



Central Maine Regional Health Care Coalition

# Hazard Vulnerability Analysis and Training & Exercise Workshop Report

April 27, 2017

## Attendance

**Rebecca Applebee**, Eye Care of Maine; **Denise Brittain**, Harris House; **Shawn Cavanagh**, Sarah Frye Home; **Art Churchill**, Kennebec EMA; **Richard Comstock**, MaineGeneral; **Jane Coolidge**, Maine CDC; **Susan Corliss**, Sarah Frye Home; **Dwight Corning**, Stephens Memorial Hospital; **Robert Dube**, North Country; **Michael Hatch**, St. Mary's; **Brady Lake**, Harris House; **Scott Mastine**, North Country; **Howard Mette**, Inland Hospital; **Steve Nickerson**, Tall Pines Healthcare; **John Rice**, Schooner Estates; **Raymond St. Pierre**, John F. Murphy Homes; **Mike Senecal**, Franklin Memorial Hospital; **Todd Tracy**, United Ambulance; **Phil Tricarico**, Riverview; **Scott Verrill**, Pinnacle Health and Rehab.; **Wayne Werts**, Atlantic Partners EMS; **Kathleen Wescott**, Maine CDC

Staff: Kara Walker, Director; Kris Gammon, Operations Mngr.

## WELCOME AND ANNOUNCEMENTS

- Save the Date! June 27th Maine CDC, along with Yale New Haven will be rolling out the state Crisis Standards of Care plan. This will be held at the Augusta Civic Center. More information as this date gets closer will be forwarded.
- Maine Emergency Management Agency (MEMA) is sponsoring an exercise that will take place on May 18<sup>th</sup> from 9:00 AM – 12:00 PM. This exercise will test the consequential effects of a significant state-wide ice storm. The Central Maine Regional Resource Center (CMRRC) use this as their quarterly communications test. A Health Alert Network (HAN) message will be sent to participants using this system. The message will indicate the current state of affairs. All Maine Emergency Management Agencies (EMA) will be open during this exercise. If your facility would like to dovetail off this State exercise, contact our office. It would be a great time for you to open up your Emergency Operations Plan (EOP) and conduct a table top exercise. Depending on your scenario, you can make phone calls; reach out to the CMRRC requesting things/people.

Question: Could this be used as a community exercise? Yes, if you open up your EOC and test the functional portion, it could be used as a community exercise.

- Centers for Medicare and Medicaid will be giving a “pass” to facilities for a full scale exercise this year, as this takes time to plan and lead up to it.
- The CMRRC is at the end of a five year project period with Maine CDC. There are three regional resource centers within the State. For the next five year period (2017 – 2022), MeCDC sent out RFP. The health care coalition districts are changing to be more in line with MeCDC's Public Health Districts. The Central Region for example would now include Somerset County. Another big change is currently there are multiple contract awards to each of the three trauma hospitals it is worked under. For the next grant period, MeCDC wants to award one contract for entire State. The work will happen out of DHHS buildings instead housed at hospitals. Coalition and medical counter measure activities will all be under one big contract. The RFP is due to Maine CDC May 25th. As this is a long process, Maine CDC has recognized there will be a few

challenges and has extended our contract from June 30<sup>th</sup>, until September 30<sup>th</sup>. Big changes! Until we hear otherwise, we will continue doing business as usual in regards to our coalition meetings, CMC workshops, exercises, trainings, etc.

## **ABOUT THE WORKSHOP**

### Purpose

The purpose of the workshop was to complete the Hazard Vulnerability Analysis (HVA) to determine areas of vulnerability relative to potential but likely hazards that threaten citizens of Central Maine. Once the hazards were ranked they were incorporated into a training and exercise planning workshop to determine training and exercise initiatives at a REGIONAL level. Types of events discussed are:

- Naturally Occurring
- Technologic
- Human Related
- Hazardous Material

### HVA Scoring

The results of this HVA helps determine what we, as a region, are going to focus on for training and exercises. The modified Kaiser Permanente HVA that is used calculates risk for different events based on probability, magnitude, and mitigation ratings.

For MAGNITUDE (Level of impact) the ratings are:

- 1 = low impact
- 2 = moderate impact
- 3 = high impact

For MITIGATION (level of preparedness and response) the ratings are:

- 1 = very prepared
- 2 = moderately prepared
- 3 = not prepared

During the scoring, we refer to the Federal Emergency Management (FEMA) HVA definition and guidelines (see attached)

In years past, we have started with the Naturally Occurring Events. There is always quite a bit of discussion and comments with this section, and as the day progresses, less time is spent on equally important events. This year we are going in reverse order, starting with Hazardous Materials.

# HAZARDOUS MATERIALS



## HAZARD AND VULNERABILITY ASSESSMENT TOOL EVENTS INVOLVING HAZARDOUS MATERIALS



| EVENT   | 1.<br>PROBABILITY                              | SEVERITY = (MAGNITUDE - MITIGATION)            |  |  |  |  |  | RISK                    |
|---|--|--|--|--|--|--|--|-------------------------|
|   |  | 2.<br>HUMAN<br>IMPACT                          | 3.<br>PROPERTY<br>IMPACT                       | 4.<br>COMMUNITY<br>IMPACT                      | 5.<br>REGIONAL<br>PREPARED-                            | 6.<br>REGIONAL<br>RESPONSE                             | 7.<br>EXTERNAL<br>RESPONSE                             |                         |
|   | <i>Likelihood this will occur</i>              | <i>Possibility of death or injury</i>          | <i>Physical losses and damages</i>             | <i>Interruption of services</i>                | <i>Preplanning</i>                                     | <i>Time, effectiveness, resources</i>                  | <i>Community/ Mutual Aid staff and supplies</i>        | <i>Relative threat*</i> |
| SCORE   | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 - 100%                |
| Major Hazmat Incident   | 3  | 2  | 2  | 3  | 2  | 2  | 2  | 72%                     |
| Nuclear Detonation  | 1  | 3  | 3  | 3  | 2  | 2  | 1  | 26%                     |
| Major Chemical/<br>Radiological/Biological<br>Exposure-Caused by<br>Terrorism | 1  | 2  | 2  | 3  | 2  | 2  | 1  | 22%                     |
| <b>AVERAGE</b>  | <b>1.67</b>                                    | <b>2.33</b>                                    | <b>2.33</b>                                    | <b>3.00</b>                                    | <b>2.00</b>  | <b>2.00</b>  | <b>1.33</b>  | <b>40%</b>              |

