GEORGIA HURRICANE RESPONSE HUB

BUILDING DISASTER-RELATED WORKFORCE CAPACITY

Needs Assessment Evaluation

Final: 7/23/19

Purpose: To assess the current rapid needs assessment tools being utilized in other states in order to assist Georgia in determining the appropriate rapid needs assessment process.

Funding for this project has been provided to the National Network of Public Health Institutes (NNPHI) through a Cooperative Agreement with the Centers for Disease Control and Prevention (CDC – NU1ROT000004-01-00). NNPHI is collaborating with Rollins School of Public Health at Emory University and the CDC's National Center for Environmental Health on this project.

Name of Tool: CASPER

Overview:

The Community Assessment for Public Health Emergency Response (CASPER) is a toolkit designed by CDC's Division of Environmental Hazards and Health Effects (EHHE), Health Studies Branch (HSB) to assist personnel from any local, state/territorial, regional, or federal public health department in conducting a community needs assessment.

The primary goals of the CASPER are to rapidly obtain information about the needs of an affected community and to assess changes in needs during the response or recovery period. The main objectives of CASPER are to:

- produce household-based population estimates of needs for decision-makers,
- determine the critical health needs and assess the impact of the disaster on the community,
- characterize the population residing in the disaster area including any ongoing health effects, and
- evaluate the effectiveness of relief efforts using follow-up CASPER.

During a disaster, the local, state, or regional emergency managers or health department officers may decide to initiate a CASPER when at least one of the following conditions occurs:

- the effect of the disaster on the population is unknown,
- the health status and basics needs of the affected population are unknown, or
- when response and recovery efforts need to be evaluated.

CASPER is designed to provide accurate and timely data through precise analysis and interpretation for decision-makers. Gathering health and basic needs information using valid statistical methods allows public health and emergency managers to prioritize their responses and to make informed decisions regarding the distribution of resources.

Design Elements/Sampling:

CASPER is conducted in two stages. For the first stage of sampling, households are divided into sections, or clusters. For this reason, U.S. Census blocks are ideal. All the census blocks will be listed with the corresponding number of households. Households are then numbered, and 30 clusters are selected using probability proportional to the number of households within the cluster. This is done by randomly choosing 30 numbers and selecting the entire cluster in which that random number (i.e., household) is located.

In the second stage, seven households are selected for an interview. This is done by counting (or estimating) the number of households within the selected cluster, dividing that number by 7 (this will be your n) then starting at a random point and traveling through the cluster in a serpentine method to select every nth household for interview.

While the most scientific and representative way is to select the seven households and continue to return until an interview is completed, it is important to balance the scientifically ideal with the real-world or disaster situation and modifications to the 30x7 design may be warranted.

- **Increase cluster selection**: If you are worried that there may be clusters that are inaccessible due to storm damage or restricted entries, you may consider increasing the number of clusters selected *a priori*.

- **Adjoining census blocks:** If clusters have fewer than seven households, a common problem in rural areas, it may be impossible for teams to interview the needed number in that cluster. If there appears to be many clusters with a small number of households, you may use the "block group" census variable or adjoin census blocks together using GIS software to create larger clusters.
- **Housing unit vs occupied housing unit**: Situations may occur in which the area to be sampled contains a high proportion of second homes or vacation rental properties. In these situations, you may consider using the "occupied housing unit" variable as the U.S. Census defines occupied housing as the usual place of residence of the person or group of people living in it at the time of enumeration.

Using GIS software, such as ArcGIS, provides more flexibility in the selection of the sampling frame by allowing the user to select portions of a county, or counties, to assess. Your sampling frame is then not limited to just counties but can be delineated by zip codes, cities, key landmarks, storm tracks, highways, or multiple other options. CDC's Health Studies, in conjunction with the Agency for Toxic Substances and Disease Registry's (ATSDRs) Geographic Research, Analysis and Services Program (GRASP), developed an ArcGIS CASPER Toolbox. This toolbox allows for the freedom to select any sampling frame within the United States and is faster and less time-consuming than the traditional Census Website method. If GIS capabilities are not available, CDC's Health Studies is available to provide sampling and mapping using the ArcGIS CASPER Toolbox.

