Review of Civil-Military Coordination in Local Disaster Response

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Abstract

Background: Globally, disasters affect over 200 million people annually. Governments at all levels attempt to mitigate the effects of disasters by providing training and resources to responders in the event of a disaster. When the disaster is of sufficient magnitude, those that respond will require additional resources to adequately attend to disaster victims. County emergency managers assist in making needed additional resources available. Department of Defense (DoD) installations are sources where emergency management agency (EMA) directors may request assistance. The purpose of this research is to understand the resources legal authority available to civilian emergency managers of Ohio Counties in a disaster. This study explores the legal authorities that provide emergency managers’ access to assets available at Wright-Patterson Air Force Base and the DoD.

Methods: Key informant interviews were conducted with six EMA directors of the counties comprising the Dayton-Springfield-Greenville Metropolitan Statistical Area. A thematic analysis was accomplished on the answers obtained from the EMA directors.

Results: There were discrepancies concerning how to engage with agencies through the intrastate mutual aid compact. There was also a lack of knowledge concerning resources available at Wright-Patterson AFB. The EMA directors were not aware of legal authorities that make DoD resources available to civilian emergency management agencies. The interviews identified constraints that cost has on providing a lasting emergency response.

Conclusions: Fostering stronger relationships with the EMAs of the Dayton-Springfield-Greenville Metropolitan Statistical area and Wright-Patterson AFB, can allow for greater protection of the citizens the EMAs are charged with serving.
Review of Civil-Military Coordination in Local Disaster Response

Over the last twenty years, over 200 million people have been affected by disasters annually (Kälin, 2007). Emergencies and disasters can occur at any time or place. One fundamental duty of government is to ensure the safety and security of its citizens. One way this is accomplished is by providing training and resources necessary to care for the public in case of an emergency. When an emergency occurs, the first responders provide the initial response. These may be police, fire fighters, or paramedics. Fortunately, these local resources can manage a great deal of the day-to-day emergencies that affect us. But, when the event is of a magnitude that outpaces the resources available, assistance is required to prevent further loss to property and reduce human suffering. The assistance required may come from individual neighbors utilizing their personal resources to help each other, aid may come from neighboring jurisdictions that are less affected, from state agencies, neighboring states willing to lend a hand, and/or from federal agencies called upon for assistance. Many communities have Department of Defense (DoD) installations within their midst that may have specialized resources that could provide great assistance in time of a disaster.

Statement of Purpose

The purpose of this research is to understand the resources legal authority can make available to civilian emergency managers in Ohio Counties in a disaster. This study also explores the legal authorities that provide emergency managers access to assets available at Wright-Patterson Air Force Base and Dayton, Ohio.

Literature Review

A disaster is defined as a sudden calamitous event bringing great damage, loss, or destruction (Merriam-Webster, 2012). Fortunately, most people will not encounter such an
event, but many do. Whatever the magnitude of the event, the first individuals to arrive to assist those affected by the disaster are known as first responders. These are usually police, firefighters, and paramedics. These first responders are trained to manage most problems that occur in a disaster that can impact people’s lives. As the scale of the disaster events increase, first responders may require additional resources.

There are many agencies, documents, agreements, and laws that govern disaster response. Most of these are relatively unknown to the general population. We will look at these diverse entities starting at the local level and expanding towards larger, more complex systems.

The management of a disaster remains local even when needed resources are brought in from an expanding circle of availability (intrastate, interstate, federal). As stated, when a disaster occurs the first to arrive are the first responders (fire, police/sheriff, emergency medical personnel). They are trained to provide life-saving procedures as well as to protect public and private property, and provide security for those at the scene to include casualties, bystanders and other first responders. The ranking member of the first responder teams (usually the fire chief) on the scene is known as the incident commander (Emergency Management Institute, 2011). The incident commander receives extensive training on incident command as they coordinate the emergency response at the scene. If the disaster is of such severity that more resources are required, the incident commander identifies what is required and requests additional services (Emergency Management Institute, 2011). When the disaster is of sufficient magnitude (either in severity or in terms of geographic size) that coordination is needed beyond what can be provided at the scene of the event, the Emergency Operations Center (EOC) is activated. The EOC is a facility where local government administrators (i.e. Fire Chief, Police Chief, Mayor/city manager/chief executive, emergency manager) meet to coordinate the management
of personnel and equipment of their respective departments, and provide the resources and personnel with needed capabilities to ensure that the emergency is dealt with as quickly and efficiently as possible (Emergency Management Institute, 2011). The EOC is activated to allow optimal management of resources (personnel, materiel, etc.) as well as a more efficient flow of communication. The team at the EOC is led by the highest-ranking government official, usually the mayor or city manager. The emergency management agency director orchestrates the diverse members of the EOC to ensure that resources and information move efficiently through the system.

If the resources in a jurisdiction are overwhelmed, the management of the disaster becomes more complex. While management responsibilities remain local, the pool from where resources can be accessed increases. Resources may be requested from neighboring jurisdictions or even private businesses where memoranda of understanding (MOU) have been negotiated to expedite sharing of resources in times of emergency. An MOU is a legal document that establishes the arrangements that have been agreed upon by the parties (jurisdictions) and which services will be made available. This allows for an expansion of services available to deal with the disaster in a timely fashion.

The state emergency management agency coordinates the request and provision of resources for the affected jurisdiction. The Ohio Emergency Management Agency (EMA) is part of the Ohio Department of Public Safety (ODPS) that has the responsibility for coordinating activities to mitigate, prepare for, respond to, and recover from disasters (ODPS, 2008). This is accomplished by collaborating closely with local, state and federal agencies in an effort to bring resources to citizens impacted by a disaster (ODPS, 2008). Ohio EMA has plans in place for multiple types of disasters, from floods to pandemic influenza. Once the chief executive declares
a local state of emergency, the county emergency management agency can request assistance via an Intrastate Mutual Aid Compact (IMAC). IMAC allows for the request of assistance once a local jurisdiction has declared a state of emergency (Ohio Revised Code §5502.41, 2006). The IMAC is an agreement for the delivery of services and resources in the response to or the recovery from a formally declared emergency or disaster. The County Emergency Management Agency director may request assistance through the state EMA or by contacting other counties directly for assistance.