\*Threat increases with percentage.

|                                      |      |      |
|--------------------------------------|------|------|
| <b>RISK = PROBABILITY * SEVERITY</b> |      |      |
| 0.40                                 | 0.56 | 0.72 |

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### Major Hazmat Incident

- **Probability:** There have been pretty good releases in the past few years. Rail systems carry a lot of hazardous materials. Commodity studies show that there are quite a few extremely hazardous materials travel through this region. Keep at high probability. Clean up costs will be high and needs to be considered with determining rating. If we are at moderate for human impact, but high for community. Why the difference? Transportation, rail, can really mess up “just in time” delivery. Evacuation/sheltering in place. Cleanup can take time and be disruptive.
- **Preparedness and Response:** Keep at moderate. Hospital Emergency Response Teams (HERT) has improved from last year, though still struggling with numbers. Most hospitals have a core group that can respond. If there is a large incident there would be some issue with most hospitals HERT team due to numbers. There has been talk about a regional HERT team response. Not set up, just in a discussion. Something to consider. Each HERT team signs up on the Maine Response program. Each team could respond with their accessibility, response team, etc. St. Mary’s has discussed with Jared McCannell, Volunteer Management Coordinator at MeCDC. There needs to be more discussion to go over specifics, such as providing own equipment, resource sharing. Another benefit would be that HERT team leaders can communicate with each other via Maine Responds.

### Nuclear Detonation

- **Probability / Preparedness and Response:** No changes from last year. It is possible but not likely. There would be a high impact if it does happen.

## Major Chemical/Radiological/Biological Exposure

- **Probability:** Grouped together with nuclear detonation, consequential effects would be the same. Probability of it happening in Maine is low. Not wide spread, regionally. Balloon festival, etc. for example. There would be public panic, for a broader community.
- **Preparedness and Response:** We now have an EOP in place; more members part of the coalition; there is a greater ability to share resources and information. This helps with regional preparedness. Resources are available outside of area to aid with external response.

Jane Coolidge from MeCDC recommends inviting others outside the coalition to assist with our HVA assessment. Other responders/members may have a better idea on how prepared our external partners are to assist with each potential event. Partners such as MEMA, police, fire. When starting out with your own HVA, it's a good idea to have expertise, subject matter experts (SMEs) at the table.

### HUMAN HAZARDS



#### HAZARD AND VULNERABILITY ASSESSMENT TOOL HUMAN RELATED EVENTS



| EVENT                         | 1. PROBABILITY                                 | SEVERITY = (MAGNITUDE - MITIGATION)            |  |  |  |  |  | RISK             |
|-------------------------------|--|--|--|--|--|--|--|------------------|
|                               | Likelihood this will occur                     | 2. HUMAN IMPACT                                | 3. PROPERTY IMPACT                             | 4. COMMUNITY IMPACT                            | 5. REGIONAL PREPAREDNESS                               | 6. REGIONAL RESPONSE                                   | 7. EXTERNAL RESPONSE                                   |                  |
|                               |  | Possibility of death or injury                 | Physical losses and damages                    | Interruption of services                       | Preplanning  | Time, effectiveness, resources                         | Community/Mutual Aid staff and supplies                | Relative threat* |
| <b>SCORE</b>                  | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 - 100%         |
| Civil Disturbance             | 3  | 1  | 1  | 2  | 2  | 2  | 2  | 56%              |
| Mass Casualty Incident        | 3  | 1  | 1  | 2  | 1  | 2  | 2  | 50%              |
| Large Public Events           | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 33%              |
| Mass Fatality Situation       | 1  | 3  | 1  | 3  | 3  | 3  | 3  | 30%              |
| Significant Bombing/Explosion | 1  | 1  | 1  | 3  | 2  | 2  | 2  | 20%              |
| <b>AVERAGE</b>                | <b>2.20</b>                                    | <b>1.40</b>                                    | <b>1.00</b>                                    | <b>2.20</b>                                    | <b>1.80</b>  | <b>2.00</b>  | <b>2.00</b>  | <b>42%</b>       |

\*Threat increases with percentage.

**RISK = PROBABILITY \* SEVERITY**

0.42      0.73      0.58

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### Mass Casualty Incident

- **Probability:** When including all four counties, the human impact would be small due to the large area based on population, which is why human impact is low. Could this rate of 3 (high) change? The potential is great. The area impacted could be quite large as well as the disruption of services. For example, in Portland the "Black Lives Matter" protest, approximately seven were people arrested. This impacted a large area due to road closure, etc. Rating changed from 3(high) to 2 (moderate).

- Preparedness and Response: This type of event has been tested a few times. We are much better prepared than we have been in the past. Would not raise our response at this time, but we are better prepared. Change preparedness to 1 (high) from 2 (moderate) and keep response at 2 (moderate). External response, keep at 2 (moderate) as we still have some work to do at our own facilities with communications etc. As a region we are good at it, but could be better. There is now a much better understanding of MCIs. There is good communication. We have come a long way in regards to preparedness and response for an MCI.

### **Civil Disturbance**

- Probability: Change rating? Some can be peaceful protests. Though the Woman's March earlier this year blocked an entire city even though it was a peaceful demonstration. Discuss it as a "large mass gathering"? Peaceful can quickly change to aggressive. There are not many protests/civil disturbances in this area. More demonstrations. Is there a difference between disturbances vs. gatherings? "Black Lives Matters" protest in Lewiston/Auburn earlier last year didn't cause a disruption. FEMA definition form defines a civil disturbance as 11 or more occurrences in 100 years. We may possibly have more vs. less (post and pre Trump). This has more of an impact in this current political environment. Update Probability from 2 (moderate) to 3 (high). Keep community impact as moderate due to traffic issues.
- Preparedness and Response: A communication plan with our coalition has been established. How the Lewiston/Auburn community communicated with each other during the "Black Lives Matter" protest. There has been quite a bit of improvement from years past with communication between first responders and hospitals. Still needs more work, but improving. Our coalition has integrated a law enforcement contact as well as MIAC contacts. A major asset. The process is still clunky, but we are continuing to work on it. Upgrade from 3 (low/none) to a 2 (moderate) for regional preparedness. Regional response: bump up to a 2 (moderate) from a 3 (low/none). External response: Due to some of the response we have had (picketing, concerts, etc.) as a region have come a long way. Move to a 2 (moderate) vs. 3 (low/none).

