, antidotes, or antibiotics than adults in the event of this type of attack[53]. Additionally, they present a unique psychological vulnerability both during the course of and following a disaster.[54] The disaster behavior in children will differ in ways that are distinctly different than adults; likewise, the disaster behavior of people with special needs may differ significantly than those without.

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[48] Columbine Report. In-Depth Specials, CNN.
http://www.cnn.com/SPECIALS/2000/columbine.cd/frameset.exclude.html
[49] "Juvenile arrested in Minnesota school shootings." March 29, 2005. CNN.
http://www.cnn.com/2005/LAW/03/28/school.shooting/index.html
[50] "Massacre at Virginia Tech." CNN. http://www.cnn.com/SPECIALS/2007/virginiatech.shootings/
[51] "Beslan rebel was terrorist: judge". CNN. May 16, 2006.
http://www.cnn.com/2006/WORLD/europe/05/16/russia.beslan/index.html?iref=newssearch
[52] "Fifth girl dies in Amish school shooting." October 3, 2006.
http://www.cnn.com/2006/US/10/02/amish.shooting/index.html
[53] Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. (2006) Mass-Casualty Events at Schools: A National Preparedness Survey. *Pediatrics*. 117: e11-e12
[54] Ibid.

Disability Preparedness Policy and Planning in the U.S.

Implementing a sound, comprehensive strategy for preparedness planning and policy –

particularly in public school settings – requires advanced preparation as well as a

collaborative planning effort between school entities, first responders, parents and

guardians, and other interested parties. This point is reinforced by one article, which

states that "identifying impairment or diagnosis does not tell a person how to

operationalize the need for functional support"[55]; it takes input from a diverse group of

participants during the initial planning and policy stages to ensure that the needs and

challenges of various groups are considered and prepared for well in advance of any

impact. This is a recurrent theme throughout preparedness literature in general, as

exemplified in one article's assertion that, "Preparation begins not days but years before a

disaster."[56] However, it is critically important that the persons and/or organizations that

are engaging in the planning and policy formulation process for emergency preparedness

purposes are as diverse and comprehensive in process as the plans and policies that they

aspire to draft. Yet, obtaining diversity in input during these initial stages as well during

response and recovery efforts continues to encounter obstacles with regard to being

implemented as standard practice in public schools and school districts. This obstacle

was acknowledged in a press release by Hilary Stryon, Director of the National

Organization on Disability's Emergency Preparedness Initiative, who stated: "If 85.7% of

community-based service providers do not know how to access the emergency

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[55] Kailes, June Isaacson and Alexandra Enders. Moving Beyond "Special Needs": A Function-Based Framework for Emergency Management and Planning. Journal of Disability Policy Studies. Austin: Spring 2007. Volume17, Issue 4; p. 233
[56] Weiner, Debra L. Shannon F. Manzi, Mark L. Waltzman, Michele Morin, Anne Meginniss and Gary R. Fleisher. FEMA's Organized Response With a Pediatric Subspecialty Team: The National Disaster Medical System Response: A Pediatric Perspective*. Pediatrics* 2006; S405

management system, then it's easy to understand why emergency managers do not know how to access disability networks and their advocates."[57]

The call for integration throughout relevant literature in preparedness planning and policy is manifesting in federal review processes as well. For example, the recent review of the National Incident Management System included a comment period, which ended on June 2, 2008[58], during which administrators could give input on the substantive components of the plan. In addition to federal agencies that are called to focus on emergency preparedness for individuals with disabilities, nongovernmental and voluntary organizations are typically relied upon to provide input and technical assistance for special needs crisis planning. This is noted in the National Response Framework Overview document, in which these entities are included in the "Key Players" section. The purpose of the NRF is to "to direct an intergovernmental response during a disaster to maintain safety and smooth functioning of the Nation"[59]. In the event of an urgent incident, regardless of its scale, an integrated response approach would likely lead to optimal outcomes when attending to a diverse group of affected persons or parties. In order to begin applying an integrated set of preparedness principles and concepts, relevant information must be extracted then organized into an easy-to-use reference guide. The typological framework constructed from the literature analysis attempts to facilitate this process.

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[57] Press Release: Inadequate Planning for Special Needs Populations a Key Finding in Nationwide Plan Review. June 19, 2006.
[58] FEMA Website, National Incident Management System section
http://www.fema.gov/emergency/nrf/NIMS.htm
[59] Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities. Progress Report 2005-2006 :22

PART II:

IDENTIFYING AND ORGANIZING CONCEPTS WITHIN THE SUBFIELDS OF

PREPAREDNESS PLANNING LITERATURE

In order to applying strategies and components that will yield optimal benefit to disability preparedness planning in public schools, there must first be a process in which all potential concepts are extracted from the vast scope of preparedness literature data. During the course of this analysis, concepts were pulled from each overlapping school of thought's literature and subsequently organized using a typological framework. Engaging in this organizing exercise enabled the most comprehensive assessment of the concepts applicable to considerations used in the formulation and processes associated with disability preparedness planning in public schools.

CHAPTER 4: TYPOLOGY FOR PREPAREDNESS LITERATURE

Dominant Scopes of Preparedness Literature

At present, there are four standard categories used in this field regarding stages of emergency management: mitigation and prevention, preparedness (which serves as the focus for this literature analysis), recovery and response[60]. There are also four types of crisis response cited, which factor into the category designation, in part, as well: evacuation, reverse evacuation, lockdown, and shelter-in-place[61]. However, the recommendations and concepts found throughout the expansive range of preparedness reference sources would be more easily replicable to urgent situations of similar cause, setting or scale if the scope of information covered was organized in a more clear and concise manner. Therefore, in order to resolve this dilemma, five primary categories as well as six secondary categories have been constructed for the current preparedness planning literature. This is the first of four steps in this literature analysis on emergency preparedness policies and reference materials. These categories and their respective descriptions, which are based in part on the four stages cited previously, are as follows:

Primary Preparedness Categories

1. Site Specific: Specific and primary reference to a particular building or individual location, such as a school building, a college campus, a specific workplace, independent living facility

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[60] *Practical Information on Crisis Planning: A Guide for Schools and Communities*. The Office of Safe and Drug-Free Schools, U.S. Department of Education. January 2007: 1-6
[61] Ibid, 1-5.

2. <u>Skill-Specific</u>: Specific and primary reference to the various skill capacities of general or vulnerable populations, nondisabled or disabled persons, or other groups with different sets of challenges regarding preparedness efforts (i.e. limited or non-English speaking persons). Also may refer to the specialized skill sets of a particular profession (i.e. pediatricians, school nurses).

3. <u>Location-Based</u>: Specific and primary reference to a particular city, state, region or climate; comprised of two or more individual sites, neighborhoods, cities or states

4. <u>Crisis Scale</u>: Specific and primary reference made to a specific scope and size of crisis incident (i.e. factory evacuation, earthquake shelter-in-place, hurricane region evacuation)

5. <u>Crisis Type</u>: Specific and primary reference made to a specific cause of crisis incident (i.e. apartment complex fire, school shooting, earthquake, chemical spill)

Initial inferences regarding the appropriate category designation of an article when using this typology can be gathered by a simple assessment based on the work's title. However, to achieve the most comprehensive and thorough framework possible, a full review of each piece of literature was conducted for content that might also fall within another primary or secondary category designation.

Table 1. Primary Category Itemization

Site-Specific Resources	27
Skill-Specific Resources	53
Location-Based Resources	33
Crisis Scale Resources	19
Crisis Type Resources	59
TOTAL	191

The "Primary" designation was assigned based on major themes repeated throughout the literature review process. It is important to note that, in many cases, the overlapping nature of preparedness literature resulted in one article falling under more than one primary category. Out of 169 reference sources, 27 items primarily focused on disability, from which the 'Skill' category emerged; 53 reference sources mentioned a particular site, and the "Site" category was constructed to describe these types of articles. Approximately 33 articles covered incidents that transpired within a particular facility (i.e. school building), location (i.e. New Orleans, LA) or multi-city or multi-state region (i.e. Hurricane Katrina's impact on the Gulf Coast), from which the "Location" designation emerged. Likewise, 19 articles directly referred to the size of a crisis, from which the "Crisis Scale" designation was derived. Finally, the highest number of literature sources – with a total of 59 articles – provided detailed information or recommendations based on a specific nature of crisis incident, such as earthquakes, school violence or terrorist attack, from which the "Crisis Type" designation emerged.

Topological Composition of Preparedness Literature

14%

31%

28%

10%

17%

- ☐ Site-Specific Resources
- ☐ Skill-Specific Resources
- ☐ Location-Based Resources
- ☐ Crisis Scale Resources
- ☐ Crisis Type Resources
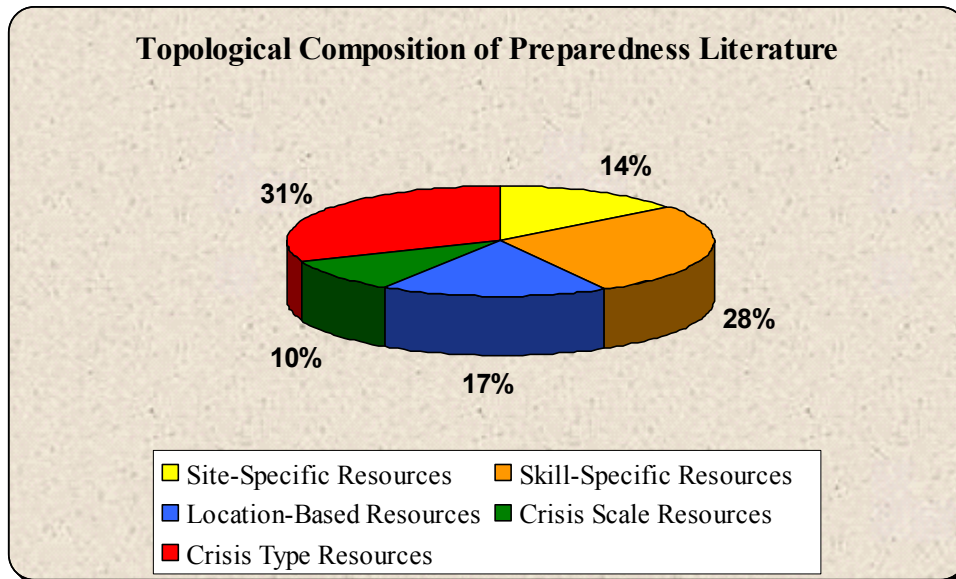
Figure 1. Primary Category Percentages of Preparedness Literature

Table 2. Sample Application of Primary Typology to Preparedness Literature

	Site-Specific	Skill-Specific	Location-Based	Crisis Scale	Crisis Type
Sample Article	Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. (2006) Mass-Casualty Events at Schools: A National Preparedness Survey. *Pediatrics*. 117: e8-e15	National Council on Disability. Lex Freiden, Chairperson. The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges. August 3, 2006.	David E. Thomas, Stewart T. Gordon, Jamar A. Melton, Christopher M. Funes, H. Jay Collinsworth and Roberta C. Vicari. Pediatricians' Experiences 80 Miles up the River: Baton Rouge Pediatricians' Experiences Meeting the Health Needs of Evacuated Children. *Pediatrics* 2006;117;S396-S401	Shirm, Steve, Rebecca Liggin, Rhonda Dick and James Graham. Prehospital Preparedness for Pediatric Mass-Casualty Events. *Pediatrics* 2007;120;e756-e761	McHugh, Megan, Andrea B. Staitl, and Laurie E. Felland. (2004) How Prepared Are Americans For Public Health Emergencies? Twelve Communities Weigh In. Health Affairs. Vol. 23, No. 3: 201-209

The rationale of the secondary categories is similar to that which led to the primary

designation. Based on the literature review, these category subjects were either

consistently cited a critical component within the title of the work or served as a major theme throughout several pieces:

Secondary Preparedness Categories

1. <u>Planning & Policy Formulation</u>: Specific and supplemental reference made to the initial stages of drafting processes for preparedness efforts preceding its implementation.

2. <u>Infrastructure</u>: Specific and supplemental reference made to system components (i.e. transportation, communications).

3. <u>Crisis Prevention</u>: Specific and supplemental reference made to threat assessment, evacuation drills, and other preventive or practice procedures within preparedness efforts.

4. <u>Crisis Containment</u>: Specific and supplemental reference made to shelter-in-place, advanced-notice evacuation and other methods of isolating an urgent situation for the purpose of alleviating its impacts.

5. <u>Crisis Response & Dispersion</u>: Specific and supplemental reference made to alleviating the cause of crisis or first response efforts

6. <u>Performance & Evaluation</u>: Specific and supplemental reference made to an assessment or review of past crisis events.

