

TO: Mayor Richard M. Daly
FROM: Special Assistant to the Mayor for Disaster Management
RE: Analysis and Recommendations to Mitigate and Respond to Extreme Heat Disasters
DATE: December 1, 2008

The Chicago Heat Wave of 1995 was a natural disaster we were unprepared to manage. This event cannot be categorized similarly to the more visible types of natural disasters such as a hurricane or earthquake, but rather the heat wave is unconventional in the sense its effects are observed through a slow, lurking progression of events. Although the first effects of the extreme heat wave took effect on July 13, it was not until Saturday, July 15 when city leaders begin to recognize the gravity of the situation. City agencies from the Department of Public Health to the Mayor's Office were all caught by surprise of the ensuing events. Although warnings of the impending heat wave were provided by the National Weather Service (NWS) (KSG, 2002, p.2) we failed to act and were significantly unprepared for this event. The response placed strained on need for emergency medical services placed a significant strain on our fire department and Chicago area hospitals to provide emergency medical services, upon our police department to respond to emergency calls, and on the Cook county Medical Examiner to manage the excessive number of dead bodies. Additionally, numerous other city agencies and State agencies were strained to response to the fallout from the extreme heat. Communication problems and a fragmented response ensued leaving all players in the disaster operation scrambling to organize their operations.

In the aftermath, the events surrounding the 1995 Chicago heat wave took the lives of over 700 city residents. Extreme heat was not the sole factor in the excessive death rates. Both meteorologists and epidemiologist agree social indicators contributed to the death of many Chicagoans (Klinenberg, 2002, 10). Most of those who perished were old, lived alone, and were impoverished. In addition, the African-Americans held the highest proportional rate of any ethno-raical group (Klinenberg, 2002, p.18 and Kasier et al, 2007, p.S158). Poor planning and response by city and state agencies resulted in failed

service to Chicagoans. The ironic part of this story is that heat-related illness is as result of the heat wave is a fairly simple medical condition to mitigate and treat (Klinenberg, 2002, p.12).

Klinenberg (2002) stated, “An effective public health response to any external threat requires awareness of the potential dangers it imposes as well as knowledge about intervention strategies that will protect the people at risk of harm (p.141). Over a decade has passed since the events of the heat wave and it is now time to reengineer our management and response strategy for extreme heat disasters. This strategic assessment will analyze the case by looking at a number of issues that result in our City’s failure to manage the disaster effectively and provide recommendations to improve future activities in mitigating, preparing and responding to extreme heat. Mitigation will focus on social problems that led to higher death rates and how we can resolve these issues to lessen, or possibly eliminate, the chance of death in future heat waves. Preparedness will discuss the organization and planning for heat related disasters. Response will discuss the emergency management of a heat wave and how we can better improve the effectiveness of our response in future extreme heat events.

ISSUES AND RECOMMENDATIONS

Discussion of issues and recommendations will be broken off into three general issue areas: mitigation; preparation; and response. Sub-issues will be discussed and analyzed within each general issue area.

1. Mitigation –The issue area discusses how social isolation and loneliness, the market model of governance, and inability to effectively combat poverty contributed to our failure to lessen the high mortality rate during the heat wave. Particularly, this issue examines how we can mitigate the need for a large disaster response through community assistance and development.

1.1 Social Isolation and Loneliness – Klinenberg’s *Heat Wave: A Social Autopsy of Disaster in Chicago* (2002) uncovered the alarming finding that social isolation and loneliness contributed to the excessive mortality rates of poor elderly African-Americans (Klinenberg, 2002, p.45). In the study, Klinenberg compared similar communities in terms of their demographic characteristics; North Lawndale, primary

African-American, and South Lawndale, primarily Latino. Although each neighborhood has similar levels of poverty, crime and similar ages, the mortality rate in South Lawndale from heat-related deaths was significantly less than what was observed in North Lawndale. The social ecology¹ of South Lawndale played a major role to ensure fewer residents were in great harm during extreme heat. Klinenberg (2002) stated,

“During the heat wave, these local conditions directly affected residents of the two community areas by constraining (in North Lawndale) or creating (South Lawndale) the possibilities for social contact that help vulnerable Chicagoans to survive (p.94).”