Training & Implementation:

State based training: CDC's Health Studies Branch (HSB) provides consultation and technical assistance during a disaster response and disaster epidemiology training throughout the year. HSB provides disaster epidemiology training to state and local public health and emergency response staff by request. The purpose of the trainings is to 1) increase emergency response capacity, 2) improve disaster epidemiology skills, and 3) share lessons learned.

Online e-Learning: The goal of the CASPER e-Learning is to supplement the CASPER toolkit by providing an overview of the CASPER methodology, its uses, and the local capabilities required to conduct a CASPER. Continuing Education (CE) credits are also available.

Typically, a CASPER with approximately 15 teams can be conducted within two midweek (e.g., Tuesday-Thursday) afternoons (e.g., 2pm-7pm) or about 10 hours of field data collection per team. Fewer teams, other days, or earlier hours will likely increase the needed hours of data collection.

Past Examples:

Although the CDC's Health Studies Branch typically provides technical assistance during a disaster response, CASPER methodology can be used in both a disaster and non-disaster setting. CASPER methodology has been used to assess public health perceptions and estimate needs of a community during a non-disaster setting. Examples include:

Ice Storms in Kentucky: The Kentucky Department for Public Health, with assistance from CDC and the U.S. Public Health Service (USPHS) Applied Public Health Teams, conducted four CASPERs in February 2009 in response to the massive ice storms that hit the area on January 26, 2009. The storm caused 36 deaths and left 770,000 people without power across the state, some for more than two weeks. The

CASPER assessed the needs of 10 severely impacted counties in the western part of the state regarding storm-related injuries and illnesses, generator use, availability of basic necessities, barriers to shelter use, and special needs. Results informed the Kentucky Department for Public Health on their ongoing recovery efforts including the continued need to disseminate public health messages about carbon monoxide poisoning as well as inform future response plans such as including pet-friendly shelters, having alternative communication mechanisms, and a better way to address the special needs of supplemental oxygen dependent individuals.

Knowledge and Attitudes of Coal Gasification Plants in Green River District, Kentucky: The Green River District Health Department, with technical assistance from CDC, conducted a CASPER in December 2009 to determine residents' awareness of the three proposed gasification facilities as well as perceived risks and benefits. The Coal Industry proposed to build "clean-coal" gasification facilities in the area, potentially affecting the health and economic status of over 219,000 residents. The CASPER assessed the perceived risks and benefits and the potential influence of residents relationship to the coal/electric industry and current disease/illness state of the household. Results were used as part of a larger Health Impact Assessment in the area.

Deepwater Horizon Oil Spill in Alabama and Mississippi: The Alabama Department of Public Health and the Mississippi State Department of Health, with assistance from CDC, conducted three CASPERs along the Gulf Coast counties in the fall of 2010 to determine the general and mental health needs of the community following the Deepwater Horizon oil spill. On April 20, 2010, the Mobile Offshore Drilling Unit (MODU) Deepwater Horizon exploded 40 miles south of the coast of Louisiana resulting in 11 deaths, 17 injuries, and the largest marine petroleum release in history. The released crude oil has prolonged negative effects on marine biota and potential health hazards for those exposed to or affected by the oil spill. The CASPERs collected information on physical health including respiratory, cardiovascular, dermal and ocular conditions; mental health including anxiety, depression, social context and quality of life, and behavioral health including alcohol use, drug use, and violence. Respondents also answered questions about changes in income, recreational activities on the coast, and consumption of seafood. Results informed the health department of the impact of the spill and lead to support for funding of mental health programs along the Gulf Coast. Follow-up CASPERs were conducted in 2011, 2012, and 2013 to assess the continuing needs of the community.

Materials and Resources:

Contact info: CASPER@cdc.gov.

CASPER Website: https://www.cdc.gov/nceh/hsb/disaster/casper/overview.htm

Information on training resources and topics: https://www.cdc.gov/nceh/hsb/disaster/training.htm

CASPER E-Course: **Community Assessment for Public Health Emergency Response (CASPER) Online Learning Tool (WB2390)**.

