Case Scenarios for System Development

Service areas may use this document to identify the benefit in working together as healthcare coalitions (HCC). The first example is a real story of how HCC members worked together to solve a problem. The second set of activities derive from capabilities or standards from the BETS All Hazards year 1 grant goals and objectives, PHEP, HPP, NHTSA report, the American College of Surgeons Report, and EMS System Standards.

The case scenarios at the end of the document are fictitious and are meant to show how activities or needs identified from one program area could expand to become a system project which would benefit the whole system and improve patient outcomes.

HCC Success Story 1: Critical drug shortage to EMS mitigated with HCC partner communication.

- IDPH was contacted regarding a shortage of the drug, Epinephrine, by an EMS service. IDPH encouraged EMS provider to reach out to members of the healthcare coalition to determine solutions.
- Healthcare coalition partners including EMS, EMA, health department, and hospital and pharmacy staff, worked together to identify the drug shortage issue and discussed options available to EMS to extend the life of the current inventory until more can be secured.
- Benefits of collaboration:
    - Information sharing between organizations offered other solutions to the immediate problem: how to extend the life of the product in stock, and preparing “kits” that can be used in lieu of a prefilled syringe.
    - A longer-term plan is being worked on as the drug shortage will continue for the foreseeable future: communication between EMS in the service area to determine if sharing is an option, and back order immediately.

Performance measures - Drug shortage issue (inventory of drug), # of partners open to discussion regarding drug sharing.

Activity Example 1: Engage stakeholders to complete a service area vulnerability assessment and identify shared resources.

- Benefits of collaboration:
    - Completes: HPP Capability 1, Objective 2, Activity 2; BETS RFP Goal 1, Objective 2, Activity 2 and 5; and EMS System Standard 1.01 and 1.03.
    - Compiling various assessments from multiple partners will provide a broader framework of vulnerabilities and needs across the entire service area.
- Challenges for service areas - Must include hospitals, public health, EMS, EMAs, and executive level and elected officials in compilation of the various assessments. Obtain data from the Social Vulnerability Index to estimate populations with a higher likelihood of having access and functional needs for planning purposes.

Performance Measures -The HCC obtains data from the Social Vulnerability Index at least once per year to estimate populations with a higher likelihood of having access and functional needs. Determine if awardees and HCCs have up-to-date data on populations with access and functional needs in their jurisdiction for planning purposes

Activity Example 2: Develop HCC preparedness plan.

- Benefits of collaboration:
    - Completes HPP Capability 1, Objective 2, Activity 2; HPP Capability 1, Objective 3, and HPP Capability 3, Objective 3, Activity 1; BETS RFP Goal 2, Objective 5; EMS System Standard 1.01 and 3.01; and 2 recommendations from NHTSA report.
    - Completing a coalition surge test tool collaboratively will help program areas understand needs of other programs and how they may be able to play a part to improve systems.
- Challenges for service areas - Must include gaps in medical communications, information sharing, resource coordination, and operational response planning. HCCs may elect to address the components associated with the Preparedness Plan in one document, in combination with the Response Plan, or in multiple documents, but all components must be documented.

Performance Measures - 1. The HCC has a complete Preparedness Plan with the required components. 2.The HCC has a Preparedness Plan that has been approved by all of its core member organizations. 3. All of the HCC's additional member organizations have been given an opportunity to provide input into the Preparedness Plan, and all member organizations have received a final copy of the plan.

Activity Example 3: Collaborate with EMAs in service area to develop an emergency operations/response plan.

- Benefits of collaboration:
    - Completes HPP Capability 2, Objective 1; HPP Capability 1, Objective 2, Activity 4; BETS RFP Goal 2, Objective 6; and PHEP Domain 2, Activity 4
    - Opportunity for organizations to collaborate on best practices and gain a better understanding of roles and responsibilities of organizations during an emergency.
- Challenges for service areas - Must include additional information of identification, notification, and accommodation of special needs populations for emergent medical attention, relocation, and or special medical centers. To promote collaboration across its membership in order to better respond to emergencies. Will also need to acknowledge/clarify concerns from EMAs about the role of a county plan vs. grant required HCC plan.

Performance Measures - A complete and approved Response Plan provides evidence that HCCs are performing this role for their communities. Percent of HCC with a complete and approved response plan.

Case Scenario 1: EMS from a service area would like a UV disinfection system in each all of the ambulances. UV lantern has been proven to be effective for killing viruses, bacteria, molds, and spores. Using a UV lantern in EMS vehicles kills most bacteria and viruses within a four foot radius in just a minute or two. The device will kill most bacteria and viruses within a ten foot radius in 5- 10 minutes.

- Past model - There are 20 ambulances that need a UV lantern to ensure ambulances are not carrying infectious diseases and spreading them to other patients. Depending on the device model, the services could spend as much as $1500 or more per device (20X$1,500=$30,000).
- TCC systems model - EMS expressed their desire for the UV lanterns at the healthcare coalition meeting. Hospitals in the service area and EMS decide to work out an arrangement where each of the hospitals under infection control specialists would keep UV lanterns in each of their ambulance bays. When an ambulance drops off an infectious disease patient at the hospital the providers would use the light to clean out their ambulance before they left. If there are 3 hospitals in the service area and the coalition purchased two UV devices for each hospital this would cost $9,000 instead of $30,000.

Benefit: From a system perspective there is now $21,000 available to do other work within the service area, and the UV lantern is used more frequently to increase efficiencies. In this scenarios there is benefit to EMS, hospitals, and public health.

Performance measure: Use of UV lanterns available at percent of hospitals for use and access to percent of EMS services

Case Scenario 2: Some communicable disease partners are not effectively maintaining a 24/7 contact for infectious disease emergencies (e.g., case of meningitis, suspected measles cases, foodborne illness outbreaks). Infectious disease emergencies usually require action on the part of local public health partners over evenings and weekends. Twice a year CADE conducts call down drills outside of business hours, and 30% of local public health departments did not complete the most recent drill.

- Current model - There are 101 local public health departments and all are asked to maintain a 24/7 contact.
- TCC systems model - Moving 24/7 coverage into a service area-wide system, may save staffing time / resources and ensure 24/7 coverage for all jurisdictions within the service area. For example, there could be 2-3 staff on call for the entire service area (instead of one person per county).

Benefit: Decreased staff time, more efficient use of funding, and more comprehensive 24/7 coverage.

Performance measure: 100% completion rates for the 24/7 call down drills.

Case Scenario 3: The threat of Ebola introduction into the US (and Iowa) was high during the 2014-2015 outbreaks in West Africa. At this time, hospitals and EMS services across the nation were tasked with preparing to assess and care for Ebola-infected patients.

- Non-Collaborative Model: All 118 hospitals and 934 EMS services in Iowa purchase PPE, conduct training, and make the structural modifications (to their hospitals and rigs) required to safely assess and care for an Ebola-infected patient.
- Highly Infectious Disease Workgroup Model- Almost immediately concerns were expressed about how many resources it would take for every Iowa hospital and EMS service to prepare to assess and care for Ebola-infected patients. In response to the concerns, IDPH worked with partners to identify three hospitals as Ebola assessment and treatment hospitals and contracted with five EMS services to transport suspected Ebola-infected patients. Representatives from the designated hospitals, contracted EMS providers, preparedness, state and local public health, emergency management, law enforcement, and laboratorians have formed the Highly Infectious Disease Workgroup.

Benefit: There is a statewide system in place to deal with a highly infectious diseases. More efficient use of funding and limited PPE.

Performance Measure: Tabletop exercise complete, member organizations present at the tabletop