If the assistance provided though the intrastate aid compact (IMAC) is not sufficient to manage a disaster, the Emergency Management Assistance Compact (EMAC) can be enlisted. The Emergency Management Assistance Compact (EMAC) provides the legal framework for states to provide mutual assistance independent of or with federal aid. EMACs were developed after Hurricane Andrew’s devastating effects on Florida in 1992. States realized that even with federal funds there would be times that states would need to assist each other in times of disaster. The compact formalizes the process of making a request for assistance from another state as well as clarifying the issues of liability and reimbursement of services provided. EMACs were established by Public Law 104-321 (Joint Resolution granting the consent of Congress to the Emergency Management Assistance Compact, 1996).

If the disaster is of such magnitude that services needed are more than is available through the EMAC, the governor of an affected state can request a Presidential declaration of a state of disaster. The process can run in parallel with the request for help from interstate sources. The Robert T. Stafford Disaster Relief and Emergency Assistance Act’s is Federal legislation enacted “to provide an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and
damage which result from such disasters” (Predisaster Hazard Mitigation Act of 2010.” Public Health and Welfare, 2012). The Stafford Act authorizes the President to issue major disaster or emergency declarations in response to catastrophes in the United States (and its territories) that overwhelm state and local governments. Such declarations result in the distribution of a wide range of federal aid to individuals and families, certain nonprofit organizations, and public agencies (McCarthy, June 2011). The process begins with the county commissioners of the affected counties declaring a state of emergency for their jurisdiction. This information is forwarded to the governor. With counsel from the Ohio EMA, the governor declares a state of emergency. State emergency agency officials then conduct a preliminary damage assessment (PDA) with assistance from the regional Federal Emergency Management Agency (FEMA) official. This assessment is submitted to the Federal FEMA administrator with a status report of state resources already in use for response to the disaster, the other resources that have been requested from the EMAC, along with estimates of what resources will be required to meet the needs of the affected citizens. FEMA will in turn review the request and after approval, forward it to the Secretary of the Department of Homeland Security (DHS). After the Secretary of the DHS reviews and approves the request, it is forwarded to the President. When the President makes the declaration of emergency, this permits the flow of monies and resources to supplement state and local resources to respond to the emergency or disaster at hand (McCarthy, 2011).

Once the federal government initiates involvement in a disaster response, it will prioritize assets to add to the response effort. Of the assets available to the federal government, the Department of Defense is one of the most comprehensive. Although the Department of Defense (DoD) and its services are equipped and trained to carry out the duties of defending the nation,
the DoD is authorized to provide resources (communications, engineering, medical, search and rescue) in a civilian disaster response. The military's ability to provide essential, life-saving services more quickly and comprehensively than any other entity is one reason why the nation continues to rely on the military in civilian disasters (H. R. Rep No 109-377, 2005, p. 201).

From as early as the turn of the twentieth century, when soldiers from the United States Army's Pacific division responded to the San Francisco earthquake of 1906 (Gaydos & Luz, 1994) to the Coast Guard’s involvement during Hurricane Katrina in 2005, the DoD has played a role in disaster response.

There are subtleties in defining military support of civil authorities. The DoD assets that respond may be from the National Guard or from Active Duty military members. Title 32 of the United States Code delineates the role of the National Guard. The National Guard is a unique branch of the DoD in that its members may act in three distinct statuses to aid in a civilian disaster response. The first status under Title 32 is where the National Guard is in a state active duty status. These troops answer to the governor and the adjutant general of their state during the response to a disaster but this position is not funded through the Federal Government. In this status, the state assumes the financial responsibility for the National Guard. The second status under Title 32 is when National Guard troops remain under the control of the governor as the commander-in-chief of National Guard personnel and can utilize members as needed to support civil authorities in the management of a disaster. However, the federal government assumes the financial responsibility for the reimbursement of the members (Bochicchio, 2010). Under the third status, the President of the United States may decide to take command of National Guard assets by placing personnel under Title 10 of the United States Code. Title 10 of the United States Code delineates the role of the armed forces. By placing the National Guard assets under
Title 10, command and control of these assets are “federalized” and answer to an active duty chain of command (Bochicchio, 2010).

This distinction of command and control authorities was explored during the response to Hurricane Katrina. An active duty Army officer, Lt General Honoré, commanded the active duty assets responding to Hurricane Katrina as Commander of Joint Task Force Katrina. In an attempt to enhance Federal and State effort, President Bush proposed appointing Lt. Gen. Honoré to the Louisiana National Guard to unify command under one person. Louisiana Governor Blanco declined the proposal and active duty troops remained under the command of Lt. Gen. Honoré. The National Guard (which comprised over 70% of the military forces responding to Hurricane Katrina) remained under the command of Louisiana Governor Blanco, and the Louisiana Adjutant General (H. R. Rep No 109-377, 2005, p. 201).

The Department of Defense (DoD) may intervene directly in the assistance of a local community in a number of ways. First, the President may declare a state of emergency and use the Stafford Act to make federal resources available to the community. Another way the DoD may intervene is by the President, at the request of the governor of the effected state, directing the Department of Defense (DoD) to commit resources to preserve life and property in “the immediate aftermath of an incident” that may subsequently be declared a major disaster or emergency (Predisaster Hazard Mitigation Act of 2010; Public Health and Welfare, 2012). Department of Defense Directive 3025.18 establishes policy and assigns responsibility for defense support of civil authorities (DSCA). The Department of Defense Directive 3025.18 also provides an overview of the procedures established to request federal Department of Defense assets. This DoD directive establishes precisely what functions DoD assets are able to perform as well as what functions they are not allowed to perform.
Another way the DoD may respond to a civilian emergency is the Immediate Response Authority (IRA). The Immediate Response Authority is granted in Section 4.g, of the Department of Defense Directive 3025.18. This directive states that “in response to a request for assistance from a civil authority, under imminently serious conditions when time does not permit approval from a higher authority, DoD officials may provide an immediate response by temporarily employing the resources under their control, subject to any supplemental direction provided by higher headquarters, to save lives, prevent human suffering, or mitigate great property damage within the United States.” In this case, DoD officials are defined as Federal military commanders, DoD Component Heads, and/or responsible DoD civilian officials (DoD Directive 3025.18). Before a response can be provided, there are six criteria against which a DoD official must evaluate the request. These criteria are listed in Table 1.

