

REGION 2 NORTH

BIOTERRORISM PREPAREDNESS PLAN



**Approved:
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**REGION 2 NORTH
HRSA GRANT
BIOTERRORISM PREPAREDNESS PLAN**

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I. Introduction

Concern for large scale terrorism attacks within the United States, resulting in mass casualties, has grown significantly since the events of September 11, 2001. Media coverage spotlighting this concern has raised the general public's awareness of potential human consequences of an attack against unprotected civilians with weapons capable of widespread damage including deaths and injuries.¹ Compounding this heightened state of alert is the possible use of deadly biological agents against domestic targets.

In response to the bioterrorism threat, the Region 2 North Bioterrorism Preparedness Planning Board was formed. The Region 2 North Bioterrorism Preparedness Planning Board is a regional organization of a broad-spectrum of groups who have a requirement and/or interest in preparing for and responding to a Biological Weapons incident. The Region 2 North Bioterrorism Preparedness Planning Board was formed as part of a federal grant issued by the U.S. Department of Health and Human Services' (DHHS) Health Resources and Services Administration (HRSA). The grant identified several focus areas to be addressed in a regional bioterrorism response plan. The focus areas under the HRSA grant are being coordinated with other grants (e.g., CDC grants, DOJ grants) to ensure the most efficient use of resources.

By addressing the challenges that a Biological Weapons incident may present, the planning effort can strengthen the ability of the health system (e.g., first responders, hospitals and public health agencies) to perform routine tasks that affect daily medical care and public health activities. The planning efforts are essential in developing a more robust public health infrastructure and providing necessary resources to manage a dramatic increase in requirements: providing surveillance, engaging in epidemiological-criminal investigations, distributing medical and public health recommendations, distributing scarce resources, and communicating with hospitals, the public, and other local, state, and federal agencies. Strengthening the region's health system provides the best civil defense against a Biological Weapons incident.

As a means to strengthen the overall health system within the region, the Region 2 North Bioterrorism Preparedness Planning Board has adopted the following mission: develop and

¹ Joseph A. Barbera, MD, Anthony G. Macintyre, MD, Craig A. DeAtley, PA-C, "Ambulances to Nowhere: America's Critical Shortfall in Medical Preparedness for Catastrophic Terrorism." BCSIA Discussion Paper 2001-15, ESDP Discussion Paper ESDP-2001-07, John F. Kennedy School of Government, Harvard University, October 2001.

implement a regional response plan that functions within an Incident Command Structure in conjunction with local Emergency Preparedness and Public Health agencies in order to effectively mitigate, respond to, prepare for, and recover from Biological Weapons incidents, pandemics, and other disasters resulting in mass casualties within the region.

The Planning Board, although led by regional medical control authorities and hospitals, represents a broad-spectrum of organizations and agencies located within the tri-county area, which include:

1. Local Public Health Departments
2. Emergency Medical Services (private and public)
3. Local Emergency Management
4. Michigan State Police – Emergency Management Division
5. Federal Bureau of Investigation
6. Local Law Enforcement Departments
7. Local Fire Departments
8. American Red Cross
10. Medical Examiners
11. Regional Response Team Network
12. Volunteer & Civic Organizations
13. Michigan Department of Community Health

The development of the Regional Bioterrorism Response plan is the result of participation from and coordination among the variety of organizations within the region that became part of a mission and vision greater than self in order to protect the lives of the people in the State of Michigan.

II. Executive Summary

A. Introduction

In response to heightened national concerns regarding potential biological threats against the United States, following the terrorist attacks of September 11, 2001, the federal government has initiated funding programs to assist in the preparedness levels of the nation's hospital and emergency medical responders. To this end Region 2 North was awarded \$335,000 in October of 2002 to initiate planning activities to identify and address deficiencies within the current system relative to bioterrorism preparedness.

The 2 North Planning Board, in collaboration with the Advisory Committee and a number of Subcommittees has conducted an assessment of the region and has identified the first stages of an implementation plan to address deficiencies identified within the Region.

The following sections of this report contain, in detail, the current status of preparedness within the three county region comprising Region 2 North (Macomb, Oakland and St. Clair Counties). It also identifies deficiencies within the respective component areas of the HRSA grant and a plan of action which includes a list of specific recommendations (in priority order) to resolve deficiencies. It should be noted from the onset that the following plan of activities does not represent a total solution to the problems identified but rather provides the beginning steps for the development of a comprehensive approach that will improve the ability of medical facilities and EMS providers to respond to biological attacks.

Special recognition is due to the members of the various committees who worked to bring this initial phase of the project to fruition.

B. Current Status

The concept of regional-wide preparedness systems is new to health care organizations, county emergency management agencies and public health departments. Most of these organizations have disaster plans which have historically dealt with localized catastrophes that have been handled in a somewhat isolated fashion. This is particularly evident in assessing disaster preparedness among hospitals as reflected in the Hospital Preparedness Resource Inventory conducted by the Michigan Department of Community Health and distributed to the regions in February of this year. A review of responses associated with disaster planning clearly shows that

the majority of hospitals historically are concerned with their internal operations in time of disaster with very few demonstrating any ongoing relationships with external agencies who may be able to provide assistance in the event of a catastrophic disaster involving thousands of patients.

The need to work collaboratively is critical in light of existing circumstances. Due to changes in reimbursement, severe shortages of nurses and other essential health personnel, hospitals are struggling to meet the daily demands of their respective service areas. On a routine basis hospital emergency departments within the region are overcrowded and diverting patients. This, in the absence of any major disaster! Similarly, the role of public health has been diminished due to decades of underfunding.

With this well known scenario as the back drop, Region 2 North has attempted to establish a realistic approach to bioterrorism preparedness planning. This approach calls for incremental steps in the development of a post event plan that would establish a new context for disaster planning with the underlying assumptions that in the event of a bioterrorist attack health care providers (hospitals and public health agencies) must work with each other and with other public safety (including police, fire and EMS agencies) to manage the casualties and to minimize the risk of additional casualties. In short, managing a bioterrorism situation is no job for a single county, EMS agency or hospital.

C. Recommendations

During the course of the past seven months, five subcommittees have undertaken the task of identifying gaps/deficiencies associated with pre-hospital and hospital responses to bioterrorist attacks. Each of the subcommittees identified recommended activities to fill these gaps and to provide a more coordinated and effective regional response.

The following list represents a number of recommendations developed by the subcommittees and approved by the Region 2 North Planning Board. More detailed information regarding each of the recommendations (including costs of implementation and timetables) are provided in subsequent sections pertaining to specific benchmark areas.

- Establish Modular Emergency Medical System (MEMS) concept – designed to provide systematic, coordinated and effective medical response to the casualties of a large scale BT incident. Appendix A represents the MEMS Plan specific to Region 2 North;
- Adopt Incident Command/Incident Management Concept and train all appropriate hospital and EMS personnel accordingly;
- Develop and implement Mutual Aid Agreements among the following constituencies: hospitals/hospitals/public health agencies/emergency preparedness/EMS agencies;
- Establish regional communications system initially utilizing the VHF HEAR system;
- Provide for redundant radio communications through the use of 800 MHz, an upgraded VHF and amateur radio (RACES) systems;
- Implement Health Alert Network;
- Establish regional/statewide surveillance system through MDSS in concert with MDCH;
- Recommend and provide standardized PPE for hospital and EMS personnel.
- Provide training programs in the use of PPE for healthcare workers and EMS personnel;
- Establish credentialing system/database for healthcare professionals and volunteers;
- Provide training regarding recognition and response to bioterrorism to hospital workers and EMS personnel;
- Provide for public information about emergency preparedness;
- Conduct regional disaster drills to evaluate effectiveness of planning efforts;
- Adopt and implement SNS plan within Region.

D. Budget

The cost of implementing the recommendations contained in the following sections of this document is summarized in Appendix A.

III. Critical Benchmarks

Regional Capacity and Needs Assessment

1. Current Status

A. Existing federal, state and local resources in the region, including hospitals, outpatient facilities and EMS systems with identified gaps in capacity

Under the auspices of the Michigan Department of Community Health, a needs assessment pertaining to hospitals, EMS agencies and Medical Control Authorities was conducted during the summer/fall of 2002. All hospitals within the region participated in the survey and submitted responses to MDCH.

Based upon information secured through the Hospital Preparedness Resource Inventory, it would appear that Region 2 North hospitals are well prepared to maintain operations for at least 48 hours in the event of a major disaster in terms of the following needs:

- Auxiliary power
- Food
- Water
- Safe medical waste disposal
- Garbage disposal
- Laundry

A review of pharmaceutical supplies maintained on average within each hospital indicates that most hospitals now use a “just in time” inventory system that provides for a minimum on-site storage of sterile supplies, vital equipment, and pharmaceuticals to meet immediate requirements. Needless to say, this lack of supplies would negatively impact any one facility’s ability to react to a large mass casualty event. Re-supply mechanisms are often shared by “sister” hospitals within the same healthcare systems thus resulting in many of the hospitals within the region counting the same capability.

Compounding this problem is the fact that there are significant issues related to the procurement, transportation and distribution of necessary pharmaceutical supplies in the event of a prolonged disaster scenario.

Capability with regard to medical equipment is also limited although not as critical as pharmaceuticals.

Bed capacity (including overflow/surge capacity), within the Region, as might be expected, exceeds statewide averages. However, given reductions in staffing due to nursing shortages, surge capacity may be over stated because a hospital has identified vacant bed(s) that may be licensed, but does not have the ability to staff them.

The result of these factors is that, contrary to what may have been reported in the assessment tool, hospitals may have significantly less surge capacity than reported. Proof of this may be reflected in the increasing need to reroute ambulances with critical patients on an every day basis.

The Region also slightly exceeds statewide averages with respect to airborne isolation rooms.

The mean number of portable HEPA units available within regional hospitals appears to be less than the mean number within the State. Similarly, the ability of facilities to isolate ventilation systems in the Emergency Department from the rest of the hospital is less in the region than in the state (36% versus 41%).

B. Existing collaboration between hospitals, outpatient facilities and EMS on both terrorism and general disaster response initiatives

The need to establish regional Memos of Understanding among hospitals, EMS, local public health departments and emergency management agencies has been identified. As a condition of participation in any grant funding it will be required that the aforementioned agencies commit to participation in this plan by signing standardized agreements approved by the Planning Board. The adoption of the Modular Emergency Medical System (MEMS) by the Planning Board for possible response to disaster situations dictates that all parties work collaboratively through Memos of Understanding which will define the respective roles of each (see Appendix C).

C. Current Collaboration with other local state and regional health agencies related to public health, rural health, public safety and emergency management.

By virtue of the establishment of the Regional Planning Board, there is more collaboration among hospitals, EMS, local public health departments and emergency preparedness agencies. All of the aforementioned groups are represented on the Planning Board, Advisory Committee and the six subcommittees. These different constituencies are now communicating with other on a regular basis and have become acquainted with each other. The need to develop MOU's among various constituencies has been identified in order to solidify these relationships.

D. Description of current antiterrorism and disaster planning initiatives within the region that addresses hospital, outpatient and EMS participation, available resources and amount and sources of funding already available

The 2 North Regional Advisory Committee has operated under an "all inclusive" philosophy. To that end, membership is extended to all pertinent agencies and organizations. The Committee continues to grow as more become aware of its mission/goals and objectives. Members of the Advisory Committee, as well as others, sit on the six subcommittees which deal with the HRSA priority activities. Appendix D is a roster of Planning Board and Advisory Committee membership which represents a broad spectrum of participation throughout the Region.

E. Current status of hospital, outpatient and EMS systems with respect to patient flow, bed capacity, overcrowding, diversion and surge capacity.

Bed, blood, and rerouting issues have been discussed within the Communications and Hospital Preparedness Committees. Recommendations are being developed relative to the use of web based systems (WEB EOC or E TEAM) to convey this information to appropriate parties in time of disaster. Discussions are also taking place relative to the establishment of a Regional Communications Center which would be the focal point for all EMS/Hospital related communications in the event of a disaster.

F. Need for bioterrorism plan that addresses triage, isolation, quarantine, decontamination, stabilization, treatment, and referral of multiple casualties (whether presenting all at once or gradually over time).

The adoption of the Modular Emergency Medical System (MEMS) concept by the Region 2 North Planning Board in concert with Mutual Aid Agreements is intended to address issues contained in this benchmark.

G. Needs for reconfiguration of hospital space for quarantine of communicable diseases and treatment of infectious disease epidemics, including provision of security services.

Although the Region exceeds statewide averages for isolation capability each hospital will need to reassess its internal isolation resources. It will be necessary to conduct another survey addressing this issue in order to update information.

H. Need for personnel augmentation (physicians, nurses, pharmacists, mental health professionals, security personnel and others) to handle large influxes of patients.

As part of the MEMS concept it has been determined that hospitals will be responsible for providing staff support to ACCs. This will be addressed in the Memo of Understanding. Credentialing of individuals who may staff an ACC (or a hospital for that matter) during a disaster situation has been identified as a need. It is anticipated that a statewide credentialing format could be implemented to address this need thus reducing redundancy on the part of the regions.

I. Need for licensing, credentialing and supervision of clinicians not normally working in facilities responding to a bioterrorist incident.

See response to Benchmark H above.

J. Need for Mechanisms to manage unsolicited clinical help and donated items.

See response to Benchmark H above.

K. Need for protection of all health care providers and emergency first responders (vaccination, antibiotic prophylaxis, personal protective equipment, education) to ensure their availability in an epidemic.

Based upon feedback from hospital and EMS representatives, there is a need to standardize PPE in terms of types and quantity. There is no uniformity among hospitals or pre-hospital providers. Furthermore training in the use of PPE is sporadic and inconsistent. Recommendations for addressing this issue are contained in the regional Hospital and Health Systems Bio-Defense Plan Section.

L. Need for training in recognition of rare diseases with bioterrorism potential

Recognizing the need for training of healthcare workers in the recognition of rare diseases with bioterrorism potential, Region 2 North in collaboration with Region 2 South conducted a very well attended and extremely well received Seminar on Smallpox for healthcare workers. Attached as Appendix D is a copy of the evaluation summary for the seminar conducted in Region 2 North (April 9, 2003).

Based upon feedback through the evaluation process (as well as the high attendance rate) there is a need to conduct more training of this type related to other biological agents.

M. Need for diagnostic and treatment protocols addressing bioterrorist infectious diseases with early nonspecific syndromes and for mechanisms to bring clinicians up to speed on these protocols before and during a bioterrorism event.

As part of the Smallpox planning process, the region developed medical Standing Orders for the Administration of Smallpox Vaccine. The development of this document represented a collaborative effort among Medical Directors from the three local Health Departments as well as the Regional Medical Director.

Local Medical Control Authorities, as part of a regional effort, have developed draft protocols for rash identification similarly protocols for EMS personnel relative to SARS have also been developed.

Additional protocols need to be developed relative to other biological agents and training programs to go with these protocols.

N. Need for pharmaceuticals and vaccines for patients or exposed individuals.

A review of pharmaceutical supplies maintained on average within each hospital indicates that most hospitals now use a “just in time” inventory system that provides for a minimum on-site storage of sterile supplies, vital equipment, and pharmaceuticals to meet immediate requirements. Needless to say, this lack of supplies would negatively impact any one facility’s ability to react to a large mass casualty event. Re-supply mechanisms are often shared by “sister” hospitals within the same healthcare systems thus resulting in many of the hospitals within the region counting the same capability.

Compounding this problem is the fact that there are significant issues related to the procurement, transportation and distribution of necessary pharmaceutical supplies in the event of a prolonged disaster scenario.

Many of these issues are being addressed as part of the SNS Plan being developed by the Region. Working in collaboration with the SNS Coordinator, this plan is beginning to take shape.

O. Needs of children, pregnant women, the elderly, those with disabilities, and non English speaking individuals.

Providing care to children, pregnant women, the elderly, those with disabilities and non-English speaking patients, poses unique challenges, at any time, let alone during a disaster situation. It will be necessary to incorporate health care professionals and volunteers who have experience with these different groups into the staff mix of the ACC, or at the very least have access to a list of such individuals who may be called upon to assist at the ACC. It goes without saying, to the extent possible, these types of patients should be segregated into special areas where they can be assigned staff who have experience n working with these types of patients. There is no shortage of these types of individuals within the region. The key will be to ensure that they are integrated into the system during the planning process. It will also be necessary to ensure that appropriate equipment and supplies have been allocated for use by these types of patients.

P. Need for infrastructure and collaboration between hospitals and EMS Systems that will support effective diversion and referral plans.

As noted in other areas of this document, clearly, there is a need to develop better communications infrastructure on a regional basis that will enable all affected parties to instantaneously know what resources are available for use and those that are not. Although there is a relatively large number of hospitals within the region, without such a system in place individual facilities may become swamped in disaster situations thus reducing their ability to provide quality patient care. This is a focal point of the Communications Subcommittee's report.

Q. Need for identification of emergency departments and outpatient centers capable of initial assessment and treatment of biological exposures.

With regard to bed capacity (including overflow/surge capacity), the Region, as might be expected, exceeds statewide averages. However, given reductions in staffing due to nursing shortages, surge capacity may be over stated because a hospital has identified vacant bed(s) that may be licensed, but does not have the ability to staff them.

The result of these factors is that contrary to what may have been reported in the assessment tool, hospitals may have significantly less surge capacity than reported. Proof of this may be reflected in the increasing need to reroute ambulances with critical patients on an every day basis.

The Region also slightly exceeds statewide averages with respect to airborne isolation rooms.

The mean number of portable HEPA units available within regional hospitals appears to be less than the mean number within the State. Similarly, the ability of facilities to isolate ventilation systems in the Emergency Department from the rest of the hospital is less in the region than in the state (36% versus 41%).

R. Need for linkages to sources of expert consultation and referral centers capable of addressing biological exposures definitively (such as communicable diseases isolation facility that can serve as dedicated referral hospital for CDC's Division of Global Migration and Quarantine).

Linkages need to further developed and refined to ensure awareness and utilization on the part of hospitals.

S. The need to update or augment existing regional and state communications capabilities available to hospitals and collaborating entities and the ability of the regional communication system to respond to overloading of standard telephone, cellular phone and radio communications during a bioterrorist incident resulting in mass casualties.

This area is address in the communication section.

T. Need for training for hospital and EMS personnel in Disaster Management, biological and chemical terrorism.

Recognizing the need for training of healthcare workers in the recognition of rare diseases with bioterrorism potential, Region 2 North in collaboration with Region 2 South conducted a very well attended and well received Seminar on Smallpox for healthcare workers. Although this seminar addressed clinical aspects of bioterrorism related to smallpox, there is also a need to enhance awareness and training of hospital personnel relative to incident command to enable hospitals to fully understand and be integrated into disaster management.

2. Identification of Deficiencies

The need to work collaboratively is critical in light of existing circumstances. Due to changes in reimbursement, severe shortages of nurses and other essential health personnel, hospitals are struggling to meet the daily demands of their respective service areas. On a routine basis hospital emergency departments within the region are overcrowded and diverting patients. This in the absence of any major disaster! Similarly, the role of public health has been diminished due to decades of underfunding.

A review of responses associated with disaster planning clearly shows that the majority of hospitals historically are concerned with their internal operations in time of disaster with very few demonstrating any ongoing relationships with external agencies who may be able to provide assistance in the event of a catastrophic event involving thousands of patients.

A review of hospital survey responses indicates the following deficiencies with regard to regional capacity insofar as hospital facilities are concerned:

- Lack of ability to procure, transport and distribute pharmaceutical supplies among hospitals;
- Limited capability to procure and transport medical equipment and supplies;
- Overflow/surge capacity within Regional hospitals may be overstated;
- Identification of the number of isolation rooms necessary to service 2 North population has yet to be determined;
- Distribution of isolation rooms not determined;
- Lack of training relative to health care workers ability to respond to biological incident.
- Lack of standardized Mutual Aid Agreements
- Lack of standardized credentialing of health care professionals and volunteers who may respond to MEMS or another hospital/medical facility
- Lack of regional bed/blood/rerouting information on day to day basis or during disaster situations;
- Need for additional protocols to be developed relative to other biological agents and training programs to go with these protocols.

3. Recommendations/Timetable/Proposed Cost

- Develop and implement standardized mutual aid agreement as condition of participation in grant funding Target Date: 9/03
- Develop standards for number/distribution of isolation rooms Target Date: 9/03
- Develop standardized credentialing format Target Date: 12/03
- Implement MEMS concept; Target Date: 6/04
- Develop mechanism for disseminating bed/blood/re-routing information among hospitals and other interested parties (e.g. EOC's, LHD's) Target Date: 3/04

Proposed costs associated with the implementation of the aforementioned recommendations are contained in the Regional Hospital and Health System Bio-Defense Plan section.