Table 3. Secondary Category Itemization

Planning & Policy Formulation	49
Infrastructure	22
Crisis Prevention and Mitigation	28
Crisis Containment	7
Crisis Response and Dispersion	32
Performance and Evaluation	53
TOTAL	191

The "Secondary" designation was assigned based on themes noted in complement to the major ones noted in the primary categorization throughout the literature review process. Out of 169 references sources, 49 items focused on initial policy and planning stages, from which the 'Formulation" category emerged. Next, 22 articles specifically referred to transportation, communications or some other form of infrastructure related to emergency events, which led to the "Infrastructure" category designation. A total of 28 articles addressed components pertaining to training, threat assessment and other means by which to prevent crisis or hazard situations, which led to the "Crisis Prevention and Mitigation" category designation. Another seven articles directly referred to methods by which to lessen the impacts of a crisis, from which the "Crisis Containment" designation emerged. This was followed by 32 articles which provided detailed information or recommendations for responding to and dissipating a crisis, which led to the "Crisis Response and Dispersion" designation. Finally, the "Performance and Evaluation" category, which had the highest total of all secondary categories with 53 articles, emerged from literature that conducted a review of past crisis events or of programs, policies and plans implemented during the occurrence of urgent incidents. In Appendix

A[62], the full typological framework – complete with color coding and category definition – is detailed. Examples of sample literature within the color-coded typological framework are outlined in Appendices H-L.
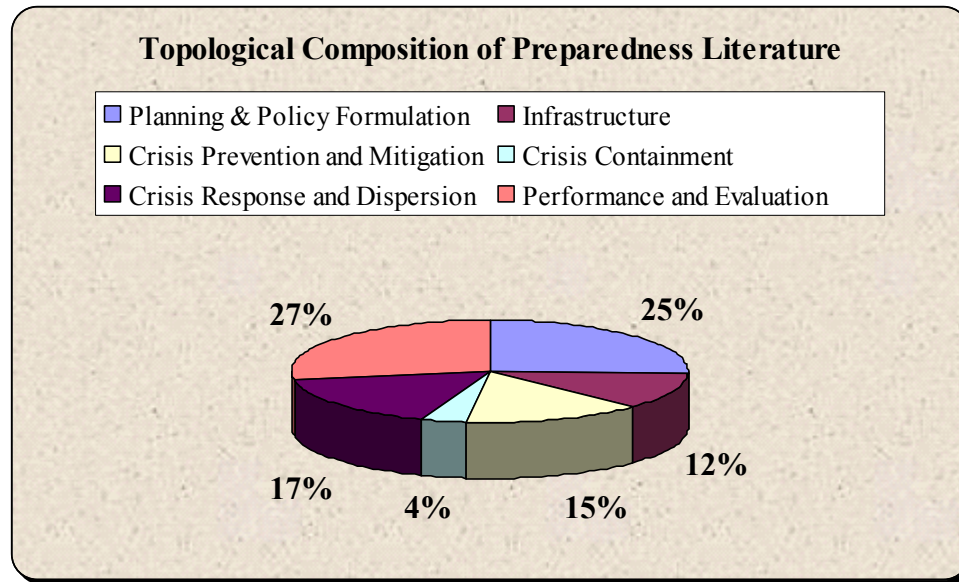
Figure 2. Secondary Category Percentages of Preparedness Literature

Table 4. Sample Application of Primary Typology to Preparedness Literature

	Planning & Policy Formulation	Infrastructure	Crisis Prevention	Crisis Containment	Crisis Response & Dispersion	Performance & Evaluation
Sample Article	Saving Lives: Including People with Disabilities in Emergency Planning. National Council on Disability. April 2005	Heppner, C., Stout, C., and Brick, K. (2004). Emergency Preparedness and Emergency Communication Access: Lessons Learned Since 9/11 and Recommendations.	Kailes, J. (2000a). Creating a Disaster-Resistant Infrastructure for People at Risk Including People with Disabilities. Trauma Treatment Professionals' Training. A. Tufan, Duyan, Hacettepe University, School of Social Work, Series No: 005.	Blendon, Robert J., Catherine M DesRoches, Martin S Cetron, John M Benson, et al. Attitudes Toward The Use Of Quarantine In A Public Health Emergency In Four Countries. Health Affairs. Chevy Chase: Jan-Jun 2006	Christensen, Keith M., Martin E. Blair, and Judith M. Holt. (2007) The Built Environment, Evacuations, and Individuals with Disabilities. Journal of Disability Policy Studies. Vol. 17, No. 4. 249-254	United States Government Accountability Office. Emergency Management: Most School Districts Have Developed Emergency Management Plans, but Would Benefit from Additional Federal Guidance. GAO-07-609. June 2007

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[62] Appendix A: Typological Matrix of Preparedness Literature

Results

As a further demonstration that there are many concepts within the current pool of preparedness literature which have the potential to be applied to the specific scope of preparedness chosen for this research, a significant portion of the resources gathered - 53 articles, or 38 percent - were categorized as "Skill-Specific". This category, which concentrates on elements of preparedness pertaining to the needs and/or challenges of a specified target population or audience, is best suited to incorporate the 'disability' component into the research focus. The category with the second highest percentage of gathered data within its designation is the "Crisis Type" category, comprising 31 percent of gathered literature. The "Site-Specific" category, which seems best suited to incorporate the school-oriented site component into the research focus, comprised 14 percent of all reference literature used in this analysis; while it is not the highest category percentage, it signals a significant category of interest regarding published preparedness literature. While each category could hold a particular degree of relevance to disability preparedness in public schools, the primary categories with the most probable correlation to this topic are the 'Skill-Specific' (due to the ability focus that is inherent within it) and the 'Site-Specific' (due to the specified site of interest, which is public school facilities and districts).

Constructing primary and secondary categories by which to organize preparedness literature is a significant step to making the concepts within it more easily referenced. However, due to the propensity for two or more of these fields to be addressed in various combinations in current preparedness literature and policy, simple strict categorization

that only allows one designation per resource may not adequately cover the entire range of elements that need to be considered. For example, the December 2000 *Pediatrics* journal article entitled "Pediatric office emergencies and emergency preparedness in a small rural state." includes secondary planning and policy formulation components from both the "Location-Based" and the "Site-Specific" categories which have principles which could be replicated in public school settings for special needs populations. The Venn Diagram format in Appendix B[63] illustrates the overlapping style that is inherent in preparedness literature. The construction of any framework by which to organize preparedness sources must include the understanding of its complex and often redundant nature when addressing relevant subjects and concepts. Thus, due to the tendency of preparedness articles to cover multiple elements of preparedness in one work, a complete separation based on the primary categories alone is not always easily achievable. Nonetheless, the construction of major and minor categories for the purpose of incorporating organization into this expansive field of resources achieves the more substantive issue at hand: a reasonably applicable framework that increases the likelihood of replicating relevant preparedness concepts to similar crisis situations. The second of four steps in this literature analysis on emergency preparedness policies and reference materials is to outline the prevailing themes in the three overlapping fields of reference on this topic.

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[63] Appendix B: Venn Diagram of Preparedness Literature Typology

CHAPTER 5: GENERAL PREPAREDNESS PLANNING

Overview

As indicated previously in the chronological overview of preparedness planning and policy in the U.S., preparedness efforts typically stem from the threat of or existing war conflicts. In the aftermath of the September 11th attacks, primacy for emergency preparedness efforts was placed on two particular types of settings as reflected in the number of literature sources within this subfield: the workplace, as well as high-rise buildings in major urban core locations. In fact, several studies, such as the World Trade Center Evacuation Study conducted by the Mailman School of Public Health at Columbia University, employed this focus to direct its research. A number of articles such as McHugh/Staitl/Felland piece entitled "How Prepared Are Americans For Public Health Emergencies? Twelve Communities Weigh In" and reports, such as the National Institute on Disability and Rehabilitation Research (NIDRR)'s *Emergency Evacuation of People With Physical Disabilities From Buildings: 2004 Conference Proceedings*, followed suit as well. Likewise, in the aftermath of the devastation and tragic impacts incurred from the presence of Hurricanes Katrina and Rita, a host of general preparedness information switched to a regional focus with an emphasis placed on natural disaster preparedness. In short, the debates and discussions involving preparedness of general or national scope tend to follow trends in accordance to those associated with the most recent crisis incident. Surprisingly, despite the urgency that combat or terrorist threat signals, attitudes toward preparedness in general reflect concerned but relaxed attitudes coupled with a staggering lack of proactive follow-up to ensure adequate protection. In short, per the consensus of themes throughout available literature, the U.S. – almost

seven years after September 11th and almost three years after Hurricanes Katrina and Rita – is still grossly unprepared. This vulnerability is rooted in one of two thoughts, per the Redlener/Berman article. First, the chances of incurring any personal impact stemming from a low probability, single event crises such as a terrorist attack is perceived by the general public to be unlikely or of little to no real consequence.[64] Second, confusion is commonplace when discussing preparedness policies and planning, as there tends to be misinformation pertaining to the proper leadership hierarchy as well as the responsibilities of government entities in attending to crisis prevention, recovery and response issues. This same notion of the prevalence of misinformation is probably applicable to the research focus of emergency preparedness in public school settings and the roles and responsibilities of school administrators and district personnel in this area.

Within the crisis response phase of emergency management, there are four types of strategies that can be used: evacuation, reverse evacuation, lockdown and shelter-in-place. In both general preparedness literature as well as disability preparedness literature, there is a secondary discussion oriented towards the 'evacuation vs. shelter-in-place' debate with regard to crisis response strategies. Discussion on the two approaches to crisis onset have emerged as points of debate with academicians and practitioners examining the merits that each one has regarding the optimal impact on the health and welfare of people – especially individuals with physical disabilities during urgent incidents. While certain incidents would require an evacuation procedure to achieve optimal safety outcomes, there are others during which leaving the premises would incur

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[64]Redlener, Irwin and David A Berman. National Preparedness Planning: The Historical Context and Current State of the U.S. Public's Readiness, 1940-2005. <u>Journal of International Affairs</u>. New York: Spring 2006. Vol. 59, Iss. 2; p. 87

more of a hazardous impact than staying within the building. For example, while

emergency responders would likely use evacuation as the safest crisis response option for

hurricanes and floods, a hazard involving a chemical or radiation release present more

time-sensitive and complicated situation due to its rapid onset.[65]   This same type of

complexity must be considered when certain physical disability types are present among

potential evacuees. At times, engaging in the evacuation process itself presents too many

physical risks or challenges to a person with mobility impairments and, thus, impedes

one's ability to achieve safe egress. This was the case of Ed Beyea, a C3 quadriplegic

who worked for Blue Cross Blue Shield on the 27th Floor of One World Trade Center on

September 11th, 2001[66]. Unfortunately, in that type of crisis situation, there was no viable

shelter-in-place option and Mr. Beyea opted to wait for first responders due to a past

emergency experience during which he incurred broken bones from layperson evacuation

assistance – an injury that can be potentially fatal to quadriplegics. As a result, Mr.

Beyea and his best friend and co-worker, Abe Zelmanowitz, who opted to wait with him

for rescue assistance, perished in the World Trade Center attacks.   The National

Clearinghouse for Educational Facilities examined these types of situations pertaining to

special needs and disabled populations in schools in their January 2008 release entitled

"An Investigation of Best Practices for Evacuating and Sheltering Individuals with

Special Needs and Disabilities." In this piece, it is asserted that even with emergency

evacuation plans in place, situations can occur where egress routes are blocked.

Therefore, for evacuation, it recommends that: "School emergency management plans

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[65] Evacuation vs. Shelter in Place, A Situational Comparison. Disaster Recovery Journal. Volume 13, Issue 3. Summer 2000. http://www.drj.com/articles/sum00/1303-04.html
[66] Byzek, Josie and Tim Gilmer. "September 11th, 2001: A Day to Remember". New Mobility Magazine. November 2001. http://www.newmobility.com/articleView.cfm?id=461&action=browse

should include procedures and training for evacuating all school occupants – including special needs and disabled students – in a variety of emergencies and building conditions and by a variety of routes." Likewise, for shelter-in-place plans, it recommends that: "Schools should continue to work with emergency planners and building designers to ensure that facilities are equipped to shelter a range of individuals with special needs".

A host of literature sources that have been categorized under 'general preparedness' are ones intended for medical professionals who serve either as first responders or in an emergency relief service capacity in response and recovery efforts during crises. Since the recommendations that are offered or can be derived from it are not typically oriented to one specific setting or for one particular scope of disaster (unless large-scale, such as stemming from urgent incidents similar to Hurricane Rita or the September 11th attacks), they have been assigned the 'general' designation for this literature analysis.