Interactive map of CASPER which shows examples of CASPER usage by state: https://www.cdc.gov/nceh/hsb/disaster/casper/casper_map.htm

Name of Tool: FEMA Rapid Needs Assessment

Overview:

The Federal Emergency Management Agency (FEMA) has developed a Rapid Needs Assessment (RNA) capability, designed to determine the anticipated scope of federal involvement to support state response operations and to determine the initial assessment of damages and affected population needs.

The RNA capability supports planning and operations conducted in accordance with the Federal Response Plan (FRP) and is a primary tool for federal managers to make response decisions.

This assessment is critical within the first few hours after an incident in providing federal response for life-threatening situations and imminent hazards. A correct and effective assessment permits FEMA and other federal agencies (OFAs) to prioritize response activities and allocate resources in anticipation of local and state government requests for federal assistance.

Information gathered during this assessment establishes a basis for effecting ongoing response activities in relation to the needs of the population to sustain and protect life, and to a lesser degree protect property.

RNA Teams, comprised of inter-agency specialists, along with representation from the affected state, conduct these assessments in order to provide information for critical resources needed to support response activities. The teams are designed to be small and self-sufficient so that local and state resources will not be impacted. RNA Teams will most likely be deployed where the magnitude of an event definitively indicates the need for federal resources.

An RNA Team's mission is to collect and provide information to determine requirements for critical resources needed to support emergency response activities. The Team is responsible for assessing both overall impact of a disaster event and determining federal *immediate response* requirements.

The requirements identified by the Team are those which pose the greatest response challenge to the affected state government. The Team provides situation assessments to determine immediate victim needs (food, water, medical, shelter) and impact to infrastructure (utilities, communications, transportation, etc.).

Assessment data are reported to the ERT-A, or Regional Operations Center (ROC), and the affected state Emergency Operations Center (EOC). State and federal managers then use the assessment data in making response decisions. It enables the federal government to pro-actively recommend resources to support state and local efforts, and to rapidly provide resources to meet identified needs.

The RNA differs from a Preliminary Damage Assessment (PDA). A PDA is used to determine the amount of *recovery* assistance required by an affected state, whereas a RNA is conducted to determine immediate resource needs of the affected area. While a RNA is conducted immediately following a major disaster, a PDA may be conducted over a longer period of time and may not begin until after initial response operations have been conducted. Although there is no specific link between a RNA and a PDA, data gathered during a RNA may be used to assist with the PDA process.

Implementation:

A RNA Team is composed of a small cadre of trained technical experts from federal and state agencies. A Team, or Teams, can be activated and deployed by the FEMA Region in which a disaster occurs to augment or supplement state and local assessment capabilities. All Team operations will be conducted as a closely coordinated joint federal/state effort. Teams are designed to be self-sufficient for the first 72 hours of operations.

Each Team contains three components: a Management Element, an Assessment Element and a Support Element, referred to as a Quick Response System (QRS). The QRS provides logistics and communications support to the Management and Assessment Elements and are positioned in each of three Mobile Emergency Response Support (MERS) Detachments, located in Thomasville, GA, Denton, TX, and Bothell, WA.

RNA Teams may be deployed either prior to an anticipated disaster event or immediately after a major disaster event in anticipation of, or in response to, a state request for rapid assessment assistance. Pre-disaster deployments could precede a potential large-scale or catastrophic incident such as a hurricane. If not deployed pre-disaster, a Team, or Teams, will be activated as soon after a catastrophic or large-scale event as possible and be prepared to begin the deployment process upon activation.

Implementing the RNA process is based on the following assumptions:

- FEMA Regions, in coordination with regional OFAs and states will maintain rosters of designated RNA Team members;
- Designated team members will receive training in RNA operations;
- Designated MERS Detachments will keep equipment and supply caches maintained and deployable at all times;
- RNA Teams are activated by the affected FEMA Region in consultation with the affected state(s);
- RNA Teams and their QRS are able to arrive at the disaster vicinity within 12 hours of activation;
- Deployed team members may have to operate in austere conditions; and
- RNA Teams will normally complete their assigned mission within 24-72 hours.