**Table 1. Criteria with which all requests from civil authorities are evaluated**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legality</td>
<td>Compliance with law</td>
</tr>
<tr>
<td>Lethality</td>
<td>Potential use of lethal force by or against DoD Forces</td>
</tr>
<tr>
<td>Risk</td>
<td>Safety of DoD forces</td>
</tr>
<tr>
<td>Cost</td>
<td>Including the source of funding and the effect on DoD budget</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>Whether providing the requested support is in the interest of the DoD</td>
</tr>
<tr>
<td>Readiness</td>
<td>Impact on the ability of the DoD to perform its primary mission</td>
</tr>
</tbody>
</table>

Source: Department of Defense Directive 3025.18

The request must be a legal request that complies with the law. Any request must be evaluated for lethality or potential use of lethal force by or against DoD forces. Any risks to DoD forces must be weighed before any response is authorized. Cost of the requested assistance must be considered as well as the potential impact on the DoD budget. The appropriateness of the request must be considered as well as the potential impact the response may have on overall readiness. There are examples of where DoD officials have responded to a disaster under the authority granted by the immediate response authority. Commanders at two Oklahoma DoD installations (Fort Sill and Tinker Air Force Base) provided support to Oklahoma City civil
authorities on 19 April 1995 following the bombing of the Alfred P. Murrah Federal Building in downtown Oklahoma City. The Fort Sill commander provided medical evacuation helicopters, explosive ordinance personnel and bomb detection dog teams. Tinker Air Force base supported civilian efforts with ambulance teams and a sixty-six-person rescue team (Winthrop, 1997). In the wake of Hurricane Fran, the governor of North Carolina requested aid from the XVIII Airborne Corps from Fort Bragg, North Carolina in September 1996. Over 600 soldiers provided emergency generator support and debris removal. As delineated in the DoD directive, these authorities are to be utilized in conditions that are considered to be a sudden and unexpected calamity and where civil authorities are unable to act effectively (Winthrop, 1997).

Immediate response at the local level may depend on the assets that are available at the DoD facility. Each branch of the armed forces has a unique skill set that sets them apart. The United States Army Corps of Engineers (USACE) provides expertise in civil engineering and the protection and emergency repair of critical infrastructure (United States Army Corps of Engineers, 2012). The United States Air Force (USAF) may provide expeditionary medical support (EMEDs) to a disaster area. This was done after the storms that affected Houston, Texas in June of 2001. The USAF was able to deploy a 25-bed expeditionary support field hospital to Houston, Texas. It started seeing patients within 3.5 hours after arrival and was fully operational eight hours later. This unit cared for 1,036 patients, including 11 surgeries in its 11-day operation (Hardin, 2005).

There are challenges in efficiently bringing available resources to the people that need them. Delays may impact a unit’s ability to provide the care they are equipped and trained for. For example, Haley and De Lorenzo (2009) wrote that the Army’s Mobile Surgical Team (MST) that deployed to Peru following the 2007 earthquake were unable to provide earthquake related
life-saving surgery even though they were on Peruvian soil and ready to receive earthquake related victims in less than 48 hours. This delay may come from the bureaucracy that is in place to request assistance. Aspects of this process can be cumbersome given the number of large agencies involved. The Select Committee Report on the preparation for and response to Hurricane Katrina highlighted numerous challenges that were faced by the Department of Defense, the Federal Emergency Management Agency, the Department of Homeland Security, and the governments of the affected states. Among the challenges cited, was a perceived delay in the Department of Defense's response to the needs of New Orleans. The report cited the cumbersome bureaucratic process in requesting aid. Such negative experiences are why the Immediate Response Authority (IRA) is the mechanism of interest for this study. The movement of a large mass of resources from the Department of Defense, or any other federal agency, may be best requested through the use of the Stafford act, but many requests for aid at the local level may be managed through the use of the immediate response authority (IRA). However, the effective use of IRA depends on communities knowing what resources can be accessed using this mechanism.

Methods

Study Design

This study was conducted to evaluate how emergency management managers of the counties that comprise the Dayton–Springfield–Greenville Metropolitan statistical area respond in a weather-related disaster using the administrative policies and laws available to civilian emergency managers in Ohio Counties. The study also explored the knowledge level of emergency managers regarding the resources available at the Wright–Patterson Air Force Base and the mechanisms available to access the resources of the Wright-Patterson Air Force Base.
Key informant interviews were held with the emergency managers for the counties that comprise the Dayton–Springfield–Greenville Metropolitan Statistical area (Champaign, Clark, Miami, Montgomery, Greene, and Preble counties). The Dayton–Springfield–Greenville Metropolitan statistical area is located in South Western Ohio. The 2010 Census reported a population of 1,957,497 persons residing in the Dayton–Springfield–Greenville Metropolitan statistical area (U.S. Census Bureau, 2012). These counties are a mixture of rural, suburban and urban settings.

**Sample**

The sample was the six emergency managers for the counties comprising the Dayton–Springfield–Greenville Metropolitan statistical area (Champaign, Clark, Miami, Montgomery, Greene, and Preble counties).

**Key Informant Interview Guide**

An interview guide was designed to direct the discussion during the interview and was approved by the Wright State Institutional Review Board. The interview guide consisted of 10 open-ended questions designed to elicit conversational responses about how emergency managers would act in an emergency based on a hypothetical scenario (see Appendix B). Each question had one or more “probes.” The probes were designed to either elicit more detailed responses about the topic and/or to help bring the interviewee back to the topic if he/she wandered off topic or scenario (see Appendix C).

**Interview Process**

The selected county emergency managers were contacted via telephone and interviews were scheduled. A script was used to guide the scheduling of interviews and the IRB approved consent form was utilized to obtain consent from the emergency managers to participate in the study. Interviews were conducted individually and in person in the offices of the emergency
management agency directors. All of the emergency management agency directors of the six counties comprising the Dayton-Springfield-Greenville Metropolitan Statistical Area voluntarily participated in the interviews. The interview guide was used to guide the researcher through a set of questions designed to learn how the emergency manager would respond to a scenario that required them to request assistance outside of their jurisdiction. The interviews took approximately 45 minutes each. No personal information about the interviewee was recorded.