### **Large Public Events**

- Probability / Preparedness and Response: Plenty in our region/state due to local fairs, the Balloon Festival, Dempsey Challenge, etc. We do a much better job at planning for these large events than we did a few years ago. Community and human property still low due to preparedness. Facilities are more equipped. Emergency Operation Centers (EOCs) are now open (or prepared to be if needed). Community may be impacted due to traffic (Fryeburg fair for example). No changes for Probability or Preparedness/Response.

### **Mass Fatality Situation**

- Probability: No large airports in our region. Smaller. Biggest threat would be apartment fires. Fires not rare, death is. No change with human impact. Property impact: Change to 1 (low) from 2 (moderate). For community impact, behavioral health would be high. Suggest keeping as a high probability.
- Preparedness and Response: Keep score as it currently stands as planning is still in the works. Still quite a bit work to be done.

## Significant Bombing/Explosion

- **Probability:** A “threat” has no impact. An actual explosion would be great. Though every threat is credible, it would be human/emotional impact (due to worry, etc.). If you were to look at the word “significant”, the definition would change our thought process. Low as we are looking at four county perspectives vs. an individual facility which would be high. Community impact would be large. Fear would be great in the community. Homes and neighborhoods have been leveled due to explosions. Plenty of examples are in the news. This would still be confined to a particular area. We are discussing “what if’s”. If we had a building explode due to natural gas, it would be high.
- **Preparedness and Response:** Responders are still spread pretty thin. A bombing would greatly exhaust our resources. Leaving at 2 (moderate) would be an appropriate level. Have we made strides on how we support each other? Leave it all at moderate? Haven’t seen too many changes in the past year. Leave preparedness and response it currently stands.

## TECHNOLOGICAL HAZARDS



### HAZARD AND VULNERABILITY ASSESSMENT TOOL TECHNOLOGIC EVENTS



| EVENT                           | SEVERITY = (MAGNITUDE - MITIGATION)            |  |  |  |  |  |  | RISK             |
|---------------------------------|--|--|--|--|--|--|--|------------------|
|                                 | 1. PROBABILITY                                 | 2. HUMAN IMPACT                                | 3. PROPERTY IMPACT                             | 4. COMMUNITY IMPACT                            | 5. REGIONAL PREPARED-                                  | 6. REGIONAL RESPONSE                                   | 7. EXTERNAL RESPONSE                                   |                  |
|                                 | Likelihood this will occur                     | Possibility of death or injury                 | Physical losses and damages                    | Interruption of services                       | Preplanning  | Time, effectiveness, resources                         | Community/ Mutual Aid staff and supplies               | Relative threat* |
| SCORE                           | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 - 100%         |
| Supply Disruption / Shortage    | 3  | 2  | 1  | 3  | 2  | 2  | 3  | 72%              |
| Cyber Attack                    | 3  | 1  | 2  | 2  | 2  | 2  | 2  | 61%              |
| Major Communications Disruption | 3  | 1  | 1  | 3  | 2  | 2  | 2  | 61%              |
| Major Power Outage              | 3  | 3  | 2  | 3  | 1  | 1  | 1  | 61%              |
| Fuel Shortage                   | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 59%              |
| Major Transportation Disruption | 2  | 2  | 2  | 3  | 3  | 3  | 3  | 59%              |
| Information Systems Failure     | 3  | 1  | 2  | 1  | 2  | 2  | 2  | 56%              |
| Water Supply Contamination      | 3  | 1  | 1  | 2  | 1  | 1  | 1  | 39%              |
| Food Contamination              | 3  | 1  | 1  | 2  | 1  | 1  | 1  | 39%              |
| Major Infrastructure Damage     | 1  | 1  | 3  | 3  | 3  | 2  | 2  | 26%              |
| <b>AVERAGE SCORE</b>            | <b>2.60</b>                                    | <b>1.50</b>                                    | <b>1.70</b>                                    | <b>2.50</b>                                    | <b>2.00</b>  | <b>1.90</b>  | <b>2.00</b>  | <b>56%</b>       |

\*Threat increases with percentage.

|                               |      |      |
|-------------------------------|------|------|
| RISK = PROBABILITY * SEVERITY |      |      |
| 0.56                          | 0.87 | 0.64 |

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## Cyber Attack

- Probability: A coalition member recently received a ransomware attack. It shut down their system. This is not unusual now-a-days. St. Mary's have had two organized cyberattacks. Most healthcare systems have anywhere from 1 – 2 million probes per year. People are getting into back systems such as heating, electrical, etc. Those utilities are now maintained on servers. Cyber is a great threat for public health entities. Frame cyberattack in a different way. How would an attack affect the health care of the facility? For example, altering a drip rate for a patient hooked up to it or an x-ray machine if the power is shut off due to a cyberattack. What is the potential impact? How are we prepared? There are two components to a cyberattack. One would be operational through equipment, and other through with staff that do not shut down their computers or share passwords. How does a cyberattack affect the health of the patient? Most attacks are breaking into system to get SSN or credit card information, financial information. Looking for money/financial gain. Unless it shuts down the entire health care system, it would not affect ability to provide health care. This type event creates a service interruption, but does not harm the patients. At what point can they access facility? Data breaching or the ability to physically affect a facility? We need to remember we are looking at PUBLIC HEALTH impact. As a region how prepared are we? When discussing property impact, keep in mind there is going to be a cost associated with a data breach. If your facility is providing employees with identity protection due to a breach, it is an incredible cost per person. Probability is high, but severity of impact would not affect the entire region. Human impact and community property would be considered low. As a coalition, we have the ability to move resources around to assist a facility needing assistance. We have been working with MEMA to provide cyber awareness training and sharing cyber related information. We now have a better understanding to update plans and training for staff than we have in the past years.
- Preparedness and Response: A cyberattack would not take out the entire region. It would not take out everything all at once. Should we drop this from a 2 (moderate) from a 3 (low/none)? The probability is high, but does cyber affect everything across the board. Other regional agencies will support facility impact. Question: If the CMRRC system would be compromised it would affect coalition? Regionally? Answer: CMRRC staff could do our work independently/remotely. However, if the Maine Health Alert Network (HAN) goes down it would be a manual effort of contacting every member individually. There are other modes of communication. Relationships have been developed to support as a group. What happens if a hospital has an attack and it affects medical records or a medical procedure? Would that be considered a property impact? Once again, we have come a long way this past year with cyber threat communication, threats, and external response. Change all scores to 2 (moderate) from 3 (low/moderate).