Information regarding the protection or restoration of infrastructure in disaster preparedness literature also comprises a significant portion of resources designated under the "general" category. In the Chien/Korikanthimath article entitled "Analysis and Modeling of Simultaneous and Staged Emergency Evacuations", conducts a sensitivity analysis and assess the number of evacuation stages and methods of preparation that would be necessary based on the evacuation demands of a particular site, location or region. Its asserts that "the benefits of the model could be realized by applying it in various emergency evacuation situations such as hurricane evacuations, nuclear plant disasters, and terrorist attacks"; perhaps this same type of modeling analysis could be

used for school sites with the evacuation challenges faced by special needs and youth populations as an input with a measurable benefit as the result. Likewise, in the 2006 Risk Analysis journal article entitled "Predicting Emergency Evacuation and Sheltering Behavior: A Structured Analytical Approach", the suggested strategies for assessing and/or predicting compliance to emergency plans and recommendations could be implemented in school districts or at individual school sites with regarding to special needs preparedness planning in school settings. Parent participation in school planning was also advocated in a brief statement in the piece. The expansion of infrastructure literature that assesses the impact of existing systems on people with disabilities or in school settings is discussed further in the related subfields of preparedness literature.

Typological Analysis of General Preparedness Literature

This specific type of preparedness planning and policy focus has emerged as significant field of interest in the last decade, and comprised almost 66 percent of the literature gathered for this analysis[67]. Slight variations on the primary category definitions might include the following:

Site Specific: The specific and primary reference to a particular building or site locations, such as a high-rise office building or a collection of buildings on city block or rural neighborhood typically served as the focus when assessing pieces relevant to this subfield.

Skill-Specific: The specific and primary reference made regarding the various skill capacities of general or vulnerable populations or groups with different sets of

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[67] Appendix H: Subfield Percentages of Aggregate Preparedness Literature

challenges regarding preparedness efforts remained the same in this subfield. Aggregate needs of people with disabilities as well as of youth and aging populations were the most frequent skill types mentioned.

Location-Based: Specific and primary reference to a city or state or a cluster of cities and states within a region were the prominent location types covered within this subfield.

Crisis Scale: The specific and primary reference made regarding a scope and size of crisis incident was typically city- or region-wide in this subfield.

Crisis Type: The specific and primary reference of specific causes of crises predominantly focused on those related to terrorism, natural disaster, or illness outbreaks (i.e. pandemic flu).

Prevailing Schools of Thought Applicable to School Disability Preparedness Planning

There are several prevailing schools of thought noted throughout this subfield of available literature that are directly applicable to establishing or improving disability preparedness planning in public schools. With regard to the formulation, implementation and administration of preparedness policy, employing a region-based system in one concept that is advocated in several pieces of literature, such as "The Rebirth of Regionalism".[68] Overall, many of the strategies and recommendations that are found general preparedness literature pertaining to proactive prevention measures such as the 'go-kits' encouraged by the Ready.gov website or advanced planning strategies – even if

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[68] Caruson, Kiki, Susan A MacManus, Matthew Kohen, Thomas A Watson. Homeland Security Preparedness: The Rebirth of Regionalism. Publius. Philadelphia: Winter 2005. Vol. 35, Iss. 1

oriented to a particular workplace setting – can be adapted and applied to public schools, in part. Finally, a predominant theme observed in literature oriented towards a general setting, type or scope is that there is consensus that special needs planning is of some significant importance; in some instances, there is even a brief or peripheral mention of these types of considerations. However, the diversity of these types of needs as well as real applicable concepts for direct use during the formulation and implementation stages is not so abundant. More specific points on the diversity of ability types as well as the needs and challenges to consider for these types of physical and mental impairments are cited in the second identified subfield of this research – disability preparedness planning.

CHAPTER 6: DISABILITY PREPAREDNESS PLANNING

Overview

As indicated previously, primacy on this particular vulnerable population – individuals with disabilities – has been placed on preparedness efforts in recent years, as signaled by the signing of Executive Order 13347 and the formation of the ICC. The U.S. Office of Homeland Security's national preparedness website, Ready America, does include a section entitled "Disabled and Special Needs" as well as a link to the ICC's "Emergency Preparedness for Individuals with Disabilities' Resource Center" in its resource listing[69]. Likewise, FEMA has a reference guide, youth-oriented information, and other strategy suggestions targeting people with disabilities with disaster preparedness and assistance information[70]. Disability organizations such as the Center for an Accessible Society and are also on the forefront of innovating feasible strategies for special needs populations and promoting disability preparedness awareness. The Emergency Preparedness Initiative (EPI), which is a program with a preparedness focus led by the National Organization on Disability (NOD), offers a host of suggestions for individuals with disabilities in emergency situations.

The bulk of literature within this subfield type is oriented to three main concepts. First, tips and suggestions for first responders, nondisabled people within a workplace (i.e. supervisors, coworkers, etc.) and – most directly applicable to the research focus – teachers and other personnel within schools are consistently offered. Second, promoting

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[69] Ready America www.ready.gov/america/getakit/disabled.html
[70] Accommodating Individuals With Disabilities In The Provision Of Disaster Mass Care, Housing, And Human Services: Reference Guide. Federal Emergency Management Agency. http://www.fema.gov/oer/reference/index.shtm

a proactive approach to crisis planning that maximizes independent achievability with plenty of advanced preparation is advocated in a significant portion of sources within this category. There are noted experts with years of research and consultation experience in disability preparedness who contribute publications to the field, and to this subset type in particular. Disability expert and consultant June Isaacson Kailes encourages this type of approach in articles and guides such as 2002's "Evacuation Preparedness: Taking Responsibility For Your Safety: A Guide For People With Disabilities and Other Activity Limitations" and 2007's "Moving Beyond "Special Needs": A Function-Based Framework for Emergency Management and Planning". Typically, the intended audience of a number of the articles and resource guides that she writes or co-authors is individuals with disabilities themselves. An interesting balance is discussed in these particular source types: one that encourages self-sufficient, independent preparedness actions through advanced planning as well as through taking the initiative to request assistance or accommodations that would be needed as a potential evacuee with one or more impairments or disability types. Third, the coordination among those impacted by the threat or onset of emergencies and first responders is a recurrent theme throughout disability preparedness literature as well. The discussion pertaining to emergency communication systems and the need for universal design components to be included has heightened in its interest and is reflected in the current pool of literature.

Typological Analysis of Disability Preparedness Literature

As one could deduce through assumption given the ability-oriented focus that is inherent to disability preparedness concepts, the majority of sources within this subfield are

designated in the 'Skill-Specific' category. However, a significant portion of the

literature also included elements from both the primary and secondary categories within

the typological framework in complement to ability limitations that fit within the 'Skill-

Specific' designation. For example, a 2004 Journal of Occupational and Environmental

Medicine entitled "Clinicians, knowledge, attitudes and concerns regarding bioterrorism

after a brief education program" describes the training process of first responders with a

specialized skill set to address a specific type of crisis. Therefore, as this piece signals,

most literature in this subfield falls into two or more categories within this typological

framework. This further demonstrates the overlapping nature of preparedness literature

as a whole, which necessitates an organizing tool by which to extract concepts and

strategies suggestions for use in a variety of settings and diverse ability types.

This specific type of preparedness planning and policy focus has also emerged as a

prominent research and article focus in the last decade, and comprised about 18 percent

of the literature gathered for this analysis[71]. Slight variations on the primary category

definitions might include the following:

Site Specific: The specific and primary reference to a particular building or site

locations tended to focus on the workplace and public spaces. High-rise buildings

were mentioned frequently as well when assessing pieces relevant to this subfield.

Skill-Specific: The specific and primary reference made regarding the various skill

capacities of general or vulnerable populations or groups primarily focused on people

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[71] Appendix H: Subfield Percentages of Aggregate Preparedness Literature

with disabilities as a vulnerable population as well as on first responders, nurses and clinicians for their specialized skill set.

Location-Based: Specific and primary reference to a city or state or a cluster of cities and states within a region were the prominent location types covered within this subfield.

Crisis Scale: The specific and primary reference made regarding a scope and size of crisis incident was typically city- or region-wide in this subfield.

Crisis Type: The specific and primary reference of specific causes of crises predominantly focused on those related to terrorism and natural disaster impacts.

Though surprisingly rare amongst the gathered literature sources for this research, there were a few articles focused on infrastructure or other structural components with a disability focus. For example, Christensen/Blair/Holt article entitled "The Built Environment, Evacuations, and Individuals with Disabilities" incorporates its own typology for the four forms of emergency evacuations as well as the three factors to be considered; it then evacuation processes through the lens of the unique characteristics presented by people with disabilities in emergency situations. This type of model could certainly be replicated in public school settings and applied to students and teachers with disabilities.

Reports and performance evaluations actually comprise a significant portion of disability preparedness literature. The majority of this type of source gathered within this subfield assessed the impact of past catastrophic events, such as Hurricanes Rita and Katrina, on

this particular subgroup of vulnerable populations and presented recommendations and strategies based on the needs and challenges faced by individuals with disabilities in its course. For example, the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities, more commonly known as the ICC, released a progress report on efforts and accomplishments for the 2005-2006 term. Along with federal-level agencies, disability organizations have also contribution evaluations and reports to preparedness literature. The National Council on Disability issued two of the reports with critical significance to the "Skill-Specific" category of this chosen research focus: Saving Lives: Including People with Disabilities in Emergency Planning in April 2005 and The Impact of Hurricanes Katrina and Rita on People with Disabilities: A Look Back and Remaining Challenges in August 2006. The latter report made important points to consider regarding psychiatric disabilities, which has relevance as evidenced in the statistics on the prevalence of mental disabilities among youth in the Demographic section in Part I. Since this impairment type was not considered in the pre-hurricane planning stages, evacuees with varying levels of mental impairment were unnecessarily sent to state hospitals or jails for prolonged periods of time, even if they previously lived independently in the community. The reason given for doing so was that shelters either didn't want to keep them due to a perceived stigma stemming from their disability or didn't have the required medication on the premises. With advanced planning efforts, bridging these gaps of inequitable treatment that can transpire during emergency incidents is achievable.

Sources that were specifically oriented to a particular school-related setting or for a particular ability (i.e. disability preparedness literature) were placed in those respective categories for this typological assessment. Research institutions, such as the Georgia Institute of Technology (Georgia Tech), have made this a project focus as well. In addition to the disability employment research conducted by CATEA at Georgia Tech, research interest in terms of infrastructure with a disability focus is also analyzed by another division. For example, emergency communications has a function of critical importance in general preparedness planning. GA Tech's Center for Advanced Communication Policy (CACP), which hosts Wireless Rehabilitation Engineering Research Center (Wireless RERC), is conducting two research projects related to this topic. CACP is currently conducting a three-year study entitled "D3: Development of Wireless Emergency Communications". Its objective is to contribute to the Federal Communications Commission (FCC)'s plan to increase access to a more comprehensive wireless emergency communications for people with disabilities[72]. A five-year study is also being conducted in collaboration with CATEA and Atlanta Public Schools entitled "D1: Vision and Mobility Impaired", which seeks to "to develop viable and reliable emergency management toolsets that can disseminate critical messages, alerts and information to support visually and mobility impaired students and visually impaired adults during any natural and man-made crisis".[73] Research on survivable infrastructure continues to emerge as a project focus, and the ways in which it impacts vulnerable populations is increasing in interest throughout literature as well.

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[72] D3: Development of Wireless Emergency Communications. Wireless RERC, Georgia Tech Center for Advanced Communication Policy (CACP).
[73] D1: Vision and Mobility Impaired. Wireless RERC, Georgia Tech Center for Advanced Communication Policy (CACP).

Prevailing Schools of Thought Applicable to School Disability Preparedness

Planning

There are several prevailing schools of thought noted throughout this subfield of

available literature that are directly applicable to establishing or improving disability

preparedness planning in public schools. The concept of advanced planning in

preparedness efforts itself is directly applicable to disability preparedness in public

schools and can be easily replicated within the policies and processes of these facilities.

The advance preparation concept is one that is discussed and advocated in all three

identified subfields as well as in preparedness literature overall. An additional theme

among articles for which people with disabilities was the intended target audience was

the need to take initiative in one's own preparedness planning when unique challenges

are a factor. Using accommodations devices and evacuation assistants in tandem with a

self-sufficient approach to individual preparedness planning is advocated throughout this

subfield's resources.