**Scalable Weather Disaster Scenario**

The emergency management agency directors were presented with a hypothetical scenario that involved a significant late winter rainstorm. The hypothetical rainstorm came after a winter with 50 inches of snowfall, which is twice the average snowfall for Dayton, Ohio (National Climactic Data Center, 2008). The hypothetical rainstorm deposited 11 inches of rain over 36 hours. This led to a hypothetical rising of water levels and flooding of the Great Miami River and its tributaries. The hypothetical flooding affected local medical centers as well as roads leading to the medical center. The hypothetical floods also affected power and other public works in the emergency management agency director’s community. This scenario was designed to be scalable, inasmuch that the interviewer could increase the severity of the effects of the hypothetical flooding as well as the availability of resources so as to overwhelm the emergency management agency director’s resources at their immediate disposal and compelled them to look outside of their jurisdiction for assistance. The scenario could also be adjusted for a rural or urban/suburban area, as the counties in the Dayton-Springfield-Greenville Metropolitan Statistical Area are diverse.
Data Analysis

At the end of data collection the researcher aggregated data from all the interviews into a single document. Based on the methods identified in Braun (2006), responses were reviewed to identify themes relevant to the research questions. Reviewing two randomly selected interviews identified an initial set of themes. A code was designated for each theme identified. The initial set of themes was used to review all interviews to apply codes to comments relevant to each theme. When a new theme is identified, it was added to the list of themes. If necessary, previously reviewed material was re-reviewed.

Results

Initial Response

Each EMA director was presented with the scenario of a rainstorm after a wetter than usual winter. The hypothetical rainstorm caused the Great Miami River and its tributaries to rise to levels that precipitated flooding. The flooding affected roads, homes and medical facilities. This was tailored to the medical facilities in each county. The hypothetical effects of the flooding scenario were magnified as required to elicit the county emergency management agency director requesting resources from outside their jurisdiction to respond to the hypothetical flood. The first hypothetical call the EMA director would place was different in a number of interviews. One third of EMA directors (2/6) indicated they would call the Miami Valley Conservancy District to learn what the conservancy district was learning about the river levels, the state of the dams, and flooding predictions. The Miami Conservancy District was developed after the Great Flood of 1913 to protect the communities near the Great Miami River from future flooding. One EMA director indicated he would monitor weather channels. All EMAs interviewed reported
they would contact the fire chief and/or law enforcement agency to gather intelligence about what was occurring in their jurisdiction.

**Activation of the Emergency Operations Center**

All EMA directors have the authority to activate their county’s emergency operations center (EOC). In this hypothetical scenario, all EMA directors stated that they would initially be monitoring the weather and river levels and assessing the damage this hypothetical storm was causing. Similarly, all EMA directors indicated they would activate the EOC once operations switched from assessment to response. The assessment phase is the phase where the EMAs are receiving information from first responders as well as other sources, such as weather data sources, and the conservancy district. When the EMAs are informed that the first responders are engaged in responding to events rather than assessing, the EOC would be activated. One of the six directors stated that the EOC could also be activated on request of the incident commander at the scene. If the incident commander at the scene believes that they need more resources than are available, the incident commander could request that the EOC be activated to aid in the request of more resources.

**Events that Precipitates Contacting Ohio Emergency Management Agency**

All EMA directors interviewed stated they would contact Ohio EMA once they had activated the EOC. Each EMA director has a field liaison at Ohio EMA and would establish a courtesy call early to make Ohio EMA aware of the conditions in their respective jurisdictions.

**Notification of Civilian Chain-of-Command**

Two of six EMA directors interviewed (33%) believed that county administrators made the call to the governor while four (67%) stated that the Ohio EMA initiated the contact to the
governor’s office. The correct protocol is for the county EMA to provide information to Ohio EMA for forwarding to the governor. This is an area that needs clarification.

**Intrastate Mutual Aid Compact Engagement**

Two (33%) of EMA directors interviewed reported that they would allow the incident commander, fire chiefs, and law enforcement to make the requests directly to the intrastate mutual aid compact (IMAC). The IMAC is the agreement that provides services and resources in response to and recovery from an emergency. The IMAC is the mechanism that allows for requesting and providing disaster assistance from other jurisdictions. The IMAC resolves the legal issues in the requesting and provision of assistance before a disaster occurs allowing for a prompt response to a disaster. Four of the six (67%) EMAs stated that they would coordinate the requests through the EOC. The lack of standardization in the IMAC resource request process may be an area suitable for further evaluation.

**Knowledge of Wright-Patterson AFB as a Community Resource**

Three of six of the EMA directors interviewed reported that they have Wright-Patterson AFB on an emergency response checklist. The explosive ordnance disposal (EOD) unit is the asset that these three EMA directors stated having on a checklist. All six EMA directors interviewed stated being aware of Wright-Patterson AFB Fire Department as an asset that could respond in an emergency. The Wright-Patterson AFB Fire Department participates in the Ohio Fire Service Emergency Response Plan, which allows the Wright-Patterson AFB Fire department to respond in events that occur outside of the confines of Wright-Patterson AFB. These two Wright-Patterson AFB assets were the most commonly cited assets that would be requested in an emergency. Three of six (50%) EMA directors interviewed had a point of contact within Wright-Patterson AFB and all three knew the Wright-Patterson AFB Fire Chief while one of the
three also had a Wright-Patterson AFB emergency management staff member as an additional point of contact.

Three of the civilian EMA directors interviewed did not know what resources Wright-Patterson AFB had to offer in case of an emergency. The remaining three were aware of the explosive ordnance disposal unit and the fire department assets such as the fire suppression foam truck at Wright-Patterson AFB. Only one of six EMA directors interviewed had a way to contact the Wright-Patterson Emergency Management agency directly. The lack of collaboration between the county EMAs and Wright-Patterson EMA might be an area poised for improvement through basic information sharing.

**Department of Defense Immediate Response Authority**

During the interviews with the EMAs, the hypothetical flooding was taken to a level that would drive the EMA directors to consider requesting assistance from the federal government. When asked how this would be accomplished, all the EMA directors interviewed described a process where the state EMA would coordinate with the Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS) to request a Presidential declaration of emergency. Once the President has made the declaration, federal resources could be made available for the response. All the EMA directors interviewed were asked of their awareness of any other manner in requesting federal assistance, specifically DoD assistance in order to assess their familiarity with IRA. None of the EMA directors knew of another method of requesting federal assistance. When asked specifically regarding the IRA, none of the EMS directors were aware of this direct mechanism for requesting federal assistance.
Differences in Requesting Assistance from National Guard and Active Duty Assets