Additionally, the empirical study of Semenza et al (1996) concurred with this conclusion noting social isolation was associated with doubling the risk of death during hot weather (p.86).

Recommendation – The effects of social isolation and loneliness during future extreme heat waves, and other extreme weather events, can be mitigated by encouraging development of a stronger social ecology. Stivers (2008), in her critique of the Hobbesian influence over authority, noted we must discover a way of strengthening the bonds between us in our social fabric to ensure security in our daily lives (p.87). The use of block clubs² can work collectively to check up on one another. Just having someone to talk to or a friend to check on one’s status greatly diminished the chances of death during the heat wave (Klinenberg, 2002, p.87). A prerequisite for block clubs is a core group of active residents rooted in the community and who are willing to make a difference to achieve change on their block (Klinenberg, 2002, p.107). The City of Chicago needs to examine a policy where we make funding available to non-profits, community organizations or individual community organizers to build new block clubs or strengthen existing ones. Any program that engenders social networking helped to reduce the chance of heat related deaths (Semenza et al, 1996, p.90). To facilitate this effort, we can contract with a local non-profit with extensive experience in the community as the city should implement the

¹ Social Ecology – The foundation for social life (Klinenberg, 2002, p.90).

² Block Club – Organized by residents to assert local control and establish standards for public behavior and property maintenance (Klinenberg, 2002, p.107).

development (Goldsmith and Eggers, 2004, p.79) of a network of block clubs or related community organizations across the depressed communities of Chicago. Funding should be made available to help these types of organizations become a part of the social fabric of the communities.

1.2 Market Model of Governance – Chicago’s governance shifted towards more an entrepreneurial state following the trend in streamlining government across the United States during the 1990’s. The theme behind much of the reinvented government was for the government to steer more and row less (Morgan, England, and Pelissero, 2007, p.9). Our city embarked on a significant effort to privatize, through delegation³, a large number of services. Outsourcing, or what many call Privatization is defined by Savas (2005) noting, “Privatization is the act of reducing the role of government or increasing the role of private institutions of society in satisfying people’s needs, that is, producing goods and delivering services (p.16).” Privatizing more than forty government functions we have generated \$20 million dollars in cost savings (Savas, 2004, p.78), but in the process we have marginalized residents who do not have the ability to independently use the system. This form of governance resulted in service delivery that demands aggressive behavior from everyone in the system including even citizens (Klinenberg, 2002, p.139). There was an expectation that poor city residents, although many were generally uneducated or unfamiliar with the market model of governance, would be active consumers of public goods (Klinenberg, 2002, p.138). Unfortunately, by privatizing a number of social services we created a negative externality (Mankiw, 2007, p.11) in our service delivery, depriving needy Chicago residents of critical social services that could have help them to survive during the heat wave.

Recommendation – First, we must not act hastily when deciding what services to outsource. Outsourcing of critical social service roles to private-sector is a major problem for needy Chicago residents (Klinenberg, 2002, p.155). Savas (2004) noted the privatization allows government to unburden itself of nonessential responsibilities and pay attention to functions that are intrinsically governmental (5).

³ Delegation – Government retains responsibility and oversight but uses the private sector for service delivery. Forms of delegation include contracts, public-private partnerships, franchise and public-private competition (Savas, 2005, 18).

Stivers (2008) issued excellent commentary on this issue posing the question, “What happens when all or most of the focus in energy in governance are aimed at negotiating individual contracts and shaping various networks, and no one is looking at the big picture (p.117)?” The big picture here is what role in assisting the elderly community with social services is the city playing? Are we attempting to deliver more efficient service to these residents? Probably not, since social service were delegated to agencies who bargained themselves into contracts they could not manage. The Department of Aging outsourced more of their programs to private and non-profit institutions despite the limited budgets available to them (Klinenberg, 2002, p.155). In addition, do we consider social services to elderly intrinsically governmental? Again, the answer is no. This is the result when the decisions to privatize social service functions are applied to the Savas definition. What occurred by the “shedding” of the public good of social services was a failure by private and non-profit agencies to provide effective service delivery towards Chicago’s elderly residents. We need to re-examine our decision to shed critical social services off to private and non-profits who cannot effectively manage the task. We need to perform the follow activities