RNA Teams are deployed at the request of an affected state, in coordination with the appropriate FEMA Region. A determination to deploy a RNA Team(s) may be made in anticipation of a potential disaster, such as a hurricane, or immediately after a major disaster occurs, when federal assistance is likely to be requested.

When activated, the entire Team will be notified and sent to the disaster area. The basic Team structure can be expanded to include additional personnel with specific technical expertise, if needed. The Team Leader will determine the need for expanding the Team based on the scope of the disaster, the need to collect information for multiple assessment areas, and the agreed upon Team expectations derived from the Initial Briefing.

Team Structure:

Management Element: The Management Element supervises and coordinates the assessment process and Team logistical support. The Management Element consists of a FEMA Team Leader and a state representative.

- FEMA Team Leader**:** The FEMA Team Leader maintains overall responsibility for RNA Team operations, in cooperation with the designated state representative. The Team Leader reports to the ERT-A Team Leader, or RNA Coordinator if multiple teams are deployed.
- State Representative: The state representative serves as a liaison to the FEMA Team Leader and is responsible for providing knowledge of local assets, geographic information, information management systems, state response plans and procedures, state assets, state response philosophies, etc. The state representative assists the Team Leader in developing operational plans and response recommendations. The state representative is provided by the state that requests the assessment.

Assessment Element: The Assessment Element includes subject-matter experts from several federal agencies that perform the actual needs assessments. The Assessment Element is composed of a Hazardous Materials Specialist, a Medical Specialist, a Mass Care Specialist, an Infrastructure Specialist, and a Fire/Urban Search and Rescue (US&R) Specialist. Some members of the Assessment Element are cross-trained in more than one Emergency Support Function (ESF), enabling them to assess immediate needs and requirements in more than one functional area.

- Hazardous Materials Specialist: The Hazardous Materials Specialist assesses the affected sites and facilities and their potential for public exposure. Identifies unsafe areas and types of hazards, contamination threats, and local hazardous materials mutual aid response capability. This position is normally filled by a representative from the Environmental Protection Agency (EPA).

- Medical Specialist: The Medical Specialist assesses the status of health/medical infrastructure including hospital and primary care systems, pharmacy systems, special population needs, environmental health, sanitation issues, and emergency medical services. The Medical Specialist also assesses the need for patient evacuation, and the need for activation of the National Disaster Medical System (NDMS). This position is normally filled by a representative from the Department of Health and Human Services (HHS), Public Health Service (PHS).

- Infrastructure Specialist: The Infrastructure Specialist assesses the status of transportation corridors and systems, energy systems and other public utilities, debris removal, secondary hazards, key facilities, and communication systems. This position is normally filled by a representative from the U.S. Army Corps of Engineers (USACE).

- Fire/US&R Specialist: The Fire/US&R Specialist assesses the status of fire, and search and rescue services including capabilities and limitations of any existing mutual aid agreements. The Fire US&R Specialist also identifies any immediate needs for fire and/or search and rescue services. This position is normally filled by a representative from one of the US&R Task Forces in the affected region.

- Mass Care Specialist: The Mass Care Specialist assesses the status of needs for mass feeding and emergency mass shelters, bulk distribution of relief supplies, emergency first aid needs, potential secondary disaster effects, and state and local governmental volunteer capability. This position is normally filled by a representative from the American Red Cross (ARC).

Support Element:

- Logistics Specialist: The Logistics Specialist provides logistical support and services for the Team during all phases of Team activity. The Logistics Specialist also monitors the readiness of all equipment support kits.

- Operations Specialist: The Operations Specialist collects assessment data from the Assessment Element, compiles data into report formats, and transmits reports to required individuals and organizations.

- Communications Specialist: The Telecommunications Specialists install, operate, and maintain the Communications Support Package and provides technical support to the Team during deployment.

Multiple Team Deployment: Depending on the scope, severity, and type of disaster, more than one Team may be activated and deployed at the same time.