## Supply Disruption/Shortage

- Probability: A good example of a supply shortage was during H1N1 event. Suggest keeping this at 2 (moderate) unless it reoccurs again. Just in time delivery. Keep impact rate same.
- Preparedness and Response: We are more prepared than last year with sharing resources. Keep score at moderate. Regional/external response, keep the same score.

## Information Systems Failure

- Probability: Still high. Will this affect property damage or death/injury? Is cost/finances considered property? If so, that would be very high. Administrative time to bring system back up to speed is also costly. Change scoring to 2 (moderate) from a 1 (low).
- Without SME's here, we are just making guesses. Have a better understanding of radios and telephone. Not computer. It is public health consequences. We are trying to find the relative threat. What is our greatest vulnerability? Mostly data breach information. There has not been any documentation regarding patient care being compromised due to a cyberattack. What are the public health consequences we would need to respond to? Change property impact to a 3 (high), vs. 2 (moderate)? Does it affect regionally though, not just one facility. It is not necessary the number, it is all subjective. It is the conversation in the room.
  - Conversation went back to Cyberattack. If we take cyberattack at 30 foot view, as a region, we could be moderate. Will a single incident impact 25%? Probably not, unless it affected the flow of information. Communication has a larger impact vs. information systems failure. Will not stop patient care, however if communication is disturbed, ambulances would be affected. Communication is key. *Property impact for information system should be change to 2 (moderate) from 3 (high) in that line item.*
  - Conversation resumed for Information Service Failure
- Community impact for Information system should be changed to 1 (low) from 3 (high). It will not going to have a wide range impact. It will certainly be an inconvenience to staff but not for patients.
- Preparedness and Response: Facilities may end up having to call information systems (IT) vendors. Most IT departments will not be able to do this on their. We can still improve in this category. Keep as 2 (moderate) all cross for preparedness and response.

## Major Communication Disruption

- Probability: Keep this the same as high. No changes for impact.
- Preparedness and Response: Some of our plans are robust, some still need work. Radio checks have had better participation. First responders are talking better with each other. What communications with 911 call centers? Are sun spots going to effect? Are there enough redundancy? Answer: Yes there are. HAM radios would take over. We have a pretty robust HAM operator pool across the state. Should we give more credit to the preparedness category? Move to 3 (high) vs. 2 (moderate). EMA's across the region support HAM radio groups. We are able pull HAM radio response pretty quick. Though we still need more drilling to clearly bring it up to a 1 (high). Change it to 1.5? (*unable to enter that formula the spread sheet*). Leave at 2 (moderate) across the board and re-evaluate next year.

## Major Power Outage

- Probability: This will have an impact, depending on how long the outage lasts. Seasonal outages; winter vs. summer. A lot of home care facilities are not prepared for significant power outages. Health centers are not prepared to take on abundance of influx. Quite a bit of impact (ventilators, oxygen for example). Long-Term Care (LTC) facilities are effect during summer months due to heat. A large group of vulnerable population, such as disabled adults/children, patients who rely on oxygen, vents are also impacted no matter what time of the year. Human and community impact categories, no change.
- Preparedness and response: This type of event has been a focus for us regionally for a number of years. We are only lacking in identifying WHO is dependent on power. We should be assisting them to become registered with their local EMA. Question: Is that our job as emergency responders? Answer: It is not our job as a region, though we can identify who/where the populations are. Local LTC's may know where the frail and elderly are that are in their community. Change to 2 (moderate) or keep as 1 (high)? We need to have a vulnerable population discussion as a region. MeCDC has a vulnerable population plan. As a coalition we need to think about if anyone has talked about or tracked VP in their community. MeCDC has a HAN for groups who service VPs. If we need to reach out to VP, we reach out to agencies who serve that population. Identifying agencies help with sending out communications. We need to work through that as a coalition. It is something that needs to be identified ahead of time. We are prepared for major power outage, but we can do better to prepare. Keep response the same.

## Fuel Shortage

- Probability: No change.
- Preparedness and Response: We are able to get access to fuel from outside sources if needed. External responses will be available, as long as shortage is not too pronounced. If the event is great, the most we are going to get is a ration, never an amount you need. At that point, we would be at the mercy of the vendor.

## Major Transportation Disruption

- Probability: No change in scoring. We do not have control over transportation.
- Preparedness and Response. Change scoring to 3 (low/none).

## Water Supply Contamination

- Probability: We have a good communication system in place with standard every day boil water HAN alerts, etc. Human and property would be low. Probability should remain at high. This event would cause an interruption of schools, health care facilities, business, etc.
- Preparedness and Response: In regards to your facility's filtration systems, do you have aging pipes? Are these being upgraded? No filter system is typically leading into a building. Mostly dealing with heavy particulates, not contamination. Change regional preparedness category to 2 (moderate) from 1 (high)

## Food contamination

- Probability/Preparedness and Response: Change scoring to Water Supply Contamination as it is similar. Not sure why this category is on a regional form. Spinach leaves being contamination, etc. State Epidemiologists at MeCDC have system to track contamination. There are E.coli alerts through the Maine HAN.

### Major Infrastructure Damage

- Probability: Roads washing out, heavy snow load on roofs, spring flooding, bridges giving way are a few examples. Keep probability as low. Human pact low as this category is damaging things not people. High property impact.
- Preparedness/response: At a regional level, there are mechanisms in place.