- **Evaluate Outsourcing for Effectiveness** – The contracts the city agrees to must include stipulation on program effectiveness. Savas (2004) noted lack of contractor monitoring and failure to penalized poor performance is a pitfall of privatization (p.33). We must measure the performance of these private and non-profit agencies to ensure they are providing effective service delivery on behalf of the city. This can be achieved by utilizing the measures of productivity method where the measurement process takes into account inputs, workloads and outputs (Morgan, England, and Pelissero, 2007, p.190). Data must not only be collected from the contractors, but also from residents who are the recipients of the service. Community sample surveys can help us to assess service performance by pointing out distortions we are not

aware of and identify the proportion of the population who utilize the service (Morgan, England and Pelissero, 2007, p.191).

- **Managed Competition** – Give city agencies a chance to improve their operations before outsourcing their function. We should have the Department of Aging compete for service delivery with the private sector. This tactic has proven to be a powerful incentive for agencies to improve their cost-effectiveness (Savas, 2004, p.21). Instead of moving straight to privatization, agencies such as the Department of Aging should be given the chance to improve their cost-effectiveness. Improved Performance can be improved by utilizing innovative methods to reduce costs and improve employee performance.

Second, we need to ensure our reinventions of government do not turn our City services and efforts to provide effective service delivery into a competition where equity is trampled upon and only those who already possess the understanding of the system to use it.

We must reverse a system of service delivery that rewards the most capable to make these inequalities even more severe (Klinenberg, 2002, p.158). Nalbandian (1991) quoted the former city manager of San Diego Sylvester Murry as stating,

“There are some people in the community who appreciate the importance of city government and are sophisticated enough to weave it and to mold it so that the quality of their lives is enhanced. There are other people in the community who do not recognize this with the same degree of sophistication. It is the responsibility of managers in government to take the initiative to see that an individual’s quality of life is not negatively affected solely because that person does not know how to use the system (p.91).”

The competitive nature of our market model of governance must be revised to reflect the realities of our society, particularly in the degrees of separation of the haves and the haves not. City residents who

do not possess the attributes that will assist them in a competitive market model should be managed differently. Instituting a level of fairness for the underrepresented groups of Chicago through social equity⁴ will assist those who have been marginalized in our entrepreneurial style of governance. Instead of the city reacting public participation by the sophisticates, we must impart participation to the poor city residents. This act can be facilitated by promoting city services through marketing, or any other measure that will bring government to the people.

1.3 Improve Capabilities to Combat Poverty – The heat wave revealed issues of poverty and how our City addresses it. Areas that saw the highest mortality rate were located within impoverished communities that were passed over by economic development of the 1990s (Klinenberg, 2002, p.140). Klinenberg (2002) stated, “Refusal to address poverty and isolation in Chicago was a crucial component of the cultural and political contest of the Chicago heat wave (p.141)” and,

“...a key reason that blacks had the highest death rates in the heat wave is that they are the only group in the city segregated and ghettoized in community areas with high levels of abandoned housing stock, empty lots, depleted commercial infrastructure, population decline, degraded sidewalks, parks and streets and impoverished institutions (p.127).”

The once vibrant economy of North Lawndale disappeared and then when coupled with a lack of redevelopment, places to socialize and work disappeared, the residents of North Lawndale, who could, fled the depressed environment, leaving a fragmented social network (Klinenberg, 2002, p.96). The fragmented social network, coupled with years of disinvestment, created a dismal environment that led to crime and poverty. These problems eventually led to seniors isolating themselves from these problems as a way of surviving. Unfortunately, this strategy proved deadly during the heat wave.

Recommendation – We must seek equity in Chicago’s economic development strategy to remove the problems of poverty in our depressed communities. We need to evaluate the fairness in terms of

⁴ Social equity – the term social implies that the unit of analysis is a group or a group characteristic rather than an individual, distinguishing social equity from individual rights. The term equity implies some calculation of fairness, right or justice (Nalbandian, 1991, p.93).

distribution of goods and services to groups and recognize this notion of “commodity egalitarianism” (Rosen and Gayer, 2008, p.63), the notion of fairness may require that some commodities be made available to everyone. To facilitate this endeavor, the city must perform the following activities:

- **Equity in Budgeting** – We must ensure equality in city services is rendered in our budget appropriations⁵. Rubin (1993) stated, “Budgets reflect choices about what government will and will not do (p.185).” We should shift our focus away from market equity and should strive for equal results in service to ensure our resources are allocated so that residents are in an equal condition after the money is spent (Morgan, England, and Pelissero, 2007, p.200). This action will help us to ensure communities who received substandard levels of service will receive attention as to bring about equality across the entire City. Equity in service indicators will also help us to identify where inequality problems on which government may need to focus (Lee, Jr, Johnson and Joyce, 2008, p.141). Our program performance budgeting (City of Chicago, 2008b) allows us to insert performance indicators that will help us evaluate our budgeting decisions. Our budgeting by program category allows us to perform analysis and planning within our budgeting decisions (Lee, Jr, Johnson and Joyce, 2008, p.141). Specifically, we measure conditions between the neighborhoods to determine what progress has been made (see Table 1). Specific performance indicators to measure service equity such as level of crime (number of violent and property crimes), community involvement (number of blocks clubs created) and new jobs created (number of new jobs created by community/neighborhood) can all be used to assess the amount of funding required to improve development of the improvised communities (Morgan, England and Pelissero, 2007, 202). The objectives of these equity indicators would be to improve the impoverished neighborhood to an equal status of the neighborhoods of the entire city.

⁵ Equality In Service – Specific areas of the Chicago budget where emphasis should be placed is in city development, community services and public safety.

- **Equity in City Economic Development Policy** – Our policies should reflect the International City Management Association’s (ICMA) provisions on social equity. It should: (1) balance the policy formation process through integrating the social aspects of the community; (2) ensure equitable regulation and service delivery acknowledging needs may vary; and (3) take actions to ensure diverse opportunities in housing, employment and community activities (Nalbandian, 1993, p.93). We should follow the lead of the Harold Washington Administration and its vision of economic equity in the City’s practices as part of the 1984 Chicago Economic Development Plan. The plan called for the City to use its authority for leverage in terms of tax incentives and public financing to generate jobs and growth for Chicago (Krumholz, 1999, p.89). The plan called for linking growth between downtown and local communities by offering public support to private developers building in strong market areas (i.e. downtown) if they were willing to invest in projects in weaker (neighborhood) market areas (Krumholz, 1999, p.90).
- **Broader Participation in Economic Development** –The alternative development economic development policy of cooperative leadership modeled by Rob Mier (1993) offers a new leadership of collaboration and cooperation by the diverse groups involved in the ED policy formulation. This method brings together political leadership, economic development professionals, administrators, industry, labor, non-profits and community development corporations to negotiate an agreement that will satisfy all participants (Krumholz, 1999, p.91).

2. Preparation – This issue will analyze the importance of coordination and accountability when devising an effective response.

2.1 Ineffective Coordination and Communication – Our response to the heat wave was plagued by ineffective operational management. There was a general lack of cohesion among all the players in the response. Although our City had detailed plans available for other forms of natural disasters, the plan we had in place for a heat wave was short ,only three pages in length ,and totally insufficient to provide

any useful guidance. Problems were observed in heightened demand for emergency medical services, fragmented responsibility across city agencies with no unified command, and the lack of an effective system for organizing and coordinating the service programs of different city, county, state, federal and private agencies (Klinenberg, 2002, p.142). These conditions resulted in an uncoordinated response to the heat wave.

Recommendation –We must design a comprehensive heat response plan that involves city departments, external government agencies and nongovernmental organizations to ensure the utmost effectiveness in our emergency response plans (Bernard and McGeehin, 2004, p.1520). A number of principles can guide us in developing this effective plan such as identifying the lead agency and all participating organizations, developing a standardized warning system, and implementation of response activities targeting high risk populations (Bernard and Mc Geehin, 2004, p.1521). These principles include:

- **Identify lead and participating Agencies** – All participants in the emergency response should know who is in charge and what they are responsible for (Alexander, 2002, p.101). Although many cities utilize the traditional chain-of-command method to coordinate response efforts, an incident-command system⁶ is more useful in heat wave disasters because its non-hierarchical management allows for flexibility to meet the requirements of the situation, notably in the system’s ability to grow and expand over the duration of the disaster (Alexander, 2002, p.110). Currently, the Office of Emergency Management and Communication (OEMC) serves as Chicago’s lead agency (City of Chicago, 2008a) and should continue to do so, but manage through the incident-command system. The OEMC should also serve as the city’s disaster planning agency. The disaster response should first identify all the players (city, state, federal and nongovernmental) involved in the response effort (see sub-issue 1.2 for necessities of networking). Second, the plan must identify the types of organizations detailing their function and

⁶ Incident-Command System – Organizes disaster related forces in a non-hierarchical manner, so that units work alongside one another under the aegis of a coordinator, but are not subject to a vertical chain of command (Alexander, 2002, p.313).

capabilities (Alexander, 2002, p.117). It is imperative each organization's abilities be identified and understood so disaster response commanders understand the resources they possess. Third, the details of the disaster plan must be disseminated to all players in the response. In addition, we must ensure the plans are composed in a clear and concise manner to facilitate a clear understanding of what needs to be accomplished to each player, and that player provides clear communication to its personnel. Lastly, the emergency plan needs to provide clear and concise instructions for each player in the response. Alexander (2002) notes this portion of the plan is critical since it ensures each organization is aware of its role in disaster response efforts and the agencies have made all of its members fully aware of their personal roles in the emergency (p.119).

- ***Deploy a Standardized Warning System*** – Health and weather data can be utilized to predict the effects of severe heat. For example, the City of Philadelphia used a synoptic methodology to analyze past weather conditions to identify those characteristics to be associated with excess mortality (Sheridan and Kalkstein, 2004, p.1931). A system similar to the technology in Philadelphia needs to be deployed in Chicago. Once the system determines a heat wave is imminent, a heat warning should be issued and the emergency plan goes in to effect. Authority to issue the extreme heat warning should be transferred from the City's Weather Center to OEMC.
- ***Target Outreach to High Risk Populations*** – Those at most risk during extreme heat are the elderly, very young persons, chronically ill patients, socially isolated people and people without access to air conditioning (Bernard and McGeehin, 2004, p.1520). Utilizing the standardized warning capabilities, as discussed above, we can structure our outreach capabilities to focus on these individuals. Home visits by and media announcements should be arranged to issuing the warning and inform citizens how to prepare (Sheridan and Kalkstein, 2004, p.1939). Bernard and McGeehin (2004) stated, "Targeted outreach is critical to reaching the socially isolated (p.1520)."

Response efforts towards the socially isolated and lonely can be arranged to exert a strong public outreach to ensure those most at-risk can receive the assistance they require to survive. The following measures should be taken:

- ***Use Media as Warning System*** – Many of the social isolated and lonely who stay within their residence may rely on the television or radio for their sole source of entertainment. Television and radio emergency response notification should preempt programming to notify city residents of the impending extreme heat. In addition, city leaders should be mobilized to stage a press conference alerting residents of the disaster, communicating the urgency of the need to take preventative measures.
- ***Home Check Ups*** – Personnel from a number of agencies and organizations can be used to check up on at-risk individuals. These workers include home healthcare workers, charitable food delivery personnel, police officers, and social workers and local block club participants (Semenza et al, 1996, p.89). In addition, community block clubs comprised of community residents can be utilized. Those who live in the community will possess a better understanding of the specific residents who need assistance. These agencies and organizations should be included in the heat wave disaster response plans.
- ***Medical Community*** – Notification should also inform medical practitioners of the impending extreme heat. The Semenza et al (1996) study suggested health care providers can be utilized to facilitate response to many at-risk residents since these individual have an established relationship with a doctor (p.89). Medical professionals can help facilitate information to their patients on what preventive measures to take and where and whom to call for assistance.

2.2 Accountability Dilemma – In the aftermath of the disaster it was clear City failed to provide an adequate response to the disaster. The resources necessary to provide such an effective response were

available; however, City agencies, metro area hospitals, and the State of Illinois did not react accountably. Commenting on the organizational complexity of a decentralized city government Klinenberg (2002) stated, "...coupled with the bureaucratic slipperiness of overlapping city, county, state, and federal jurisdiction make it difficult to pinpoint the lines of political accountability (p.145)." We failed to manage the numerous players during the disaster response. This failure in managing a network of response players is what caused the city to issue a fragmented response.