CHAPTER 7: SCHOOL PREPAREDNESS PLANNING

Overview

The approach to school emergency management planning in the U.S. is a bottom-up, decentralized model. At present, there are no federal laws that mandate emergency management plans in school districts, though most states report requiring school emergency management planning[74]. The fact that action is being taken by local government agencies in the absence of a federal mandate or directive could be an optimistic indicator that the critical nature of this type of planning is realized by street-level bureaucrats and is collectively viewed as important to the welfare of our nation's schools. However, it is also important to note that, according to one survey conducted on school emergency preparedness nationwide, almost one-quarter (22.1 percent) do not have a disaster plan with provisions for children with special health care needs.[75]

Resources in the form of funding and recommended best practices are provided on the federal level for state and local use. The decentralized approach to emergency preparedness places the majority of the coordination, collaboration, and implementation of these processes as state and local initiatives. Certain deficiencies have surfaced in this implementation model, one of which involves financing school preparedness efforts and accessibility. One that has been cited in this area is that federal funds directed toward this aim in public schools are sometimes used for tasks in distant relation to the aim for which it was intended. School administrators often cite depleting budgets and the

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[74] United States Government Accountability Office. Emergency Management: Status of School Districts' Planning and Preparedness – Statement of Cornelia M. Ashby, Director of Education, Workforce, and Income Security. GAO-07-821T. May 17, 2007: 5

[75] Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. (2006) Mass-Casualty Events at Schools: A National Preparedness Survey. *Pediatrics*. 117: e8

numerous urgent demands on staff and resources as this cause of this occurrence[76]. This relates to another area of concern, which is that schools tend to be in older buildings that are, on average, 40 years or older[77]. Today, many of these are in need of structural upgrades. However, other sources outline a host of funding options that are made available not only from the federal level, but from various private and organizational sources as well. Additionally, since school safety can also be categorized as relevant to public health in some cases, a website focused on school health also includes grant alerts that pertain to school preparedness funding.[78] However, there are constraints that exist on school budgets that still pose a dilemma to individual school sites.

According to related literature, the needs and considerations within each subfield of emergency preparedness planning vary greatly based on fundamental factors, such as population characteristics, origin of crisis, and location. For instance, emergency management planning in schools must be customized to the needs of children, who are themselves deemed to be a vulnerable population. It has been noted that disaster preparedness for youth cohorts has unique characteristics that must be considered, as children are at higher risk to the adverse effects of a crisis as a group. Regarding the primary health impacts on children, it has also been noted that they are also more susceptible to the physical affects of chemical and biological agents, and would require different doses of medications, antidotes, or antibiotics than adults in the event of this

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[76] Mortlock, Mick. A Disaster Report Card. Public Manager. Vol. 35, No. 1. Spring 2006:27
[77] Ibid: 27
[78] The Center for Health and Health Care in Schools – Grant Alerts Section:
http://healthinschools.org/sitecore/content/Home/News%20Room/Grant%20Alerts.aspx

type of attack[79]. Different degrees of physical as well as psychological effects shape the response that is needed during a crisis event in or affecting schools. There are factors of maturity, susceptibility and resilience that influence this categorization, some of which have been described in available preparedness literature – predominantly in sources stemming from school-oriented organizations or pediatric associations. One such entity, the American Academy of Pediatrics, addresses the mental and emotional impacts of crises on youth and notes in one of its articles that: "…the psychological effects of disaster on children are neither uniform nor universal in nature. It is widely accepted that the psychosocial manifestations in children after disaster are influenced greatly by the nature of disaster itself, the level of exposure to the disaster, the extent to which the children and those around them are personally affected by the disaster, and the individual characteristics of children, including their age and stage of development."[80] Youth present a unique psychological vulnerability both during the course of and following a disaster.[81] The disaster behavior in children will differ in ways that are distinctly different than adults; likewise, the disaster behavior of people with special needs may differ significantly than those without.

One interesting feature observed throughout 'preparedness and readiness' resources within school emergency management literature are the provision of materials targeting students as well as educators. One source of this bifurcated information approach is

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[79] Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. (2006) Mass-Casualty Events at Schools: A National Preparedness Survey. *Pediatrics*. 117: e11-e12
[80] Hagan, Jr., Joseph F. and the Committee on Psychosocial Aspects of Child and Family. **Psychosocial Implications of Disaster or Terrorism on Children: A Guide for the Pediatrician.** *Pediatrics* 2005;116:787
[81] Ibid.

offered by the American Red Cross by way of its "Masters of Disaster"[82] program, which offers materials for students as well as educators regarding disaster preparedness in schools. One federal-level governmental entity, the Federal Emergency Management Agency (FEMA), also engages in this dual target approach by providing online access to a host of resources for use in school settings or for youth and educators in particular. For example, a subset of the FEMA's Community Emergency Response Team (CERT) program is called Teen SERT, or "School Emergency Response Training". It is a youth preparedness program that has been implemented in a number of public schools across the nation and has been incorporated into the Emergency Management Institute's toolkit for Multi-Hazards Emergency Planning for Schools Train-the-Trainer course[83]. This program encourages teens to take initiative with their roles in their school facility's preparedness efforts and fosters active engagement throughout its policy and planning formulation process[84]. Teen SERT also encourages the participation of parents and guardians in the training process, which could indirectly encourage of the parents of students with disabilities to take a more demonstrative role in this type of planning as well.

Typological Analysis of School Preparedness Literature

In accordance to emerging themes in available literature, recent research projects and articles have begun to explore preparedness planning in general in a variety of settings through a comprehensive lens. The "Site-Specific" and "Skill-Specific" categories, in tandem with other primary and secondary category designations, were the most

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[82] "Masters of Disaster", American Red Cross. http://www.redcross.org/disaster/Masters/
[83] Teen SERT (School Emergency Response Training). The Connection Newsletter. Volume 7, Issue 1. Winter 2005. http://www.naem.com/connection/11/sert.html
[84] Teen SERT Program and Funding Description
http://www.cert-la.com/yabbfiles/Attachments/TeenSERT-Model.pdf

frequently used in this subfield. Location-based assessments of preparedness efforts on

school sites is emerging as a more popular journal topic, as reflected in the 2007

Kano/Borque article entitled "Experiences With and Preparedness for Emergencies and

Disasters Among Public Schools in California" as well as the Journal of School Health's

October 2005 article entitled "Planning for a Mass Casualty Incident in Arkansas

Schools".

With the exception of the U.S. Department of Education (U.S. DoE)'s ***Crisis Planning***

publication, reports and reference guides, which are assigned to the "Performance and

Evaluation" secondary category, offered some of the most critically important

information contributed to this subfield of literature. Related GAO reports indicate that a

more comprehensive approach to school preparedness planning is needed, and that the

vague construct of the decentralized system often results in policy and implementation

gaps.[85] It also noted that, overall, urban schools demonstrate a stronger level of

preparedness than rural schools. Other deficiencies were cited, such as problems

communicating with first responders as well as existing local plans that do not address

recommended practices adequately[86]. The now-defunct America Prepared Campaign,

Inc.'s 2004 study entitled *Preparedness in America's Schools: A Comprehensive Look at*

Terrorism Preparedness in America's Twenty Largest School Districts was a recent

performance analysis of school emergency preparedness plans and practices in the twenty

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[85] United States Government Accountability Office. Emergency Management: Status of School Districts'
Planning and Preparedness – Statement of Cornelia M. Ashby, Director of Education, Workforce, and
Income Security. GAO-07-821T. May 17, 2007
[86] United States Government Accountability Office. Emergency Management: Most School Districts Have
Developed Emergency Management Plans, but Would Benefit from Additional Federal Guidance. GAO-
07-609. June 2007

largest school districts in the U.S. The U.S. Department of Education's National Center for Education Statistics released ***Crime, Violence, Discipline, and Safety in U.S. Public Schools - Findings From the School Survey on Crime and Safety: 2005-06*** in September 2007. While components directly correlated to students with disabilities was not included, statistics detailing the occurrence of various types of school violence and potentially hazardous situations lend evidence to the need to implement a usable emergency plan for any and all ability limitations. Likewise, the U.S. DoE's collaboration with the U.S. Secret Service on ***Threat Assessment in Schools: A Guide to Managing Threatening Situations and to Creating Safe School Climates*** in May 2002 achieved a similar objective and, as a result, was categorized in the "Policy and Plan Formulation" secondary category.

This specific type of preparedness planning and policy focus has heightened in interest in recent years, and comprised almost 16 percent of the literature gathered for this analysis[87]. Slight variations on the primary category definitions might include the following:

Site Specific: The specific and primary reference to an individual school site or district was most frequent cited in works relevant to this subfield.

Skill-Specific: The specific and primary reference made to children and people with disabilities as vulnerable populations were the most frequent skill types mentioned.

Location-Based: Specific and primary reference to a city or region were the prominent location types detailed within this subfield.

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[87] Appendix H: Subfield Percentages of Aggregate Preparedness Literature

Crisis Scale: The specific and primary reference made regarding a scope and size of crisis incident was typically city- or region-wide in this subfield.

Crisis Type: The specific and primary reference of specific causes of crises predominantly focused on those related to terrorism, natural disaster, or illness outbreaks (i.e. pandemic flu).

Prevailing Schools of Thought Applicable to School Disability Preparedness Planning

There are several prevailing schools of thought noted throughout this subfield of available literature that are directly applicable to establishing or improving disability preparedness planning in public schools. One that does emerge from related literature is that improvements in the emergency preparedness of public schools are greatly needed. The needs of people with disabilities and other vulnerable populations are routinely – though it appears not deliberately – omitted from planning efforts, an oversight which is a cited deficiency as well.

Another school of thought that emerged during the review of this subfield's literature was that local agencies need to take the primary role in school preparedness. Since a chasm in communication is often noted in studies on local emergency planning, coordination with regular meetings and frequent discussion forums among local entities– such as medical responders, law enforcement, public health entities, and parent groups – is highly recommended. This would address the barrier noted in the article "Mass Casualty Events at Schools: A National Preparedness Survey, which states that "although the majority (of

school officials, 53.1%) reported having met with local law enforcement once or twice, more than one-quarter (27.1%) reported never having met with local law enforcement to discuss emergency planning.[88]

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[88] Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. (2006) Mass-Casualty Events at Schools: A National Preparedness Survey. *Pediatrics*. 117: e10

PART III:

APPLICATION OF CONCEPTS TO DISABILITY PREPAREDNESS PLANNING

IN PUBLIC SCHOOLS

CHAPTER 8: REVIEW

The application of relevant concepts gathered from the aggregate pool of compiled

literature is the third of four steps in this literature analysis on emergency preparedness

policies and reference materials. By using the typological matrix to effectively narrow

the scope of information, it is now easier to select and subsequently apply principles of

preparedness planning and policy to settings of similar sizes or to crises of similar type

and scale. It also serves to offers details or suggestions directly correlating to one's

particular subfield of interest, even if the subfield of interest has yet to be written by

policymakers, engineers, planners or academicians.

Relevant Concepts

Each subfield's literature contributes concepts and principles that have a significant

degree of relevance to disability preparedness planning in public schools. Chapter 4,

which analyzed literature on General Preparedness Planning, the adoption of a regionalist

model for preparedness efforts was recommended since the scope of impact that results

from crises often cross individual site and local boundaries. Advanced planning as well

as active participation in preparedness efforts was also advocated. The revision of current

emergency plans was also suggested briefly in some literature in acknowledgement of the

challenges that existing plans and policies present to vulnerable populations.

Chapter 5, which analyzed literature on Disability Preparedness Planning, encouraged the

active engagement of various special interest organizations, local first responders, and

parents and guardians throughout preparedness planning and policy processes. The

critical importance of advance planning approach to preparedness – well in advance of the onset of a crisis situation – was detailed as well. The need for people with special needs – such as individuals with disabilities – to take initiative on individual preparedness planning was another concept that directly targets the targeted research group, though – for children with special needs – parents would need to take that initiative on behalf of their children. The need to draft and implement emergency plans that are functional for all ability types was also noted.

Chapter 6, which analyzed literature on School Emergency Management Planning, also advocated diverse input from various organizations and stakeholder groups during preparedness planning and policy processes. During these same processes, increasing the involvement of parents and guardians in school preparedness planning was also emphasized. Finally, due to the coordination gaps that tend to surface during local preparedness efforts, the call for improved communication among first responders and other local-level groups and agencies with important roles in emergency preparedness was consistently recommended.

Brief Case Study Examples

The focal points reflected in the typological framework are reflected in the real application of emergency preparedness exercises. Two brief examples of preparedness efforts in action illustrate use of the categories with the primary designation as well as a few of the secondary categories in terms of real application.

The first case study example, which incorporates a demonstration of general preparedness planning as well as disability preparedness planning, is demonstrated through the past emergency exercises at the Georgia Institute of Technology. During an informal May 23, 2008 meeting with Andrew Altizer, who serves as the Director of Emergency Preparedness for the Georgia Tech Campus Police, insight was obtained on crisis response strategies as well as planning for disabled students on campus. Student with disabilities who reside in campus dormitories were also discussed. With regard to the engagement of parents of students with disabilities in campus disaster planning, there was one account of a parent of a mobility-impaired student who joined the group responsible for campus preparedness efforts and contributed considerations for activity limitations within their planning processes. It was also stated that while emphasis is typically placed on evacuation processes in the discussion of preparedness, there are few incidents – if any with a significant probability of occurring – that would actually merit this type of response strategy. A call for lockdown or shelter-in-place, as was implemented during the recent Atlanta tornado on March 14, 2008, would be more likely in response to natural disasters or even campus-wide threats. The types of emergencies that tend to transpire on Georgia Tech's campus typically stem from a chemical spill/mishap and are usually confined to one building. In this case, the evacuation may be utilized as a crisis response, but only for that one building or site.