In this instance the FEMA Team Leader of each RNA Team reports to a RNA Coordinator who, in turn, reports directly to the ERT-A Team Leader. The ERT-A Team Leader, in coordination with the affected state may also staff a state representative position to coordinate the activities of the RNA Teams with state response operations. The RNA Coordinator may also be supported by a Logistics Coordinator, an Operations Coordinator, and/or a Telecommunications Coordinator, at the discretion of the ERTA Team Leader.

Past Uses:

FEMA Rapid Needs Assessment in Hurricane Katrina: https://www.facingsouth.org/2005/08/fema-response.html

Deployment of Rapid Needs Assessment Teams to the Midwest in response to tornados: https://www.fema.gov/news-release/2008/06/12/fema-deploys-rapid-needs-assessment-team-kansas-response-ongoing-emergencies

Materials and Resources:

FEMA Rapid Needs Assessment Manual: https://www.hsdl.org/?abstract&did=4199

FEMA Sources Cited in the Manual:

1. ***Federal Response Plan,*** 9230.1-PL, April 1999.
2. ***Robert T. Stafford Disaster Relief and Emergency Assistance Act,*** as amended, 42 U.S.C. § 5121, et seq.
3. ***Rapid Needs Assessment (RNA) Team Field Operations Guide,*** 9324.1-FG, October 1999
4. ***Emergency Response Team (ERT) Operations Manual,*** 9354.1-PR, June 1998
5. ***Emergency Support Team (EST) Operations Guide,*** 9361.1-FG, April 1998

6. ***Regional Operations Center (ROC) Operations Manual,*** 9362.1-PR, Draft
7. ***The FEMA Acronyms, Abbreviations and Terms (FAAT) List,*** updated annually
8. ***Personal Property Management Manual,*** 6150.1

Name of Tool: WHO: Rapid Risk Assessment of Acute Public Health Risks

Overview:

Not a specific tool but a manual that was developed to guide rapid risk assessment of acute public health risks from any type of hazard in response to requests from Member States of the World Health Organization (WHO).

The manual will assist rapid and defensible decision-making about acute public health events that pose a risk to human health through application of a systematic process from event detection and risk assessment to communication with key stakeholders and the public.

The manual complements existing hazard-specific risk assessment guidance, including:

- WHO Human Health Risk Assessment Toolkit: Chemical Hazards1
- Application of Risk Analysis to Food Standards Issues, a Joint FAO/WHO Expert Consultation, Geneva, Switzerland, 13–17 March 1995.

Rapid risk management of acute public health events reduces or prevents disease in affected populations and reduces negative social and economic consequences. Additional benefits include:

- defensible decision-making,
- implementation of appropriate and timely control measures,
- more effective operational communication,
- more effective risk communication, and
- improved preparedness.

Steps in the Risk Assessment of Public Health Events:

Assembling the risk assessment team: Depending on the quality and completeness of the information available to assess the risk, a risk assessment team may be assembled. Additional expertise (e.g. in toxicology, animal health, food safety or radiation protection) can be brought in at any time but may be needed at the beginning of the risk assessment.

Formulating risk questions: The risk assessment team should decide on the key questions to be answered. Based on the characteristics of the event, the risk assessment team should decide how frequently the risk assessment should be updated. The team should also agree on the priority questions and decide the time needed to complete each assessment. The time available between assessments may help direct the number and scope of risk questions considered.

Undertaking the risk assessment: Risk assessment includes three components — hazard, exposure, and context assessments. The outcome of these three assessments is used to characterize the overall level of risk.

- Hazard assessment is the identification of a hazard (or number of potential hazards) causing the event and of the associated adverse health effects.

- Exposure assessment is the evaluation of the exposure of individuals and populations to likely hazards.
- Context assessment is an evaluation of the environment in which the event is taking place. This may include the physical environment such as climate, vegetation, land use (e.g farming, industry) and water systems and sources as well as the health of the population (e.g. nutrition, disease burden and previous outbreaks), infrastructure (e.g. transport links, health care and public health infrastructure), cultural practices and beliefs. Context assessment should consider all factors – social, technical and scientific, economic, environmental, ethical, and policy and political – that affect risk.

Completing a risk assessment is not always a sequential process with hazard, exposure and context usually assessed at the same time. Although each is assessed separately, there is overlap in the information required to assess each domain.