Recommendation –Two pieces of networked management can help the City of Chicago achieve accountability in disaster preparation.

- ***Establish a framework for accountability.*** A framework consisting of setting goals, aligning values, establishing trust, structuring incentives, measuring performance, and managing change should guide the development of the network of players in preparation of the response (Goldsmith and Eggers, 2004, p.124). Each of these areas are crucial; however, setting goals and aligning values/establishing are the foundation of the accountability framework. In the setting goals areas, players are carefully aligned both with each other and with the broader goal (Goldsmith and Eggers, 2004, p.125). This area provides clarity to the network, ensuring everyone is on the same page. Aligning values/establishing trust permits transparency in communicating the values and goals of the network at the outset of the relationship (Goldsmith and Eggers, 2004, p.129).
- ***Install a Chief Relationship Officer (CRO) to ensure the network is effectively arranged and managed.*** The CRO, working out of the OEMC, would control the policy and decision-making elements of the disaster response network allowing the CRO to have a broader view of the relationships among city, county, state, federal, private and non-profit players (Goldsmith and Eggers, 2004, p.163). To facilitate an effectively arranged and managed network, the CRO and its subordinates must be proficient in trust building, negotiation trust building, and collaboration

(Goldsmith and Eggers, 2004, p.157). The CRO must continually search for opportunities to improve the performance of the organization's multitude of contracts, partnerships, and networks (Goldsmith and Eggers, 2004, p.163).

3. Response – This issue area is split up among three sub-issues areas of emergency services management, community policing, and Chicago Fire Department organization development.

3.1 Emergency Services Management – Three areas saw significant strain during the heat wave response: emergency rooms; the fire department, and body reception and management.

- 1. Emergency Rooms and Bypass Policy** - Allowing hospitals to temporarily refuse emergencies without oversight caused significant problems. Chicago-area hospitals were given the legal right to declare a bypass in belief patient care would benefit if overwhelmed hospitals were allowed to temporarily restrict emergency calls (KSG, 2002, p.8). The policy made it clear hospitals were not to lightly call bypasses, but left the criteria for doing so considerably vague (KSG, 2002, p.8). The Illinois Department of Public Health (IDPH) possessed the authority to assess the need for a bypass, recall a bypass and, if necessary levy fines if hospital inappropriately used the bypass (KSG, 2002, p.9). The effectiveness of the bypass policy is in question since it failed to alter the management of providing better patient care, and thus made the policy ineffective (Theodoulou and Kofinis, 2004, p.18). This situation led to ambulances being diverted long distances to the nearest open emergency department. Cities hospital and trauma centers concentrated on North Side created what Klinenberg (2002, p.131 called) a “segregated geography of medical care” that added to the vulnerability of the impoverished communities of the South and West Sides, where residents are most likely in need of EMS services.
- 2. Fire Department** – Chicago’s ambulance operation was overwhelmed by the increased need for emergency medical services (EMS). The result was reliance on firefighters to act as first-responders, a task they did possessed limited capabilities in providing (KSG, 2002, p.12). By July

14, the situation became dire when 97 percent of the EMS calls were responded by firefighters (KSG, 2002, p.12). Although both line firefighter and paramedics recognized the need for assistance in EMS transport, the fire department command believed enough resources were present, thus there was no need for additional reinforcements. The decisions of the fire department may have involved considerations of efficiency over effectiveness. Some paramedics complained the failure to call in additional resources was reflection of prioritization of cost containment over life preservation (Klinenberg, 2002, p.134).

3. **Body Management** – The office of the Medical Examiner saw an extremely heightened demand for services. It was strained by a lack of resources in both staffing and storage of dead bodies. The pressures of the excessive deaths of the heat wave forced the ME staff to store bodies in refrigerated trucks and slowed their response in identifying the causes of death (KSG, 2002, p.5). In addition, the CPD, possessing the job of body transport saw a reduction in their capability as first-responders since they had to transport the bodies to the county morgue.

Recommendation –The following acts will improve our emergency services management during the next heat wave.