## NATURAL HAZARDS



### HAZARD AND VULNERABILITY ASSESSMENT TOOL

#### NATURALLY OCCURRING EVENTS



| EVENT                | SEVERITY = (MAGNITUDE - MITIGATION)            |  |  |  |  |  |  | RISK       |
|----------------------|--|--|--|--|--|--|--|------------|
|                      | 1. PROBABILITY                                 | 2. HUMAN IMPACT                                | 3. PROPERTY IMPACT                             | 4. COMMUNITY IMPACT                            | 5. REGIONAL PREPARED-                                  | 6. REGIONAL RESPONSE                                   | 7. EXTERNAL RESPONSE                                   |            |
|                      | Likelihood this will occur                     | Possibility of death or injury                 | Physical losses and damages                    | Interruption of services                       | Preplanning  | Time, effectiveness, resources                         | Community/ Mutual Aid staff and supplies               |            |
| SCORE                | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = Low<br>2 = Moderate<br>3 = High | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 = N/A<br>1 = High<br>2 = Moderate<br>3 = Low or none | 0 - 100%   |
| Ice Storm            | 3  | 2  | 3  | 3  | 2  | 2  | 2  | 78%        |
| Drought              | 3  | 1  | 2  | 2  | 3  | 3  | 2  | 72%        |
| Heavy Snow, Blizzard | 3  | 1  | 3  | 3  | 1  | 2  | 2  | 67%        |
| Flood                | 3  | 1  | 3  | 3  | 1  | 1  | 1  | 56%        |
| Lightning Severe     | 3  | 1  | 1  | 1  | 2  | 2  | 2  | 50%        |
| Thunderstorm         | 3  | 1  | 2  | 2  | 2  | 1  | 1  | 50%        |
| Urban Fires          | 3  | 1  | 1  | 2  | 2  | 2  | 1  | 50%        |
| Hurricane            | 2  | 1  | 3  | 3  | 2  | 2  | 2  | 48%        |
| Tornado              | 3  | 1  | 1  | 1  | 2  | 1  | 1  | 39%        |
| Pandemic/Epidemic    | 2  | 3  | 1  | 3  | 1  | 1  | 1  | 37%        |
| Wild Fire            | 3  | 1  | 1  | 1  | 1  | 1  | 1  | 33%        |
| Heat Wave            | 2  | 2  | 0  | 1  | 2  | 2  | 1  | 30%        |
| Dam Inundation       | 1  | 3  | 3  | 3  | 3  | 3  | 1  | 30%        |
| Landslide            | 2  | 1  | 1  | 1  | 2  | 2  | 1  | 30%        |
| Damaging Earthquake  | 1  | 3  | 3  | 3  | 2  | 2  | 2  | 28%        |
| Tsunami              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0%         |
| <b>AVERAGE SCORE</b> | <b>2.31</b>                                    | <b>1.44</b>                                    | <b>1.75</b>                                    | <b>2.00</b>                                    | <b>1.75</b>  | <b>1.69</b>  | <b>1.31</b>  | <b>43%</b> |

*\*Threat increases with percentage.*

|                                      |      |      |
|--------------------------------------|------|------|
| <b>RISK = PROBABILITY * SEVERITY</b> |      |      |
| 0.43                                 | 0.77 | 0.55 |

27-Apr-17

### **Ice Storm**

- Probability: No change. Down lines, trees, property damage, etc.
- Preparedness and Response: Statewide, we have been planning and testing this for a while. Not if sure we are going to get any better. If a large event, resources would be spread out in entire region. No change to scoring.

### **Heavy Snow/Blizzard**

- Probability: Most people no to stay at home; businesses close and encourage employees to stay home. There are State messages urging Mainers not to go out if they don't have to. This would be a low impact for human. Property would be high due to clean up and possible damage. We are thinking ahead in regards to preparedness by opening up their EOC.
- Preparedness and Response: As a region, we have done well by sending out HAN alerts for bed availability. Good response now.

### **Flood**

- Probability: High. Low human impact as flooding won't affect entire county/region. Property should still remain as high probability.
- Preparedness and Response: This happens regularly, we are prepared. We have dealt with this and have been successful.

### **Lightening**

- Probability: Lightning strikes do happen often, however, low human and property impact.
- Preparedness and Response: How do you prepare for lightning strikes? Education. Scoring on all categories remain the same.

### **Thunderstorm**

- Probability / Preparedness and Response: Human impact is low; know to seek shelter. No change to scoring.

### **Drought**

- Probability: Change to 3 (high) from 2 (moderate). Hydration is the biggest issue. Keep impact same.
- Preparedness and Response: Our region has MOU in place for this. Most droughts are short term. Not long term. If bad drought would need to rely on MEMA, other states. Country wide MOU. Winter drought would be worse as everything is frozen.

### **Hurricane**

- Probability / Preparedness and Response: Three Category 3 hurricanes have impacted our region in recent years. Should we increase probability to 3 (high)? No, keep the same. Wind, storm, surge and debris are the things to worry about during a hurricane. Scoring as a 2 (moderate) seems low. In our region do we get storms of that intensity? Human impact, change to 1 (low) from a 2 (moderate). Property impact should remain same. Community impact, change to 3 (high) from 2 (moderate).

## Urban Fires

- Probability: Tenement fires have happened. More local than region. Should property impact be higher? For that one area that experienced the fire, yes, but not regionally. Would community impact be higher due to how many tenants in building? Will there be a major interruption of services for multiple building fires. Community impact change to 2 (moderate) from 1 (high). Property, keep at 1 (high).
- Preparedness and Response: No changes.

## Heat Wave

- Probability: A heat wave defined as three consecutive days being greater than 90 degrees. Three events lasting three or more days. If we use those criteria, our region would not qualify. Two or more with a heat index over 105 degrees. Use definition to determine scoring. A heat wave affects the elderly, especially those with respiratory issues. We get numerous HAN alerts due to heat during the summer months. If we do not have a problem with heat then why do we receive the alerts from MeCDC? There would be no property impact. This would have a higher human impact.
- Preparedness and Response: As a region we are prepared. Regional preparedness scoring at 1 seems generous as there would be a large impact of vulnerable populations. The State Heat Plan is currently being revised due to environmental concerns. This may change our rating at a later date. Heat vs. smog. Change to 2 (moderate) from 1 (high). Change probability to a 2 (moderate).