Resources:

WHO Risk Assessment Manual:
https://apps.who.int/iris/bitstream/handle/10665/70810/WHO_HSE_GAR_ARO_2012.1_eng.pdf?sequence=1

WHO Initial Needs Assessment Form:
https://www.who.int/hac/network/global_health_cluster/ira_form_v2_7_eng.pdf

Name of Tool: PAHO

Overview:

As part of the WHO, the Pan American Health Organization (PAHO) does not have a separate rapid needs assessment tool.

Resources:

https://www.paho.org/disasters/index.php?option=com_content&view=article&id=744:rapid-needs-assessment&Itemid=0&lang=en

Name of Tool: Pennsylvania Public Health Risk Assessment Tool

Overview:

The Pennsylvania Public Health Risk Assessment Tool (PHRAT) was developed for the Pennsylvania Department of Health to help public health and health care planners prioritize their planning efforts for emergencies that impact the health of the public. The Pennsylvania PHRAT is a workbook developed in Microsoft® Excel.

The PHRAT workbook and user guide lead planners through an analysis of the health-related impacts of various hazards that can occur in their jurisdictions. The PHRAT assesses the planning that is necessary to ensure access to emergency response and preparedness resources, taking into account the services provided by public health agencies and the healthcare system. This tool can be used to generate a composite risk to the overall health of the entire jurisdiction, or it can be used to assess the risk of a hazard from the perspective of either the public health system or healthcare system, respectively.

To assess the public health risk that results from a specific hazard, severity is measured in five major domains: human health, healthcare services, inpatient healthcare infrastructure, community health and public health services. This tool takes a quantitative approach to impact assessment, measuring baseline levels of morbidity, services, and activities, and comparing them to the morbidity, service impacts and activities that result from specific hazard incidents.

The Tool:

This tool can be used to generate a composite risk to the overall health of the entire jurisdiction, or it can be used to assess the risk of a hazard from the perspective of either the public health system or healthcare system, respectively, using one of the two component or sub-analyses.

The two sub-analyses are the Public Health System Risk Assessment and the Healthcare System Risk Assessment.

- The Public Health System Risk Assessment examines the severity of specific hazards based on their impact on human health, healthcare services, the functioning of the community and the impact on public health agency services.
- The Healthcare System Risk Assessment analysis examines severity in two of these areas (human health and healthcare services), and also on in-patient healthcare facility infrastructure.

The overall Public Health Risk Assessment calculates severity based on a hazard's impact in all five of the domains.

Many hazards result in disproportionate consequences for certain vulnerable or at-risk populations. Planning for the whole community requires both the recognition of potentially severe impacts of disasters on specific populations, and focused planning to mitigate or respond to those impacts. This tool introduces the concept of adjusted risk, which weights the risk of a hazard based on the additional planning necessary to ensure universal access to emergency response resources for at-risk populations.

In addition to generating an Adjusted Risk Score for each hazard, the Pennsylvania PHRAT can also be used to integrate an assessment of preparedness efforts into planning for public health emergencies. The prioritization of planning should be driven by the current status of preparedness for each hazard. This tool attempts to generate a Planning Priority Score for specific hazards by including a quantified assessment of preparedness into the analysis. The Pennsylvania PHRAT uses the 15 Public Health Emergency Preparedness (PHEP) capabilities and the eight Healthcare Preparedness Program (HPP) capabilities to determine a Status Score for each capability. These Status Scores are generated through self-assessment processes conducted by public health and healthcare agencies. Each capability is also assigned a hazard-specific Relevance Score that is unique to each hazard, based on the relevance or importance of each capability to the public health response for that hazard. A Preparedness Score for each hazard is then calculated by using both the Status Scores and the Relevance Scores for all 15 Public Health Preparedness or all 8 Healthcare Preparedness capabilities.

The Adjusted Risk Score for each hazard is then compared to the jurisdiction's Preparedness Score for that hazard. The ratio of the Adjusted Risk Score to the Preparedness Score is referred to as the Planning Priority Indicator. These scores are then ranked, and the rank is referred to as the Planning Priority Score. This Planning Priority Score reflects a relationship between preparedness efforts and hazard impact, but unlike other risk assessments, it does not propose or presume a specific reduction of risk based on achieving a certain degree of preparedness or mitigation.