Three of six (50%) EMA directors interviewed indicated that there was greater knowledge and comfort in requesting resources from the National Guard than from Active Duty DoD resources. Three of six emergency operations centers had a position for a military liaison manned by National Guard personnel. All six EMA directors interviewed indicated that if National Guard resources were needed Ohio EMA would be the liaison in requesting these resources. The delegation of the process of requesting National Guard assets through their Ohio EMA liaisons accounted for the EMA director’s comfort with the process. Even with the knowledge that Ohio EMA would assist in obtaining resources from the National Guard, there were still concerns regarding the costs associated with use of these resources. The relative knowledge that the interviewed EMA directors had for requesting National Guard resources contrasted sharply with the knowledge in attempting to access resources from Wright-Patterson AFB. All six civilian EMA directors interviewed viewed the process of requesting assistance from Federal DoD resources as a lengthy and cumbersome process. One EMA director interviewed stated, “I wouldn’t waste my time” when asked how he would use the Stafford Act for requesting Federal assistance from Wright-Patterson AFB. All six EMA directors described utilizing the Stafford Act as the main means of requesting federal DoD resources. One concern regarding the use of federal DoD resources that two of six EMA directors expressed was the fear that the lengthy process in which authorization for DoD assistance is granted, similar assets could be obtained from closer sources. This is a valid concern regarding the Stafford Act but use of the IRA can greatly minimize the request is processed.
Financial Constraints of Emergency Management Agencies

Due to the financial constraints many counties are facing, part-time employees and volunteers primarily staff five of six EMAs. Five of six (83%) of EMA directors interviewed indicated that among their initial requests for assistance from the intrastate mutual aid compact (IMAC) would be a request for personnel trained in emergency operations center (EOC) duties. The EMA directors interviewed indicated that if the disaster response extended into days rather than hours, the disaster response might deteriorate as the EMA directors lack the personnel to continuously staff the emergency operations center. Only one of six EMAs interviewed was staffed in sufficient numbers to continue operations if the response extended into days rather than hours. Another aspect where costs might impact disaster response is in the costs associated with use of DoD assets. According to the EMAs interviewed, the costs of utilizing DoD resources, either from the National Guard or from Active Duty DoD assets, are greater than those coordinated through memoranda of understanding with local suppliers. County EMAs may establish memoranda of understanding with local businesses and other entities (i.e., faith-based organizations) that have resources that could be utilized quickly and at less cost than utilizing similar resources from the DoD. County EMA directors indicated being hesitant to obligate themselves financially for more expensive DoD resources without clear indications that funding sources from either the state or the federal government will be made available for reimbursement.

Discussion

The response to an emergency or disaster is a time- and resource-consuming endeavor. No one community is prepared to handle all types of emergency without outside assistance. Most emergency managers have developed a network of partners that can come to their aid in case of
an event that is severe enough that it taxes their resources to exhaustion. Partners can be many different entities. They may be another governmental agency such as police, firefighters, emergency medical services, and the public health department. A partner can be a non-governmental organization (NGO) such as the American Red Cross. A partner may also be a private business that can provide equipment and expertise, such as a construction company with heavy machinery or possibly a faith-based organization that can provide emotional, psychological and spiritual support, in addition to shelter and/or meals. One underutilized partner that stands ready to assist local communities in the event of a disaster is the Department of Defense. There are multiple ways the DoD can provide assistance. Aid may be in the form of manpower to clear debris, professional expertise such as an explosive ordnance unit assistance and fire fighting foam support, as well as emergency medical support. The emergency managers of the counties that comprise the Dayton-Springfield-Greenville Metropolitan Area were interviewed to examine how the EMAs would respond to a hypothetical storm with a resulting flood. The interviews examined the initial steps taken by the EMA directors in the hypothetical situation. The interviews also elucidated the EMAs criteria for activating the emergency operations center as well as determining who contacted the intrastate mutual aid compact (IMAC) for assistance once local resources became overtaxed. This was compared to guidelines established by Federal Emergency Management Agency (FEMA) training. The questions also explored the process of notifying the governor of local circumstances and the degree of understanding of the legal authorities that provide emergency managers access to assets available at Wright-Patterson Air Force Base and the Department of Defense. All of the civilian emergency management directors interviewed were unaware of the immediate response authority (IRA) and how it could impact their operations. The civilian emergency management directors
believed that to access active duty Department of Defense assets, a lengthy and cumbersome process would have to be undertaken to attempt to access any resources from the DoD. The civilian EMA directors were more familiar with obtaining DoD resources from the National Guard. A military liaison on the emergency operations center personnel assists with obtaining National Guard assets through the Ohio EMA military liaison. Even as the civilian EMA directors were more familiar with this process, there were still concerns regarding the costs associated with these resources. A concern of the civilian EMA directors was that the time and effort that it would take to get approval for active duty Department of Defense assets to be released from Wright-Patterson Air Force Base would be too long and that similar assets could be made available from other sources that would be easier to obtain. Conversely, the emergency management director for Wright-Patterson Air Force Base stated that Wright-Patterson Air Force Base EMA received requests directly from civilian victims of emergencies for assistance (D. Frank, personal communication, June 1, 2012). Wright-Patterson Air Force Base EMA gave an example of a dialysis center in Dayton that called Wright-Patterson Air Force Base EMA using IRA to request a 5000-watt electric generator after they lost power after a storm. After taking into consideration the six criteria that are delineated within the Department of Defense directive 3025.18, the 5000-watt electric generator was provided to the dialysis center. This is the same process a civilian EMA director would use to request assistance from the Wright-Patterson AFB emergency management agency via IRA. The immediate response authority was instituted as a way to assist civil authorities in the event of a disaster but it is an underutilized and lesser-known mechanism.

One theme that became apparent during the interviews was the concern of costs associated with responding to a disaster. Most government agencies are under tight financial
restraints that affect the resources available. The cost of using Department of Defense assets, either National Guard (under state active duty or Title 32 status) or Title 10 active duty status is perceived to be higher than the costs of utilizing resources that may be obtained through memoranda of understanding with local sources or through provision of resources through Ohio EMA. Another aspect of financial constraints that all emergency management agencies are contending with is the costs associated with staffing. Volunteers or part-time employees staff many emergency management agency positions. When asked what resources the County EMA directors would request through the Intrastate Mutual Aid Compact (IMAC), many responded that an early request would be for additional staff to man the EOC. Many departments may not be able to fully staff an Emergency Operation Center (EOC) if a response goes on for a number of days. Some departments are better staffed but would still require additional staffing from other departments or agencies to be able to fill all the positions in the EOC required during an extended response. This was the indication that an EMA director of a rural county gave when asked about the EOC. How this EMA director mitigated the risk was by having a strong relationship with the Health Department commissioner and they have agreed to share manpower resources in case of an event where personnel are scarce.