## Tornado

- Probability Preparedness and Response: Tornadoes do occur in our region. How good are we at warnings? Statewide we are good at alerts/warning through outlets such as TV and radio, but could do better. Push notifications are being worked on at a county level. Keep scoring the same.

## Pandemic/Epidemic

- Probability: Keep at moderate. Community impact should be high as amount of people sick and business it would affect. Since 2006 we have been planning for this type of event. Currently have pretty good plans in place.
- Preparedness and Response: No changes. We are in pretty good shape. Is it perfect? It never will be perfect; however, is a workable plan. The current State Ebola plan will work with other emerging infectious diseases that may arise.

## Wild Fire

- Probability / Preparedness and Response: They do occur, mostly wooded areas. No changes to scoring.

## Dam Inundation

- Probability: State has a good inspection/maintenance program. However, if it did happen in Lewiston/Auburn for example, human impact would be high.

- Preparedness and Response: As a region, we haven't done a lot of preplanning for flooding. No change to scoring.

### **Landslide**

- Probability: These have occurred. Typically this event does not happen on a big scale in Maine. They are not all that frequent. Probability same at moderate. Impact stay at low.
- Preparedness and Response: No changes to scoring.

### **Damaging earthquake**

- Probability: Changed language in this category last year to include damage to structure. Probability is low. If there was a damaging earthquake, human impact should be high. Change scoring to 3 (high) for all impact categories.
- Preparedness and Response: No change to scoring. However, if it is a damaging earthquake and it affects a large region, it may take a long time to get resources. Do you have an annex in your EOP for a damaging earthquake? If not we are not prepared. What is a consequence effect for an earthquake? Water, transportation, etc. Do we have a plan to address these issues? Yes, some are addressed in our EOP. Changing preparedness from a 3 (low/none) to a 2 (moderate). Keep the remaining categories at the same rating.

### **Tsunami**

- Probability / Preparedness and Response: No changes. Why is this on our HVA?

## **TOP FIVE HAZARDS FOR CENTRAL MAINE**

Ice Storm 78%

Drought 72%

Supply Disruption / Shortage 72%

Major Hazmat Incident 72%

Heavy Snow, Blizzard 67%

# Assessing Risk: Shifting Focus from Hazards to Capabilities

Jane Coolidge, Maine CDC and Kara Walker, CMRRC

Jane and Kara have been taking a different approach at looking at HVAs. Currently, hazards that are identified as the most probable to occur and having the greatest impact (consequence) which also have a low preparedness (mitigation score) become the hazards of the most concern (vulnerability).

The Assistant Secretary for Preparedness and Response (ASPR) had determined that all public health emergency preparedness and response functions can be condensed into four broadly defined Hospital Preparedness Program (HPP) Capabilities. These capabilities are not hazard specific and have a broad application to a wide variety of hazards.

- Capability 1: Foundation for Health Care and Medical Readiness
- Capability 2: Health Care and Medical Response Coordination
- Capability 3: Continuity of Health Care Service Delivery
- Capability 4: Medical Surge

*\*See attached "2017-2022 Health Care Preparedness and Response Capabilities" for further details on the above capabilities*

It is suggested that is not as much the hazard that makes us vulnerable but the lack of preparedness relative to the capabilities. Therefore it is suggested that the focus for preparedness should be on mastering PERFORMANCE of the capabilities rather than responding to specific hazards.

Associated with each capability and stated goal is a set of objectives with associated activities. Together these more specifically define the intent and expectations for each of the capabilities.

## Capability Based Planning

- Annually assess your ability to perform the capabilities
- Identify gaps in ability to perform
- The goal is to fully develop the ability to perform each capability
- The lesser developed capabilities is what you would need to perform further preparedness, planning, and testing
- An exercise would be to test, measure and validate the capabilities

## Public Health Consequences or Impacts of Hazards

- The severity of each hazard is estimated to include the impact (consequences) of each hazard on people, property and community services (severity).

- Consequences are not specific to specific hazards, for example:
  - o Water source contamination can occur from a variety of hazards from flooding to terrorism
  - o Mass casualties can occur from a train wreck or an active shooter
  - o Medical surge due to illness can generate from influenza to exposure to toxic substances
  - o Public distress occurs to some extent with all hazards

A few examples of wide spread CONSEQUENCES or IMPACTS OF HAZARDS:

- Prolonged power outage/power grid failure; summer heat; winter cold
- Major infrastructure damage; roads, homes, businesses, schools, public buildings
- Information systems failure
- Transportation disruption, roads, rail planes
- Supply disruption/shortages: food, and other necessary commodities
- Fuel shortage
- Water supply contamination

In order to test this new concept, two crosswalks were completed:

- Hazards were cross walked with Public Health Consequences

## Hazards to Consequences

|                                   |           | Information Systems Failure   | Supply Disruption / Shortage   | Food Contamination  | Mass Casualty Incident   | Mass Fatality Situation  |
|-----------------------------------|-----------|---|--|---|--|--|
| <b>Public Health Consequences</b> |           | Power outage/power grid failure: summer heat, winter cold: widespread | Major infrastructure damage: roads, homes, businesses, public buildings: widespread<br>Major communications disruption | Information systems failure: widespread<br>Transportation disruption: widespread<br>Supply disruption's shortages: widespread | Fuel shortage: widespread<br>Food contamination/spillage<br>Water supply contamination: widespread | Water shortage: widespread<br>Mold growth<br>Carbon monoxide poisoning<br>Major hazmat exposure/contamination; chemical, radiological, biological, nuclear: widespread or significant numbers<br>Public displacement: evacuation; shelters: significant numbers<br>Shelter in place: significant numbers<br>Security issues: civil disturbance, disobedience: riots/looting; protection of scarce resources/assets<br>Medical Surge; trauma (MCI); illnesses (due to food, water, or toxic exposures)<br>Medical Surge; infectious disease: Influenza, Ebola (due to the intensity of the resources needed to care for one patient)<br>Mass Fatalities |
| <b>Hazards</b>                    | Flood     | X   | X  | X   | X  | X  |
|                                   | Hurricane | X   | X  | X   | X  | X  |