- ***Bypass policy oversight needs to be enhanced to ensure appropriate use.*** The exchange of communication that took place between State of Illinois and the hospital on bypass can be done via internet connections and sharing information. Goldsmith and Eggers (2006) stated, “Better access to information produces better decisions (p.100).” We need to work with the State of Illinois to devise a more effective monitoring of the bypass. The State Department of Public Health (DPH) EMS division already possesses the authority to assess and revoke a hospital’s decision to go on bypass. What we need is a real-time method of monitoring the hospitals activities in terms of available space for patients and availability of medical staff. An “electronic gateway” (Goldsmith and Eggers, 2004, p.95) should be established that will transfer important

information to the IDPH and our OEMC in a timely fashion. Utilizing digital connections will allow the IDPH EMS division to ensure the bypass policy is appropriately used, and, if need be, when it should be revoked.

- ***Make use of all available EMS resources*** – The fire department must balance its desire to achieve fiscal austerity with the needs of a critical situation. Cost cutting measures during a disaster makes our decisions look insensitive to plight of the people who require emergency medical services. The city possessed a number of methods to reinforce the response of the strained paramedics and firefighter such as by calling in off duty paramedics to, use of private ambulances, or seek assistance from surrounding municipalities.
- ***Make use of Resources in Neighboring Municipalities*** – The ME needs to be reinforced in a similar fashion as the paramedics utilizing mutual aid of surrounding counties. This will ease the congested in-take and processing of dead bodies. In addition, we need to remove police from transporting dead bodies. Neighboring counties medical examiners resources (staff and transportation capabilities) should be utilized. We need to work with these municipalities to enhance our mutual aid agreement through intergovernmental cooperation and coordination (Morgan, England, Pelissero, 2007, 333). This action would allow improved body reception and management and would free the police from body transport and allow them to utilize more effectively in performing well-being checks for the Chicago's at-risk residents.

3.2 Community Policing - The Chicago Alternative Policing Strategy (CAPS) and Senior Officer programs were well intentioned; but, failed to deliver the effective service delivery to Chicago's poor elderly residents. The Chicago Police Department (CPD) needs to ensure it possesses the capacity to offer an effective response to meet the demands of future heat waves. The CPD should have been able to use their networks in the community to target assistance to at-risk residents. Klinenberg (2002) offered two reasons the CPD failed to deliver the needed assistance: (1) the organizational culture of the police

department as a paramilitary organization made it difficult for officers to be enthusiastic serving in a social service role; and (2) the vocational challenges of police work in high crime areas made the community policing seem secondary (p.153).

Recommendation –The failure of the community policing during the heat wave is imbedded in the CPD difficulty in transforming its organization. We need to ensure the police department organization transformation is effectively managed. This action requires us to recruit qualified individuals that fit into the community policing transformation and any divergence from officers is evaluated and corrected.

- **Recruitment** – Job position definitions for police officers may have not reflected the necessary characteristics of community policing. The challenge of assisting the elderly points to the need for the City of Chicago to develop and deploy new skills. We need to ensure the officers with the proper qualifications were hired and current officers received the necessary training to properly perform duties of community policing. I recommend our recruitment efforts be designed to attract individuals that can properly manage the responsibilities of the position. Riccucci and Naff (2008) state, “The main objective of recruitment is the generation of an adequate number of qualified applicants from which a good selection can be made (p.249).” Selection requires ensuring those selected as police officers, and more so for individuals selected for the Senior Officer Units, adhere to the requirements of the job. These requirements include the ability to work with the elderly, establish close ties and look out for them in a crisis (Klinenberg, 2002, p.151). Overall, we need to make sure this is the type of work the officer has an interest in performing.
- **Evaluate Divergence in Community Policing** – The capacity problem not only involves finding and hiring smart people, but also requires devising effective strategies to tackle the new problems of governance (Kettl, 2002, p.160). The police department must perform a number of activities to ensure this capacity is met. The strategy of community policing emphasizes knowledge

management, teamwork, and community partnerships (Ford, 2007, p.321). We have to ensure the police department has transformed itself into a community policing force. The community policing program has been in effect since the early 1990s and has been through the stages of Exploration (how to change), Commitment (new vision), and Implementation, and monitoring/revising (Ford, 2007, p.323). The one stage that is important for success but has been problematic for the CPD is monitoring and revising. Community policing requires the department introduce systems⁷ thinking into the transformation of the department. Five areas must be changed for community policing to be successful: enhancing partnerships; re-engineering the internal operating systems; restructuring the organizational hierarchy; better managing human resources and adopting a problem solving approach (Ford, 2007, p.325).