No community is prepared to handle any event that comes their way alone. Civilian EMA directors need to have a degree of awareness of the resources that are available in the community. Because of the perceived obstacles in gaining access to the resources available at Wright-Patterson AFB, civilian EMA directors have developed plans in case of an emergency that exclude this option. Five of six (83%) of civilian EMA directors indicated they would contact Wright-Patterson AFB if there were a need for an explosive ordinance disposal (EOD) team or in case of a military aircraft mishap. Those are the primary resources that civilian EMA
directors have knowledge of on Wright-Patterson AFB. County EMA directors were also aware of the fire department resources on Wright-Patterson Air Force Base. Three of six (50%) of EMA directors interviewed discussed the response to the Franklin Iron and Metal Company fire in Dayton on May of 2010. This fire required the use of fire suppression foam trucks to be able to control the fire. The Montgomery County EMA contacted Wright-Patterson Air Force Base Fire Chief and requested assistance. The Wright-Patterson fire department responded with a fire suppression foam capable truck and assisted in extinguishing the fire.

As a participant in the Ohio Fire Chief’s Response Plan, Wright-Patterson Air Force Base fire department has a close relationship with the fire departments of the surrounding counties. One aspect that facilitates the interaction with civilian fire departments is the fact that the Wright-Patterson Fire Chief is a civilian who is also a fire chief for a local civilian jurisdiction. This illustrates the fact that many of the relationships among emergency management agencies and Wright-Patterson Air Force Base are based on relationships that tend to be of a personal nature rather than a relationship based on mutual aid agreements, official policies and protocols. The EMA directors interviewed indicated that strong relationships between EMA peers aid in cooperative efforts during an emergency. Building trust among EMA peers before an event occurs allows for open and honest communication during an emergency. Only one of the EMA directors of the Dayton-Springfield-Greeneville Metropolitan Statistical Area had a point of contact within the Wright-Patterson AFB emergency management agency. There are no direct links from peer-to-peer for the majority (five of six) of EMA directors in the communities around Wright-Patterson AFB with the Wright-Patterson AFB EMA. This lack of communication minimizes the opportunities to establish professional relationships that may be use useful in an emergency. The EMA community of the Dayton-Springfield-Greeneville
Metropolitan Statistical Area has developed a network of peers that has neglected to include Wright-Patterson AFB EMA. Wright-Patterson AFB emergency management agency has resources that could be utilized in a response to an emergency outside the gates of Wright-Patterson AFB as evidenced by the response to the dialysis center in Dayton. The lack of communication between the county EMA directors and Wright-Patterson AFB emergency management agency might be a cause for the lack of awareness of the Immediate Response Authority.

**Recommendations**

There were different statements made by the interviewed EMA directors about the process in requesting aid from the Intrastate Mutual Aid Compacts (IMAC). Two of the six EMA directors interviewed stated that they would allow for the managers of the assets on scene (incident commander, law enforcement, and fire fighters) to request IMAC resources directly. Four of the six EMA directors stated that they would coordinate the request of resources. The Ohio Revised Code Section 5502.41, division (E)(2) clarifies the process where EMAs are responsible for making the requests for assistance. This discrepancy must be corrected at the two jurisdictions where that authority has been delegated to lower levels. This process would allow for greater oversight and awareness by the county EMA of what resources are requested and what the potential costs associated with response and recovery.

Two of six EMA directors interviewed indicated that their local government officials carried out the conveyance of information to state government officials, and the governor while four of six believed that this information was transmitted by the state EMA. The correct process is for information to be delivered to Ohio EMA who will forward information to the Governor as part of their counsel. The lack of a clearly defined method in which information is forwarded to
state officials may cause undue delay in the availability of resources that may aid in the swift response to a disaster.

**Knowledge of Wright-Patterson AFB as a Community Resource**

The lack of collaboration between the county EMAs interviewed and Wright-Patterson EMA might be an area targeted for improvement. Four of six EMA directors interviewed had points of information contact within Wright-Patterson AFB but only one had a direct line of communication with the Wright-Patterson EMA. All EMA directors interviewed were aware of the Wright-Patterson AFB Fire Department as a potential resource in case of a disaster. As a participant in the Ohio Fire Chiefs Response plan, Wright-Patterson AFB Fire Department could participate directly in an emergency outside of the DoD installation. Three of six EMA directors interviewed identified the Wright-Patterson explosive ordnance unit as a potential resource in case of an emergency. This was the extent of the knowledge of resources available for aid from Wright-Patterson AFB. There was no awareness of the possible medical assets on Wright-Patterson AFB that could be requested, or of the engineering expertise, public health technical assistance, bioenvironmental engineer resources, or possible logistical support. While the Dayton-Springfield-Greenville Metropolitan Statistical area has developed an emergency response network that does not include Wright-Patterson AFB assets, response to an emergency may be augmented if there was greater awareness of the resources available at Wright-Patterson AFB.

The EMA directors interviewed knew of one way to request aid from the Department of Defense (DoD): The Stafford Act. The use of a the Wright-Patterson AFB Fire Department as a member of the Ohio Fire Chiefs Response Plan is a way to use DoD assets without resorting to the Stafford Act. The EMA directors also knew how to request National Guard assets through
the state EMA, but this is only applicable while National Guard assets are classified as Title 32 assets and not Federal assets. If National Guard assets are under Title 10, they are federal assets and any request for assistance must be through the same mechanisms as if requesting active duty resources. None of the EMA directors interviewed (six of six) were aware of the Immediate Response Authority (IRA). This way to request DoD resources could provide local communities with assets that are otherwise unavailable in a timely fashion. Awareness of this system could reduce response times and potentially reduce human suffering, as well as protect lives and property.

**Financial Constraints of Emergency Management Agencies**

Five of six EMA directors interviewed stated that among their initial requests to the state EMA in this hypothetical scenario would be additional staff for the emergency operations center (EOC). These EMAs are staffed with part-time employees and volunteers and lack the personnel required to be able to keep the EOC open 24 hours a day for extended operations. This financial constraint not only influences manning of the EOC but also possible resources requests. All interviewed EMAs indicated that all required resources would be requested but there was concern as to how to reimburse the agencies that provide assistance pay if there was no state or federal declaration of disaster and accompanying funds.

**Limitations of this Study**

This study looked at only a small fraction (six of 88 counties) of the EMAs in Ohio. The results might have been different in an area with a different population mix.