Regional Disease Surveillance

1. Current Status

Current disease surveillance systems within the region, indeed within the state, rely on passive surveillance and electronic and paper notices for disease reporting and notifications. Hospitals, private physicians, clinical laboratories, primary and secondary schools, childcare centers, and camps are required to report the occurrence or suspected occurrence of any disease, condition or infection as identified in the Michigan Communicable Disease Rules (MDCH). The law also requires physicians and other health care providers, to report any unusual disease occurrences (Michigan Public Health Code) but there exists no protocol for active, real-time surveillance or syndromic surveillance in the region.

The Region 2 North Disease Surveillance subcommittee has met since the inception of Region 2 North. The subcommittee is a cross-section of Hospital ER and Infection Control personnel, EMS, Health Department, Animal Control, and Emergency Management representatives.

2. Identification of Deficiencies

The need to create a sustainable regional disease surveillance system, with broad participation and 24/7 access to local health departments and MDCH was identified early on in the planning process. This type of surveillance system should be coordinated with similar regional projects funded under Focus Area B of the CDC grant funding including, enhancing, designing and developing systems for rapid detection of unusual outbreaks of illness and assisting state and local health departments in establishing expanded epidemiologic capacity to investigate and mitigate such outbreaks

Along with the absence of distinct active surveillance, there exist potential gaps in current passive disease reporting e.g. a lack of reporting on the part of private practitioner. In order to move ahead and establish more elaborate systems of surveillance, the existing system must be working as efficiently as possible. Gaps in reporting, from a health care provider standpoint, could be the result of a lack of knowledge/familiarity with particular disease, little or no enforcement of reporting laws, lack of education regarding legal responsibilities, not understanding the importance of reporting and having a misunderstanding of HIPAA regulations in regards to communicable disease reporting. These are some of the issues that the region and

local health departments can address, in order to improve methods to increase/promote timely and complete reporting. Though there are systems that exist through local health in the region, they are separate entities and improvement is not unjustified.

Current reporting / surveillance systems are driven by the Local Health Department. Historically, the Health Department was intently focused within their own jurisdictions. Real concern and effort to realize the worldwide travel patterns of people, food supplies and disease has forced better reporting and stronger inter-agency communications. The current Regional planning efforts have opened doors to inter-personal communications, and helped to address some issues from Health Department to Health Department.

Currently, local health departments and hospitals are relying heavily on passive surveillance, which is dependent on the hospital, school, lab, private practitioner or other health care provider to report an illness. This can present a challenge in detecting any unusual or emerging diseases quickly and efficiently, because of the lag time between time of outbreak and time to notification to local health departments.

The most critical deficiency identified in the regional and local disease surveillance systems is the unavailability and/or lack of active or syndromic surveillance throughout the State of Michigan.

Local health departments have different levels of capability to collect, receive, and disseminate such vital information. This particular issue has been the most perplexing and frustrating.

3. Recommendations/Timetable for Implementation/Proposed Costs

Many improvements to passive surveillance capabilities within the region will be initiated with the launch of Michigan Disease Surveillance System (MDSS) and the Michigan Health Alert Network (HAN). This will provide 24/7 access to LHD's and make reporting much easier and user friendly. However, this is not the only solution. LHD's and hospitals can take an active role in identifying areas in which reporting may not be accurate and provide feasible efforts to remove the problem.

Recommendations can be broken down into 3 areas:

- Improvement of already existing systems of passive surveillance Target Date: 6/04
- Creation of active surveillance protocols and Target Date: 9/03
- Creation of syndromic surveillance systems target Date: 1/04

Twenty four/Seven Accessibility:

The first task is to ensure that every health department in the region is accessible 24/7 for reporting of disease. This may involve the establishment of a new phone line or the development of a protocol for individuals to be on-call for disease reporting outside of regular business hours.

All-in-One – Quick Reference of Important Contact Numbers Website:

There is a need for a universal quick reference cardex document or flip chart and website for Region 2 North or website. A quick all-in-one source for key information and contacts in an efficient and effective presentation. Contact information for counties to alert adjacent counties of unusual outbreak. Since, individuals do not always get sick within their county of residence, there needs to be a quick reference to notify the proper health department.

- Identification and Description of “Region 2 North” Bio-Defense Partners including appropriate Phone or Fax Contact #s including Hotlines, After Hours, and Weekends: CDC, MDCH, MDA, Local Health Departments (Environmental Health, Communicable Disease, Emergency Preparedness, etc...), EMS, Animal Control, Poison Control, Local Hospital (ERs & Infection Control, Labs), Emergency Management Offices (WMD)...and others as necessary. Each would include a brief description of service or purpose.
- Descriptions of Syndromes or Conditions that may be considered “suspect or unusual” that would require reporting. Schematic or Flow Diagram of Disease Reporting; Proper reporting procedure for routine and unusual and/or suspect symptoms of illness or disease for each county.

Approximate costs for cardex/flip chart would be \$15 - \$20 each with distribution of 750 this would entail an expenditure of up to \$15,000. This information would be distributed to all

hospitals (ER/Lab/Infection Control), pediatricians, animal control, family practitioners, Urgent Care/walk in clinics, EMS etc.

Support and Education

Another method is to provide on-going support, education and marketing to ensure public and private provider reporting cooperation. Materials can be provided to keep physicians and health care providers up-to-date on BT agents and emerging diseases with information on clinical presentation, incubation, new forms, proper personal protection precautions etc.

Quick Reference Wall Chart

Lacking in many medical offices, clinics, EMS facilities is a descriptive wall chart referencing the “Symptoms” of Biological or Chemical Exposures from a Medical Response Perspective. Charts are needed to display and include (as appropriate); signs & symptoms, onset, clinical diagnostic tests, exposure route & treatment, incubation, transmission, isolation, prophylaxis, and PPE regarding the top ten BT agents of greatest concern. The charts can also provide pertinent contact information for all LHD’s within the region. Charts should be designed for wall mounting, easy to read, easy access to key personnel. The advantage of a wall-mounted chart is that it would not become lost or misplaced as easily as a publication, book, handout, pamphlet, etc., and ensures uniformity of information.

This item may be displayed where convenient for the facility, and could be used broadly.

Approximate Cost: distribution x \$7.50 - \$10 each x 500 (Distribution to include Hospital ER’s, Hospital Urgent Care facilities, EMS)

Professional Society Participation/Representation

Reminders regarding reporting laws and reportable diseases should be disseminated to the medical community. A good method to increase awareness of reporting and reporting laws within the medical community and private physicians (where reporting is generally lower) is through Professional Society Newsletters and conferences/seminars, targeted to physicians and other health care providers. The Region can provide a short standardized presentation or documentation for dissemination regarding reporting laws.

Costs would be minimal for this effort.

Enhance Inter-Departmental Communications

Increase trust and communications between the LHD and the health care providers in the area. There is a consensus that ICP's may not be as in-tune or the loop with the events in the ER and the LHD. Risk communications and protocols when there is a specific outbreak, including points of contact and contacting surrounding jurisdictions that may be affected and active surveillance protocols to check in with hospitals and other health care providers daily for specific cases. This may include quarterly or semi-annual meetings or forums for discussion to help negate the "silo" thinking or departmental barriers.

Summary of Budgetary Recommendations

Priority Ranking	Activity	Proposed Cost
1	Information materials/flip charts/wall posters	\$15,000
2	Training/seminars/educational forums	\$15,000
	TOTAL	\$30,000

Regional Antibiotic and Vaccine Preparedness

1. Current Status

A. The plan must address stockpiling and distribution of antibiotics and vaccines at the local and regional level for initial protection of emergency first responders in health care settings, recognizing that a federal response will be secondary to a state and regional ability to respond to a disaster.

A review of the hospital survey conducted by the MDCH indicates that most, if not all hospitals, within the Region maintain a "just in time" inventory of medications. This is cost effective and promotes use of pharmaceuticals before expiration. This limited inventory would probably be used to continue to treat currently admitted patients and those patients seen in the ED as well as institutional personnel if prophylaxis and/or treatment were needed due to actual or potential

exposure of a BT agent or some other illness. It would not be sufficient to support large numbers of patients who may be exposed to biological agents. Additional resources through the implementation of the SNS plan would be required to treat these patients.

With regard to initial protection of first responders, the region is fortunate to have an MMRS site within our region (City of Warren Fire Department). The Region and the MMRS continue to work collaboratively to ensure an appropriate and coordinated response to protect first responders.

B. The plan should also create a local/regional system to receive, store and distribute large quantities of antibiotics and vaccines from federal and state resources (such as the CDC antibiotic stockpile or vaccine stockpiles that may be created in the near future). The composition of planned local antibiotic and vaccine stockpiles should be based on generally accepted clinical recommendations.

Region 2 North has been actively engaged in the development of a regional SNS plan. In the process of developing a local and state SNS plan. The 2N Region SNS planning committee is currently evaluating two Receipt, Storage, and Staging (RSS) sites in the region. CDC is responsible for the delivery of material by plane and trucking to the RSS. CDC may choose to deliver by tractor-trailer trucks directly to the RSS. Emergency Management Coordinators and county EPC's are making the recommendations for RSS sites as well as dispensing sites. The number of dispensing sites (DS) per county has not been decided but availability and suitability of such sites is known to EMCs. Review and selection of dispensing sites should be completed by 6/03. MDOT is committed to transporting material from the RSS to designated dispensing sites. The committee plans to secure redundant truck transport resources. Additionally, local county resources can be mobilized in a major event through the EOC. Stage 1 smallpox vaccination clinic planning enabled creation of clinic floor plans, supply lists, personnel needs, etc. that can be expanded to handle larger client populations dispensing sites. The 2N Region currently conforms to CDDC/MDCH guidelines for vaccine and medication dosages for BT agents.

C. The antibiotic and vaccine readiness plan must be operative on a 24 hour per day, 7 day per week, basis and must describe the arrangements for tapping into other resources for antibiotic and vaccine treatment of biological exposures, such as pharmaceutical caches of

metropolitan medical response systems funded by the Office of Emergency Preparedness, or other public and private sources.

As part of its planning process, the Regional Antibiotic and Vaccine Subcommittee has begun to assess the number of personnel necessary to operate an RSS and associated dispensing sites. This process will most certainly involve utilization of private pharmacists and numerous other volunteers. The subcommittee continues to work collaboratively with the local MMRS in order to ensure that the plans of both groups operate in concert with each other. A representative of the Warren MMRS is an active participant on the Antibiotic and Vaccine Subcommittee. The Subcommittee also has representation from the Michigan Pharmacist Association.

2. Identification of Deficiencies

As part of planning process the Subcommittee took into account responses contained in the Hospital Preparedness Resource Inventory. This assessment identified a number of deficiencies:

- Hospitals within the Region have not taken into account the need to distribute medications/vaccines, on a first priority basis, to staff and other essential personnel as part of their internal disaster plans;
- There is no standardized mutual aid agreement between hospitals and local units of government (i.e. County Public Health and Emergency preparedness agencies) within the Region;
- There is a lack of awareness on the part of hospitals regarding the availability of external resources (SNS) that could be made available in the event of a major disaster occurrence;
- There is a lack of accepted standardized medical protocols for the treatment and prophylaxis of specific BT agents;
- There has been a lack of regional tabletop and field exercises pertaining to SNS;
- No cadre of identified pharmacists who would be responsible for staffing the SNS has been established;
- There is a need to establish the position of “Pharmacist Planner” at the State level to ensure coordination of pharmacists;

- There currently is no credentialing model in place that would facilitate staffing of the SNS;
- There is a lack of an identified volunteer pool that would be necessary to fully staff the SNS;
- There is currently no Statewide inventory control system to track SNS assets

3. Recommendations/Timetable/Proposed Cost

The following recommendations have been identified in order to address the aforementioned deficiencies:

- Develop Statewide SNS plan to serve as template for Regional models, although Region 2 North has begun the process to develop its own planning document, it would be helpful and would be more beneficial from a coordination standpoint if there were a template that all regions were following Target Date: 6/04
- Develop statewide medical protocols Target Date: 6/04
- Conduct Regional tabletop exercise designed to test implementation of SNS Plan Target Date: 9/04
- Establish formal relationship and collaborate with Michigan Pharmacist Association (Regional and Statewide) Target Date: 1/04
- Conduct training exercise for SNS personnel (including involvement of Local Health Departments, local Emergency Management Offices, Hospitals – Directors of Pharmacies, Security, Facilities Management and other key Contacts Target Date: 9/03
- Secure portable loading docks for RSS and distribution sites Target Date: 1/04

Summary of Budgetary Recommendations

Priority Ranking	Activity	Proposed Cost	Target Date
1	Training (hospital personnel/pharmacists)	\$17,500	9/03
2	Portable loading dock(s) 3 @ \$25,000 ea.	\$75,000	9/04
3	Generator	\$25,000	1/04
4	Establish Interim drug caches	\$50,000	1/04
	TOTAL	\$167,500	

Regional Hospital and Health System Bio-Defense Plan

1. Current Status

A. Hospital capacity: a plan for increasing hospital bed capacity to accommodate increases in admissions from an infectious disease epidemic over an extended period of time.

As referenced in the Regional Capacity and Needs Assessment Section of this document, there is a need within the region to provide for additional surge capacity. This need results from the fact that the average daily census within the region is 85% occupancy of hospital beds and the inability of individual hospitals to add more beds due to staff shortages.

Although the Oakland County Health Department has initiated an effort to secure Mutual Aid Agreements from hospitals within that county, not all hospitals have agreed to it as this report was being finalized. Additionally there are no standardized agreements on a regional basis.

In order to manage the potentially huge casualty load that would result from a bioterrorism incident, regional health care systems (hospitals, clinics, ancillary care organizations, private physicians, and public health) must be able to respond to an increased patient surge. The Modular Emergency Medical System (MEMS) addresses the gaps in regional casualty care resources. The Region 2 Planning Board has adopted the MEMS model for implementation within the region. See Appendix A for the Region 2 North Operational MEMS Plan as recommended by the subcommittee assigned to address this benchmark.

B. Hospital capacity: A plan to address overcrowding and the need for hospital diversion, with large numbers of acute casualties arriving on their own or by ambulance, including a rapid communication plan with EMS units that allows them to determine a destination immediately at any time.

The communications plan outlined in the Regional Communications section of this document outlines how EMS units will be advised of what hospitals or other facilities are capable of receiving patients, if recommendations are implemented. This will include bed/blood availability as well as rerouting instructions.

C. Hospital capacity: A plan for how hospitals will receive patients on a daily basis when several hospitals are on diversion simultaneously.

See narrative under previous section. These procedures will be developed as part of the MEMS plan.

D. Isolation and quarantine: A plan for providing isolation and quarantine for casualties using references as CDC's for Type C (contagious) facilities.

With the establishment of Acute Care Centers, the issue of isolation or quarantine of stable patients becomes less problematic. It is anticipated that, as part of the MEMS plan, protocols will be developed that will direct such patients to the ACC's, thus enabling hospitals to deal with more critically ill and injure patients.

E. Hospital capacity: A plan for addressing the needs of children, pregnant women, the elderly and those with disabilities will be addressed in ensuring access to medically appropriate care. Planning for children should include school settings and the clinicians caring for them there.

Individual "pods" within the Acute Care Centers will be established and dedicated to meet the needs of patients requiring different needs from those of the general population.

F. Hospital capacity: A plan for how hospital security will be provided (crowd control, patient traffic to support triage decisions, prevention of further terrorist attacks at the hospital).

Initially hospital security will be the responsibility of hospital security, depending upon the magnitude of the problem this responsibility may be assumed by local law enforcement or sheriff department personnel.

G. Equipment and Supplies: A plan for ensuring movement of equipment maintained by hospitals or EMS systems to the scene of a bioterrorist event.

Within the regional MEMS plan it is proposed that stockpiles of equipment and supplies be established and stored at County Emergency Management facilities or hospital facilities which are to be determined.

H. Equipment and Supplies: A plan for how essential goods and services such as food, water, electricity and shelter will be delivered to patients and hospitals.

This will be developed in conjunction with the plan to operationalize Acute Care Centers.

I. Equipment and Supplies: Procedures for safe and appropriate disposal of medical waste.

Procedures for the disposal of medical waste will follow generally accepted medical protocols/guidelines consistent with OSHA rules and regulations.

J. Responder Personal Protection: A plan for how responding clinicians and their families will be protected from exposures to biochemical casualties and environments (such as provision of personal protective equipment, antibiotics and vaccines).

There currently exists no standardized PPE within the region, furthermore, there is sporadic and in some cases no training in its use. As part of the overall hospital and first responder preparedness plan, it is recommended that type and quantities of equipment be standardized and that standardized training be adopted throughout the region.

K. Exposure Limitation, Quarantine and Decontamination: A regional plan to limit exposures to contagious or hazardous threats during an bioterrorist event, including the acquisition, storage and distribution of protective equipment to protect health care workers and

patients, portable or fixed decontamination systems, or capital improvements designed to increase capacity for quarantine and treatment of biological casualties.

As part of the regional plan, PPE equipment has been requested for distribution to personnel responsible for staffing the ACC's (see proposed budget summary).

L. Exposure Limitation, Quarantine and Decontamination: A plan for how existing decontamination systems will be assessed and upgraded if necessary to allow for large numbers of patients exposed to particulate infectious material from an airborne or environmental release (such as fixed hospital units, portable units, or DMATs capable of mobile decontamination).

See response to previous Benchmark. In addition to PPE for Acute Care Centers, decontamination tents have been proposed for assignment to ACC's.

M. Exposure Limitation, Quarantine and Decontamination: A description of which hospitals in the Region (such as the dedicated referral hospital for CDC's Division of Global Migration and Quarantine) will be targeted for capital improvements (such as air-filtered quarantine units or biological decontamination facilities) to assure safe and effective isolation and decontamination of large numbers of patients with communicable bioterrorist diseases.

It is proposed that all hospitals within the region as well as sites identified as ACC's have access to decontamination tents to ensure safe and effective isolation and decontamination of patients with communicable diseases.

N. Exposure Limitation, Quarantine and Decontamination: A description of how additional needed decontamination equipment will be deployed to maximize statewide benefit and cost effectiveness. This may include plans for mobile caches of supplies that could be deployed to areas with an acute need.

Equipment will be distributed to hospitals pre-event or stockpiled with County Emergency Management.

2. Identification of Deficiencies

- Location of possible ACC sites yet to be determined
- Lack of mutual aid agreement identifying responsibilities of respective parties (e.g. hospitals, EMS agencies, Health departments, emergency management).
- Need to establish protocols for use of pre-hospital personnel
- Lack of equipment necessary to equip Acute Care Centers
- Lack of training for hospital and pre-hospital personnel in the use of PPE equipment
- Lack of sufficient amounts of PPE equipment distributed among hospital and pre-hospital personnel
- Lack of understanding on the part of hospital administrators, public health directors and local emergency managers re: MEMS concept and their respective roles.

3. Recommendations/Timetable/Proposed Cost

The adoption of this plan is based upon the following assumptions:

- A large-scale Biological Weapons incident may produce thousands to hundreds of thousands of casualties and/or fatalities;
- During a Biological Weapons incident, actual infected casualties, together with those who may potentially have been exposed, will overwhelm EMS, outpatient clinics, and hospitals;
- Hospitals will be unwilling to be designated as the receiving site for specific biological agents;
- Hospital resources should be redirected to care for the most seriously ill. Elective admissions should temporarily cease, while critical medical /surgical and 911 functions will continue. Implementation of hospital disaster plans will result in extra medical personnel that could be used to staff an acute care facility;
- A simple system that rapidly integrates medical resources and provides massive casualty management will be needed.

- Establishing a system to quickly expand outpatient and inpatient acute care facilities is necessary to provide rapid treatment to a large population of severely ill Biological Weapons patients.
- During a large-scale Biological Weapons incident, the standard of care will need to accommodate all affected people. In a mass casualty situation, health care workers will provide care to as many victims as possible, but individualized treatment plans may be rare or nonexistent. A de-centralized team approach to providing basic medical care may be the most effective use of resources. Advanced life-saving technology and treatment options will either not be available, or they will be unable to be implemented due to lack of specially trained medical personnel.

Implementation of a mass patient care management plan will involve the following:

- The county emergency management agencies in Oakland, Macomb, and St. Clair counties, together with the 2 North regional hospitals and public health departments, should be responsible for establishing, maintaining, and overseeing the operation of the Acute Care Centers (ACCs)). This includes credentialing of personnel, in concert with sponsoring hospitals. Target Date: 6/04
- Region 2 North expects to use existing hospital EDs as triage locations prior to transporting appropriate patients to ACCs set up in each of the 3 counties as required Target Date: 6/04
- The use of hotels, schools, etc. may be considered as alternative care facilities (ACCs), but these sites, identified by each of the county Emergency Planning agencies, have not yet been reviewed for their appropriateness. This effort should be undertaken within the next six months Target Date: 10/03
- The expanded inpatient facilities (Acute Care Centers) will be most efficient if their services are directed exclusively to victims of the Biological Weapons incident. Victims who also require acute or critical medical treatment of urgent conditions, such as heart attack or traumatic injuries, should receive care at the existing medical facility where more diverse resources are available.
- The type of agent used and the resulting illness will determine the composition of the Acute Care Center (ACC). The number of casualties expected to survive versus the anticipated number of fatalities will dictate the allocation of medical staff.