The second case study example, which incorporates a demonstration of school preparedness planning, is described in the efforts of Atlanta Public Schools. There are

106 APS school facilities that are attended by 49,773 students[89] and employ 4,181 full-time teachers.[90] Exact statistics regarding the presence of disability among students and teachers are not listed. In February 2007, APS announced its receipt of a grant to fund their Emergency Response Management Crisis Project, which is awarded by the U.S. Department of Education's Office of Safe and Drug-Free Schools – the same federal entity that published the *Crisis Planning* guide. Similar to the bottom-up, decentralized implementation model observed nationally in preparedness, schools districts operate in a similar fashion. As a district, per the Atlanta Board of Education, a policy mandate was issued to all schools within its jurisdiction to create and maintain emergency plans in accordance with Georgia State Law. Per Rebecca Kaye, Director of Policy Development and Governmental Relations for Atlanta Public schools, the policy process entails including a "variety of stakeholders" to "be involved in the development and review of the plans". The Board policy states that "…Plans shall be prepared with input from students, parents or legal guardians, teachers, community leaders, other school and Atlanta Public Schools employees, and local law enforcement, fire service, public safety and emergency management agencies."[91] However, within this policy mandate, there is no specific provision regarding preparedness planning for special needs populations, such as students and teachers with disabilities. This oversight was also noted in the Brill/Phinney study as well as the U.S. Government Accountability Office's June 2007 Report entitled "Emergency Management: Most School Districts Have Developed Emergency Management Plans, but Would Benefit from Additional Federal Guidance" (GAO-07-609).

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[89] 2007-2008 APS Fast Facts http://www.atlanta.k12.ga.us/content/aps/FastFacts07.pdf
[90] 2005-2006 APS Fast Facts http://www.atlanta.k12.ga.us/content/aps/FastFacts_2006march.pdf
[91] Board Policy, Atlanta Board of Education.

CHAPTER 9: RECOMMENDATIONS AND STRATEGIES

Throughout the course of this research, only four of the sources that were found had a

direct correlation to disability preparedness planning, policy or practice in schools for

students and teachers with disabilities:

1. Integrating Students with Special Needs and Disabilities into Emergency

    Response and Crisis Management Planning. ERCM Express Newsletter. U.S.

    Department of Education, Office of Safe and Drug-Free Schools, ERCM

    Technical Assistance Center.

2. **Working with Students with Disabilities in a Disaster** (Chris Dayian, Psy. D.

    Senior Project Director, Safe Schools Center, Los Angeles County Office of

    Education)

3. Cavanagh, John and Anne Malia. Prepping for Emergencies with Disabled or

    Special-Needs Students. The Education Digest. Ann Arbor: Mar 2007. Volume

    72, Issue 7; p. 58

4. An Investigation of Best Practices for Evacuating and Sheltering Individuals with

    Special Needs and Disabilities. National Clearinghouse for Educational Facilities.

    January 2008

There is a great need to expand the number and availability of literature oriented to this

narrowed focus. However, in the interim, the typological framework resulting from this

research can assist greatly in the goal of replicating concepts for this aim. Despite the

limited pool of information directly correlating to disability preparedness planning and

policy in public schools, the constructed typological matrix offers an option for gathering and applying relevant principles and concepts for people with disabilities that could be beneficial/or otherwise lead to optimal outcomes for this target demographic. Once principles, recommendations and concepts are organized by site, skill, location, crisis scale and/or crisis type, extracting those with significant relevance to a comparable urgent situation becomes a much easier task to facilitate.

A number of recommendations for a more integrated school preparedness policy and planning effort can be derived based on the prevailing themes of the literature assessed in this analysis as well as the typological framework. The application of concepts gathered from other related fields of preparedness planning resulting from the literature review is the last of four steps in this literature analysis on emergency preparedness policies and reference materials. Five themes emerged during the literature analysis as the most consistently asserted points with reasonable replication potential in terms of disability preparedness in public schools are described in further detail through the lens of the constructed typological framework:

1. ***Encourage diversity within groups and individuals who are actively engaged in school preparedness efforts throughout the entire process – from the policy and plan formulation stages to the response and recovery phases.***
This school of thought falls within the 'Skill-Specific' primary designation as well as the 'Policy and Plan Formulation' secondary one. Organizations with a nationwide special interest focus, such as the National Organization on Disability and the Easter Seals, as

well as think-tank groups such as Columbia University's National Center on Disaster Preparedness, make focusing on the considerations and challenges regarding vulnerable populations of public preparedness a top priority. Citizen engagement in the process itself is also encouraged, and is another recommendation that results from this analysis. There are a number of school- and student-oriented preparedness programs that encourage active engagements in these types of processes, and significant benefit could likely result from broadening the scope of participation to include representation of the disability interest – such as students and/or teachers with disabilities themselves, parents of students with disabilities, disability organization representatives – in this process. As a standard practice or procedure, perhaps keeping at least one slot open for the representation of disability interests – whether from parents of disabled student as observed in the Georgia Tech example, or with a representative from local disability organization or rehabilitation service entity – would be an active step towards making all-inclusive preparedness planning a tangible reality.

2. *For optimal planning and policy outcomes, re-emphasize an "all-hazards preparedness" approach in public schools.*

This recommendation falls within the 'Crisis Type' primary category as well as the 'Policy and Plan Formulation' secondary category. Though it is not mentioned in school-oriented preparedness literature, this type of approach almost seems to have a direct correlation for to preparedness efforts in public schools. A surprisingly longstanding concept that originated during and was promoted by the Carter Administration, "all-hazards" preparedness is one which emphasizes individual and family readiness for

perceived low-probability events, such as terrorist attacks, as well as "cyclical and periodic events like natural disasters and prolonged power outages"[92]. In schools, where emergencies can arise that are either with small-scale with individual impacts stemming from school violence (i.e. fisticuffs) or decidedly larger in scale stemming from school threat or some type of local or regional crisis with catastrophic effects, could transpire unexpectedly at a moment's notice. Therefore, engaging in an "all hazards" approach would seem to be the most sound and prudent choice of the most significant relevance to a public school setting.

3. *Engage in comprehensive planning approaches in school preparedness efforts.*
Typically a standard reference within the field of city and regional planning, the concept of comprehensiveness within preparedness planning is being incorporated more frequently in relevant literature. It is also promoted in legislation as well, as evidenced by H.R. 5441's Title VI: National Emergency Management, in which Section 631 of Chapter 2 entitled Emergency Management Capabilities promotes the formulation and use of a comprehensive preparedness system. Another theme throughout preparedness literature encouraged use of comprehensive planning in preparedness efforts – particularly in school settings. Introducing this concept into school emergency preparedness planning would directly incorporate the considerations for individuals with disabilities as well as be in accordance with the integration principles advocated by the New Freedom Initiative and the ICC.

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[92] Redlener, Irwin and David A Berman. National Preparedness Planning: The Historical Context and Current State of the U.S. Public's Readiness, 1940-2005. <u>Journal of International Affairs</u>. New York: Spring 2006. Vol. 59, Iss. 2: 91

Advanced planning that is comprehensive in nature must become standard practice in

school preparedness efforts. Actually, promoting advance planning yields optimal

benefit to both sides of the evacuation versus shelter-in-place debate that (has emerged)

within preparedness planning today. As noted in the Chapter 7 of the ADA's Addendum,

people with disabilities – in this particular case, students and teachers with disabilities –

often have disability-related challenges that are different from other nondisabled

populations – many of which must be planned well in advance of an actual crisis

incident[93]. Considerations concerning medications and whether or not refrigeration

would be needed during a shelter-in-place or lockdown response as well as evacuation

aids (i.e. devices) or aides (i.e. people) cannot be readily available for sudden use without

adequate foresight and preparation.

4. ***Enable outlets and forms of emergency communication (i.e. public alerts through***

media, internal school alert systems) to become more diverse in its usability, especially

for individuals with disabilities during crises events.

This concept can be placed within either the 'Crisis Scale' or 'Site-Specific' primary

category as well as the secondary category labeled 'Infrastructure', and is recommended

via the 2004 FCC Report. The research efforts related to this topic in which Georgia

Tech is engaging demonstrate the heightened interest and critical importance of ensuring

that infrastructure is not only survivable in the wake of disaster, but also components

within it are universally designed for optimal usability by all who will require its use. As

evidenced by the foci of these two multi-year projects being conducted by the Center of

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[93] An Investigation of Best Practices for Evacuating and Sheltering Individuals with Special Needs and Disabilities. National Clearinghouse for Educational Facilities. January 2008

Advanced Communication Policy, an efficient and all-inclusive preparedness policy and planning process is negated by a weak infrastructure as its support.

5. *Use regionalism as the policy and planning model for preparedness efforts.*

This recommendation falls within the 'Location-Based' primary category as well as in the 'Policy and Plan Formulation' secondary category. Quite often, situations that evolve into urgent incidents have impacts that either originate from or impact individuals, locations and entities well beyond there own school grounds, city limits, or even state boundaries. For example, natural disasters such as Hurricane Katrina had catastrophic impacts that expanded far beyond a local-level hazard into a multi-state, Gulf Region devastation and casualty. Also, during the September 11th attacks on New York City, Washington, D.C. and Pennsylvania, schools were in session and were impacted by either being in close proximity to the sites of attack or by quickly engaging in mass evacuation or lockdown in response to the crisis. In addition to that, incorporating this implementation model may address some of the gaps that have arisen in the current federal-state-local, bottom-up decentralization policy model that is current used for school preparedness in the U.S. This gap in policy implement is a recurrent theme in the current pool of preparedness literature, primarily in the subfields of school preparedness and disability preparedness. Per the Caruson article entitled "Homeland Security Preparedness: The Rebirth of Regionalism", regional approaches to homeland security efforts became a renewed interest when past crisis events revealed the "lack of coordination, communication, and responsiveness" among intergovernmental agencies.[94]

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[94] Caruson, Kiki, Susan A MacManus, Matthew Kohen, Thomas A Watson. Homeland Security Preparedness: The Rebirth of Regionalism. Publius. Philadelphia: Winter 2005. Volume 35, Issue 1: 144

This model type might also make funding preparedness efforts in schools more feasible by alleviating the fiscally constrained budgets of individual public schools or schools districts; attending to the demanding costs of structural improvements, ADA accessibility standards in older buildings, and other pertinent projects with a collective pool of financial resources might enable changes to be made that would optimize the emergency alerts and egress options for students and teachers with disabilities in public schools. Therefore, it seems conducive to effective policy standards to implement a regional model in the policy and planning of all school preparedness efforts. Though this suggestion does not specifically address disability preparedness in public schools, the comprehensive element that can be inherent to a regionalist model would be most conducive to promoting diversity among target issues and participants in this process with a more inclusive style of engagement.

CHAPTER 10: CONCLUSION

While the components of school emergency management planning are extensive in nature, there is a pressing need to ensure that egress options and preparedness standards are equally viable for all students, faculty, and staff – disabled and non-disabled alike. Since there are various disability types and multiple impairments can be present in an individual, emergency preparedness and egress standards that are universal in design and attend to the survivability of all public school participants must be established. This topic is critically important to the welfare of U.S. public schools today. The prevalence of crises observed by the U.S. in recent years due to natural disaster, terrorist attack, or other urgent incident substantiates the importance of adequate preparation.

Emergency planning is a complex process that is difficult to replicate due to the variety of crisis types, locations, scales within it as well as in the diverse single site types and population groups that may be impacted by its occurrence. However, the process which it currently implements is typically uniform and vague in its construct, predominantly attending to segment of the population without disabilities. In similar fashion, the literature and policy involved with preparedness planning is equally complex and boasts a broad spectrum of content. While disability preparedness information pertaining to the workplace is likely the most readily available literature type, it is equally important to have literature of the same type available that focuses on public schools. In order to make preparedness literature more 'user-friendly', the implementation of a typology for current literature has been constructed. Based on five primary categories as well as six subcategories, this system makes the process of replicating or applying concepts within

the expansive field of preparedness policy and literature more concise and feasible for doing so for one target site, if so desired by academicians, practitioners or other interested parties. The goal of this analysis was to facilitate this process as a means of extracting concepts of relevance within the broad preparedness scope to improving disability preparedness planning within public schools. The organization of preparedness literature according to the constructed typological framework made the process of identifying relevant schools of thought within it easier and thus, more easily applicable to the narrowed scope of disability preparedness planning in schools. The prevailing themes throughout the gathered sources which held potential significance to this narrowed scope led to six replicable recommendations: diversity amongst groups and individuals engaged in preparedness policy and plan formulation; the incorporation of a comprehensive planning approach to preparedness; reinstating the use of an all-hazards approach to preparedness efforts; advanced planning well in advance of a crisis situation; and the implementation of regionalism in the preparedness model.