**Public Health Implications**

Utilizing the guidelines of “prevent, promote, and protect”, this study examines how an improved relationship with the Wright-Patterson AFB EMA might prevent, promote and protect
public health in the Dayton-Springfield-Greenville Metropolitan Statistical area. By establishing
open avenues of communication between the Wright-Patterson AFB emergency management
agency and local emergency management agencies, there will be an increased degree of
knowledge of the resources readily available that might enhance response to emergencies. This
enhanced response could aid in preventing further injuries after a disaster and augment
manpower if a local public health department needed additional skilled and trained personnel.
With greater ties to the resources available through Wright-Patterson AFB, there might be
increased opportunities to promote health, especially in manner of providing subject matter
experts on diverse topics such as bioterrorism, and chemical, biological, radiological, nuclear and
high explosive (CBRNE) the high interest items in public health emergency preparedness. A
strong, professional relationship between the local county emergency management agency
directors and the Wright-Patterson AFB emergency management agency could enhance
everyone’s ability to protect the health of the community the EMA is charged with serving. By
instituting these ties and fostering greater trust within the EMAs that serve within the Dayton-
Springfield-Greenville Metropolitan Statistical area and Wright-Patterson AFB, the capacity to
respond to an emergency in a swift, efficient and purposeful manner can allow for greater
protection of the citizens of the Dayton-Springfield-Greenville Metropolitan Statistical area.
References

An Act Creating Intrastate Mutual Aid Compact. 2002 Ohio Revised Code 129th General Assembly File No. 95, SB 243, § 1, eff. 7/3/2012.


D. Frank, personal communication, April 19, 2012.


Appendices

Appendix A - Acronyms

AFB  Air Force Base
CBRNE  Chemical-Biological-Radiological-Nuclear-high Explosive
DSCA  Defense Support of Civil Authorities
DoD  Department of Defense
DHS  Department of Homeland Security
EMA  Emergency Management Agency
EMAC  Emergency Management Assistance Compact
EOC  Emergency Operations Center
EMEDs  Expeditionary Medical Support
FEMA  Federal Emergency Management Agency
IMAC  Intrastate Mutual Aid Compact
IRA  Immediate Response Authority
MOU  Memoranda of Understanding
MST  Mobile Surgical Team
NGO  Non-Governmental Organization
ODPS  Ohio Department of Public Safety
USAF  United States Air Force
USACE  United States Army Corps of Engineers
USC  United States Code
Appendix B - Interview Guide

1. What is the first step in managing an event of this nature?
   *Probe:* Whom do you call?
   *Probe:* If you need to evacuate casualties, how would you do it?
   *Probe:* If for some reason you couldn’t evacuate casualties, what would you to care for them?

2. Who decides to activate the Emergency Operations Center?
   *Probe:* What circumstances cause you to activate the emergency operations center?

3. What circumstances would prompt you to initiate a call Ohio EMA?
   *Probe:* At what point in the response effort would you contact Ohio EMA?

4. What circumstances would prompt you to initiate a call to the governor?
   *Probe:* Who is responsible for initiating the call to the governor?

5. What circumstances would prompt you to call IMAC?

6. What circumstances would prompt you to call EMAC?

7. Is Wright-Patterson AFB on any of your checklists?
   *Probe:* What circumstances would prompt you consider Wright-Patterson AFB as a source for assistance?
   *Probe:* How would you request assistance from Wright-Patterson AFB?
   *Probe:* Do you have a point of contact (name/number) at Wright-Patterson AFB?

8. What resources are you aware of at Wright-Patterson AFB that could be of assistance in this disaster?
   *Probe:* Medical/EMEDs?
   *Probe:* Civil Engineering?
   *Probe:* Fire?
   *Probe:* What other resources might be available at Wright-Patterson AFB that might assist you in this disaster?

9. Is there anything else about this disaster scenario that comes to mind that we have not covered that you think should be included in our discussion?
Appendix C – Interview Scenario

The EMA personnel were presented with a scenario that involved a significant late winter rainstorm. This rainstorm came after a winter with 50 inches of snowfall, which is twice the average snowfall for Dayton, Ohio (National Climactic Data Center, 2008). The rainstorm deposited 11 inches of rain over 36 hours. This led to rising water levels and flooding in the Great Miami River and its tributaries. The flooding affected the local medical center as well as roads leading to the medical center. The floods also affected power and other public works in their community. This scenario was designed to be scalable so as to overwhelm the resources at their immediate disposal and compelled them to look outside of their jurisdiction for assistance. The scenario could also be adjusted for a rural or urban/suburban area.
Appendix D – IRB Consent Letter

CONSENT FOR PARTICIPATION IN RESEARCH

Review of Civil-Military Coordination in Local Disaster Response

A. PURPOSE AND BACKGROUND

Wilfredo J. Nieves, MD, is a Master of Public Health Student at Wright State University. He is conducting a study to learn about the processes local emergency managers use to initiate a response to a disaster in their jurisdiction. The goal of the research is to learn how emergency managers will respond if an actual event occurs in communities in the Greater Dayton Metropolitan area. The goal is to understand how emergency managers respond in a disaster once local resources have been exhausted and you begin to look outside of your jurisdiction for assistance.

B. PROCEDURES

If I agree to be in the study, the following will happen:

As a participant in this study, I will be asked to answer questions regarding the processes and protocols in place when responding to a disaster, to include but not limited to knowledge of Department of Defense resources available in case of a disaster, mechanisms to access Department of Defense resources and any points of contact which could assist in accessing Department of Defense resources.

The interview is expected to last about 45 minutes.

C. RISKS/DISCOMFORTS There are no known risks to participation in this study.

D. CONFIDENTIALITY

No personal identifying information will be collected. Reports based on this research will be generalized. No information about individual counties or emergency management agencies will be provided in reports.

E. BENEFITS

There will be no direct benefit to me from participating in this study.

F. COSTS

There will be no costs to me as a result of taking part in this study.
G. PAYMENT

There will be no payment provided to me for taking part in this study.

H. QUESTIONS

If I have questions about this research study, I can contact the researcher Wilfredo J Nieves at viperdoc@me.com or his faculty advisor Dr. William Spears at (937) 258-5552. If I have general questions about giving consent or my rights as a research participant in this research study, I can call the Wright State University Institutional Review Board at 937-775-4462. If I would like a copy of the group (not individual) results of this study, I can contact Wilfredo J Nieves. It is estimated that these results will be available on or after July 2012.