Michigan DMAT may be available to augment hospitals within 8 – 10 hours.)

- For contagious disease outbreaks that result in more infected patients than available isolation rooms, hospitals may need to designate a unit, ward, floor, or building as an isolation area to provide space for infected individuals while protecting the remainder of hospital facilities.

When necessary, 2 North Regional jurisdictions should implement Phase 2 of the MEMS.

- Declaration of a state of emergency by the Governor, Health Department, etc.
- During this phase, mass care facilities capable of offering inpatient services (Acute Care Centers (ACCs)) are mobilized to provide care to Biological Weapons incident victims.
- The identity of the agent and its infectious characteristics, combined with real-time epidemiological information, will influence the number of mass care facilities activated.
- These factors will also determine whether emphasis will be focused on outpatient or inpatient care. For example, biological agents that are incapacitating but have a low mortality rate (i.e., Q-fever, brucellosis, or VEE) will require a greater emphasis on outpatient treatment. Biological agents known to have a high mortality rate (anthrax, plague, and tularemia) will necessitate more inpatient medical care.

ACCs should be established quickly in structures of sufficient size that are located close to existing hospitals.

- The ACC will function more efficiently and will require less dedicated specialized resources if they are located adjacent or very close to the supporting hospital;
- Ideally, the ACC should be able to share hospital resources and services more easily, including food preparation, laundry, pharmacy, and lab services;
- Examples of suitable facilities include schools, community centers, and hotel conference rooms. The model chosen by 2 North utilizes inpatient units of around 50 beds to maximize staff efficiency;

- These structures are advantageous because they contain adequate floor space for patient care, bathrooms, kitchens, refrigeration, laundry service, electricity, and generator backup. Ideally, the selected building will be large enough to allow all patient services to be provided on a single floor. This type of layout will minimize the need for additional support personnel;
- Medical and support personnel, as well as supplies required to establish and sustain an ACC will need to be drawn from both local and outside resources;
- Augmentation teams from other 2 North Region hospitals may be requested to support staffing issues; If each hospital within 2 North provides 12 volunteers per day (working 12 hour shifts), ACCs capable of treating 650 patients can be established;
- Home Health nurses can be utilized to staff ACCs;
- The Michigan DMAT may be available to augment hospitals within 8 – 10 hours.);
- Consider the using the staff of the facility being used as an ACC to provide support functions (e.g., school teachers, school nurses, school maintenance personnel, etc.);
- Consider using Americorps, Red Cross, Salvation Army, Citizencorps, and Michigan Volunteers who Act in Disasters (MIVOAD) as support personnel for ACCs. (Coordination of these resources needs to be pre-planned.);
- MCA model protocols should be drafted to allow nursing students, EMT's Paramedics etc., to function as ACC staff;
- County Emergency planning jurisdictions should have a cache of supplies that will be used during an initial response to act independently for up 48 hours;
- The level of care provided at the ACC will be supportive and should include agent-specific therapy, non-invasive respiratory care (i.e., bronchodilators and suctioning); intravenous hydration; pain management; treatment of nausea, vomiting, diarrhea, anxiety; and treatment of minor exacerbations of underlying disease;

- A temporary morgue can be set up at the ACC, utilizing refrigerated trucks, to manage the deceased;
- ACCs may also be established in areas distant from hospitals to create a medical presence in the greater community and permit local residents to travel shorter distances;
- Dispersed ACCs may be particularly prudent if the bioterrorism agent is contagious. (National Disaster Medical System (NDMS) Level I Disaster Medical Assistance Teams (DMATs) could be used to accomplish this mission.)

In order to implement the initial stages of the MEMS concept and to assist hospitals and EMS providers to upgrade their existing capabilities consistent with the aforementioned benchmarks the following areas should be funded and implemented (in order of priority as determined by the subcommittee):

Summary of Budgetary Recommendations

Priority Ranking	Activity	Proposed Cost
1	Training of hospital/EMS Personnel re: use of PPE	\$100,000
2	Provide Standardized PPE Equipment to Hospitals/EMS personnel (see Appendix for description and amounts)	\$485,000
3	Equipment for MEMS	\$250,000
4	Decontamination tents for hospitals/ACC's	\$500,000
5	Training of hospital personnel re: ACC operations	\$100,000
6	Education forums for MCA's, EM, LHD re: MEMS	\$25,000
7	Upgrade of hospital ED ventilation system	\$2,500,000
	TOTAL	\$3,960,000

Regional Communications System Development

1. Current Status

A. Create a mechanism to assure that the regional bioterrorism hospital preparedness communication system will be coordinated with the Health Alert Network created under the CDS

grant Focus Area E, and describe how it will be activated during an acute incident, or one involving an epidemic developing over a longer time period

The objective of establishing “a mechanism to assure that the regional bioterrorism hospital preparedness communication system will be coordinated with the Health Alert Network...” is problematic. At the present time, neither the Health Alert Network nor a defined “regional bioterrorism hospital communications preparedness system” exists within Region Two North. The development and implementation of the Health Alert Network is being coordinated by the Michigan Department of Community Health. It is anticipated that it will become operational sometime during the fall of 2003. Therefore, representatives of Region 2 North have focused their attention on identifying a Regional Bioterrorism Hospital Communications System. Once this is established, identifying a mechanism to assure coordination with Health Alert Network, when it becomes a reality, will be relatively simple.

It has been determined that a regional communications system would be required to carry voice traffic. Beyond this, any communications system for use on a regional basis should have certain basic requirements:

- 1) It should be readily available and relatively inexpensive to provide access to all.
- 2) It should provide the capability of individual or wide area calling.
- 3) It must be reliable.

Of the possible existing systems that might meet these requirements, two come to mind immediately; the Public Switched Telephone Network (PSTN) and the HEAR/HERN VHF radio system. Since these two systems exist currently, it is the recommendation of the Communications Subcommittee feeling that a combination of the PSTN and the VHF HEAR radio system be utilized as the Regional Bioterrorism Hospital Communications System.

The PSTN is available throughout society, and it is safe to say that every agency has access to it. However, it is not possible to speak with more than one agency at a time unless special provisions for conference calling are made in advance. Initiating a conference call may or may not be possible or desirable in the event of a bioterror incident. However, through “phone chains” it is possible to initiate multiple conversations at the same time. When traffic volumes

are low, the PSTN is very reliable. During the first stages of an event, it is assumed that call traffic on the PSTN will be low.

The HEAR/HERN system should be available to all health care facilities as required by statewide emergency medical system agreement. Wide area calling is a feature of radio communications, which is shared by the HEAR/HERN system. This feature makes it possible to communicate with more than one agency at a time. Modern radio equipment is extremely reliable. Short of catastrophic failure, the infrastructure should suffer no ill effects in the event of a bioterror incident. However, communications can be adversely affected by improper communications procedures.

While it is true that every dispatch center has a telephone, not every dispatch center has a Hear radio. Additionally, every ambulance has a Hear radio, but no ambulance has a telephone. During the initial stages of an incident it may be possible to make cell calls successfully, but to contact every dispatch center or ambulance individually would be a time consuming task. More to the point, with VHF radio all ambulances and dispatch centers so equipped can be contacted instantly. But for those centers and Hospitals without VHF Hear capability, telephone calls will have to provide initial contact (we address gaps in our system later). For example, EMS providers, outpatient clinics and the like, are not equipped with HEAR equipment. These entities can only be contacted by telephone. Thus, unless VHF radio equipment is acquired and installed at each facility currently without this capability, it will not be possible to rely on radio alone. At the same time, it may be possible to rely on the PSTN to make the initial round of contacts. However, this may prove to be time consuming and inefficient.

As we understand it, the Health Alert Network (HAN) is a web-based system designed to alert authorities to patterns of outbreaks that may indicate a bioterror event. This system, when deployed, will be available to every health care provider in the region. In the event the Health Alert Network indicates a suspicious turn of events, the regional communications system would be activated and used to inform and alert area health care facilities of the impending situation, and to provide redundant voice communications in the event of overloading of the PSTN, cell phone and radio circuits.

Further, this definition of coordination (as well as the objectives of benchmarks two and three) also infers which agencies require access to the SYSTEM on a primary basis. Hospitals,

outpatient clinics, and other health care providers that would be required to accept and thus prepare for victims of an attack will require two-way communications of some kind. These will be the primary users of the SYSTEM. Now, EOC centers and Police and Fire dispatch centers may or may not need two-way communications on the SYSTEM. These agencies should be considered secondary users as will be discussed at a later time.

A mechanism to insure coordination of the HAN and the SYSTEM may take on one or more different forms where:

- a) A central authority monitors the HAN, recognizes an emergency situation and alerts the appropriate agencies, or
- b) Monitoring the HAN is done by individuals at each of the participating health care facilities. In the event of an emergency situation, individuals at the effected facilities will take it upon themselves to alert other hospitals or a centralized agency or individual that will then spread the word.

We offer the following as a mechanism by which the SYSTEM should be activated.

- 1) Hospital personnel contact the State Public Health Officer (PHO). He or she will establish communications with affected health care facilities and inform the various county Health Departments. Depending on the type of incident (acute or epidemic) and its scale, the State Health Officer may then contact adjoining regions, states, and/or the federal government to provide for an adequate response.
- 2) The county Health Department alerts uninvolved local health care facilities and the county Emergency Manager.
- 3) The county Emergency Manager will then activate the county Emergency Operations Centers as necessary and inform the local Emergency Managers.

An “acute” incident may be defined as an incident by which the delivery mechanism of the bio-agent causes a massive influx of symptomatic patients over a short period of time. Symptomatic patients appearing at health care facilities in low numbers initially, on the other hand, will characterize an “epidemic” incident. The number of cases will increase dramatically over time.

The two differing incident types will require different initial responses from emergency service providers.

1) Again, it is left up to hospital Emergency Rooms and outpatient clinics to identify an acute incident. Monitoring of the HAN will be of use in this instance, as these casualties will show up at more than one facility. In this case, the regional communications system will be activated as above, with the State Public Health Officer first contacting health care facilities to ascertain the scope of the problem. Once this is accomplished, the State PHO would then notify the appropriate agencies. The process of notifications would then proceed as before.

2) In the event of an epidemic incident, it may take some time before the magnitude of the attack is known. The first casualties of an attack may not come in for treatment for several days. The first health care facility that sees suspicious symptoms should alert the State PHO. The State Health Department would then inform all regional facilities of the situation advising them of the need for quick reporting should the same symptoms appear at their facilities. Monitoring of the HAN over time will show a pattern of sick people at the various health care facilities, and give some idea as to the magnitude and distribution of the casualties.

Of course, whether we are faced with an acute incident or an epidemic incident, the primary centers for treatment will have the burden of letting the appropriate agencies know that something out of the ordinary is occurring. If the HAN or the VHF SYSTEM is to be used effectively, a person or persons will have to be trained in its use. A communications protocol should be developed specifying how and when to use the equipment, what kind of data is required and who will accumulate, analyze and disseminate this data to those who need it.

B. Addressing gaps in the communications systems among hospital emergency departments, outpatient facilities, EMS systems and State and local emergency management, public health and law enforcement agencies, as they relate to bioterrorism response.

All of the disparate groups mentioned above have the ability to communicate among members of their own agencies via radio. Some possess the capabilities to communicate with each other while

others do not. However, all of these entities should be able to establish communications via the PSTN from their fixed locations.

Medical communications in the State of Michigan are governed by a statewide agreement entitled MEDCOM Requirements. As such, emergency medical service providers throughout the tri-county area should be fairly well equipped in that every hospital and every emergency transport vehicle must have VHF HEAR capability. Further, transport units certified as Advance Life Support units must have UHF radio capabilities as well. In this respect, things are fairly standardized. But, how the hospitals talk to these units and among themselves is not standardized.

In the case of Macomb County, hospital-to-hospital communications is affected through MEDCOM. Located at Mount Clemens General Hospital, MEDCOM uses a Motorola Centracom II Gold console with an audio switching matrix to route hospital to hospital and hospital to transport unit communications via dedicated conditioned leased lines through the PSTN. A request for service from a transport unit is called into MEDCOM via UHF or VHF radio. The MEDCOM operator routes this call to the available hospital emergency room via an audio switching matrix. This matrix interconnects the transport unit to the hospital ER that will handle the call. Routing a call through the matrix must be performed manually.

The VHF radio equipment is located and licensed for operation at Mount Clemens General Hospital. The UHF equipment is located and licensed for service at two locations in the County. The primary site is the County Building in downtown Mount Clemens. The secondary site is located at the St. John's Macomb Medical Center. Thus, the UHF system is redundant with two separate transmit/receive sites, whereas the VHF equipment is not. No redundancy exists for dispatching medical calls should MEDCOM suffer a catastrophic failure.

Saint Clair County also has a "MEDCOM". The operation of this SCMEDCOM is somewhat different than in Macomb County. In this case, SCMEDCOM can only communicate with hospitals through the UHF medical frequencies. Saint Clair County medical dispatch does not have the capability to operate on VHF. The VHF HEAR/HERN frequencies are used for direct transport to hospital communications. SCMEDCOM has equipment for UHF operation only. The SCMEDCOM operator manually routes calls from transport units to hospitals via an audio-switching matrix.

Oakland County primarily utilizes 800 MHz frequencies. It is assumed that Oakland County hospitals and emergency units are still equipped with VHF radio per the state EMS plan.

Within the region, at the present time, it is not possible for police or fire agencies to communicate with health care providers by way of radio from their dispatch positions. Some of the fire departments that are still providing ambulance services have the capability to communicate on the HEAR/HERN system from within transport vehicles.

It is safe to assume that most if not all walk in clinics, doctor's offices, etc. do not have either VHF or UHF communication capabilities.

C. Make regional communication systems redundant, to ensure communication backup in the event of failure or excess load on land line and cellular telephone systems and Internet communications.

A suitable approach to providing redundancy to the system previously outlined is the use of the Amateur Radio community. The Radio Amateur Civil Emergency Service (RACES) is the mechanism by which amateur radio operators could be called into service to provide needed communications. RACES groups form a ready pool of trained, qualified disaster communications specialists. The County Emergency Managers have authority to activate this group. It may be undesirable to expose these volunteer personnel to the hazards of a bio-terror incident by bringing them into close proximity of Emergency Rooms treating exposed victims. Therefore, it is suggested that a RACES radio operator position be located in an area of the hospital other than the Emergency Room that has the capability to communicate with ER personnel via internal hospital intercom or telephone system. RACES deployment will in all probability, be dependent on the type and scope of an incident. Additional training or equipment may be required for RACES personnel.

D. Create a mechanism for electronic tracking of hospital bed status across the region with a central device or system, and include a process to update and continuously maintain currency.

A standardized region wide bed/blood availability and hospital rerouting format does not currently exist. The implementation of a web based site such as Web EOC or E Team will ensure that resource information is shared among agencies/organizations and facilities that need such information.

E. Create a mechanism to monitoring all emergency department and outpatient visits, complaints, and diagnosis from a surveillance and detection perspective, and how this will be integrated on the community state and national level. Briefly describe how this will be funded with CDC surveillance money in constructing an integrated plan.

Until MDSS and HAN are implemented this function does not exist within the Region. Needless to say the Region is actively engaged with MDCH in the implementation of these services.

F. Create a process to educate the general public as to where and when to present to the hospital or to activate EMS. This mechanism must be consistent with the Public Information and Communication system developed under the CDC grant Focus Area F. Under Focus Area F, the Michigan Department of Community Health and local health departments will develop capacity and infrastructure to assure that citizens are provided with timely and accurate info. during a public health threat or emergency.

In the event of a disaster, it will be the responsibility of local County Emergency Management Offices in conjunction with local public health and hospitals to disseminate this information.

G. Create a process to respond to large numbers of patients, worried well, family and friends, and media. This process must be consistent with the Public Info. & Communication system developed under the CDC grant Focus Area F

See response immediately above.

2. Identification of Deficiencies

- Some hospitals within the region have VHF HEAR radios and some do not see Budget Summary – Appendix A for respective lists). The MEDCOM system in Macomb County centralizes the VHF communications capabilities in the county. It would seem prudent to de-centralize this and equip each hospital in Macomb with its own VHF capability.

- Hospitals in St. Clair and Oakland counties limited VHF capabilities as they do not have the full spectrum of frequencies available for their use. Those that don't should be furnished the equipment forthwith.
- There currently exists no communication capabilities between hospitals and County EOC's .
- There is no uniform communications capabilities between counties
- A standardized region wide bed/blood availability and hospital rerouting format does not currently exist.

3. Recommendations/Timetable/Proposed Costs

Recommendation	Target Date
• Install VHF Base Stations in Hospitals which do not have capability	6/04
• Submit FCC license application for Hospitals not currently licensed	8/03
• Replace existing VHF Base Stations in Hospitals that do not have full Spectrum capability	6/04
• Install VHF Mobile Radios in County EOC's	6/04
• Obtain VHF Mobile Radios for use in ACC's	6/04
• Obtain upgrade EMS mobiles radios for EMS Units	6/04
• Secure 800 MHz Radio capability for hospitals/EMS/Public Health and EOC's	10/04
• Install RACES Equipment in all Hospitals (redundant system)	3/04
• Obtain RACES Equipment for use in ACC's (Redundant system)	6/04
• Standardize Web based Information system (e.g. Web EOC) for Bed/Blood availability and re-routing information as well as other Information in the event of a disaster	3/04
• Obtain JPS System to ensure radio compatibility with Police/Fire	10/04

Summary of Budgetary Recommendations

Priority	Activity	Proposed Cost
1	Hospital VHF base stations EOC VHF mobiles ACC VHF mobiles VHF licensure application fees	\$265,600
2	EMS VHF Mobiles	\$125,000
3	800 MHz – 23 hospitals/public health/mobiles	\$512,000
4	RACES Equipment for Hospitals/ACC's/EMS Agencies	\$88,000
5	JPS system (Black Box)	30,000
6	Web based interface with hospitals/EOC's/health dept's. Bed/blood availability/rerouting	\$100,000
	Total	\$1,120,600

Regional Disaster Drills

1. Current Status

A. Describe the plan for testing regional bioterrorism response plans and for reinforcing training efforts.

A regional Disaster Drill Subcommittee of the Advisory Committee has been established and has been meeting to address issues related to regionalized disaster drills. As a result of this group meeting a number of recommendations have been developed to address testing of bioterrorism response plans on a regional basis (see recommendations below).

B. Describe how biological disaster drills will be of sufficient intensity to impact the community's normal operations during the exercise, in a way similar to what would be expected during an actual biological terrorist incident.

Regional disaster drills will be planned and coordinated by the Regional Disaster Drill Subcommittee to ensure that they regional in nature and are of sufficient intensity to test the system's ability to respond.

C Describe the process for incorporating lessons learned from the drills into periodic revisions of the bioterrorism response plan.

Standardized evaluation tools will be developed to ensure consistency. Furthermore, regional representatives will serve in a liaison capacity to all exercises. See recommendations cited below.

2. Identification of Deficiencies

At the present time there is no regional approach to conducting disaster drill scenarios. Individual hospitals test internal plans while counties and municipalities test local plans. Multiple problems exist with regard to communications, logistics and other issues pertaining to a widespread disaster scenario. The implementation of the MEMS concept will enable the Region to test a regional approach to potential bioterrorist scenarios for the first time.

3. Recommendations/Timetable/Proposed Costs

The following recommendations have been developed to ensure that individual and regional disaster drills are coordinated and conducted consistent with regional plans for potential response to biological threats. The recommendations outlined below also address the need to reinforce knowledge and uncover opportunities for improvement in the bioterrorism disaster plan.