In complement to attending to the educational needs of people with disabilities, policies must be enacted that more effectively address the preparedness needs of this demographic in public schools. In addition to preparing for potential crises that could affect any of our nation's citizens at any given moment, schools also face challenges due to behavioral disruptions on the part of its own students or other extreme cases of disturbance that could result in mass injuries and/or casualties. With specific regard to America's youth and school-age population, crisis could transpire unexpectedly at a moment's notice. For example, the events of September 11th, which took place during schools' hours of

operation, demonstrate the substantial nature of this issue. With the adequacy of standards for general school emergency planning being called into question, those specifically aimed at the safe and effective evacuation of people with disabilities are even more lacking in certainty. Therefore, schools must engage in practices that improve the level of preparedness in public schools for all citizens – disabled and nondisabled alike.

APPENDIX A

TYPOLOGICAL MATRIX FOR PREPAREDNESS LITERATURE

	SITE-SPECIFIC	SKILL-SPECIFIC	LOCATION-BASED	CRISIS SCALE	CRISIS-TYPE
POLICY & PLAN FORMULATION	Strategies for preparedness policy & planning stages at specific sites	Strategies for preparedness policy & planning stages focused on the needs of a target population	Strategies for preparedness policy & planning stages at a specific locality, state, or region	Strategies for preparedness policy & planning stages for a specific scope of crisis or disaster impact	Strategies for preparedness policy & planning stages for a particular type of crisis event
INFRASTRUCTURE	Strategies for protecting and/or restoring the operation of systems at a specific site	Strategies for protecting and/or restoring the operation of systems in terms of use by a target demographic	Strategies for protecting and/or restoring the operation of systems in a specific locality, state, or region	Strategies for protecting and/or restoring the operation of systems following a crisis of specific size or scope	Strategies for protecting and/or restoring the operation of systems following a specific type of crisis
CRISIS PREVENTION	Threat assessment practices or hazard mitigation within a particular facility	Threat assessment practices or hazard mitigation for a particular ability type	Threat assessment practices or hazard mitigation for a particular climate, locality or region	Threat assessment practices or hazard mitigation for one of a particular size or scope	Threat assessment practices or hazard mitigation of a particular type of crisis event
CRISIS CONTAINMENT	Strategies used to prevent the spread of impacts from an individual site	Strategies used to prevent the spread of impacts among a target demographic or population	Strategies used to prevent to spread of impacts from a particular locality, state or region	Strategies used to prevent to spread of impacts of a particular size or scope	Strategies used to prevent to spread of impacts from a particular type of crisis
CRISIS RESPONSE & DISPERSION	Strategies for individual site response to or to alleviate the impact of a crisis	Strategies customized to a specific population for use in response to or to alleviate crisis impacts	Strategies for a specific locality, state or region to use in response to or for relief from a crisis	Strategies for a particular size or scope of crisis to use in response to or for relief from impacts	Strategies for a particular type of crisis to use in response to or for relief from impacts
PERFORMANCE & EVALUATION	A review or assessment of past crises at a particular site	A review or assessment of past crises for a target population or demographic	A review or assessment of past crises at a particular locality, state or region.	A review or assessment of past crises of a particular size or scope	A review or assessment of specific type of past crises

VENN DIAGRAM OF PREPAREDNESS LITERATURE TYPOLOGY

Skill-Specific

Site-Specific

Crisis Type

Location -Based

Crisis Scale
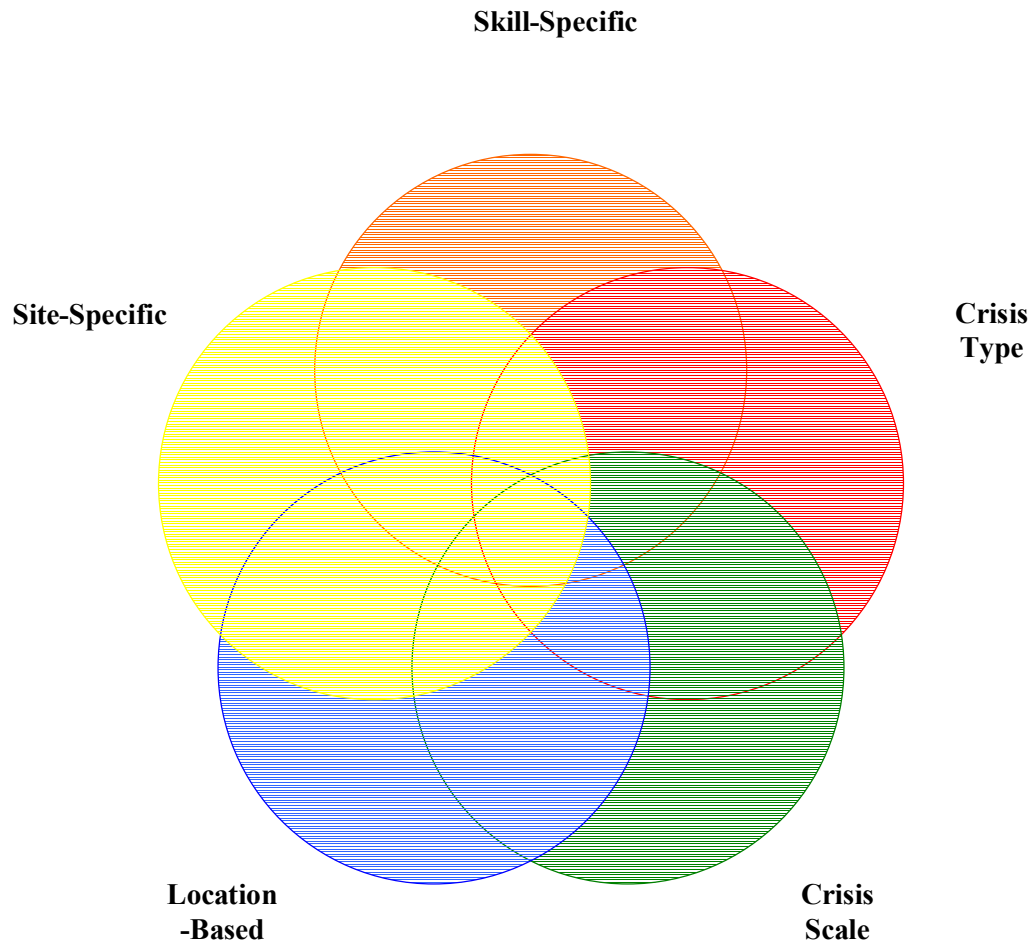
The five categories for preparedness literature were derived from major themes gathered during its analysis. The Venn Diagram illustrates the overlapping nature of its three identified subfields as well as the propensity of preparedness resources to address two or more categories within the constructed typology in a single source.

CHART – GENERAL PREPAREDNESS LITERATURE

RESOURCES

General Preparedness Literature Sources
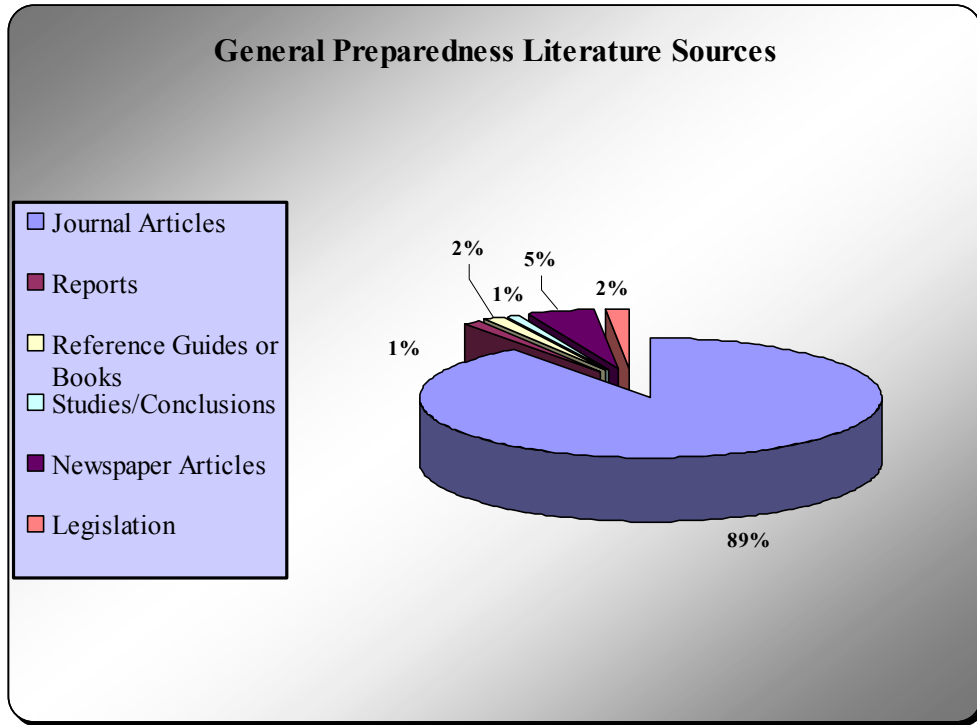
	No. of Sources	Subfield Percentage	Total Percentage
GENERAL PREPAREDNESS SOURCES			**65.68%**
Journal Articles	100	90.09%	59.17%
Reports	1	0.90%	0.59%
Reference Guides or Books	2	1.80%	1.18%
Studies/Conclusions	1	0.90%	0.59%
Newspaper Articles	5	4.50%	2.96%
Legislation	2	1.80%	1.18%
TOTAL	111	100%	65.68%

APPENDIX B

CHART – DISABILITY PREPAREDNESS LITERATURE

RESOURCES

Disability Preparedness Literature Sources
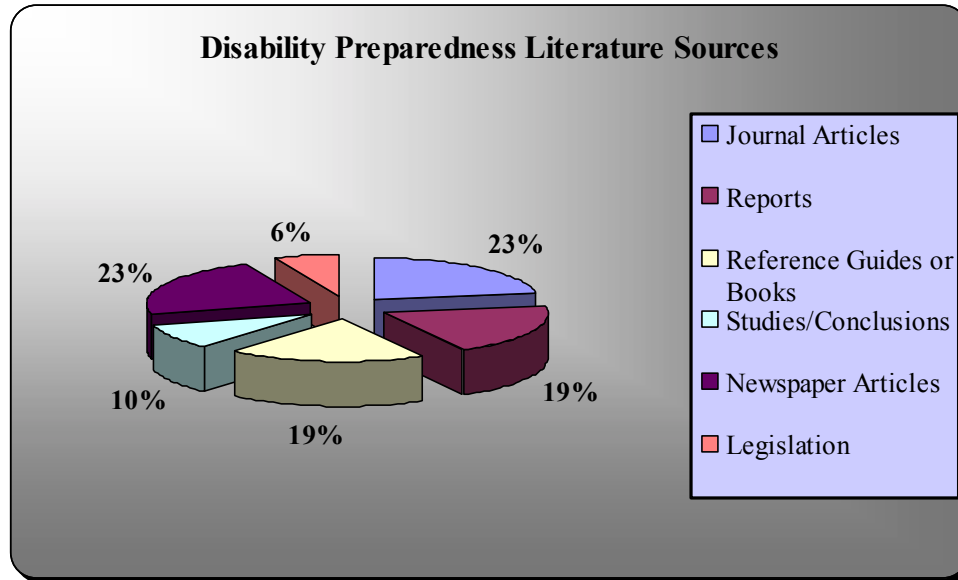
	No. of Sources	Subfield Percentage	Total Percentage
DISABILITY PREPAREDNESS SOURCES			**18.34%**
Journal Articles	7	22.58%	4.14%
Reports	6	19.35%	3.55%
Reference Guides or Books	6	19.35%	3.55%
Studies/Conclusions	3	9.68%	1.78%
Newspaper Articles	7	22.58%	4.14%
Legislation	2	6.45%	1.18%
TOTAL	31	100.00%	18.34%

CHART – SCHOOL PREPAREDNESS LITERATURE RESOURCES

School Preparedness Literature Sources

- ☐ Journal Articles
- ☐ Reports
- ☐ Reference Guides or Books
- ☐ Studies/Conclusions
- ☐ Newspaper Articles
- ☐ Leglislation