- Public Health Consequences were cross walked with Capabilities

# Consequences to Capabilities

| CAPABILITY 2   | Health Care and Medical Response Coordination        |   |   |  |   |
|--|--|---|---|--|---|
|  | Utilize Information Sharing Procedures and Platforms | Coordinate Response Strategy, Resources, and Communications |   |  |   |
|  | Utilize Communications Systems and Platforms         | Identify and Coordinate Resource Needs during an Emergency  | Coordinate Incident Action Planning During an Emergency | Communicate with Health Care Providers, Non-Clinical Staff, Patients, and Visitors during an Emergency | Communicate with the Public during an Emergency |
| Power outage/ power grid failure: summer heat; winter cold: widespread           | X  | X   | X   | X  | X   |
| Supply disruption/ shortages: widespread   | X  | X   | X   |  |   |
| Major hazmat exposure/contamination; chemical, radiological, biological, nuclear | X  | X   | X   | X  | X   |
| Public displacement: evacuation  | X  | X   | X   | X  | X   |
| Shelter in place   | X  | X   | X   | X  | X   |
| Medical Surge; trauma (MCI)  | X  | X   | X   | X  | X   |
| Medical Surge; infectious disease  | X  | X   | X   | X  | X   |
| Mass Fatalities  | X  | X   | X   | X  | X   |
| Public distress; range from stress to panic                                      | X  | X   | X   | X  | X   |

The crosswalks were offered in order to demonstrate that very different hazards can result in similar public health consequences and the set of response capabilities can be used to respond to a variety of public health consequences.

## Discussion / Question:

- Q: Will data be linked in the different tabs? A: Not linked at this time
- This looks like it will work as we can come up with a strategic plan as a coalition. We can see what we are good at and what we need to work on.
- Q: Will we be able to provide action items from this form? A: Yes. You are able to make actionable activities which connect capabilities with hazards. It will always be moving in a forward direction to improve capabilities.
- This will be placed on the website if you are interested in using this at an organizational level vs. a regional level as shown in today's workshop.
- Q: How can capabilities be transferred to individual level vs. coalition level? A: Each facility is part of a coalition so scores can still apply to your organization and further be applied at the organizational lever.

# TRAINING AND EXERCISE PLANNING WORKSHOP

To assist you with your training and exercise needs, CMRRC is providing a Homeland Security Exercise and Evaluation Program (HSEEP) on Wednesday, May 31<sup>st</sup> from 8:30 am – 4:00 pm. Through the use of HSEEP, exercise program managers can develop, execute, and evaluate exercises that address the hazards that are identified through your HVA process. This workshop will be an informal, abbreviated training to help you become familiar with the forms and process in order for you to conduct an exercise at your facility. If interested in participating, contact the CMRRC office.

## Capabilities Based Planning Overview

- Core capabilities identified through training and exercises are the prevention, protection, mitigation, response and recovery mission areas.
- Through HSEEP you can use exercises as a way to examine required HPP capability levels and identify gaps.

Purpose of the Training and Exercise Planning Workshop (TEPW) is to identify and set exercise program priorities and develop a multi-year schedule of exercise events and supporting training activities to meet those priorities. To do this you need to perform the following tasks:

- Identify threats and hazards (*your top five hazards from your HVA*)
- Identify areas for improvement
- Identify external sources and requirements (*National Preparedness Report which identify cybersecurity, economic recovery, infrastructure systems, supply chain integrity and security, etc.*)
- Identify Accreditation Standards and Regulations (*HPP grant requirements, Maine CDC contract deliverables, Joint Commission, HIPPA, CMS EP CoP, DNV*)

## Coalition Surge Test (CST)

- LOW/NO notice exercise
- The CST tests a coalition's ability to work in a coordinated way to find appropriate destinations for patients using a simulated evacuation of at least 20 percent of a coalition's staffed acute care bed capacity. The entire CST takes approximate three to four hours to complete and includes two following phases:
  - 1) tabletop exercise with functional elements and facilitated discussion
  - 2) After Action Report

## Discussion:

### Task #2: Identify areas for improvement

- COMMUNICATION: During the hayride incident last year, St. Mary's first heard of incident by first patient going through the door. No warning ahead of time. Need to bring CMRHCC EOP on a road show to teach responders. Incorporate dispatch centers? They should be on the call list for any disaster and should receive the first call. This should be put in the protocol.
- If information regarding an incident is relayed to hospital, it isn't indicated as a MCI or hazard material, etc. only symptoms of patient. Need to integrate Public Service Answering Points (PSAPs).
- For large, region wide MCI and HAZMAT training/seminars. Identify first responders / facilities that need to know. Have real people transported for better real life training.
- Need to incorporate training and exercise activities going on in the region. During our coalition meetings, build time in the agenda to have members talk about their exercises, or lessons learned day so folks can pick out pieces.
- Still a few "kinks" in our MCI protocol with CONNECT.

### Task #3: Identify external sources and requirements

- Cybersecurity is one of our top hazards. Any on list of interest to test? Supply chain integrity and security should be tested. Workshop this as a group. Need to identify who supplies are. Will need to get the supply chain individuals in each facility involved with workshop.

### Activity 3: Establish exercise program priorities

- We should test MCI, LTC evacuation (surge, communication, etc.)
- Need to get away from ED for a bit as this group has been tested often.
- Will be able to get municipal officials involved.

### Activity 3: Establish exercise program priorities examples

- Partnership/coalition development
  - Expand regional collaboration
  - Strengthen interoperable and operable communications capabilities
  - Strengthen communication capabilities
  - Strengthen response to mass casualty incidents
- 
- A full scale exercise involving a LTC facility could hit most bullets above.
  - It is really needed at this type facility; quite a bit of discussion on this.
  - No current plan to test; could use the exercise to develop an evacuation plan.