- Establish Regional Exercise Design Team 10/03
- Develop and conduct yearly orientation program to assist individual hospitals in the development of bio-terrorism plans: 01/04
- Recommend that individual hospitals conduct at least one table top exercise per year based on bio-terrorism plan: 01/04
- Conduct one regional full scale exercise each year. These exercises will include prior tabletop exercises leading up to the full scale event. It is recommended that that full scale exercises be rotated among the three counties within the region: 08/04
 - Select areas of plan to test. Not all areas are necessarily tested in any one type of exercise format; 02/04
 - Coordinate stronger ties with local Emergency Management/Health Departments/EMS providers/hospitals, etc. Ongoing
 - Develop stronger annual training programs using MSP-EMD suggestions. Ongoing

- Develop realistic disaster scenarios of sufficient intensity to fully test System 08/04
- Develop process to incorporate feedback from drills into regional planning efforts
 - Assign regional liaison to all exercises; Ongoing
 - Submit evaluations/critiques to regional Planning Board And Advisory Committee Ongoing
 - Develop standardized critique forms; 03/04
 - Develop standardized regional debriefing instruments; 03/04
 - Develop regional newsletter 03/04

Estimated costs associated with regional Disaster Drill planning/exercises:

Summary of Budgetary Recommendations

Priority	Activity	Proposed Cost
1	Disaster Drill Training for Hospital EMS Personnel	\$50,000
2	Disaster Drills/Exercises (\$10,000/Hospital)	\$230,000
	TOTAL	\$280,000

IV. Appendix

- A. Budget Summary
- B. MEMS Operational Plan for Region 2 North
- C. Sample Mutual Aid Agreement
- D. Planning Board Membership Roster
Advisory Committee Membership Roster

**REGION 2 NORTH
 HRSA BUDGET SUMMARY
 (IN ORDER OF PRIORITY WITHIN EACH GROUP)
 APPROVED BY PLANNING BOARD
 MAY 28, 2003**

I. Capacity and Needs Assessment

See Regional Hospital and Health System Bio-Defense

II. Disease Surveillance

1.	Information materials/flip charts/wall posters	15,000
2.	Training/seminars/educational forums	<u>15,000</u>
		30,000
	Disease Surveillance Sub-total	\$30,000

III. Regional Hospital and Health System Bio-Defense

1.	Training of hospital/EMS Personnel re: use of PPE	100,000
2.	PPE Equipment	
	6 PAPRS with HEPA filters/TYCHEM suits for each hospital/ambulatory care center 6 x 30 = 180 @ \$1,000 ea.	180,000
	2 PAPRS with HEPA filters/TYCHEM suits for each EMS agency 3 x 25 = 75 @ \$1,000 ea. (assigned to hospitals) 2 x 100 @ \$1,000 ea.	75,000 200,000
	6 PAPRS with HEPA filters/TYCHEM suits for each ACC (Acute Care Center) 6 x 5 = 30 @ \$1,000 ea.	<u>30,000</u> 485,000
3.	MEMS equipment/supplies Oxygen manifold system for ACC's	150,000 <u>100,000</u> 250,000
4.	Decontamination tents 23 Hospitals 5 ACC's	500,000

	2 Ambulatory Care Centers	
5.	Training of hospital personnel re: ACC operations	100,000
6.	Education forums for MCA's, EM, LHD re: MEMS	25,000
7.	Upgrade of hospital ED ventilation system	2,500,000
	Hospital Preparedness Sub-total	\$3,960,000

IV. Regional Communications

1.	Hospital VHF base stations	
	Macomb - 5 @ \$12,000 ea.	60,000
	Oakland - 15 @ \$10,000 ea.	150,000
	St. Clair - 3 @ \$10,000 ea.	<u>30,000</u>
		240,000
	EOC VHF mobiles	
	Macomb - 1 @ \$2,000 ea.	2,000
	Oakland - 1 @ \$2,000 ea.	2,000
	St. Clair - 1 @ \$2,000 ea.	2,000
	Health Dept's. - 3 @ \$2,000 ea.	<u>6,000</u>
		12,000
	ACC VHF mobiles	
	5 @ \$2,000 ea.	10,000
	VHF licensure application fees	
	Macomb County - 4 @ \$900 ea.	3,600
2.	EMS VHF mobiles	
	125 @ \$1,000 ea.	125,000
3.	800 MHz - 23 hospitals/public health/mobiles	512,000
4.	RACES equipment	
	23 hospitals @ \$1,000 ea.	23,000
	5 ACC's @ \$1,000 ea.	5,000
	60 EMS agencies	<u>60,000</u>
		88,000
5.	JPS system (Black Box)	30,000
6.	Web based interface with hospitals/EOC's/health dept's.	100,000
	Bed/blood availability/rerouting	
	Regional Communications Sub-total	\$1,120,600

V. Regional Disaster Drills

1.	Training/orientation	50,000
2.	Disaster drill	<u>230,000</u>
		280,000

Regional Disaster Drills Sub-total **\$280,000**

VI. Antibiotic and Vaccine Preparedness

1.	Training (hospitals/pharmacists) Program development 100 people @ \$125 ea.	5,000 <u>12,500</u> 17,500
2.	Portable loading dock(s) 3 @ \$25,000 ea.	75,000
3.	Generators 1 @ \$25,000 ea.	25,000
4.	Interim drug caches	50,000

Antibiotic and Vaccine Preparedness Sub-total **\$167,500**

TOTAL **\$5,558,100**

**REGION 2 NORTH
BIOTERRORISM PREPAREDNESS
PLANNING BOARD**

ADAPTATION OF ACUTE CARE CENTER CONCEPT

Adopted May 28, 2003

REGION 2 NORTH BIOTERRORISM PPREPAREDNESS PLANNING BOARD

ADAPTATION OF ACUTE CARE CENTER CONCEPT (Adopted May 28, 2003)

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Concept of Operations for the Acute Care Center

A Template for Providing Mass Casualty Medical Care Following a Bioterrorist Attack

1. ***Introduction***

1.1 **Purpose**

This document, the *Concept of Operations for the Acute Care Center*, describes in detail the organization and operation of the Acute Care Center (ACC). This document expands upon those concepts outlined in the 1998 concept paper, *Modular Emergency Medical System (MEMS)*, prepared by the Biological Weapons Improved Response Program (BW IRP). This document is intended to provide a basis for standard operating procedure (SOP) development, and to assist disaster medical planners, coordinators, and responders at all levels in better managing the consequences of a biological incident. This report is the second in a series providing a comprehensive description of the MEMS mass casualty care strategy.

1.2 **Background**

The BW IRP, under the Department of Defense (DoD) Domestic Preparedness (DP) Program, conducted a series of multiagency workshops in 1998 that focused on identifying improved approaches to managing the consequences of a bioterrorist incident. The BW IRP quickly concluded that the key to an effective response to a large-scale attack against a civilian population is providing systematic, coordinated, and timely care to victims. In an effort to address this issue, the BW IRP outlined a mass casualty medical care strategy called the MEMS. This mass casualty care strategy was designed to provide a focused and timely medical response to a huge number of victims by expanding and redirecting assets of the local medical community. The MEMS is based on the rapid organization of a community's medical assets into two types of expandable patient care modules, the ACC and the Neighborhood Emergency Help Center (NEHC). This strategy also establishes the framework from which outside disaster medical resources can effectively augment local medical response efforts. A network of modules integrated with an aggressive community outreach effort will better mitigate the effects of bioterrorism by easing the burden on a community's major medical facilities and enhancing the community's capability to care for large numbers of casualties. Although the MEMS is designed specifically to manage the consequences of a bioterrorist incident, it has applications for other catastrophic medical events. This concept paper, however, will address only the ACC component of the MEMS and how it relates to a bioterrorist event.

The intent of the ACC is to integrate proven effective concepts to maximize the strategy's application while minimizing the training required for its implementation. Although the ACC was designed specifically for managing casualties during a bioterrorist event, it may also be useful in responding to any catastrophic medical emergency. Many of the

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April 23, 2003

fundamental premises of commanding, controlling, and managing the incident are consistent with those of the Hospital Emergency Incident Command System (HEICS) developed by the State of California Emergency Medical Services Authority. This model defines responsibilities, provides a logistical management structure, and specifies clear reporting channels. In addition, the ACC concept makes use of the Federal Response Plan's (FRP) Emergency Support Function #8 (ESF #8), Health and Medical Service Annex, which provides a framework for coordinating the delivery of Federal disaster assistance to State and local governments, as it pertains to an overwhelming medical disaster or emergency. For more information on the FRP, one can refer to <http://www.foma.gov/r-n-r/frpl>. ESF #8 identifies the resources and methods for obtaining supplemental resources to meet the health needs of the victims following a major disaster, emergency, or terrorist attack, including a bioterrorist incident.

Another useful resource for State and local planners is the "Interim Planning Guide for Improving State and Local Agency Response to Terrorist Incidents Involving Biological Weapons." This guide presents an integrated, multiagency, Federal, State, and local approach for responding to acts of bioterrorism and provides a synopsis of resources available to emergency planners.

1.3 Program Approach

In December 1999, the BW IRP sponsored the establishment of the ACC Working Group. The working group was charged with studying the issues associated with providing mass casualty care in response to a catastrophic bioterrorist incident and identifying a consensus-based strategy to improve the overall effectiveness of such a response. The BW IRP ACC Working Group project manager solicited participation from several Federal, State, and local agencies; private institutions; and subject matter experts. Candidates were identified based on their specific knowledge and expertise in various public health, medical, and medical logistical backgrounds. The first task of the working group was to analyze and expand upon the ACC concept.

From January through October 2000, the ACC Working Group conducted a series of facilitated workshops focused on improving upon and refining the ACC concept. During the process, a computer simulation model was constructed to help participants conceptualize and analyze the concept's design. An initial draft of the *Concept of Operations for the Acute Care Center* was prepared based on the working group discussions. The working group participants reviewed the initial draft; and in March 2000, an interim consensus was achieved pending the peer review to validate the concept.

In July 2000, the BW IRP invited an independent panel on experts to review the draft *Concept of Operations for the Acute Care Center* and validate the virtual model. The results of that review were presented to the ACC Working Group and revisions were made to the virtual model.

This version of the *Concept of Operations for the Acute Care Center* represents the first published draft of the ACC concept.

1.4 Assumptions

In developing the ACC concept, the following assumptions were applied:

- a. A large-scale bioterrorist incident will likely produce thousands to hundreds of thousands of casualties and/or fatalities, depending on the agent used.
- b. During a bioterrorist event, actual infected casualties and the worried well who seek aid will overwhelm emergency medical systems (EMS) and hospitals.
- c. Hospital resources will be redirected to care for the most seriously ill. Elective admissions will temporarily cease, but critical medical/surgical and 911 functions will continue.
- d. Establishing a system to rapidly expand inpatient acute care facilities will be necessary to provide rapid treatment to a large population of severely ill patients from an agent of bioterrorism.
- e. A simple system that rapidly integrates medical resources and provides massive casualty management will be needed.
- f. Emergency officials will communicate with the medical community in advance (during preplanning activities), and when the event is recognized, to assure healthcare workers that their safety and that of their families has been planned for and that prophylaxis and/or protection will be provided. It will be crucial to have accurate and timely dissemination of information to medical professionals to decrease their risk and concern of becoming secondarily infected and to encourage them to continue caring for patients from an agent of bioterrorism.
- g. During a large-scale bioterrorist event, the standard of care in an affected community will change to provide the most effective care to the largest number of victims. In a mass casualty situation, healthcare workers will provide care to as many victims as possible, but individualized treatment plans may be rare or nonexistent. A decentralized team approach to providing basic medical care may be the most effective use of resources. Advanced life-saving technology and treatment options will likely either not be available or unable to be implemented due to lack of specially trained medical personnel.
- h. The expanded ACC facilities as well as medical personnel and supplies will be most efficient if directed to victims of bioterrorism-related illness only. Victims of such illnesses who also require acute or critical medical treatment of urgent conditions such as heart attack, traumatic injuries, or severe exacerbations of chronic conditions, such as diabetes mellitus, should receive care at an existing medical facility (i.e., hospital) where more diverse resources are available. The ACC should be an extension of a nearby medical facility (hospital) and transparent to the public. Ideally, the general public would seek initial care from either the NEHC or the emergency department (ED) of their local hospital.

- i. The type of agent used and resulting illness will determine the composition of the ACC. The number of casualties expected to survive versus expire will dictate the allocation of medical staff.
- j. The ACC will function more efficiently and require fewer dedicated, specialized resources if located adjacent or very close to the supporting hospital(s) in the affected region.
- k. Physicians, nurses, and other licensed medical personnel will need to be quickly credentialed following preestablished policies. This function is best carried out by the office of emergency management (OEM) of the respective community, in conjunction with local sponsoring hospitals, before staff arrival at the ACC itself.
- l. Preplanning and sensitive surveillance systems are vital in reducing the impact that a bioterrorist event will have on a community. The better the surveillance system and preplanning, the more likely the ACC is to have a positive impact and outcome following the event.

1.5 Concept Overview

Following a major bioterrorist event, emergency managers will need to coordinate an effective medical response for the enormous number of casualties seeking aid. As previously seen in other large-scale disasters, in addition to the large numbers of people actually affected, an outpouring of “worried well” or psychosomatic casualties will appear. So many casualties converging on hospitals will quickly overwhelm them. One strategy to effectively respond to the health and medical needs arising from such an incident is to activate and mobilize preplanned mass care facilities. During emergency operations, a community’s OEM may activate the previously described MEMS, which is one such strategy. Under this concept, ACCs will be quickly established in structures or buildings of sufficient size located close to existing hospitals to provide definitive and supportive care for acutely ill patients from an agent of bioterrorism who exceed hospital capacity. Depending on the community, these centers will ideally be physically close or attached to a hospital. The maximum bed capacity of an ACC will be 1,000 beds (in increments of 250 beds), and it provides essentially one level of care equivalent to general medical inpatient care.

The ACC is designed, organized, equipped, and staffed specifically to provide inpatient medical services for those affected by an incident involving a biological weapon of mass destruction (WMD). The ACC is designed to treat patients who need inpatient treatment but do not require mechanical ventilation and those who are likely to die from an illness resulting from an agent of bioterrorism. Patients who require advanced life support (ALS) such as provided by intensive or critical care units will receive priority for hospital admission rather than admission to the ACC.

Restricting the type of patients treated at these centers serves two purposes. First, it allows a streamlined approach to patient care; in general, most patients will require similar treatment following preestablished critical pathways or clinical practice

guidelines. Secondly, in situations where isolation is desirable but impractical, it cohorts patients with similar infections/exposures from the same disease, thus limiting exposure to noninfected persons (a practice recommended by the Association for Professionals in Infection Control and Epidemiology Inc. [APIC], and the Centers for Disease Control and Prevention [CDC]).

As a part of the coordinated response, area hospitals will close to elective, noncritical admissions and will identify current inpatients who are stable enough for discharge or transfer to another suitable medical facility that is likely located outside the affected locality. Hospitals may off-load inpatients to the ACC who are presumed infected with the bioterrorist agent. Patients who present with symptoms of a bioterrorist-related illness and a concurrent medical or surgical emergency, such as heart attack or trauma, will be a priority for admission into the local hospital facilities and not the ACC. A staff consisting of physicians, nurses, respiratory therapists, nonlicensed patient care providers (nursing assistants), medical clerical personnel, maintenance or facility technicians, and civilian volunteers is required to operate this facility. Precise numbers of each type of personnel will be dependent on the type of agent used and resulting illness in a bioterrorist attack. For example, an attack resulting in a large number of patients requiring acute inpatient care but a low fatality rate might indicate a need for more registered nurses. Conversely, an attack with an extremely potent agent that has a high fatality rate might indicate a need for fewer registered nurses because the patients' condition would deteriorate quickly, resulting in death.

Ideally, community emergency planners and the sponsoring hospital(s) will identify and pretrain a team of "core leaders" to facilitate the development of the ACC(s). This team may consist of a hospital administrator, a medical director (physician), a nurse with management level experience, and a logistics person, in addition to representation from the community's OEM.

2. Scope

2.1 Risk Management/Policy

Depending on the scope and magnitude of the event, healthcare practices will likely have to change to effectively apply available assets to care for the greatest number of casualties. Decisions will need to be made to ration the use of the community's limited medical resources until significant mutual aid or Federal resources arrive. Procedures for quickly credentialing licensed medical personnel will need to be preestablished by the community's OEM and consistent with Federal and State statutes. Liability issues related to negligence and malpractice will likely have to be waived, as clinicians are asked to manage the high volumes of casualties. The standard of practice will likely differ from standards to which clinicians and patients are accustomed. The personal attention that is usually expected and received may become nonexistent. These circumstances will require medical decisions at every level to be made swiftly based on limited information. New medical care standards tailored for managing catastrophic casualty events must be developed to assist medical professionals in this time of devastation. Personnel with limited medical background or experience, such as medical or nursing students, may need

to be assigned to patient care in some capacity. All healthcare providers will have atypically large patient assignments. Patient care will likely have to be prioritized and delivered in a scaled down manner. The design of the ACC considers such factors while attempting to provide the best care available under these conditions. The community's OEM is responsible for ensuring that adequate medical transportation and logistical support is provided to each of the ACCs to initiate and sustain operations.

2.2 Level of Care Philosophy

As with all disasters, responding medical personnel must be trained to understand that their natural instinct to deliver as much care as needed for each patient is not optimal and may be deleterious. Predefined criteria for the delivery of care (standing admission orders, discussed next) and guidelines for discharges will provide the framework to assist medical personnel in applying the reduced care delivery model.

The ACC will be designed and equipped to provide mass care only to patients of a bioterrorism-related illness who require inpatient treatment. When implemented, ACCs will concentrate on providing agent-specific and ongoing supportive care therapy (i.e., antibiotic therapy, hydration, bronchodilators, and pain management) while hospitals focus on the treatment of critically ill patients. The ACC, therefore, **will not** have the capability to provide advanced airway management (i.e., intubation and ventilator support), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), Advanced Trauma Life Support (ATLS), or Neonatal Advanced Life Support (NALS). Patients requiring an advanced level of care (i.e., critical/intensive care-level support) will be transferred to the closest hospital if bed space is available. Otherwise, supportive care will be provided to these individuals at the ACC. Women who develop active labor while in an ACC will be transferred on a priority basis to the nearest NEHC or hospital ED for obstetrical support and delivery.

The rationale for limiting the level of care at the ACC is based on the following:

- Hospitals have better access to the resources required to treat critically ill patients. These resources include cardiac monitors, oximeters, ventilators, free-flowing oxygen, intravenous pumps, and invasive monitoring equipment.
- Hospitals have better access to staff (i.e., respiratory therapists; critical care, emergency, and surgical nurses and physicians) experienced in resuscitation and care of critically ill patients. It is more efficient to concentrate these trained individuals in one location.
- The ACC is established when demand for healthcare exceeds existing resources. To aid patient survival, the ACC must be set up quickly to maximize its use of limited resources by streamlining its level of care to provide the maximum good to the greatest number of people. This is best accomplished by providing only antibiotics, hydration, bronchodilators, and pain management at the ACC. The primary focus on these four areas simplifies the logistics of setting up these centers

and reduces the amount of supplies and equipment a community needs to cache, yet the ACC is enabled to provide the care that will help the greatest number of victims.

- Providing a selective level of care minimizes the ethical decisions healthcare providers would need to make when only a limited supply of advanced care technology is available.
- Providing this level of treatment eliminates healthcare providers' dependence on technology to provide mass care.
- A free-standing ACC faces a number of logistical barriers that directly affect the level of care that can be provided at the facility. An ACC established in a school gymnasium, community field house, or hospital cafeteria will not have necessary access to free-flowing oxygen, medical air to drive ventilators, or specialized electrical outlets required to provide critical care-level medicine. These locations do, however, offer the space necessary to provide agent-specific therapy and basic supportive care to victims of a bioterrorist event.
- Streamlining the care provided at the ACC will allow healthcare providers of various backgrounds to follow preestablished treatment guidelines.
- Recommending that an ACC be able to provide the same level of care that can be offered by a hospital puts an unrealistic burden on a community to provide unlimited resources (i.e., money, equipment, and personnel) to an ACC.

2.3 Standing Admission Orders

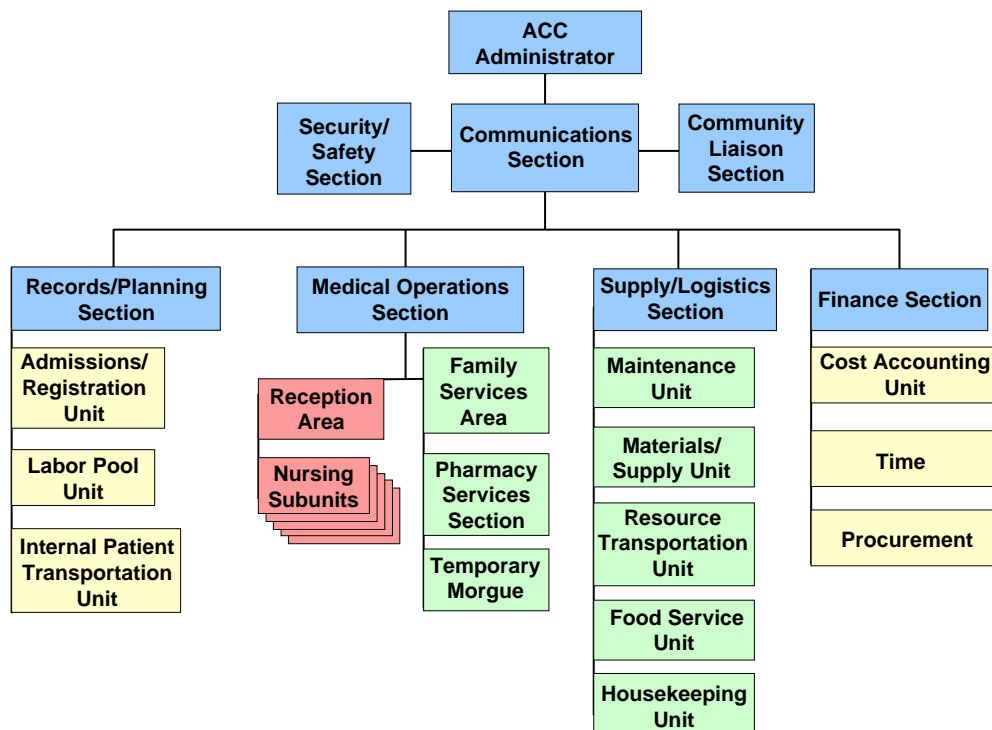
To facilitate rapid admission and treatment of casualties, standing predefined admission orders can be used. These admission orders provide a template for physicians to use for quickly writing orders required to direct inpatient care. These standing predefined admission orders should address the basic components of agent-specific and ongoing supportive care therapy, such as antibiotics or vaccines, hydration, bronchodilators, pain management, and other provisions of basic patient care. Included in this *Concept of Operations for the Acute Care Center* document is an example of an appropriate template for an ACC admission. (See Appendix A, Sample Admission Orders.)