I. CONSENT

I will be given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. I am free to decline to be in this study, or to withdraw from it at any point.

If I agree to participate I should sign below.

__________________________________________  ________________________________
Date                                               Signature of Study Participant

__________________________________________  ________________________________
Date                                               Signature of Person Obtaining Consent

Notes:
Appendix E – IRB Approval

DATE: May 22, 2012
TO: Wilfredo J. Nieves, M.D., Graduate Student
    Public Health Program
    William Spears, Ph.D., Faculty Advisor
FROM: B. Laurel Elder, Ph.D.
    Chair, WSU-IRB
SUBJECT: SC# 4800
    ‘Review of Civil-Military Coordination in Local Disaster Response’

This memo is to verify the receipt and acceptance of your response to the conditions placed on the above referenced human subjects protocol/amendment.

These conditions were lifted on: 05/22/2012

This study/amendment now has full approval and you are free to begin the research project. If this is a VA proposal, you must still receive a letter of approval from the Research and Development Committee prior to beginning the research project. This implies the following:

1. That this approval is for one year from the approval date shown on the Action Form and if it extends beyond this period a request for an extension is required. (Also see expiration date on the Action Form)

2. That a progress report must be submitted before an extension of the approved one-year period can be granted.

3. That any change in the protocol must be approved by the IRB; otherwise approval is terminated.

If you have any questions concerning the condition(s), please contact Jodi Blacklidge at 775-3974.

Thank you!
Enclosure
RESEARCH INVOLVING HUMAN SUBJECTS

Action of the Wright State University
EXPEDITED REVIEW
Assurance Number: FWA00002427

Title: 'Review of Civil-Military Coordination in Local Disaster Response'

Principal Investigator: Wilfredo J. Nieves, M.D., Graduate Student
William Spears, Ph.D., Faculty Advisor

Department: Public Health Program

Expedited Category: 6, 7

The Institutional Review Board has approved the use of human subjects on this proposed project with conditions previously noted. The conditions have now been removed.

REMINDER: FDA regulations require prompt reporting to the IRB of any changes in research activity, changes in approved research during the approval period may not be initiated without IRB review (submission of an amendment), and prompt reporting of any unanticipated problems (adverse events).

Signed Chair, WSU IRB

Expedited Review Date: May 18, 2012
IRB Meeting Date: June 18, 2012

This approval is effective only through: May 18, 2013
To continue the activities approved under this protocol you should receive the appropriate form(s) from Research and Sponsored Programs (RSP) two to three months prior to the required due date.
If you do not receive this notification, please contact RSP at 775-2425.
## Appendix F – List of Public Health Competencies Met

<table>
<thead>
<tr>
<th>Domain #1: Analytic/Assessment</th>
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<tbody>
<tr>
<td>Identify the health status of populations and their related determinants of health and illness (e.g., factors contributing to health promotion and disease prevention, the quality, availability and use of health services)</td>
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<tr>
<td>Adhere to ethical principles in the collection, maintenance, use, and dissemination of data and information</td>
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<tr>
<td>Describe the public health applications of quantitative and qualitative data</td>
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<tr>
<td>Collect quantitative and qualitative community data (e.g., risks and benefits to the community, health and resource needs)</td>
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<tr>
<td>Describe how data are used to address scientific, political, ethical, and social public health issues</td>
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<tr>
<th>Domain #2: Policy Development and Program Planning</th>
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<tr>
<td>Gather information relevant to specific public health policy issues</td>
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<td>Describe how policy options can influence public health programs</td>
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<tr>
<td>Explain the expected outcomes of policy options (e.g., health, fiscal, administrative, legal, ethical, social, political)</td>
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<tr>
<td>Gather information that will inform policy decisions (e.g., health, fiscal, administrative, legal, ethical, social, political)</td>
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<tr>
<td>Describe the public health laws and regulations governing public health programs</td>
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<tr>
<td>Demonstrate the use of public health informatics practices and procedures (e.g., use of information systems infrastructure to improve health outcomes)</td>
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<tr>
<th>Domain #3: Communication</th>
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<tr>
<td>Communicate in writing and orally, in person, and through electronic means, with linguistic and cultural proficiency</td>
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<tr>
<td>Participate in the development of demographic, statistical, programmatic and scientific presentations</td>
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<tr>
<th>Domain #4: Cultural Competency – N/A</th>
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<tr>
<th>Domain #5: Community Dimensions of Practice</th>
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<tr>
<td>Recognize community linkages and relationships among multiple factors (or determinants) affecting health (e.g., The Socio-Ecological Model)</td>
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<tr>
<td>Identify stakeholders</td>
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<td>Maintain partnerships with key stakeholders</td>
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<tr>
<td>Describe the role of governmental and non-governmental organizations in the delivery of community health services</td>
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<tr>
<td>Identify community assets and resources</td>
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<tr>
<td>Gather input from the community to inform the development of public health policy and programs</td>
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<tr>
<td>Inform the public about policies, programs, and resources</td>
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<tr>
<th>Domain #6: Public Health Sciences</th>
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<tr>
<td>Relate public health science skills to the Core Public Health Functions and Ten Essential Services of Public Health</td>
</tr>
<tr>
<td>Describe the scientific evidence related to a public health issue, concern, or intervention</td>
</tr>
<tr>
<td>Retrieve scientific evidence from a variety of text and electronic sources</td>
</tr>
<tr>
<td>Discuss the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)</td>
</tr>
<tr>
<td>Describe the laws, regulations, policies and procedures for the ethical conduct of research (e.g., patient confidentiality, human subject processes)</td>
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<tr>
<td>Partner with other public health professionals in building the scientific base of public health</td>
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<tr>
<th>Domain #7: Financial Planning and Management</th>
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<tr>
<td>Describe the local, state, and federal public health and health care systems</td>
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<tr>
<td>Describe the organizational structures, functions, and authorities of local, state, and federal public health agencies</td>
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<tr>
<td>Adhere to the organization’s policies and procedures</td>
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<tr>
<th>Domain #8: Leadership and Systems Thinking</th>
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<tr>
<td>Incorporate ethical standards of practice as the basis of all interactions with organizations, communities, and individuals</td>
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<tr>
<td>Describe how public health operates within a larger system</td>
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<tr>
<td>Identify internal and external problems that may affect the delivery of Essential Public Health Services</td>
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<tr>
<td>Describe the impact of changes in the public health system, and larger social, political, economic environment on organizational practices</td>
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