11%   4%   7%   4%0%

74%
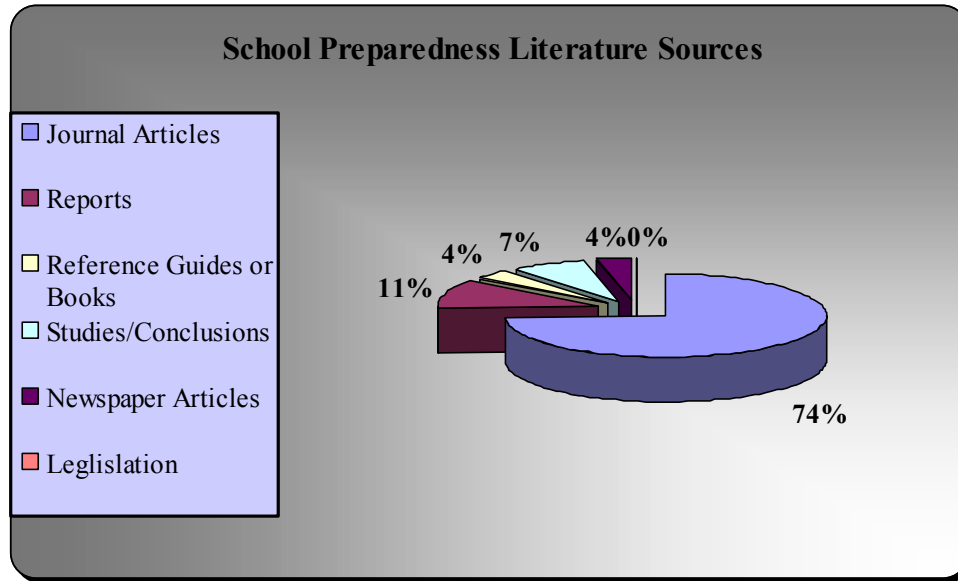
	No. of Sources	Subfield Percentage	Total Percentage
SCHOOL PREPAREDNESS SOURCES			**15.98%**
Journal Articles	20	74.07%	11.83%
Reports	3	11.11%	1.78%
Reference Guides or Books	1	3.70%	0.59%
Studies/Conclusions	2	7.41%	1.18%
Newspaper Articles	1	3.70%	0.59%
Legislation	0	0.00%	0.00%
TOTAL	27	100%	15.98%

APPENDIX F

AGGREGATE PREPAREDNESS LITERATURE RESOURCES
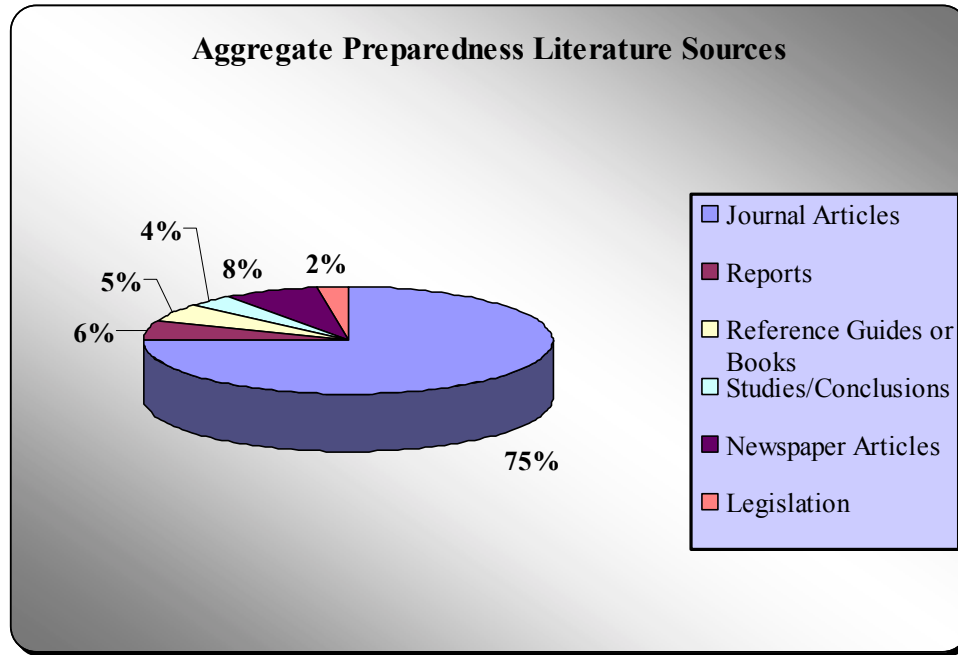
	No. of Sources	Subfield Percentage
AGGREGATE PREPAREDNESS SOURCES		
Journal Articles	127	75.15%
Reports	10	5.92%
Reference Guides or Books	9	5.33%
Studies/Conclusions	6	3.55%
Newspaper Articles	13	7.69%
Legislation	4	2.37%
TOTAL	169	100%

APPENDIX G

CALCULATIONS OF PREPAREDNESS SUBFIELD LITERATURE

Subfield Percentages of Aggregate Preparedness Literature

- ☐ GENERAL PREPAREDNESS SOURCES
- ■ DISABILITY PREPAREDNESS SOURCES
- ☐ SCHOOL EMERGENCY MANAGEMENT SOURCES

16%

18%

66%
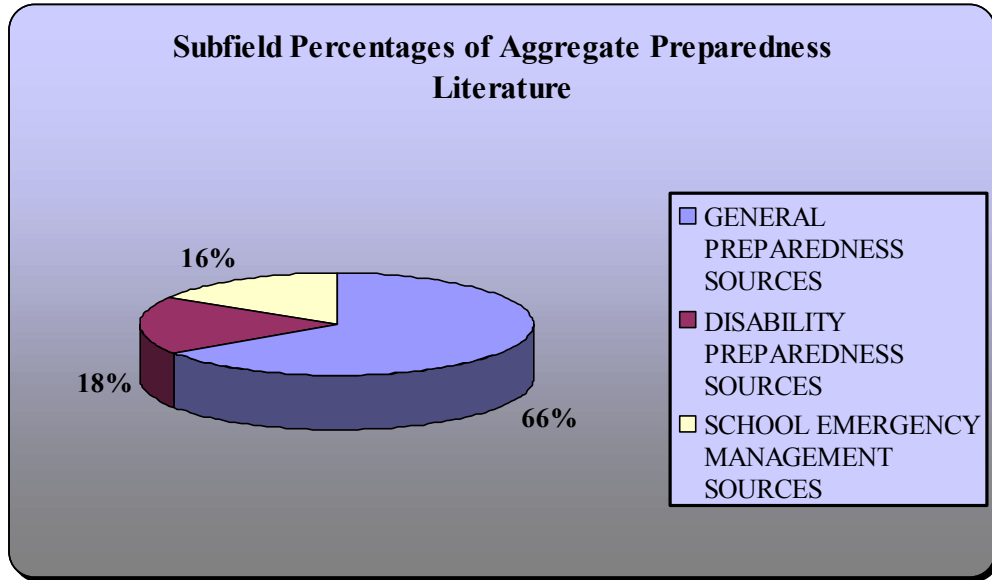
TYPOLOGICAL CHART: SITE-SPECIFIC LITERATURE

Topology of Site-Specific Preparedness Literature

30%   37%

15%   0%   11%   7%

- SiS/PPF Planning & Policy Formulation
- SiS/I Infrastructure
- SiS/CPM Crisis Prevention & Mitigation
- SiS/CC Crisis Containment
- SiS/CRD Crisis Response & Dispersion
- SiS/PE Performance & Evaluation
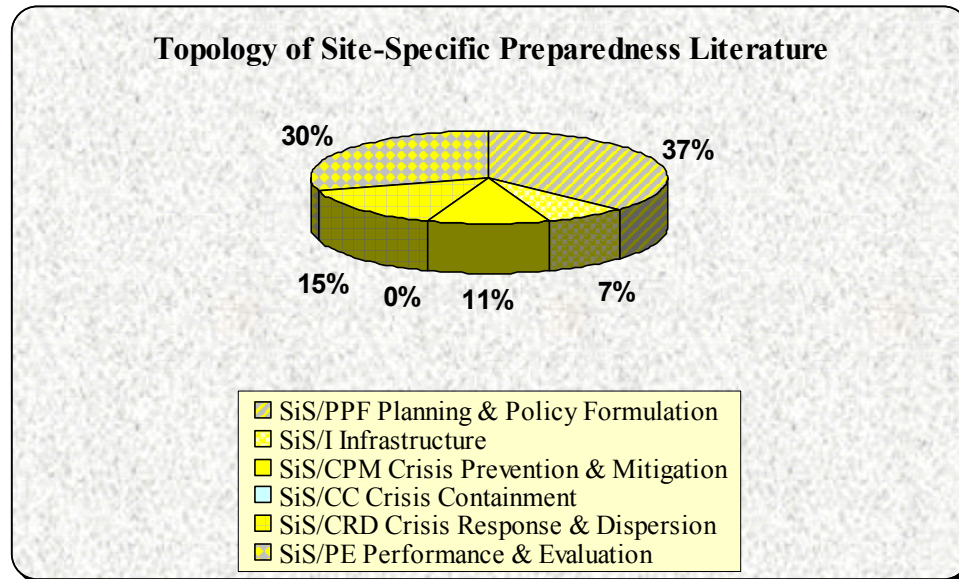
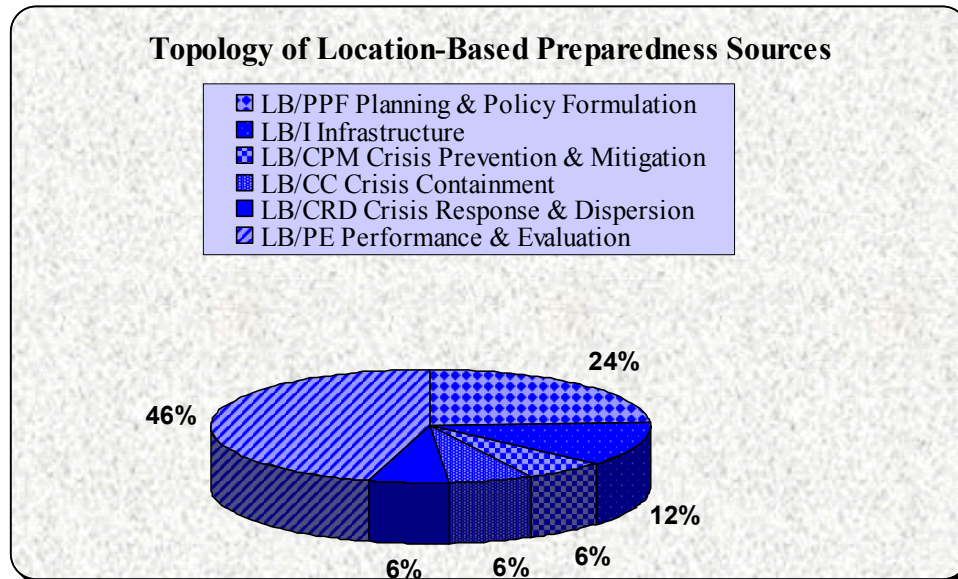| SITE-SPECIFIC		No. of Sources	Sample Literature
SiS/PPF	Planning & Policy Formulation	10	Bucher, Katherine T. and M. Lee Manning. "Creating Safe Schools". The Clearing House. September/October 2005
SiS/I	Infrastructure	2	Antosia RE, Hutson HR, Chang A, Leaning J. Emergency Code Systems and Disaster Preparedness in Level-1 Trauma Centers in the US. Academic Emergency Medicine. Philadelphia: May 2003. Vol. 10, Iss. 5;
SiS/CPM	Crisis Prevention & Mitigation	3	Pascopella, Angela. "Threat Assessment Plans". District Administration. January 2008: 35-40
SiS/CC	Crisis Containment	0	
SiS/CRD	Crisis Response & Dispersion	4	Shirm, Steve, Rebecca Liggin, Rhonda Dick and James Graham. **Prehospital Preparedness for Pediatric Mass-Casualty Events.** *Pediatrics* 2007;120;e756-e761
SiS/PE	Performance & Evaluation	8	Brill, Steven and Allison Phinney. Preparedness in America's Schools: A Comprehensive Look at Terrorism Preparedness in America's Twenty Largest School Districts. September 2004. The America Prepared Campaign, Inc.
	TOTAL	**27**	