3. Organization

3.1 Command Organization

The organization of the command and control structure for the ACC will be locally determined and will fit into the existing local emergency command structure. The example in Figure 3-1 is modeled after the nationally recognized Incident Command System (ICS) and the companion HEICS. (Refer to Appendix B, ACC Functional Components, for a detailed explanation of each component of the ACC.)

Figure 3-1. ACC Command Organization



This emergency management system reflects the following:

- The minimum management staffing requirements for the operation of the ACC.
- Recognition that these minimums will be mandated by the type of bioterrorist agent used and its effect on the emergency management and hospital structure of the community. This management structure can be modified to meet the needs of the local community's emergency command structure.

3.1.1 ACC Administrator and Main Components

The ACC Administrator is responsible for the command and control functions of the entire ACC. This person will manage and control the total operation of the facility. The ACC Administrator's role is to ensure that the ACC functions at the highest level of

efficiency possible with given staff and equipment. The Administrator should base the administration of the facility out of the Communications Section (CS) located within the ACC. The ACC Administrator directly oversees the Communications Section, Security/Safety Section, and the Community Liaison Section, which are described below. The ACC Administrator is also responsible for the four other sections, each of which has a director who is responsible for day-to-day management.

3.1.1.1 Communications Section. The CS will be established as the hub of administrative activity of the facility. This is not to be confused with the community's Emergency Operations Center (EOC), which operates from another location and has broader responsibilities. The ACC Administrator will manage the ACC out of this CS and will be assisted in this area by the Security/Safety Director, Community Liaison Director, and the Communications Director. The most important function of the ACC Administrator is to facilitate and manage the flow of information into and out of the ACC. The function of the ACC's CS is to maintain an activity log, documenting all activities including bed status reports, operational problems, and the like. The ACC Administrator will also be responsible for all reporting requirements for the facility and generating situation/status reports that reflect patient and staffing activity when requested by the Medical Command Center (MCC) or community's OEM. The MCC, another component of the MEMS, is discussed further in Section 3.2, Patient Flow. Representatives from the other operating sections of the ACC will have a desk within the CS to facilitate communication and coordination of all actions. The Casualty Relocation Unit (CRU), also a MEMS component, will maintain its dispatch office within the ACC's CS using CRU internal communication while fully coordinating all patient transports with the ACC staff.

An ACC is a high-volume user of telecommunications and information technology. Communication is the most crucial function of the CS because it is the hub of incoming and outgoing information. The ACC Administrator maintains command and control from the CS with the assistance of the Communications Director. Every ACC Section Director will maintain a desk or work area in or near the CS area. It is critical that the CS has a dedicated telephone and communication system to receive and transmit MCC and supporting hospital requests. Telephones need to be available in all offices, staff workstations, administrative areas, and nursing subunits. The use of multifunction, wireless communication devices should be considered. Additional phone jacks may need to be made available for facsimile machines and computer modems. If the building selected has an intercom or public address system available, consideration should be given to using it and developing guidelines for its use. Ideally, public telephones will be located near the designated waiting areas; but if not, signs (in English and Spanish) should be placed indicating their location. Staff workstations should have dedicated internal lines or radio channels, if possible. If resources are scarce, the simplest system, which is face-to-face verbal communications using runners, may be employed. Telephone systems should be intact following a bioterrorist attack; however, as with all disaster situations, it is likely that standard telephone numbers will be deluged with incoming calls. For this reason, it is recommended that emergency planners arrange for one or more unlisted telephone numbers per ACC.

Ideally, a standardized electronic information system should be planned for and installed to support clinical management, patient tracking, and departmental administration. The existing hospital information systems should be evaluated during the preplanning stage by emergency planning officials to determine the feasibility of quickly providing this capability in the facility selected. Workspaces should be identified to include sufficient space for computer terminals, keyboards, mouse pads, and printers.

An area known as the Communications Base is required by ambulance personnel for report writing and communications with their respective headquarters. Direct radio communication should be available between the ambulance services and the CRU. The most appropriate location for this base is within or near the ACC's CS area. If a high volume of ambulance traffic is likely, separate accommodations may be preferred to minimize the impact on the ACC's CS.

3.1.1.2 Security/Safety Section. Under the direction of the Security/Safety Director, the ACC should maintain an internal staff of security guards who are on duty 24 hours a day, 7 days a week. The nature of the facility, particularly the number of access points, will determine the exact requirements for security staff. Security personnel will issue the ACC staff identification (ID) badges to be worn by all staff while at the ACC. Security personnel stationed at access points should be tasked with checking the ID of anyone entering the facility. In addition to adequately staffing the access points, security personnel should be present in certain high-risk areas such as the pharmaceutical dispensary, medical supply areas, family areas, and temporary morgue. Having a secure parking area for staff members (that is patrolled by security personnel) or access to nearby public transportation is also an important consideration. The local law enforcement agencies will most likely play an invaluable role in the ACC's security plan.

The ACC should implement strict infection control procedures to protect staff, patients, and visitors. Patient care areas will have staff dedicated to maintaining sanitary conditions throughout the facility. A detailed discussion of environmental health, sanitation, and personnel protective equipment is provided in Section 5, Operational Considerations.

3.1.1.3 Community Liaison Section. The ACC Administrator will also establish and maintain a relationship with the community's OEM to issue information from the ACC and channel information to it. The Community Liaison Director's role is to respond to the community concerns that affect the ACC and its mission. Media communications will be the direct responsibility of this director, who will establish contact with counterparts of all cooperating agencies and functions as a community representative and point of contact (POC). This person will coordinate ACC activities with the hospital and NEHC public information efforts. He/she will provide to the MEMS Public Information Office (PIO) all necessary casualty data, progress reports, and labor pool requests that might be released to the media. This person will also provide information to the local community as approved by the MEMS PIO. This process will be assisted by one or more liaison assistants, as necessary.

When established, the ACC does not function as a stand-alone operation, rather the ACC is but one component of a broader bioterrorism response system. To affect successful

mass casualty care, the ACC must integrate and interoperate with other areas of the public health response. Given the potential magnitude and range of scenarios involved with bioterrorism, it is essential that medical integration and interoperability occur at every level: Federal, State, and local. Integration with medical evacuation (e.g., casualty relocation units), outpatient care centers (e.g., NEHCs), community outreach, and the medical logistics systems is particularly critical. The ACC support service requirements include, but are not limited to, community outreach, physical security, social services, public affairs, billeting, feeding, waste management, logistics, and maintenance. The ACC must coordinate with appropriate command elements to ensure smooth, timely, and seamless patient flow and to sustain operations.

3.1.2 ACC Functional Units

3.1.2.1 Records/Planning Section. A Records/Planning Director heads this section. This section consists of three functional units:

- Admissions/Registration
- Labor Pool
- Internal Patient Transportation.

The Records/Planning Director should work very closely with the ACC Administrator to ensure that patient and personnel status is kept up to date. This section will manage all paperwork generated within the ACC. The Records/Planning Director will staff the Admissions/Registration area with a Patient Care Coordinator (PCC) and will maintain a control register identifying those patients admitted to the ACC. The ACC is strictly an inpatient facility where patients are usually sent from the NEHC or a hospital's ED. Nonetheless, a record should still be kept of anyone who is administered care, even if that person did not arrive through conventional means (walk-ins). The Records/Planning Section should also maintain staffing logs identifying anyone working at the ACC in any capacity. Patient registration, treatment, and disposition records are also the responsibility of this section. In addition, this section is responsible for managing all personnel who are not actively assigned to another section within the ACC, such as spontaneous volunteers or staff members who are in an available or out-of-service status within the facility. If staffing permits, a Labor Pool Unit Leader can be appointed to assist the Records/Planning Director with tracking the facility's personnel resources and providing extemporaneous training to new ACC staff members as necessary. The Records/Planning Director will also supervise the internal patient transport section. The internal patient transport section will be responsible for moving patients from the Admissions/ Registration area to the assigned bed or from their assigned bed to the morgue. Depending on their availability and the needs of the nursing staff, the internal transport staff may even be asked to assist in physically turning patients or moving them up in their beds.

3.1.2.2 Medical Operations Section. The Medical Operations Section encompasses all clinical areas of the ACC. The Medical Operations Director is a physician responsible for directing the medical care for every patient entering the ACC. The Medical Operations Section consists of four main functional units:

- Nursing Subunits
- Pharmacy Services
- Family Services (if the ACC Administrator so chooses)
- Temporary Morgue.

Because the Medical Operations Director is responsible for directing the medical care in the facility, that individual and the nursing subunit supervisors are tasked with ensuring that the staff members in the ACC are operating within the scope of their practice and training. The director should have inpatient privileges at a nearby supporting hospital to ensure continuity and knowledge of the local policies and procedures. The Medical Operations Director should also oversee any ancillary operations within the ACC. If staffing levels permit, each nursing subunit (50 beds) within the ACC should have a unit leader (either a physician or registered nurse [RN]) assigned to expedite and optimize patient care rendered.

3.1.2.3 Supply/Logistics Section. A Supply/Logistics Director heads this area, often referred to as simply the Logistics Section. This section is responsible for all of the services and support needs of the ACC, including obtaining and maintaining the facility, equipment, and supplies. This section consists of the following five functional units:

- Maintenance
- Materials/Supply
- Resource Transportation
- Food Service
- Housekeeping.

This section is tasked with the ordering activities for the procurement of equipment, supplies, food, and drink, as well as the handling of all contracting for services, supplies, and equipment. The Supply/Logistics Section is responsible for ensuring that all the supplies needed throughout the ACC are obtained with the exception of pharmaceutical supplies. Due to the specialized procedures surrounding the acquisition of drugs, this function should be the responsibility of pharmacy services in the Medical Operations Section.

There are specific refrigeration needs in any inpatient facility, including a temporary one such as an ACC. First, it is essential to have the capability to refrigerate medications

separately from any bodily fluid specimens collected. Second, because the ACC is an inpatient facility, it must have an adequate food refrigeration system.

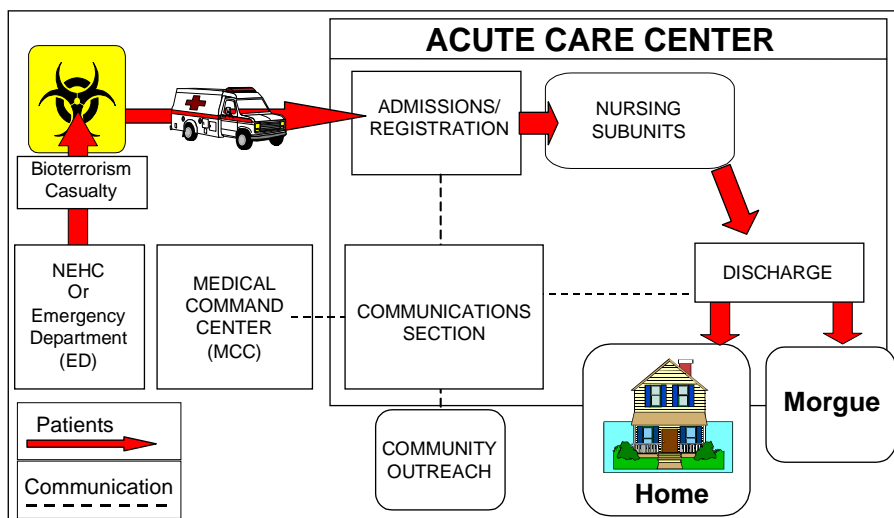
To ensure that adequate nutrition levels are met, a Food Service Unit Leader should be appointed to coordinate the proper feeding of both patients and staff. This individual can arrange for the delivery of food to the facility through local catering sources. Roughly 75 percent of the patients in the ACC who are able to eat will be fed through the catering sources. Because of disease-related dietary restrictions, the other 25 percent will need the assistance of the supporting hospital's food service. The Supply/Logistics Director should also appoint a Resource Transportation Unit Leader to manage the internal and external transportation services for personnel, supplies, and equipment. Close communication among the Supply/Logistics Director, the ACC Administrator, and other Section Directors is essential to ensure that the facility's resource needs are anticipated and met.

3.1.2.4 Finance Section. The ACC Administrator will determine if there is a need and the resources available for a Finance Section. Depending on the incident, there may be no need for such a section, or it may be carried out through the supporting hospital. If needed, however, the ACC Administrator may appoint a Finance Director to head this section. This person will be responsible for working with the other section directors on activities such as providing monies for procuring special equipment or supplies, contracting with any vendors, timekeeping, cost analysis, collection of personal insurance information from patients, if appropriate, and other financial aspects of the incident. Additional personnel may need to be allocated for this function. This section could be broken into three functional areas: time, procurement, and cost accounting, as necessary. Cost accounting is addressed in Appendix B, ACC Functional Components.

3.2 Patient Flow

Presented in Figure 3-2 is a model illustrating the flow of incoming bioterrorism casualties from NEHC or ED facilities to the ACC.

Figure 3-2. ACC Flow Diagram



Casualties will arrive at the ACC primarily through the CRU or ambulances. Before patients arrive, either the NEHC or the hospital ED should notify the MCC that patients need to be hospitalized. The MCC of the MEMS will determine where the patients will be admitted (hospital or ACC) and communicate that location back to the CRU staff. The MCC will also communicate to the ACC that there are incoming patients. The information to be relayed should include the total number of patients and any other pertinent details, such as how many patients require transfer by stretcher versus wheelchair.

The ACC will be physically set up so that one 250-bed “pod” composed of five 50-bed nursing subunits is completed before beginning the physical setup of the next 250-bed pod. When the first 50-bed nursing subunit is completely set up and staffed, the ACC can begin to accept admissions. As more nursing subunits are completely set up with core staffing and supply resources, admissions can be distributed evenly across the nursing subunits until capacity is reached. A general guideline for admitting patients to the next nursing subunit could be when the current nursing subunit is at 70–80 percent capacity. When the first 250 beds reach 50–60 percent capacity, the next pod should be nearing completion and readying for receipt of patients. The Medical Operations Director must communicate with the CS to facilitate the opening of additional ACCs. The Medical Operations Director should control the opening of the various pod and nursing subunits. ACC pods that are not located within the same physical structure may require duplicate resources, such as temporary morgues or admissions/registration areas. In addition, as each 250-bed pod is filled, a nursing “pod manager” should be appointed to assist the PCC in managing patient flow and resolving any patient or staffing issues encountered. Similarly, the Medical Operations Director should identify a physician to become the “manager” of each pod, who assists in managing patient care and resolves any medical/clinical issues that may arise. The physician pod manager should be the individual who is the most experienced in managing acutely ill patients.

As patients arrive, they should be directed to or dropped off at the ACC's Admissions/Registration area. The patients should be rapidly evaluated for placement and categorized by the PCC. As bed assignments are made, the Internal Patient Transportation Unit will move the patient from the Admissions/Registration area to an assigned bed in a nursing subunit. Approximately six transporters plus one transport clerk (for managing information and traffic control) per 250-bed pod will be required, in addition to the transport personnel assigned to each nursing subunit. Admissions will be spread among the nursing units so as to evenly distribute the workload associated with new arrivals. Patients will be sent from the Admissions/Registration area to their inpatient location with the additional admissions packet of paperwork that includes physician orders (also known as standing admission orders; refer to Appendix A, Sample Admission Orders). These orders should be preprinted and cached during the preplanning activities of the community's OEM. Each patient's admission orders will be completed and tailored to meet the patient's individual needs based on the findings of the physician in the nursing subunit (not in the Admissions/Registration area). Patients who arrive without first having been triaged will be redirected to either an NEHC or hospital ED. The ACC is not designed to provide evaluative type patient assessments in the Admissions/Registration area. This area is intended solely to log patients into the tracking system and assign nursing unit and bed location.

When the patient arrives at the assigned location, standard inpatient procedures will prevail, albeit in a more streamlined or scaled-down manner. The medical clerical personnel in each nursing subunit will be responsible for processing the physician's admission orders, while the RN will verify and sign that the orders were implemented. Nurses will complete an admission assessment on every patient and initiate the multidisciplinary plan of care. Standardized plans of care may be developed in advance based on the typical presentation of expected agents that might be used in a bioterrorist attack. Many present with flu-like symptoms, which are conducive to a template approach. Prestablished criteria to guide transfer and discharge decisions would be useful to promote patient movement through the system. This approach would assist the ACC in maintaining maximum bed availability for continued admissions of patients affected by bioterrorism-related illness.

Case managers and/or social workers will be responsible for discharge planning to ensure that those who need assistance at home receive such care. Discharge will include the collection of patient records and referral to psychological counseling or other human relief services and any follow-up that may be necessary. Preprinted agent-specific discharge instructions should be developed or obtained during the preplanning stages and cached for use in an actual incident. Patients will be discharged with these instructions and any starter packs of agent-specific medications that they might still require. As with the discharge instructions, when the agent is identified, discharge medications should be prepackaged if feasible. Discharges will be coordinated through the Admissions/Registration area for bed control and patient-tracking purposes. As de-escalation occurs, nursing subunits will naturally consolidate patients and resources, allowing unnecessary areas to be closed.

3.3 Facility Requirements

a. Site Selection. Deciding where to locate the ACC will have a major influence on the eventual cost and operational efficiency of the center; and that decision should be made in conjunction with medical response staff. The ACC should be set up in a preexisting structure as close as possible to its supporting hospital for ease of transferring patients and sharing of resources such as laboratories and diagnostic capabilities. The ACC's onsite resource requirements will increase in direct proportion to the distance it is from the supporting hospital.

b. Parking and Access. The locations of building access points must be carefully considered. The Admissions/Registration area of the ACC should be located on the ground floor for ease of patient access. Car parking should be as close to the entrance as possible, well lit, and available exclusively for patients, their relatives, and in particular, ACC staff. There should be designated areas for ambulances and buses that drop off and pick up patients. This area should be well marked and be as close to the Admissions/Registration area as possible.

Designated parking areas will also be needed for the following:

- Ambulances that are not in use
- Taxis and private vehicles to pick up patients (including those with limited mobility)
- Family and other visitors
- Police vehicles
- Logistical resupply vehicles.

The patient reception entrance should be clearly identified (in English, Spanish, and other languages as necessary), using signage, from all approaches. The reception entrance should also be properly illuminated to allow for good visibility and to facilitate a safe environment at night.

c. Building. The combined size of the ACC's nursing subunits should be large enough to effectively care for at least 250 inpatients. The exact allocation of space for each area will be largely determined by the facility used; however, for planning purposes, the ACC base model consists of five 50-bed nursing subunits. If needed, the ACC design allows for expanding its capability by simply adding subunits within a given facility as space permits.

(1) Total Space. The minimum size of a functional ACC that can incorporate all of the major areas is approximately 40,000 to 48,000 square feet. The total size and number of nursing subunits will also be influenced by factors such as facility layout, number of patients and staff, availability of technology and staff, patient acuity, and the medical logistics support structure.

Space determinants revolve around the major functional areas of the ACC, which can be further divided into the following areas:

- Communications
- Admissions/Registration
- Nursing (or patient care) subunits
- Multipurpose family/visitor area (waiting room, counseling, etc.)
- Multipurpose staff area
- Pharmacy/medication preparation
- Supply storage and distribution
- Staff workstations
- Support services (e.g., storage, bathrooms, utility)
- Food services
- Maintenance
- Transportation dispatch and equipment
- Secure area (for patient valuables, deceased persons' belongings)
- Temporary morgue.

Lastly, when evaluating and planning the best use of space, it is important to consider the need for enough space to maneuver and circulate between beds and equipment.