In research undertaken by Ford in *Building capability throughout a change effort* (2007) a “learning team” was established to collect data on the transformation effort and analyze where more work needs to be completed. In cases where some police officers diverged from the community policing program in-depth interviews were conducted to determine what the problem was and also to generate solution to resolve the issues (Ford, 2007, p.329). We need to use this method to evaluate the reasons behind divergence in our department. Gathering data for the divergence evaluation can be provided through interviewing police officers by individual or group interviews. The Un-standardized interview allows the learning team interviewers to develop, adapt and generate questions and follow-up probes appropriate to the purpose of the investigation (Berg, 2007, p.94). The focus group interviewing approach will allow the learning team to learn through discussion on what the nature of the problem is, learning how police officers discuss the problems and generating an impression of the community policing program (Berg, 2007, p.144).

⁷ Systems Thinking – Police officers need to see change as a large scale effort to transform the police department, not the individual officer (Ford, 2007, p.325).

3.3 CFD Organizational Development - Commanders in fire department do not have high regards for EMS division. This situation resulted in internal divisions among firefighters and paramedics. This is due to an organizational culture that is dominated at the top by firefighters. This situation led to the fire department having very little regard to the needs of the EMS division (Klinenberg, 2002, p.133). The problem observed in the response was a status-incongruent situation; higher status people tend to find it difficult to take orders from lower-status people (Bowditch and Buono, 2005, p.142). The fire department leadership, dominated by firefighters, did not take the EMS reports seriously (Klinenberg, 2002, p.134). Even though the paramedics continually requested back-up to help them manage the crunch of EMS calls, the commanders and firefighters, failed to issue a recall (putting everyone off-duty back to work), or call in support from the municipalities on the City's periphery (Klinenberg, 2002, p.134). This problem resulted in the slowed response by the fire department to the events of the heat wave.

Recommendation –The lack of cohesion in the Chicago Fire Department (CFD) can be managed by organizational development focusing on building cohesion between firefighters and paramedics. To remove the situation of distrust of the firefighter hierarchy, organizational practitioners call for “unfreezing” the past patterns of poor relations and “freezing” new behaviors of open and trusting relationships into place (Denhardt and Denhardt, 2006, p.395). To facilitate this development an interventionist should be brought in to deal with the problems. This professional will work with members to reveal dysfunctional behaviors and develop more effective relationships (Denhardt and Denhardt, 2006, p.395). The most effective way to ensure we see change in the fire department is to begin by team building. The interventionist will review how the department communicates, diagnosis the group problems and the will design and facilitate an action plan to overcome the difficulties (Denhardt and Denhardt, 2006, p.396).

CLOSING

Effective management of future extreme heat events requires the City of Chicago to perform a number of activities to ensure we do not repeat our failures of the past. This not only requires us to look at the management of the disaster preparedness and response, but also evaluate how we can mitigate the social issues that contribute to the possibility of death.

This strategic assessment highlighted the three issues of mitigation, preparation and response that we must take into account when devising a strategy to improve our operations. Mitigation discussed how social isolation and poverty contributed to the excessive deaths during the heat. We must ensure the at-risk communities are given the appropriate assistance to help them survive the next extreme event. Mitigation also highlighted how inequity in our service delivery significantly contributed to high mortality rates among these impoverished communities. Preparedness outlined the problems we faced in coordination and management and how we can be success in future events by organizing all players, whether city, state, federal and private into a network that works cooperatively, functions effectively and is bound by commitment to a shared vision. The final section discussed the response effectiveness and how our capabilities can be improved to ensure our emergency services and first responders are ready to for the next extreme heat disaster.

The final stage in the disaster cycle (Alexander, 2002, p.6) is recovery. This stage is the process of repairing the damage done by the disaster. This evaluation of issues and recommendations serves as the first step in the recovery effort on how we can improving how the City if Chicago manages a heat wave disaster. The next step is implementing the recommendations outlined in this assessment to facilitate improved management of future extreme heat events.

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