TO DO/ MISC.:

- CMRRC will populate a draft multi-year schedule and forward to members for review.
- Med Surge TTX listed on 2017 multi-year schedule did not happen. Will need to move this up.
- Infectious Disease TTX has been moved to May

Comments:

- October would be a good time to test.
- In order to get this exercise in before CMS deadline.
- Med Surge in July then functional in September/October?
- Maybe our August coalition could be tabletop exercise?
- Full scale in 2018 evacuation
- ICS 300/400 training for next year

## **2017 – 2011 Health Care Preparedness and Response Capabilities**

### **Capability 1: Foundation for Health Care and Medical Readiness**

The foundation for health care and medical readiness enables the health care delivery system and other organizations that contribute to responses to coordinate efforts before, during, and after emergencies; continue operations; and appropriately surge as necessary. This is primarily accomplished through health care coalitions that incentivize diverse and often competitive health care organizations with differing priorities and objectives to work together. Health care coalitions should collaborate with a variety of stakeholders to ensure the community has the necessary medical equipment and supplies, real-time information, communication systems, and trained and educated health care personnel to respond to an emergency. These stakeholders include core health care coalition members (hospitals, EMS, EMA, and public health agencies) and Maine CDC.

Goal: The community's health care organizations and other stakeholders, coordinated through a sustainable health care coalition, have strong relationships, identify hazards and risks, and prioritize and address gaps through planning, training, exercising, and managing resources.

#### Objectives:

- Establish and Operationalize a Health Care Coalition
- Identify Risk and Needs
- Develop a Health Care Coalition Preparedness Plan
- Train and Prepare the Health Care and Medical Workforce
- Ensure Preparedness is Sustainable

### **Capability 2: Health Care and Medical Response Coordination**

Healthcare and medical response coordination enables the health care delivery system and other organizations to share information, manage and share resources, and integrate their activities at both the federal and state levels.

Private health care organizations and government agencies, have shared authority and accountability for health care delivery system readiness, along with specific roles. In this context, health care coalitions service as a communication and coordination role within their jurisdictions. This coordination ensures the integration of health care delivery into the broader community's incident planning objectives and strategy development. It also ensures that resource needs that cannot be managed within the health care coalition itself are rapidly communicated to Maine CDC. Health care coalition coordination may occur at its own coordination center, the local EOC or by virtual means, all of which are intended to interface with Maine CDC.

Goal: Health care organizations, health care coalitions, and their jurisdictions collaborate to share and analyze information, manage and share resources, and coordinate strategies to deliver medical care to all populations during emergencies and planned events.

### Objectives:

- Develop and Coordinate Health Care Organization and Health Care Coalition Response Plans
- Utilize Information Sharing Procedures and Platforms
- Coordinate Response Strategy, Resources, and Communications

### **Capability 2: Continuity of Health Care Service Delivery**

Optimal emergency medical care relies on intact infrastructure, functioning communications and information systems, and support services. The ability to deliver health care services is likely to be interrupted when internal or external system such as utilities, electronic health records, and supply chains are compromised. Historically, continuity of operations planning has focused on business continuity and ensuring information technology redundancies. However, health care organizations and health care coalitions should take a broader view and address all risks that could compromise continuity of health care service delivery. Continuity disruptions may range from an isolated cyberattack on a single hospital's IT system to a long-term, widespread infrastructure disruption impacting the entire community and all of its healthcare organizations.

A safe, prepared, and healthy workforce and comprehensive recovery plans will bolster the health care delivery system's ability to continue services during an emergency and return to normal operations more rapidly.

Goal: Health care organizations, with support from health care coalitions, provide uninterrupted medical care to all populations in the face of damaged or disabled health care infrastructure. Health care workers are well-trained, well-educated, well-equipped to care for patients during emergencies.

### Objectives:

- Identify Essential Functions for Health Care Delivery
- Plan for Continuity of Operations
- Maintain Access to Non-Personnel Resources during an Emergency
- Develop Strategies to Protect Health Care Information Systems and Networks
- Protect Responders' Safety and Health
- Plan for and Coordinate Health Care Evacuation and Relocation
- Coordinate Health Care Delivery System Recovery

### **Capability 4: Medical Surge**

Medical surge is the ability to evaluate and care for an increased volume of patients that exceeds normal operating capacity. Providing an effective medical surge response is dependent on the planning and response capabilities developed in Capabilities 1, 2 and 3 (above). Developing health care coalitions is especially important to support the coordination of the medical response across health care organizations.

Medical surge requires building CAPACITY and CAPABILITY:

- Surge CAPACITY is the ability to manage a sudden influx of patients. It is dependent on a well-functioning incident command system and the variables of space, supplies, and staff. The surge requirements may extend beyond placing patients into beds, and should include all aspects related to clinical services (e.g., laboratory studies, radiology exams, operating rooms).
- Surge CAPABILITY is the ability to manage patients requiring very specialized medical care. Surge requirements span a range of medical and health care services (e.g., expertise, information, procedures, or personnel) that are not normally available at the location where they are needed (e.g., pediatric care provided at non-pediatric facilities or burn care services at non-burn center). Surge capability also includes special interventions in response to uncommon and resource intensive patient diagnosis (e.g. Ebola, radiation sickness) to protect medical providers, other patients, and the integrity of the medical care facility.

Although these terms are not mutually exclusive (e.g., an emergency with large numbers of burn patients results in the need for both capacity and capability), they provide context for medical surge planning and can assist the health care coalition in developing regional approaches to providing care to patients with specific illnesses or injuries resulting from a wide variety of emergencies (e.g., regional viral hemorrhagic fever plan, regional mass burn plan, and regional mass pediatric plan).

Health care coalitions and their members that coordinate during a medical surge response are more likely to manage the emergency without state or federal assets or employing crisis care strategies. However, it is not possible to plan for all worst case scenarios, and there may be times when the health care delivery system is stressed beyond its maximum surge capacity. For those scenarios, crisis care strategies may be employed and planned well in advance.

Goal: Health care organizations, including hospitals, EMS, and out of hospital providers, delivers timely and efficient care to their patients even when the demand for health care services exceeds available supply. The health care coalition coordinates information and all available resources for its members to maintain conventional surge response. When an emergency overwhelms the health care coalition's collective resources, the health care coalition supports the health care delivery system's transition to contingency and crisis surge response and promotes a timely return to conventional standards of care as soon as possible.

Objectives:

- Plan for a Medical Surge
- Respond to a Medical Surge