(2) Recommended Buildings. Examples of buildings suitable for use as an ACC include National Guard armories, gymnasiums, schools, hotel conference rooms, health clubs, and community centers. These buildings are recommended because they contain separate rooms with large floor space for patient care, bathrooms, kitchens, and laundry facilities, and have electrical and communication links. These facilities are also likely to be equipped with adequate parking, loading ramps, and backup electrical generators. Hotel conference rooms can easily become substitute hospital wards that provide adequate space for beds, tables, and chairs, and have running water, climate control, storage areas, and restroom capabilities, and so on. Schools, community centers, and health clubs are similar in that they have large open areas as well as segregated restrooms, office space, and shower facilities in addition to comparable logistic capabilities (running water, climate control, storage, etc.). Schools also contain cafeterias, public address systems, and lounge facilities. Another factor that makes schools and National Guard armories attractive options is that they are generally publicly owned structures, making it presumably easier for emergency officials to rapidly commandeer such a building in the

event of a disaster. Regardless of choice, it is strongly recommended that emergency planning officials designate appropriate facilities in advance and begin discussions to negotiate agreements for use in mass casualty incidents.

(3) Doorways and Corridors. All doors through which patients may pass must be of sufficient size to accommodate wheeled stretchers and wheelchairs with attached intravenous poles and other equipment with ease. Corridors should be wide enough to allow the cross-passage of two-wheeled stretchers or wheelchairs or other delivery carts without difficulty. There should be adequate space for personnel and equipment to enter, exit, and maneuver in any of the rooms.

(4) Electrical Supply. The electrical supply to the ACC should be surge-protected to guard against damage to electronic and computer equipment. All computer terminals and powered medical equipment should have access to emergency power. The community's OEM should plan to have emergency generators and uninterruptible power supply (UPS) units available for the ACC.

(5) Heating and Air Conditioning. The ACC should have climate control appropriate to its environment.

(6) Lighting. Adequate artificial lighting for clinical areas is important for performing procedures, assessments, and direct patient care. Ideally, clinical areas should also have exposure to daylight wherever possible to minimize patient and staff disorientation.

(7) Floor Coverings. The floor covering in all patient care areas and corridors should have the following characteristics:

- Impermeable to water and body fluids
- Durable
- Easy-to-clean
- Non-slip surfaces (no carpeting of any kind).

(8) Hand Wash Facilities. If water is available for handwashing, basins should be available within every patient care area in readily accessible locations at the ratio of approximately one for every 10–25 beds, depending on layout. If water is not available, or facilities are inadequate, waterless, alcohol-based hand cleaners should be freely distributed.

(9) Refrigeration. The selected facility should have either onsite refrigeration capabilities or adequate electrical supplies to handle the demands of temporary refrigeration containers.

3.3.1 Layout Considerations

a. **General Layout.** The nursing subunits should be centrally located to the other areas of the ACC. The Admissions/Registration area is the focus of the initial patient presentation and admission procedures and should be located at the main entrance of the building. The nursing subunits provide inpatient medical management services and should be easily accessible from the admissions area. The Communications and Supply/Logistics sections should be accessible to the nursing subunits but should not impair the clinical functions of the ACC. Such support areas are best arranged around the periphery or upper floors of the building.

b. **Traffic Pattern (Patient and Supplies).** The ACC layout should allow rapid access to every area with a minimum of cross-traffic. Close proximity is desirable between the Admissions/Registration area and the nursing subunits. This factor becomes apparent at times of high workload as staff may require temporary relocation to manage surges in patient admissions. Visitor and patient access to public areas of the ACC should not traverse the clinical areas. Protection of visual, auditory, and olfactory privacy is important while recognizing the need for observation of patients by clinical staff. Support, material services, and, in certain cases, specialized care or counseling areas may be used. If so, they should not be located where they could impede patient flow or patient care.

c. **Bed Spacing.** Patient care areas should allow at least 2 feet of clear floor space between beds. The bed spacing should not restrict routine patient care activities and ideally should provide convenient and adequate storage space for disposable/nondisposable medical supplies. There should be complete access to the patient and enough circulation space to allow movement of staff and equipment around the patient's bed. Storage space may consist of modular plastic bins or other similar design concepts.

d. **Provisions for Medical Gases (Oxygen).** Provision of medical gases (oxygen) is a logistically complex and expensive undertaking. Each community will need to evaluate its resources in determining whether to provide oxygen therapy in the ACC. The building used to house the ACC will probably not have internal medical gas lines. Therefore, if emergency planners determine that oxygen will be provided at the ACC, they should consider, for example, developing a multiple branch-line system that pipes medical gases to each nursing subunit and patient bed. This may be accomplished by using portable cylinders; however, it may be more practical to construct a temporary liquid oxygen manifold system because of the sheer number of cylinders that would be needed (one E-cylinder of oxygen lasts an average of 4 to 8 hours for one patient at a flow rate of 2 liters/minute). It is strongly suggested that a biomedical engineer be involved in the setup of the oxygen delivery system, should it be deemed feasible. (See Appendix C, Oxygen Logistics and Delivery Set-Up.)

4. Staffing Requirements

The potentially enormous number of patients seeking treatment will cause hospitals to fill to capacity, requiring them to fully engage all their available staff. Staffing for the ACC will require personnel from either nearby hospitals, possibly temporary staffing agencies, or more likely, National Guard units, Army Reserve units, or Disaster Medical Assistance Teams (DMAT). The issue of finding adequate numbers of medical professionals to staff an ACC is one that requires creative preplanning. Local communities may need to negotiate mutual aid agreements that specify where additional staff may be obtained while awaiting the arrival of Federal resources. It is not expected that an affected community will have the extra staff resources to open an ACC independently. Clearly, the majority of ACC staff will have to come from outside the affected area. Furthermore, planning should include communicating projected health and medical staffing shortfalls to the Department of Health and Human Services (DHHS) Office of Emergency Preparedness (OEP). As the lead support agency under FRP ESF #8, DHHS is responsible for assisting communities with preplanning and mobilization of health and medical personnel. DHHS OEP is heading up a national effort to assist select communities in developing local Metropolitan Medical Response Systems. These efforts in particular should consider preplanning that includes identifying ACC staffing requirements.

Staffing agencies that specialize in providing staff during hospital nursing union strikes are another resource to investigate because they typically provide personnel from outside the affected (strike) area. To ensure that the ACC operates in tandem with the supporting hospital, planners might consider distributing some of the hospital's regular staff among the temporary personnel. This is advantageous because it provides a base of staff who have valuable information, such as departmental phone numbers or procedural knowledge.

Potential types of medical providers who will staff the ACC include physicians and other healthcare providers who may not have inpatient general medical skills or who are still in training. It is highly beneficial to the entire operation of the ACC if some physicians whose current practice includes management of hospitalized patients are dispersed among the ACC's temporary medical staff. The temporary staff of doctors may not have used their acute care medical skills in many years. Additionally, they may not be current in treatment regimes or have the ability to start or administer intravenous lines, or even recognize the symptomatology of a life-threatening illness.

The nature of the medical needs and the shortage of staff in a bioterrorist incident may make traditional role delineation impractical. Therefore, divisions of responsibilities for various aspects of patient care and program administration will be based on knowledge, experience, special talents, and to some extent, interests of individual staff members. In this way, each staff member's particular abilities will be fully used and operations will run more smoothly. Nonmedical personnel, such as clerks and volunteers, will be engaged extensively throughout the ACC to lessen the burden on the clinical staff. Volunteers will be used if available. However, the ACC design is predicated on the assumption that they will *not* be available. Comprehensive personnel requirements and

duty descriptions for the Communications Director, Section Directors, and functional unit leaders are covered in Appendix D, Job Action Sheets. Job Action Sheets for additional personnel can be written using the unit leader descriptions as a guide. For staff members to work as a team, individual flexibility and good communication based on mutual respect are necessary. Coordinating procedures should be implemented to outline administrative concerns, such as chain of command, scheduling, and staff absences. The ACC Administrator is ultimately responsible for ensuring that appropriately educated and qualified professionals staff the ACC during operation. Staffing an ACC is a major challenge; and in practical application, it may be that an ACC cannot be opened until outside staffing resources arrive. Workers' Compensation insurance should be provided to all staff as disaster declarations are made. The ACC will likely operate on two rotating 12-hour shifts.

Suggested minimum staffing per 12-hour shift for a 50-bed nursing subunit follows:

- One physician
- One physician's assistant (PA) or nurse practitioner (NP) (physician extenders)
- Six RNs or a mix of RNs and licensed practical nurses (LPN)
- Four nursing assistants/nursing support technicians
- Two medical clerks (unit secretaries)
- One respiratory therapist (RT)
- One case manager
- One social worker
- Two housekeepers
- Two patient transporters.

The minimum number of staff providing direct patient care on the 50-bed nursing subunit per 12-hour shift is 12, which includes the physician, the physician extenders, nurses, and nursing assistants. The physician will be assigned the entire subunit, while the nursing staff will operate in a team approach. Members of the patient care team will have tasks assigned that are consistent with their scope of practice.

Policymakers will need to establish minimum prerequisite job qualifications to ensure that the practitioners have at least the baseline credentials to practice in the ACC. Credentialing of physicians and other licensed medical personnel should be preplanned and is the responsibility of the OEM. As a part of the preplanning activities related to credentialing, the OEM needs to establish a policy for physicians who are licensed in other States (as well as other licensed care providers), and determine what entity is responsible for providing malpractice insurance coverage and protection from future

lawsuits for the medical providers. Examples of credentialing requirements are as follows:

- a. Physicians. Physicians are responsible for directing the medical care provided in the ACC. This includes the medical evaluation, diagnosis, treatment, and disposition of the patient. All physicians who staff the ACC should be credentialed, including the Medical Operations Director. It is recommended that some of the ACC physicians possess training, experience, and competence in acute care settings sufficient to evaluate and initially manage and treat the patients who seek care at the ACC.
- b. Physician Assistants (PA)/Nurse Practitioners (NP). These care providers must possess appropriate credentials and undergo the same credentialing process as the physicians. They are responsible for assisting in the care of the patients, including assessment planning and evaluation of response to medical interventions. They must be able to provide evidence of patient care experience. They must be capable of providing patient care in austere circumstances. Experienced providers with these advanced practice credentials may function as physicians within the ACC.
- c. Nurses and Paramedics. These care providers must possess appropriate credentials as well. They are responsible for the nursing care of patients, including assessment planning and evaluation of response to medical interventions. They must be able to provide evidence of direct patient care experience. They must possess and show evidence of the knowledge and skills necessary to deliver the care required by patients admitted to the ACC and do so in austere circumstances. Retired RNs may be used in a manner (either as nurses or as nursing assistants) that is consistent with the policies of the affected locality and the State in which the event occurs. The policy regarding this should be determined in advance by emergency planning officials in conjunction with the supporting hospital.
- d. Medical Clerical Personnel. The clerks in the ACC are responsible for generating the paperwork necessary to run an ACC. They are the facilitators who coordinate moving patients through the ACC. They are responsible for answering phones and ensuring that all communications are carried out within the ACC and other modules in the MEMS. They are required to have some experience in a medical environment and to understand medical terminology. Finally, they are responsible for supervising the nonmedical volunteers in their sections.
- e. Emergency Medical Technicians (EMT) and Nursing Assistants. These technicians are responsible for providing assistance to the nursing staff in the care and treatment of patients in the ACC. EMTs must possess current licenses, while nursing assistants should show evidence of either recent relevant experience in providing direct patient care or certification as a nursing assistant or a similar role. Both should have actual experience in the medical field using their license/certificate/training. Nursing and medical students may also be potential sources of labor for filling this role.

5. Operational Considerations

A discussion of some of the operational components involved in the deployment of an ACC follows. (See Appendix B, ACC Functional Components, for detailed descriptions of the various functional components of the ACC.)

5.1 Extemporaneous Training

Extemporaneous training provides all the orientation and background information necessary for staff members to effectively operate within the ACC organization. The ultimate success of the ACC will depend largely on the effectiveness of this training. At a minimum, staff members should receive some form of training that addresses the mission of the ACC, site orientation, standard operating procedures, and the responsibilities of each member of the ACC. All staff, including volunteers, should receive this training before the opening of the ACC or their initial shift. New clinical staff who report after the ACC has opened must be oriented to their immediate role, environment, and the ACC in general by either the PCC or the pod manager. Other nonclinical staff reporting after the ACC opens will be oriented by their respective unit “manager.”

This training should include, but not be limited to the following:

- Personal protective measures, including infection control measures (handling and disposing of infectious waste, agent-specific transmission prevention measures, etc.)
- Standard operating procedures
- Information on the agent and treatment modalities
- Standard reporting procedures
- Response to outside requests for information
- Patient confidentiality.

The Records/Planning Director, in concert with the Medical Operations Director, is responsible for this function.

5.2 Job Action Sheets

Job Action Sheets are a simple method for assigning and identifying roles and responsibilities for all personnel. They are straightforward job description checklists outlining critical activities for a specific job position. Disaster situations are unpredictable and extremely variable. These aspects, coupled with staff turnover, excitement, anxiety, and feelings of urgency or haste may confuse even experienced personnel. Roles are easily forgotten in the urgency of the moment. Job Action Sheets are used in addition to the extemporaneous training to teach staff “what they are going to

do; when to do it, and who to report to after they've done it." To ease the burden of memorizing protocols, each staff member is issued a sheet that prioritizes a detailed description of the critical actions necessary for successful performance. (See Appendix D, Job Action Sheets.)

5.3 Patient Records

A functional medical record must be established for every individual who is treated at the ACC. This record accompanies each patient throughout his/her stay and is available to the medical staff as needed for documenting the treatment provided and the patient's response to such. All records must be complete, legible, and thorough. Initially, each patient will arrive at the ACC with some paper documentation that was started in either the NEHC or the transferring hospital's ED. Upon arrival to the ACC, additional components of the patient's medical record will need to be added. A basic admission package of paperwork should be minimally composed of preprinted standing admission orders, medical history, and physical checksheet, multidisciplinary progress notes, and nursing flowsheets (for documenting vital signs, intake and output [I&O], activities of daily living [ADL], etc.). Nursing documentation requirements should be scaled down as much as possible, and charting by exception is highly recommended. It is recommended that each ACC adopt the standardized inpatient record system of the supporting hospital in the most simplified form possible, which will facilitate the transfer and management of patient information.

5.4 Patient Tracking

Patient tracking is the responsibility of the Records/Planning Director. Patient demographics will be captured on each patient at the time of admission. The Admissions/ Registration area will maintain a patient register (patient logbook) that includes information such as the dates of the patient's admission and discharge and the nursing subunit where the patient was admitted. When the patient is ready for discharge, the nursing subunit will notify the Admissions/Registration area informing it of the location to which the patient is being discharged. This information will also be recorded on the patient register. A copy of the patient register should go to the community's EOC and the MCC at the ACC because they are responsible for handling requests for patient location and bed availability. Accurate patient tracking is a critical function of the ACC as relatives, media, and incident investigators will be trying to locate individuals during this stressful time. If an automated admissions/patient tracking system can be preplanned by the OEM, the Admissions/Registration area staff will need to be trained on the system during their extemporaneous training.

5.5 Medical Equipment and Supplies

Necessary medical equipment and supplies should be predetermined and cached for emergency use wherever possible. If stockpiling is not feasible, emergency planners must identify mechanisms for rapid acquisition of required supplies. Appropriate stocks of necessary medical supplies and equipment must be available or easily obtainable at all times to sustain continuous operations. (See Appendix E, Medical Equipment List.)

5.6 Pharmacologic and Therapeutic Drugs and Agents

Necessary drugs and agents must be made immediately available to the ACC. An initial starting point for emergency planners is to perform a survey of area hospital pharmacies, community pharmacies, and area/regional pharmacy warehouses. Planners should identify all possible sources for obtaining necessary drugs, as well as the volume available from each source. For each source, a phone number that provides 24-hour access to the appropriate authorized individual(s) must be obtained. A mechanism for the emergency acquisition of large quantities of supplies as well as one for the distribution of these medications to hospitals, NEHCs, and ACCs will be required. Communities should expect to be self-sufficient for up to 72 hours following an attack. Law enforcement agencies may be a possible resource for picking up and delivering the pharmaceutical supplies, especially as they provide a secure mechanism for doing so. In addition, some supplies are available via the CDC's National Pharmaceutical Stockpile Program. More information is available via the Web site, www.cdc.gov.

The actual experience of one large community that has already performed this type of survey confirms the presumption that procedures for emergency pharmaceutical acquisition are nearly nonexistent. Therefore, it is strongly recommended that emergency planners negotiate in advance this type of agreement with local pharmaceutical suppliers and pharmacies. To assist communities in this inventory assessment, sample forms have been included in Appendix F, Pharmaceutical Supplies. Ideally, the OEM would stockpile the appropriate drugs if financially/logistically possible and have area hospitals buy their "Just in Time" supplies from that source. Most pharmacies purchase pharmaceuticals on an as-needed basis because they receive frequent deliveries from their suppliers. This system is referred to as the Just in Time system. If drugs are cached, shelf-life and stock rotation must be considered.

It may become necessary to provide security for pharmaceutical suppliers if public panic ensues or is deemed imminent. Emergency planners must also identify mechanisms for stockpiling or rapidly acquiring critical medications such as antibiotics. Before use, pharmaceuticals should be inspected to ensure that the drugs have not surpassed their active shelf-life or have not been adversely affected by storage conditions (refrigerated storage accommodations may be required for certain medications).

5.7 Environmental Health and Sanitation (Housekeeping)

The principles of Standard Precautions should be generally applied for the management of patient care equipment and environmental control. At a minimum, the ACC should have policies to address the following environmental health and sanitation issues:

- a. Each facility should have in place adequate procedures for the routine care, cleaning, and disinfection of environmental surfaces, beds, bedside equipment, and other frequently touched surfaces and equipment. To ensure that these policies are met, it is recommended that consideration be given to the use of pretreated, disposable germicidal wipes throughout the ACC.

- b. Environmental Protection Agency (EPA)-approved germicidal cleaning agents should be available in patient care areas to use for cleaning spills of contaminated material and disinfecting noncritical equipment.
- c. Used patient care equipment that is soiled or potentially contaminated with blood, body fluids, secretions, or excretions should be handled in a manner that prevents exposures to skin and mucous membranes, avoids contamination of clothing, and minimizes the likelihood of microbial transfer to other patients, personnel, and environments.
- d. Policies should be in place to ensure that reusable equipment is not used for the care of another patient until it has been properly cleaned and reprocessed, and to ensure that single-use patient items are appropriately discarded.
- e. Sterilization is required for all instruments or equipment that enters normally sterile tissues or through which blood, intravenous (IV) fluids, or medication flow.
- f. Rooms and bedside equipment of infected patients should be cleaned using the same procedures that are used for all patients as a component of Standard Precautions (see detailed explanation in Section 5.8), unless the infecting microorganism and the amount of environmental contamination indicates special cleaning. Special disinfection of bedside equipment and environmental surfaces may be indicated for certain organisms that can survive in the inanimate environment for extended periods of time. The methods and frequency of cleaning, as well as the products used, can be determined by the supporting hospital's existing policies.
- g. Patient linen (if not disposable) should be handled in accordance with Standard Precautions. Although linen may be contaminated, the risk of disease transmission can be minimized if it is handled, transported, and laundered in a manner that avoids transfer of microorganisms to other patients, personnel, and environments. Facility policy and State/local regulations should determine the methods for handling, transporting, and laundering soiled linen.
- h. Contaminated medical waste should be sorted and discarded in accordance with Federal, State, and local regulations.

5.8 Personnel Protection Measures

Agents of bioterrorism are generally not transmitted from person to person except for very specific diseases, such as smallpox or pneumonic plague; re-aerosolization of these agents is unlikely. All patients in the ACC should be managed using Standard (Universal) Precautions. Standard (Universal) Precautions (which include Universal Precautions for blood and body fluids) are designed to reduce transmission from both recognized and unrecognized sources of infection in healthcare facilities, and are recommended for all patients receiving care, regardless of their diagnosis or presumed infection status. For certain diseases or syndromes, additional precautions may be needed

to reduce the likelihood for transmission. Descriptions of these precautions may be found on the CDC Web site (www.cdc.gov).