APPENDIX I

TYPOLOGICAL CHART: SKILL-SPECIFIC LITERATURE

Topology of Skill-Specific Preparedness Sources

- □ SkS/PPF Planning & Policy Formulation
- ■ SkS/I Infrastructure
- ■ SkS/CPM Crisis Prevention & Mitigation
- □ SkS/CC Crisis Containment
- □ SkS/CRD Crisis Response & Dispersion
- ■ SkS/PE Performance & Evaluation
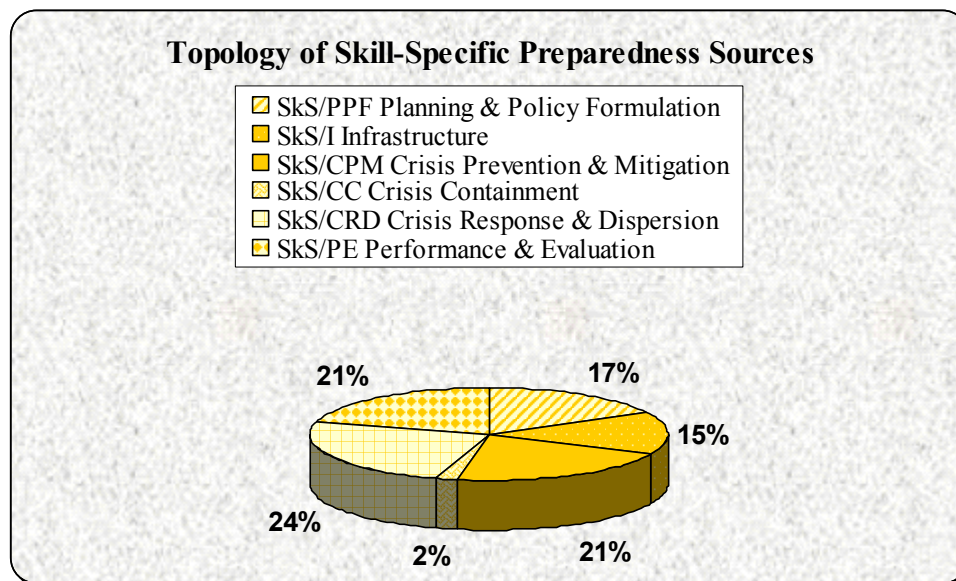
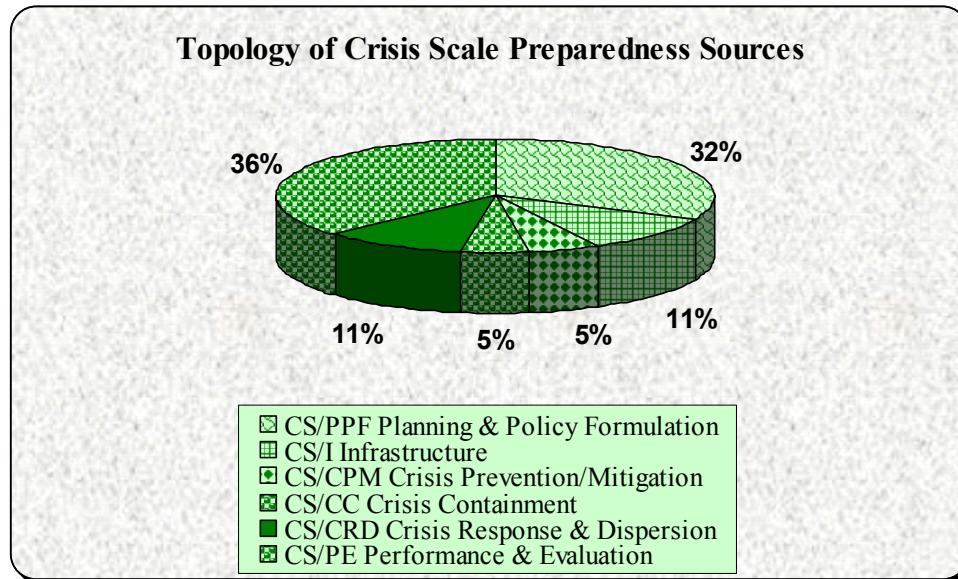| SKILL-SPECIFIC		No. of Sources	Sample Literature
SkS/PPF	Planning & Policy Formulation	9	Integrating Students with Special Needs and Disabilities into Emergency Response and Crisis Management Planning. ERCM Express Newsletter. U.S. DoE, OSDFS, Volume 6, Issue 1. 2006
SkS/I	Infrastructure	8	Christensen, Keith M., Martin E. Blair, & Judith M. Holt. The Built Environment, Evacuations, and Individuals with Disabilities. Journal of Disability Policy Studies. Vol. 17, No. 4
SkS/CPM	Crisis Prevention & Mitigation	11	Kailes, J. Evacuation Preparedness: Taking Responsibility For Your Safety: A Guide For People With Disabilities & Other Activity Limitations. Center for Disability Issues & the Health Profession, Western University of Health Sciences
SkS/CC	Crisis Containment	1	Facing Fear: Helping Young People Deal with Terrorism & Other Tragic Events. American Red Cross
SkS/CRD	Crisis Response & Dispersion	13	An Investigation of Best Practices for Evacuating and Sheltering Individuals with Special Needs &Disabilities. National Clearinghouse for Educational Facilities. January 2008
SkS/PE	Performance & Evaluation	11	*Emergency Evacuation of People With Physical Disabilities From Buildings: 2004 Conference Proceedings*. National Institute on Disability and Rehabilitation Research NIDRR, Office of Special Education & Rehabilitative Services, U.S. DoE
	TOTAL	53	

TYPOLOGICAL CHART: LOCATION-BASED LITERATURE

Topology of Location-Based Preparedness Sources

- ▣ LB/PPF Planning & Policy Formulation
- ■ LB/I Infrastructure
- ▣ LB/CPM Crisis Prevention & Mitigation
- ▩ LB/CC Crisis Containment
- ■ LB/CRD Crisis Response & Dispersion
- ▨ LB/PE Performance & Evaluation

24%

46%

12%

6%   6%   6%

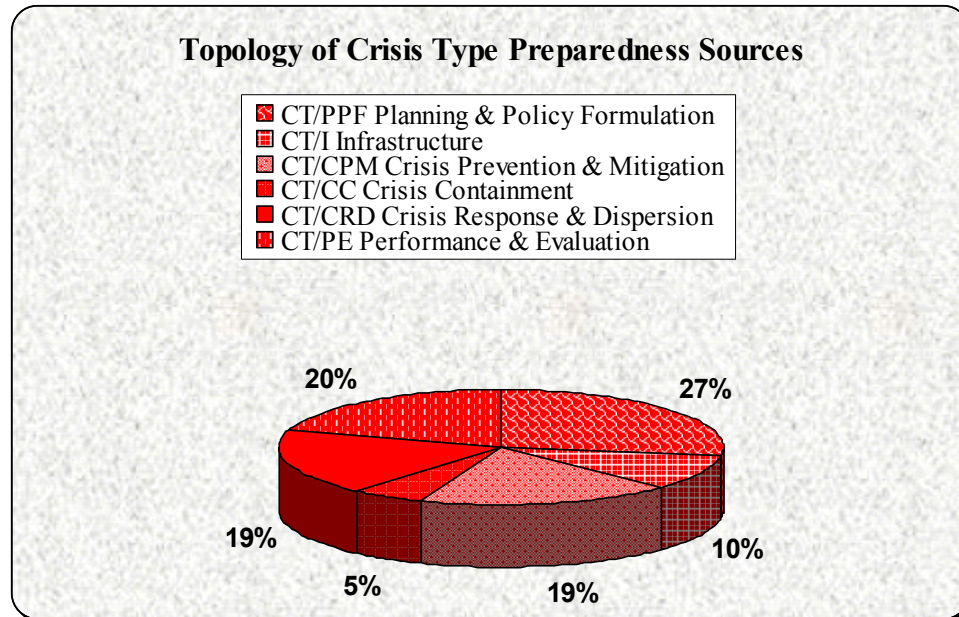|	LOCATION-BASED	No. of Sources	Sample Literature
LB/PPF	Planning & Policy Formulation	8	Compendium of Initiatives on Emergency Preparedness and People with Disabilities in CDC Funded States: 2007. AAHD.
LB/I	Infrastructure	4	Heppner, C., Stout, C., & Brick, K. (2004). Emergency Preparedness & Emergency Communication Access: Lessons Learned Since 9/11 & Recommendations.
LB/CPM	Crisis Prevention & Mitigation	2	McHugh, Megan, Andrea B. Staitl, and Laurie E. Felland. How Prepared Are Americans For Public Health Emergencies? Twelve Communities Weigh In. Health Affairs. Vol. 23, No. 3: 201-209
LB/CC	Crisis Containment	2	E B Gagnon, M B Aboutanos, A K Malhotra, D Dompkowski, et al. In the Wake of Hurricane Isabel: A Prospective Study of Postevent Trauma and Injury Control Strategies. The American Surgeon. Mar 2005. Vol. 71, Iss. 3
LB/CRD	Crisis Response & Dispersion	2	David E. Thomas, Stewart T. Gordon, et al. **Pediatricians' Experiences 80 Miles up the River: Baton Rouge Pediatricians' Experiences Meeting the Health Needs of Evacuated Children.** Pediatrics 2006;117;S396-S401
LB/PE	Performance & Evaluation	15	The Final Report & Findings of the Safe Schools Initiative: Implications for the Prevention of School Attacks in the US. U.S. Secret Service and U.S. Doe. Wash., D.C. July 2004
	TOTAL	**33**	

APPENDIX K

TYPOLOGICAL CHART: CRISIS SCALE LITERATURE

Topology of Crisis Scale Preparedness Sources

- ⊠ CS/PPF Planning & Policy Formulation
- ⊞ CS/I Infrastructure
- ⊡ CS/CPM Crisis Prevention/Mitigation
- ⊠ CS/CC Crisis Containment
- ■ CS/CRD Crisis Response & Dispersion
- ⊠ CS/PE Performance & Evaluation

	CRISIS SCALE	No. of Sources	Sample Literature
CS/PPF	Planning & Policy Formulation	6	National Council on Disability, Public Consultation. Homeland Security, Emergency Preparedness, Disaster Relief and Recovery. May 31, 2007.
CS/I	Infrastructure	2	Chien, Steven I. and Vivek V. Korikanthimath. Analysis and Modeling of Simultaneous and Staged Emergency Evacuations. Journal of Transportation Engineering. Vol. 133, No. 3. March 1, 2007: 190-197
CS/CPM	Crisis Prevention/Mitigation	1	Kirby, Betty, John Thompson and Michael Loehr. Preparing for the Crisis. *Nieman Reports*. 61, 1. Spring 2007:66-70
CS/CC	Crisis Containment	1	Cutter, Susan L. Lessening the Impact of Disasters. American Scientist. Research Triangle Park: Mar/Apr 2008. Vol. 96, Iss. 2
CS/CRD	Crisis Response & Dispersion	2	Baker, Mark C., Charles A. Witschorik, Jonathan C. Tuch, Waverly Hagey-Espie, and Veena B. Mendiratta. (2004) Architectures and Disaster Recovery Strategies for Survivable Telecommunications Services. Bell Labs Technical Journal. 9(2): 125-145
CS/PE	Performance & Evaluation	7	Nationwide Plan Review – Phase 2 Report. U.S. Department of Homeland Security and U.S. Department of Transportation. June 16, 2006
	TOTAL	**19**	

TYPOLOGICAL CHART: CRISIS TYPE LITERATURE

Topology of Crisis Type Preparedness Sources

- CT/PPF Planning & Policy Formulation
- CT/I Infrastructure
- CT/CPM Crisis Prevention & Mitigation
- CT/CC Crisis Containment
- CT/CRD Crisis Response & Dispersion
- CT/PE Performance & Evaluation

20%   27%

19%   10%

5%   19%

	CRISIS TYPE	No. of Sources	Sample Literature
CT/PPF	Planning & Policy Formulation	16	Dombroski, Matt, Baruch Fischoff, & Paul Fischbeck. Predicting Emergency Evaluation & Sheltering Behavior: A Structured Analytical Approach. Risk Analysis. Vol. 26, No. 6
CT/I	Infrastructure	6	Grady, Mary L., ed. Pediatric Terrorism & Disaster Preparedness: A Resource for Pediatricians. American Academy of Pediatrics, AHRQ, U.S. Dept. of Health & Human Services. AAHQ Publication No. 06(07)-0056 October 2006
CT/CPM	Crisis Prevention & Mitigation	11	Hagan, Jr., Joseph F. and the Committee on Psychosocial Aspects of Child & Family. 2005. Psychosocial Implications of Disaster or Terrorism on Children: A Guide for the Pediatrician. Pediatrics
CT/CC	Crisis Containment	3	Blendon, Robert J., Catherine M DesRoches, Martin S Cetron, John M Benson, et al. Attitudes Toward The Use Of Quarantine In A Public Health Emergency In Four Countries. Health Affairs. 2006.
CT/CRD	Crisis Response & Dispersion	11	Klote, John H., Bernard M. Levin & Norman E. Groner. Emergency Elevator Evacuation Systems. Elevators, Fire & Accessibility, Proceedings, 2nd Symposium, American Society of Mechanical Engineers. Baltimore, MD. April 19-21, 1995
CT/PE	Performance & Evaluation	12	Mortlock, Mick. A Disaster Report Card. Public Manager. Vol. 35, No. 1. Spring 2006
	TOTAL	59	

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"9/11 Panel Report: We must act". CNN (July 23, 2004)
http://www.cnn.com/2004/ALLPOLITICS/07/22/911.report/index.html

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