

HURRICANE AND TROPICAL STORM

Essential Elements of Information – (EEI)

EEI contain Situational Awareness information on People, Systems, and Services Providers that is critical to acquire in the first and perhaps second operational periods. Specific elements stated here may not apply in every event. Additional elements must be generated as the event evolves through Recovery.

Impact of Event or Scenario

Unlike other naturally occurring and terrorist events, hurricanes and tropical storms typically develop relatively slowly over a period of days with a degree of path and intensity predictability. This provides some time for preparedness activities such as evacuation, opening of shelters, and pre-staging response personnel and equipment to mitigate the impact of the storm on infrastructures and populations.

As the storm approaches, the principle affects are storm surge and severe weather. The amount of cumulative wind damage depends on the storm intensity and storm linger time. Damage caused by surge depends on the storm intensity, coastal geography, and the timing of the tides. Flooding damage can result both from surge and intensity and duration of rainfall. Slower moving tropical storms tend to produce greater amounts of rain over time than hurricanes. Flooding can occur in Florida days and even weeks after storms pass to the north through Georgia and Alabama that result in swollen rivers that empty into the Gulf. County areas bordering these rivers are prone to flooding.

Lightning and wind damage due to fallen trees can cause widespread loss of power. Flooding and power outages will impact people, health and medical systems, and service providers reducing or closing access to these services. (See discussion below) Power outages also cause a rise in carbon monoxide deaths for the use of generators and grills in enclosed spaces. Flooded highways and roadways may inhibit or prevent response activities.

After the storm passes, flooded areas can cause environmental health issues due to flooded drinking water wells and flooded underground sewage treatment systems increasing potential for outbreaks of enteric diseases. Flooded areas may cause the migration of a variety of species poisonous snakes, alligators, and dangerous mammals into nearby communities. Areas with prolonged standing water and un-maintained swimming pools can provide breeding areas for mosquitoes and increase the risk for arboviral disease outbreaks. Areas with uncollected garbage can foster intrusion of rats and other opportunistic animals such as raccoons which may be infected with rabies.

People

People include vulnerable populations, the general population, and responders. Vulnerable populations may be classified as static or transitory.

Static populations consist of people who have medically complex conditions, those who are functionally disabled, frail elderly, and children who are two years old or younger. Evacuation of persons in this category can exacerbate their medical condition causing stress and behavioral health issues. Loss of power for air conditioning can quickly cause heat stress issues among frail elderly.

Transitory populations are those who have chronic medical conditions, seniors in high-rise buildings, and children older than two years old. Power outages will cause immediate issues for persons who are dependent on electricity for oxygen generation and other medical devices. Prolonged power outages with loss of air conditioning and elevators can degrade the health of seniors in high rise buildings who otherwise would not need additional care.

Populations in both categories are vulnerable to enteric and arbo-viral diseases that may spread when recovery operations are prolonged. Behavioral health issues may also require monitoring and treatment over time.

Depending on the area, there may be large numbers of transient vulnerable populations (tourists) that will require post-event assistance.

Systems

Systems include healthcare, medical care, infrastructure, transportation, and communications. Wind damage, flooding, and power loss will reduce or negate the effectiveness of key systems when they are most needed for storm recovery.

Service Providers

Service providers are those who provide health and medical care and support services. Damage and flooded facilities, power loss and road debris will reduce or negate the ability of service providers to serve affected populations.

Essential Elements of Information

Storm information

Before Landfall – continuously updated

- Predicted storm track
- Predicted forward speed

- Predicted storm intensity at landfall
- Predicted tidal surge conditions
- Confidence level in predictions
- Validation data supporting predictions
- Historical data on previous storms with similar track
- Anticipated rainfall amounts
- Current river/lake levels
- Anticipated initial area of operations (AO)

People Information

Before Landfall

- General Evacuation Orders – mandatory or voluntary designations
- Time phasing of evacuation orders, if imposed
- General and Special Needs Shelter locations and opening times
- Host community shelter locations and opening times
- Special Needs Shelter population updates

After Landfall

- Special Needs Shelter population updates
- Verified mortality reports
- Vulnerable population status
- Responder health and safety issues
- Epidemiology reports
- Carbon monoxide related injuries and deaths
- Current rumors
- Risk communications
- Ad hoc (Gypsy) shelter assessments

Systems Information

Before Landfall

- County Profile data elements
- Forward deployment of RERAs
- Forward deployment of Federal assessment teams
- Forward deployment of logistics staging areas
- School closures
- Evacuation routes
- Agency for Persons with Disability (APD) assessment of sheltering status
- Children's Medical Services (CMS) assessment of sheltering status
- Mental health assessment of sheltering status
- Available Federal assets

After Landfall

- Infrastructure damage assessments
- Flooding reports
- Areas of power outages
- Anticipated time for electric utilities to return to service
- Strike team deployments (Epi, Env. Health, SpNS, Behavioral Health)
- Oxygen resupply
- Vector and Vermin Control status
- Drinking water system status/Boil water notices
- Anticipated time for water systems return to service
- Federal ESF 8 assets deployments
- Information on coping/stress reduction/psychological first aid

Service Providers

Before Landfall

- Hospital evacuation/shelter-in-place plan (vertical, partial, total) status
- Generator and fuel status
- Health care and medical facility evacuation orders
- Hospital bed availability forecast
- Anticipated CHD closures

After Landfall

- Hospital status reports
- Hospital bed status
- Health care and medical facility status reports (including dialysis centers, cancer treatment centers, and hospice centers)
- CHD status
- Primary care status
- APD assessment of all facilities and clients
- CMS assessment of all patients
- Pharmacy status
- Dialysis Center assessments
- Non-evacuated health care facilities status