Standard (Universal) Precautions prevent direct contact with all body fluids (including blood), secretions, excretions, nonintact skin (including rashes), and mucous membranes. Standard Precautions routinely practiced by healthcare providers include:

- a. Within each ACC, policies should be in place for preventing occupational injury from an exposure to blood-borne pathogens in accordance with Standard (Universal) Precautions, which synthesizes the major features of Universal Precautions, designed to reduce the risk of transmission of blood-borne pathogens, and Body Substance Isolation, designed to reduce the risk of transmission of pathogens from moist body substances.
- b. Strict handwashing after touching blood, body fluids, secretions, excretions, or items contaminated with such substances, regardless of whether gloves were worn, must be practiced by any personnel having direct patient contact or direct contact with items used by patients. Hands are to be washed immediately after gloves are removed, between patient contacts, and as appropriate to avoid transfer of microorganisms to other patients and the environment. Either plain or antimicrobial soaps may be used according to the supporting hospital's policies.
- c. Clean, nonsterile gloves are worn when touching blood, body fluids, secretions, excretions, or items contaminated with such substances. Clean gloves are put on just before touching mucous membranes and nonintact skin. Gloves are changed between tasks and between procedures on the same patient if contact occurs with contaminated material. Hands are washed promptly after removing gloves and before leaving a patient care area.
- d. Face masks and eye protection, such as goggles (or face shields), are worn to protect the mucous membranes of the eyes, nose, and mouth while performing procedures and patient care activities that may cause splashes of blood, body fluids, secretions, or excretions.
- e. A gown (typically one that is disposable and fluid-resistant) is worn to keep clothing from being soiled during procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Selection of gowns or gown materials should be suitable for the activity and amount of contamination likely to be encountered. Soiled gowns are removed promptly, disposed of properly, and hands washed to avoid transfer of microorganisms to other patients and environments.

5.9 Provisions for Children and Family Members

Providing effective care to children poses unique challenges, especially in a disaster situation. Children have special needs, both physically and psychologically. The following child care concepts should be considered when planning and operating an ACC:

- a. If possible, incorporate healthcare providers with child care experience into the staff mix of the ACC. When making patient care assignments, make every attempt to assign staff with pediatric experience to the children requiring care. These providers have developed special skills and experience that are crucial in caring for young children. Cohorting children together in the same nursing subunit may also be an effective strategy for staffing purposes.
- b. Ensure that pediatric supplies are included in the medical equipment and supplies stockpiling and acquisition efforts. Children require smaller-sized equipment and supplies, different medication dosing, and, in some cases, completely different treatment measures.
- c. As much as is reasonably possible, minimize separation from parents, particularly in children under the age of 5 years. Children who are not separated from their mother or primary caregiver generally have a better capacity for dealing with stress and are more likely to be cooperative with medical treatment. Emergency planners should consider the likelihood that parents who are able may not want to leave their children at all; hence, overnight accommodations may become necessary, and subsequent bathing and dining accommodations.
- d. Try to establish and maintain a routine for children. Children who maintain daily routines tend to have less physical resistance, aggression, negativism, and regression.
- e. Involve the family in the care of children as much as possible (bathing, feeding, dressing, etc.).
- f. Whenever procedures are performed on young children, they should be completed as quickly as possible, and the parent(s) or family member should be present for comfort. Ideally, all the procedures the child requires should be performed at the same time so that the child can “get it over with” all at once. Procedures should be explained thoroughly to both the child and the parent(s); and if possible, a separate procedure room should be established away from the nursing subunit to reduce anxiety levels in the other children in that unit.
- g. If time and resources permit, establishing a play area for children can be a crucial therapeutic tool in their recovery. Play allows them to work through their feelings in a nonthreatening and comfortable manner.
- h. Prepare parent(s) or family members and the children for discharge by including community resources they can access if behavioral or health issues arise.

5.10 Staff Support Services

At least one room should be provided within the ACC to enable staff to relax during rest periods. There should be allowance for food and drink to be prepared and appropriate table and seating arrangements made available. The room or facility should be isolated from the nursing subunits so that the staff can decompress and discuss feelings and issues

regarding patients out of the sight and hearing of both patients and visitors. It should have adequate lighting and floor and wall coverings to provide a relaxing atmosphere. The ideal facility would have a separate area for staff to prepare for their shift or to prepare to leave for the day. Staff should have access to their own toilet facilities that are not shared with patients and visitors. Again, it would be ideal if the building had shower facilities and lockers so that the staff could clean up before leaving their shift. Having the ability to shower before leaving the ACC would provide the staff with some peace of mind and a low level of decontamination. Surgical scrubs (if provided) could be picked up and dropped off here so staff could easily change before and after their shifts.

It is also strongly recommended that emergency planners consider the following to address healthcare workers' fears:

- Provision of risk awareness education, including frank discussions of potential risks and measures for protecting healthcare providers
- Invitation to staff for active, voluntary involvement in the quality assurance process
- Providing daily incident updates
- Involving fearful or anxious healthcare providers in other useful roles.

5.11 Epidemiological and Public Health Investigation

One of the major challenges that emergency planners face in a bioterrorist incident is to effectively determine the scope and magnitude of the event. To do this, a massive epidemiological investigation will be initiated. Investigators may need frequent access to medical providers, patients, and their medical records. Emergency planners should ensure that the ACC is constructed and operated in a way that supports this critical public health activity.

5.12 Patient Disposition

Most bioterrorism agents are not associated with secondary spread of infection to healthcare providers or families. For certain agents, such as pneumonic plague or smallpox, victims of bioterrorism will ideally not be discharged from the facility until they are deemed noninfectious. However, consideration should be given to developing home care instructions in the event that large numbers of persons exposed may preclude admission of all infected patients. Depending on the exposure and illness, home care instructions may include recommendations for the use of appropriate barrier precautions, handwashing, waste management, and cleaning and disinfecting the environment and personal care items. In addition, home care instructions should provide information on the remaining treatment regime and any follow-up care that may be required. Patients will be discharged from the ACC when they are able to care for themselves (toilet, feed, dress themselves) or when they are recovered enough to go home with someone there to assist in their care and recovery.

Postmortem care will be conducted in the ACC's Temporary Morgue area in accordance with established Federal guidelines. The Temporary Morgue will provide the initial fatality processing and temporary storage of remains until they are transferred to the appropriate mortuary services provider. When an individual is pronounced dead, his/her personal data will be recorded and filed for victim tracking purposes. The remains will be tagged, and all clothing belonging to the deceased will be discarded by the nursing personnel before the body reaches the morgue. The individual's personal effects will have been inventoried and secured during the admission procedure. Death notifications will be handled through official channels only.

5.13 Food Services

One of the greatest challenges facing the ACC Administrator will be to provide for the feeding of both patients and staff. A crisis situation will limit the options available to emergency planners and the ACC Administrator. Careful preplanning is critical to ensure that the plan and system are in place to accomplish this mission. There are two viable options for providing food services: (1) catering all meals to both patients and staff, or (2) catering all meals that can be catered and having special dietary needs handled by the supporting hospital's food service department. If possible, all meals should be catered, as the supporting hospital's food service department is likely to be overextended from supporting their inpatients and staff. Emergency planners need to have contingency catering contracts in place to support the ACC(s). The catering contract should require that the caterer supply all plates and eating utensils needed for each meal.

5.14 Hospice Care

Hospice care is a compassionate method of caring for terminally ill people. Hospice is a medically directed, interdisciplinary team-managed program of services that focus on the patient/family as the unit of care. Hospice care is palliative rather than curative, with an emphasis on pain and symptom control, so that a person may live out the last days of life fully, with dignity and comfort (National Hospice and Palliative Care Organization). In the event of a bioterrorist incident that is lethal enough to cause high casualty and death counts, hospice care will be a significant part of the medical services provided by the ACC. Therefore, adequate supplies of pain medicine, such as intravenous morphine must be available, as well as policies surrounding its use.

The psychosocial aspects of the mixed inpatient population that is likely to exist will be complex. Patients who are expected to die may be located next to patients who are improving. Families of both will be in close proximity to each other. Varying beliefs and traditions surrounding death and dying will become evident and may cause already stressful conditions to worsen. Chaplains and other religious personnel should maintain a presence in the ACC around the clock if at all possible. Staff unfamiliar with hospice care and goals should be briefed on both as they will be the first resource the patient and families use to assuage fears and receive accurate information on prognosis and treatment.

5.15 Provider Credentialing

The OEM has the overall authority and responsibility for human resources during a disaster situation. One responsibility is to develop emergency hiring procedures using appropriate outside resources as available. Inherent in this is the responsibility for verifying that the minimum criteria for clinical practice in the case of licensed medical professionals and in particular, physicians, PAs, NPs, and nurses, has been met. The OEM should work in conjunction with local hospitals or managed care organizations in credentialing licensed healthcare providers in accordance with procedures outlined by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). When physicians and other medical professionals report to the ACC for duty, the credentialing and verification process should already be complete and ideally, a temporary identification badge issued. To assist the OEM in establishing its credentialing policies and procedures, the following should be considered:

- a. Physicians, PAs, and NPs. The minimum core criteria that should be verified for physicians are licensure, picture identification (e.g., driver's license), education, training or experience, clinical competence, and ability to perform requested privileges. During normal (i.e., nondisaster) times, this information is checked directly with the medical school and specialty board. Clinical competence is verified through letters from individuals acquainted with the physician. For licensed independent practitioners, verification using information from either the American Medical Association Physician Masterfile, the Educational Commission for Foreign Medical Graduates, or the American Osteopathic Association is acceptable. In a disaster situation, based on State and local regulations, physician, PA, and NP credentialing should be streamlined by verifying the individual's current credentials and privileges at his/her home hospital and by obtaining a copy of the relevant medical license and board certifications.
- b. RNs, LPNs, RTs, Paramedics, EMTs, and all other licensed personnel. Presentation of the individual's current professional license, picture identification (e.g., driver's license), and current CPR card, if available, is typically sufficient verification to practice in most States.

6. *Conclusion*

The care of presenting casualties and worried well along with medical prophylaxis, vaccination, treatment, and information form the backbone of an effective response to a bioterrorist attack. A mass casualty care system was developed to cope with the high numbers of casualties and those who think they are casualties. One critical component of this system involves opening ACCs to expand the capabilities of existing hospitals to provide inpatient medical care. ACCs are flexible, modular units that operate in concert with hospitals and NEHCs. They can be expanded or contracted in a modular fashion to provide a flexible mechanism for an effective medical response to the consequences associated with a bioterrorist attack, regardless of scope. They are also useful in other overwhelming medical emergencies that are not caused by events of bioterrorism. Given the low likelihood/high consequence of a bioterrorist event, it is important to understand that this approach is flexible and adaptable to other major public health events.

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GLOSSARY OF ACRONYMS

ACC	Acute Care Center
ACLS	Advanced Cardiac Life Support
ADL	Activities of Daily Living
ALS	Advanced Life Support
APIC	Association for Professionals in Infection Control and Epidemiology, Inc.
ATLS	Advanced Trauma Life Support
BLS	Basic Life Support
BW	Biological Warfare
BW IRP	Biological Weapons Improved Response Program
CDC	Centers for Disease Control and Prevention
CISM	Critical Incident Stress Management
CPR	Cardio-Pulmonary Resuscitation
CRU	Casualty Relocation Unit
CS	Communication Section
DMAT	Disaster Medical Assistance Team
DP	Domestic Preparedness
ED	Emergency Department
EMS	Emergency Medical System
EMT	Emergency Medical Technician
EMTALA	Emergency Medical Treatment and Active Labor Act
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESF # 8	Emergency Support Function # 8
FRP	Federal Response Plan
FTE	Full-time Equivalent
HEICS	Hospital Emergency Incident Command System
I/O	Input/Output
ICS	Incident Command System
ICU	Intensive Care Unit
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
LPN	Licensed Practical Nurse
MCC	Medical Command Center
MEMS	Modular Emergency Medical System
NA	Nursing Assistant
NALS	Neonatal Advanced Life Support
NEHC	Neighborhood Emergency Help Center
OEM	Office of Emergency Management
NP	Nurse Practitioner
PA	Physician Assistant
PALS	Pediatric Advanced Life Support
PCC	Patient Care Coordinator
PIO	Public Information Office
POC	Point of Contact
PPE	Personal Protective Equipment
RN	Registered Nurse

RT	Respiratory Therapist
UPS	Uninterruptible Power Supply
WMD	Weapons of Mass Destruction
SBCCOM	Soldier and Biological
LHD	Local Health Department
RSS	Receipt Storage Staging Site
NPS	National Pharmaceutical Stockpile
SNS	Strategic National Stockpile
EPC	Emergency Preparedness Coordinator (CDC)

APPENDIX C

SAMPLE MUTUAL AID AGREEMENT

OAKLAND COUNTY HOSPITAL MUTUAL AID CONSORTIUM AGREEMENT

Introduction and Background

Oakland County is susceptible to disasters, both natural and man-made, that could exceed the resources of any individual Oakland County Hospital ("Hospital"). A disaster could result from incidents generating an overwhelming number of patients, from a smaller number of patients whose specialized medical requirements exceed the resources of the Recipient facility (e.g., hazmat injuries, pulmonary, trauma surgery, etc.), or from incidents such as building or plant problems resulting in the need for partial or complete Hospital evacuation.

Purpose of Mutual Aid Agreement

Mutual Aid is a concept well established and is considered "standard of care" in most emergency response disciplines. The purpose of this Mutual Aid Agreement ("Agreement") is to aid Hospitals and the surrounding community in emergency management by authorizing the Hospital Mutual Aid Consortium ("HMAC"). HMAC addresses the loan of medical personnel, pharmaceuticals, supplies, and equipment, or assistance with emergent Hospital evacuation, including accepting transferred patients.

This Agreement is an Agreement among Hospitals for the purpose of providing mutual aid at the time of a Public Health Emergency. An incident of this magnitude will almost always involve the Oakland County Emergency Response and Preparedness Division (OCERPD) and the Oakland County Health Division (OCHD). The disaster may be an external or internal event for Hospitals and assumes that each affected Hospital's emergency management plans have been fully implemented.

This document addresses the relationships between and among Hospitals, ERPD and the Oakland County Health Division and is intended to augment, not replace, each Hospital's disaster plan. The Agreement also provides the framework for Hospitals to coordinate as a single H-MAC community in actions with OCERPD, the Oakland County Health Division and the Oakland County EMS Medical Control Authority, whose Mutual Assistance Agreement is incorporated into this agreement by reference, during planning and response. This document does not replace but rather supplements the rules and procedures governing interaction with other organizations during a disaster, e.g., law enforcement agencies, OCERPD, Oakland County Health Division, fire departments, American Red Cross, etc.

By signing this Agreement each Hospital is evidencing its intent to abide by the terms of the Agreement in the event of a public health emergency as described above. The terms of this Agreement are to be incorporated into the Hospital's emergency management plans.

- §1. Definition of Terms:** The following words and expressions used throughout this Agreement, whether used in the singular or plural, within or without quotation marks, or possessive or non-possessive, shall be defined, read and interpreted as follows:
- 1.1. **Command Post:** An area established in a Hospital during a public health emergency that is the facility's primary source of administrative authority and decision-making.
 - 1.2. **Health Emergency Communication's Center (HECC):** Operated by the Oakland County Emergency Response and Preparedness Division, the HECC is a communication and information center that has network capabilities allowing for the immediate determination of available Hospital resources at the time of a public emergency. The HECC shall be operational 24 hours a day during public health emergencies. The HECC does not have any decision-making or supervisory authority but merely collects and disseminates information, and performs regular radio checks of the HECC system.
 - 1.3. **Donor Hospital:** The Hospital(s) that provides personnel, pharmaceuticals, supplies, or equipment to a facility experiencing a public health emergency. Donor Hospital is also referred to as Patient Receiving Hospital when patient evacuation is an issue.
 - 1.4. **HMAC:** Hospital Mutual Aid Consortium developed by this Agreement.
 - 1.5. **HECC:** The primary communication system used by Hospitals to communicate during an emergency.
 - 1.6. **Recipient Hospital:** The Hospital(s) experiencing the public health emergency and which requests personnel, pharmaceuticals, supplies, or equipment. Recipient Hospital is also referred to as Patient Transferring Hospital when patient evacuation is an issue.
 - 1.7. **Public Health Emergency:** An incident that exceeds a single facility's effective response capability or which cannot be appropriately resolved solely by using its own resources. Such public health emergencies will involve the Oakland County Emergency Response and Planning Division (OCERPD) and the Oakland County Health Division (OCHD) and may involve loan of medical and support personnel, pharmaceuticals, supplies, and equipment from another facility or the emergent evacuation of patients.
 - 1.8. **Patient Receiving Hospital:** The hospital that receives transferred patients from a facility responding to a Public Health Emergency.
 - 1.9. **Patient Transferring Hospital:** The hospital that evacuates patients to a Patient Receiving Hospital in response to a Public Health Emergency.
 - 1.10. **Party:** All participating hospitals, their departments, divisions, employees, agents, subcontractors and volunteers that have executed

this Agreement and provided a copy with original signatures to the HECC.

§2. Hospital Responsibilities.

- 2.1. Each Hospital shall designate a representative(s) to attend HMAc meetings and to coordinate the mutual aid initiatives with the individual Hospital's emergency preparedness/management plans. Hospitals also commit to participating in HMAc exercises and maintaining their radio links.
- 2.2. Command Center: Each Hospital shall establish a command center that is responsible for informing OCERPD of its situation and defining needs that cannot be accommodated by the Hospital itself. The senior hospital administrator or designee is responsible for requesting personnel, pharmaceuticals, supplies, equipment, or authorizing the evacuation of patients. The senior hospital administrator or designee will coordinate both internally, and with OCERPD and the Donor Hospital, all of the logistics involved in implementing assistance under this Agreement. Logistics include identifying the number and specific location where personnel, pharmaceuticals, supplies, equipment, or patients should be sent, how to enter the security perimeter, estimated time interval to arrival and estimated return date of borrowed supplies, etc.
- 2.3. Hospital Indicators: A set of hospital resource measures that are reported to the HECC during a Public Health Emergency drill or actual Public Health Emergency. The indicators are designed to catalogue hospital resources that could be available for other hospitals during a Public Health Emergency.
- 2.4. Oakland County OCERPD: Each Hospital will participate in an annual HMAc exercise that includes communicating to the OCERPD and OCHD a set of data elements or indicators describing the Hospital's resource capacity. The HECC will serve as an information center for recording and disseminating the type and amount of available resources at each Hospital. During a disaster drill or emergency, each Hospital will report to the HECC the current status of their indicators.
- 2.5. Public Relations. Each Hospital shall work through a Joint Public Information Center ("JPIC") coordinated by the Oakland County Public Information Officer (PIO) during a Public Health Emergency to allow their public relations personnel to communicate with each other and release consistent community and media educational/advisory messages. Each Hospital shall designate a Public Information Officer who will be the Hospital liaison with the JPIC.
- 2.6. Emergency Response and Preparedness Coordinator Each Hospital shall designate a Coordinator for disseminating the information regarding this Agreement to the relevant Hospital personnel,

coordinating and evaluation of the Hospital's participation in the exercise of the HMAAC.

- 2.7. Initiation of Transfer of Personnel, Material Resources, or Patients. Each Hospital shall designate a Senior Hospital Administrator who shall have the sole authority to initiate the transfer or receipt of personnel, material resources, or patients. The Recipient hospital senior administrator and Recipient hospital medical director, in conjunction with the chief of service of the affected services, will make a determination as to whether medical staff and other personnel from another facility will be required at the Recipient Hospital to assist in patient care activities.
- 2.8. IHECC Response: The HECC will contact the other participating hospitals to determine which participating hospital is equipped to handle the request from the Transferring Hospital as required by the situation. The HECC will inform the Transferring Hospital as to which participating hospital will become the Donor or Patient Receiving Hospital.
- 2.9. Credentialing. Personnel offered by Donor Hospitals shall be limited to staff that are **fully accredited or credentialed in the Donor institution**. No resident physicians, medical/nursing students, or in-training persons shall be volunteered. The Medical Director (is this solely his/her responsibility "?") of the Recipient Hospital will be responsible for providing a mechanism for granting emergency credentialing privileges for physician, nurses and other licensed healthcare providers to provide temporary emergency services at the Recipient Hospital.

§3. Procedures

- 3.1. Medical Operations - Loaning Personnel
 - 3.1.1. Communication of request: The request for the transfer of personnel initially can be made verbally to the OCERPD by the authorized senior hospital administrator. The request, however, shall be followed up with written documentation of such request before personnel will be released. The Recipient Hospital will identify to the Donor Hospital the following:
 - a. The type and number of requested personnel, included specialty training if needed.
 - b. An estimate of how quickly the request is needed.
 - c. The location where they are to report,
 - d. An estimate of how long the personnel will be needed.
 - 3.1.2. Credential Verification: The arriving donated personnel will be required to present their Donor Hospital identification badge at the site designated by the Recipient Hospital's command center.

The Recipient Hospital will be responsible for the following:

- a. Meeting the arriving donated personnel (usually by the Recipient Hospital's security department or designated employee).
- b. Confirming the donated personnel's ID badge with the list of personnel provided by the Donor Hospital. Providing additional identification, e.g., "visiting personnel" badge, to the arriving donated personnel.
- c. The Recipient Hospital will accept the professional credentialing determination of the Donor Hospital but only for those services for which the personnel are credentialed at the Donor Hospital.

3.1.3. Supervision. The Recipient Hospital's senior administrator in coordination with the medical director shall identify where and to whom the donated personnel are to report. The supervisor or designee of the Recipient Hospital shall supervise the donated personnel. The supervisor or designee will meet the donated personnel at the point of entry of the facility and brief the donated personnel of the situation and their assignments. If appropriate, the "emergency staffing" rules of the Recipient Hospital will govern assigned shifts.

3.1.4. Demobilization procedures The Recipient Hospital will provide and coordinate any necessary demobilization procedures and post-event stress debriefing.

3.2. Transfer of Pharmaceuticals, Supplies or Equipment

3.2.1. Communication of Request: The request for the transfer of pharmaceuticals, supplies, or equipment initially can be made verbally to the OCERPD by the authorized senior hospital administrator. The request, however, shall be followed up with a written communication of such request before pharmaceuticals, supplies or equipment will be released. The Recipient Hospital will identify to the Donor Hospital the following:

- a. The quantity and exact type of requested items.
- b. An estimate of how quickly the request is needed.
- c. Time period for which the supplies will be needed.
- d. Location to which the supplies should be delivered.

3.2.2. The Donor Hospital will identify how long it will take them to fulfill the request. Since response time is a central component during a disaster response, decision and implementation shall occur quickly.

3.2.3. Documentation: The Recipient Hospital shall honor the Donor Hospital's standard order requisition form as documentation of

the request and receipt of the materials. The Recipient Hospital's security officer or designee will confirm the receipt of the material resources. The documentation will detail the following:

- a. The items involved.
- b. The condition of the equipment prior to the loan (if applicable).
- c. The responsible parties for the borrowed material.

3.2.4. Tracking. The Donor Hospital is responsible for tracking the borrowed inventory through their standard requisition forms. Upon the return of the equipment, etc, the original invoice will be co-signed by the senior administrator or designee of the Recipient Hospital recording the condition of the borrowed equipment.

3.2.5. Transporting of pharmaceuticals supplies or equipment: The Recipient Hospital is responsible for coordinating, through OCERPD, the transportation of materials both to and from the Donor Hospital. This coordination may involve government and/or private organizations, and the Donor Hospital may also offer transport. Upon request, the Recipient Hospital must return and pay the transportation fees for returning or replacing all borrowed material.

3.2.6. Supervision: The Recipient Hospital is responsible for appropriate use and maintenance of all borrowed pharmaceuticals, supplies, or equipment.

3.2.7. Demobilization procedures: The Recipient Hospital is responsible for the rehabilitation and prompt return of the borrowed equipment to the Donor Hospital.

3.3. Transfer/Evacuation of Patients

3.3.1. Communication: of request: The request for the transfer of patients initially can be made verbally to the OCERP. The request, however, must be followed up with a written communication prior to the actual transferring of any patients. The Patient Transferring Hospital will identify to the Patient Receiving Hospital.

- a. the number of patients needed to be transferred.
- b. the general nature of their illness or condition.
- c. any type of specialized services required, e.g., ICU bed, burn bed, trauma care, etc.

3.3.2. Documentation: The Patient Transferring Hospital is responsible for providing the Patient Receiving Hospital with the patient's complete medical records, insurance information and other

patient information necessary for the care of the transferred patient. The Patient Transferring Hospital is responsible for tracking the destination of all patients transferred out.

- 3.3.3. Transporting of patients: The Patient Transferring Hospital is responsible for coordinating and financing the transportation of patients to the Patient Receiving Hospital. The point of entry will be designated by the Patient Receiving Hospital's senior administrator. Once admitted, that patient becomes the Patient Receiving Hospital's patient and under care of the Patient Receiving Hospital's admitting physician until discharged, transferred or reassigned. The Patient Transferring Hospital is responsible for transferring of extraordinary drugs or other special patient needs (e.g., equipment, blood products) along with the patient if requested by the Patient Receiving Hospital.
- 3.3.4. Supervision: The Patient Receiving Hospital will designate the patient's admitting service, the admitting physician for each patient, and, if requested, will provide at least temporary courtesy privileges to the patient's original attending physician.
- 3.3.5. Notification: The Patient Transferring Hospital is responsible for notifying both the patient's family or guardian and the patient's attending or personal physician of the situation. The Patient Receiving Hospital may assist in notifying the patient's family and personal physician.

§4. Reimbursement and Liability

- 4.1. Financial & Legal Liability: The Recipient Hospital will assume legal responsibility for the personnel and equipment from the Donor Hospital during the time the personnel, equipment and supplies are at the Recipient Hospital. The Recipient Hospital will reimburse the Donor Hospital, to the extent permitted by federal law, for all of the Donor Hospital's costs determined by the Donor Hospital's regular rate. Costs includes all use, breakage, damage, replacement, and return costs of borrowed materials, for personnel injuries that result in disability, loss of salary, and reasonable expenses, and for reasonable costs of defending any liability claims, except where the Donor Hospital has not provided preventive maintenance or proper repair of loaned equipment which resulted in patient injury. Reimbursement will be made within ninety days following receipt of the invoice. Liability claims, malpractice claims, disability claims, attorneys' fees, and other incurred costs are the responsibility of the Recipient Hospital. An extension of liability coverage will be provided by the Recipient facility, to the extent permitted by federal law, insofar as the donated personnel are operating within their scope of practice. The Recipient Hospital will reimburse the Donor Hospital for the salaries of the donated personnel at the donated personnel's rate as established at the Donor Hospital if the personnel are employees being paid by the Donor Hospital. The

reimbursement will be made within ninety days following receipt of the invoice.

- 4.2. Patient Receiving Hospitals assume the legal and financial responsibility for transferred patients upon arrival into the Patient Receiving Hospital. Upon admission, the Patient Receiving Hospital is responsible for liability claims originating from the time the patient is admitted to the Patient Receiving Hospital. Reimbursement for care should be negotiated with each Hospital's insurer under the conditions for *admissions without precertification requirements* in the event of a declared public health emergency.
- 4.3. Hold Harmless Condition: The Recipient Hospital shall hold harmless the Donor Hospital for acts of negligence or omissions on the part of the Donor Hospital in their good faith response for assistance during a disaster. The Donor Hospital, however, is responsible for appropriate credentialing of personnel and for the safety and integrity of the equipment and supplies provided for use at the Recipient Hospital.

§5. DURATION AGREEMENT.

The Agreement and any amendments hereto shall be effective when executed by the Parties. This Agreement shall remain in effect until cancelled or terminated, in writing, by a party pursuant to section 6.

§6. TERMINATION OR CANCELLATION OF AGREEMENT.

A Party may terminate or cancel this Agreement for any reason upon 30 days notice before the effective date of termination or cancellation. The effective date for termination or cancellation shall be clearly stated in the notice.

- §7. NO THIRD PARTY BENEFICIARIES.** Except as provided for the benefit of the Parties, this Agreement does not and is not intended to create any obligation, duty, promise, contractual right or benefit, right to indemnification, right to subrogation, and/or any other right in favor of any other person or entity.

- §8. COMPLIANCE WITH LAWS.** Each Party shall comply with all federal, state, and local statutes, ordinances, regulations, administrative rules, and requirements applicable to its activities performed under this Agreement.

- §9. DISCRIMINATION.** The Parties shall not discriminate against their employees, agents, applicants for employment, or another persons or entities with respect to hire, tenure, terms, conditions, and privileges of employment, or any matter directly or indirectly related to employment in violation of any federal, state or local law.

- §10. PERMITS AND LICENSES.** Each Party shall be responsible for obtaining and maintaining, throughout the term of this Agreement, all licenses, permits, certificates, and governmental authorizations for its employees and/or agents necessary to perform all its obligations under this Agreement.

- §11. **RESERVATION OF RIGHTS.** This Agreement does not and is not intended to impair, divest, delegate, or contravene any constitutional, statutory, and/or other legal right, privilege, power, obligation, duty, or immunity of the parties.
- §12. **DELEGATION/SUBCONTRACT/ASSIGNMENT.** A Party shall not delegate, subcontract, and/or assign any obligations or rights under this agreement without the prior written consent of the Parties.
- §13. **NO IMPLIED WAIVER.** Absent a written waiver, no act, failure, or delay by a party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either party shall subsequently effect its right to require strict performance of this agreement.
- §14. **SEVERABILITY.** If a court of competent jurisdiction finds a term or condition of this Agreement to be illegal or invalid, then the term or condition shall be deemed severed from this Agreement. All other terms, conditions, and provisions of this Agreement shall remain in full force.
- §15. **CAPTIONS.** The section and subsection numbers, captions, and any index to such sections and subsections contained in this Agreement are intended for the convenience of the reader and are not intended to have any
- §16. **GOVERNING LAW/CONSENT TO JURISDICTION AND VENUE.** This Agreement shall be governed, interpreted, and enforced by the laws of the State of Michigan.
- §17. **AGREEMENT MODIFICATIONS OR AMENDMENTS.** Any modifications, amendments, recessions, waivers, or releases to this agreement must be in writing and agreed to by all Parties. Unless otherwise agreed, the modification, amendment, recession, waiver, or release shall be signed by the same persons who signed the Agreement or other persons as authorized by the Party's governing body.
- §18. **ENTIRE AGREEMENT.** This agreement represents the entire Agreement and understanding between the Parties. This Agreement supercedes all other oral or written agreements between the Parties. The language of this Agreement shall be construed as a whole according to its fair meaning and not construed strictly for or against any Party.

The signature placed hereon signifies participation in the Oakland County Hospital Mutual Aid Consortium, and that the signatory is a duly authorized representative of the named member organization.

Member: Oakland County EMS Medical Control Authority

Typed Name and Title

Telephone Number

Signature

Date

Appendix A

HMAC Function

The Oakland County Hospital Mutual Aid Consortium (OCHMAC) Agreement provides the means for Hospitals to coordinate with Oakland County Emergency Response and Planning Division (OCERPD), Oakland County Health Division, Fire, Police and EMS during a public health emergency.

The Health Emergency Communications Center (HECC) serves as the data center for collecting and disseminating current information about equipment, bed capacity and other Hospital resources during a public health emergency. (See attached form, pp. 13-15.) The information collected by Oakland County is confidential and will be used only for emergency preparedness and response.

In the event of a public health emergency or during a disaster drill, Hospitals will be prepared to provide the communication center the following information:

1. The total number of injury victims your Emergency Department can accept, and if possible, the number of victims with minor and major injuries.
2. Total number of operating beds currently available to accept patients in the following units:
 - a. general medical (adult)
 - b. general surgical (adult)
 - c. general medical (pediatric)
 - d. general surgical (pediatric)
 - e. obstetrics
 - f. cardiac intensive care
 - g. neonatal intensive care
 - h. pediatric intensive care
 - i. burn
 - j. psychiatric
 - k. subacute care
 - l. skilled care beds
 - m. operating suites
3. The number of items currently available for loan or donation to another Hospital:
 - a. respirators
 - b. IV infusion pumps
 - c. dialysis machines
 - d. hazmat decontamination equipment

- e. MRI
- f. CT scanner
- g. hyperbaric chamber
- i. ventilators
- j. external pacemakers
- k. atropine
- l. kefzol

4. The following number of personnel currently available for loan to another Hospital:

Physicians:

- Anesthesiologists
- Emergency Medicine
- General Surgeon
- OB-GYN
- Pediatricians
- Trauma Surgeons

Registered Nurses:

- Emergency
- Critical Care
- Operating Room
- Pediatrics
- Medical/Surgical
- Other Nursing Personnel

Other Personnel:

- Maintenance Workers
- Mental Health Workers
- Respiratory Therapists
- Plant Engineers
- Security Workers
- Social Workers
- Others as indicated
- Partner Hospital Concept (Optional)

Each Hospital should standardize a set of contacts to facilitate communications during a public health emergency.

The procedural steps in the event of a public health emergency are as follows:

1. Notify HECC of nature of emergency and need for additional health care support (with specifics).
2. Determine the total number of patients the emergency department and Hospital can accept, and if possible, the total number of patients with major and minor injuries.
3. Recipient Hospital, working through the Health Emergency Communications Center, contacts donor Hospital(s) to determine availability of beds, equipment, supplies, and personnel. (Contact additional donor Hospital if initial Hospital is unable to meet needs.)
4. Recipient Hospital contacts the HECC and notifies the center of its needs, how they are being met, and any unmet needs.
5. At the request of the Recipient Hospital, the HECC will contact other Hospitals to alert them to the situation and to begin an inventory for any possible or actual unmet needs.

EXAMPLE

PRIMARY DATA COLLECTION FORM

In the event of an emergency, record the time of communication, the total number of injury victims the Recipient Hospital can accept, and, if possible, the number of major* and minor** injury victims the Recipient Hospital can accept.

Date:

Page #:

Hospital	Time	Total Number of Patients	Minor Injuries	Major Injuries	Comments
Botsford General Hospital					
Crittenton Hospital					
Genesys Regional Medical Center					
Henry Ford Medical Center					
Huron Valley–Sinai Hospital					
North Oakland Medical Center					
POH Medical Center					
Providence Hospital –Novi					
Providence Hospital-Southfield					
St. John Oakland Hospital					
St. Joseph Mercy Hospital - Oakland					

William Beaumont Hospital – Royal Oak					
William Beaumont Hospital - Troy					

- * "Major injury victims": those expected to require admission and/or significant medical/ Hospital care resources (operating room, critical care, extensive orthopedics intervention, etc.)
- * * "Minor injury victims": those expected to be treated and released or require very little medical/Hospital resources.

EXAMPLE

SECONDARY DATA COLLECTION FORM*

If time or need permits, request the following information from the donating Hospital.

Hosp Name: _____

Person completing form: _____

Date:

Time:

Number of Open/Available Beds		Total Available to Donate	
General medical (adult)		Respirators	
General surgical (adult)		IV Infusion Pumps	
General medical (pediatric)		Dialysis Machines	
General surgical (pediatric)		Hazmat De-contamination Equipment	
Obstetrics		MRIs	
Cardiac ICU		CT Scanners	
N ICU		Hyperbaric Chamber	
PICU		Ventilators	
Burn		external acemakers	
Psychiatric		atropine	
Trauma		kefzol	
OR Suites			
Skilled Nursing & Subacute Care			

* During an actual public health emergency or disaster drill, Hospitals should complete the above form with the most current information available and have this information ready for dissemination to OCERPD & OCHD , requesting Hospitals, and the HECC clearinghouse.

EXAMPLE

SECONDARY DATA COLLECTION FORM*

Hosp. Name: _____

Person completing form: _____

Date: _____ Time: _____

Physician	Number of Personnel Currently Available to Loan/Donate to Partner Hospitals.
Anesthesiology	
Emergency Medicine	
General Surgeon	
General Medicine	
OB-GYN	
Pediatrician	
Trauma Surgeon	
Other as indicated	
Registered Nurses	
Emergency	
Critical Care	
Operating Room	
Pediatrics	
Other as indicated	
Other Personnel	
Maintenance Workers	
Mental Health Workers	
Respiratory Therapists	
Plant Engineers	
Security Personnel	
Social Workers	
Other as indicated	

- During an actual public health emergency or disaster drill, Hospitals should complete the above form with the most current information available and have this information ready for dissemination to OCERPD & OCHD, requesting Hospitals, and the HECC clearinghouse.

APPENDIX D

REGION 2 NORTH PLANNING BOARD

NAME	ADDRESS
Dr. Harry Aretakis	St. Joseph Mercy Hospital 15855 E. 19 Mile Rd. Clnt. TWP 48038
Jere Baldwin	Port Huron Mercy Hospital 2601 Electric, Port Huron, MI 48060
Bobbi Barber	Port Huron Mercy Hospital 2601 Electric, Port Huron, MI 48060
Dr. Carolyn Bird	Oakland County Health Division 1200 N. Telegraph Rd. Pontiac, MI 48341
Jerry Blair	Providence Hospital 16001 W. 9 Mile Road, Southfield 48075-4818
Jane Brister	43525 Elizabeth Road Mt. Clemens, MI 48043
Kevin Czubachowski	St. Clair County Health Dept. 3415-28th Street, Port Huron, MI 48060
Ken Cummings	Tri Hospital EMS 309 Grand River, Port Huron, MI 48061
Paul Florkey	River District Hospital 4100 River Rd., East China, MI 48054
Diane Forsys	St. Clair County Health Dept. 3415 28th St., Port Huron, MI 48060
Connie Franko	Huron Valley-Sinai One William Carls Dr., Commerce, MI 48342
Mike Gerstenlauer	St. John Macomb Hospital 11800 East 12 Mile Rd., Warren, MI 48093
Val Gokenbach	Wm. Beaumont Hospital 3601 W. 13 Mile Rd, Royal Oak, MI 48073
Bonnie Kincaid	Oakland County MCA, 1200 N. Telegraph Rd. Annex 1, Pontiac, MI 48341-0410
Keith Kuchenmeister	Mt. Clemens General Hospital 1000 Harrington RD, MT Clemens, MI 48043
Dr. Kevin Lokar	43525 Elizabeth Road Mt. Clemens, MI 48043
Ralph Maltese	Bi-County Community Hospital 13355 Ten Mile Rd. Warren, MI 48089
Rich Martin	Port Huron Hospital 1221 Pine Grove, Port Huron, MI 48061-5011
Christine McEachin	Wm. Beaumont Hospital 3601 W. 13 Mile Rd, Royal Oak, MI 48073

Dr. Thomas Petinga	Oakland County Medical Director 1200 N. Telegraph Rd, Annx 1, Pontiac 48341
Tracy Proverbs-Singh	MDCH Regional Epidemiologist
Dr. Dean Sheer	Port Huron Mercy Hospital 2601 Electric, Port Huron, MI 48060
Jill Smith	One S. Main, 8th Flr Mt. Clemens, MI 48043
Marie Stock	Select Specialty Hospital 44405 Woodward Ave. Pontiac, MI 48341
Dr. Mike Tawney	Mt. Clemens General Hospital 1000 Harrington Rd. Mt. Clemens, MI 48043
Jim Van De Velde	St. Joseph Mercy Hospital 15855 E. 19 Mile Rd. Clnt. TWP 48038
David Walters	Botsford General Hospital 28050 Grand River, Farmington, MI 48336
Dr. Douglas Wheaton	Department of Emergency Medicine 22101 Moross Road, Detroit, MI 48236- 2172

REGION 2 NORTH ADVISORY COMMITTEE

#	ORGANIZATION	COUNTY	REPRESENTATIVE
3	2North Hospitals	Macomb	Mike Gerstenlauer
		Oakland	Thomas Petinga, D.O. - Chair
		St. Clair	Jere Baldwin
3	Medical Control Authorities	Macomb	Jane Brister
		Oakland	Bonnie Kincaid
		St. Clair	Ken Cummings, Vice Chair
1	EMS Medical Dir.	Oakland	Steve McGraw, D.O.
2	E.M.S. Providers-Public/Commercial	Macomb	Brian Walker - Secretary
		St. Clair	Tom Konik
6	County Public Health Departments	Oakland	Carolyn Bird
		Macomb	Mark Manor (EPC)
		Macomb	Kevin Lokar, M.D.
		Oakland	George J. Miller
		Oakland	Laura Riddell
		St. Clair	Diane Forys
2	MDCH Field Reps	Region 2N	Kevin Czubachowski
		Region 2S	Pat Vranesich
1	Emer. Management	Macomb	Vicki Wolber-Chair
1	MMRS	Macomb	Chief Mark Fournier
1	MSP Coor.	State	Lt. Mark Martinez
1	MDCH Regional Epidemiologist	State	Tracy Proverbs-Singh
1	MDCH Regional Pharmaceutical Coordinator	State	Sharon Hinkins
1	Poison Control Center	Wayne	Susan White, M.D.
1	F.B.I.	Federal	Mark Davidson
1	Infection Control PHMC Administrator Oakland county	Oakland	Jerry Blair, Director
3	Local Law Enforcement	Macomb	David Teske, Captain
		Oakland	Donald McLellan, Captain
		St. Clair	Barry L. Brockdrof, Captain
4	Medical Examiners	Macomb	Werner Spitz, M.D.
		Oakland	L.J. Dragovic, M.D.
		Oakland	Robert Gerds
		St. Clair	Mary Palmateer
1	Public Info/Media Asst.	Oakland	Robert Dustman
1	Corp.Counsel	Macomb	Jill Smith

1	Red Cross		Kathy Osterman
1	Regional Response Team	St. Clair	Jeff Friedland
1	Region 2 South		Ann Maher
1	Team		Marianne Hill
1	Animal Control	Macomb	Susan Jeroue, Director
		St. Clair	Scott Forester
1	Lampton County EMS	Canada	Ken Langlois
1	St. Joseph Mercy Oakland	Oakland	Mary Jo Malafa
1	Henry Ford Medical Center	Oakland	Dr. N. Houry
1	Beaumont Hospital Troy	Oakland	Heidi Shepard
1	St. Joseph Mercy Oakland	Oakland	Dr. Bruce Wilkie
1	University Lab	Oakland	James A. Williams Director, Lab, Safety Officer
1	St. John Hospital Oakland	Oakland	George Metropolis
1	St. John Hospital North Shore	Macomb	Kim Lagerquist