Tool Completion Steps:

Step 1: Enter Baseline Data

Before entering information about the specific hazards being analyzed, you must enter certain "Baseline Data" about your jurisdiction. There are five worksheets into which baseline data should be entered. It is possible to use the tool without entering baseline data, if data are unavailable or if planners prefer to assess the potential impact of disasters subjectively, based on the knowledge and experience of subject matter experts.

- Baseline Health, Services, and Infrastructure: The tool calculates severity by comparing hazard-specific values to baseline values in a number of metrics.
- Baseline At-Risk Populations: The tool assesses the need for plans addressing at-risk populations by examining both the special needs of at-risk populations (entered in the Hazard Worksheets) and the size of these populations (entered as Baseline Data) in your jurisdiction.
- Baseline Preparedness Capabilities (2 worksheets): In order to assess the level of preparedness in the jurisdiction, the current status of the 15 Public Health Emergency Preparedness Capabilities and the eight Healthcare Preparedness Capabilities must be entered.
- Community Characteristics: The Pennsylvania PHRAT uses certain community characteristics to estimate the impact of specific hazard scenarios. For example, the number of hospital beds located within ten miles of a nuclear reactor is used to determine the impact of an accident at a nuclear facility on the region's supply of hospital beds.

Step 2: Hazard Data

These sheets are pre-filled with data entered by the Center for Public Health Readiness and Communication (CPHRC) at the Dornsife School of Public Health. The tool's authors made a number of assumptions about the likely impacts of hazards, based on local data from historic incidents, published literature from similar incidents in other regions, and information about local infrastructure and vulnerabilities. *These assumptions apply to southeastern Pennsylvania and should not be applied to geographically distinct regions*. For example, the impact of a coastal storm or tornado would likely be much more severe along the Gulf Coast or in the Great Plains, respectively.

Hazards in the worksheet include:

- Active shooter
- Biological terrorism
- Chemical terrorism
- Civil disturbance
- Coastal storm
- Conventional explosive
- Cyber terrorism
- Drought
- Earthquake
- Fire
- Flood
- Hazardous materials
- Localized infectious disease
- Nuclear facility accident
- Pandemic
- Radiation dispersal device
- Temperature extremes
- Tornado
- Utility interruption
- Winter storm

Step 3. Analysis

When all of the hazard worksheets have been completed, the tool generates a number of different charts and graphs that will help you analyze the hazards relative to each other.

- Summary of Impacts: This sheet summarizes all of the data that has been entered for all of the hazards. The demands and critical service interruptions summarized in this sheet can potentially be used to develop benchmarks and directly guide preparedness planning.
- Severity: Compares the severity of all hazards in each domain.
- Planning Priority Scores: a simple rank-order list of the hazards in order from highest to lowest Planning Priority.
- Summary of Scores: The "Summary" worksheet displays the scores of all of the hazards, including the Planning Priority Score.

- Public Health vs. Healthcare: a comparison of the overall analysis with the two sub-analyses: Public Health System and Healthcare System.
- Probability vs. Severity: displays graphs of the probability and severity for all hazards.
- Adjusted Risk vs. Preparedness: displays graphs of the adjusted risk and preparedness for all hazards.
- At-Risk Populations: displays a graph of the At-Risk Populations Scores of all hazards.
- Individual Hazard Analyses: a menu that links to an in-depth analysis of each hazard, based on the information provided in the Hazard worksheets. These analyses include a graph of the five severity domains, an assessment of the needs and the sizes of at-risk populations, and a graph of the status of each the 15 Public Health Preparedness capabilities and the eight Healthcare Preparedness capabilities and its relevance to the specific hazard.

Resources:

PHRAT Website: https://drexel.edu/dornsife/research/centers-programs-projects/center-for-public-health-readiness-communication/our-projects/phrat/

Link to the Excel Tool:
https://drexel.edu/~/media/Files/dornsife/CPHRC/PHRAT%20Tool.ashx?la=en

Link to Guide/Manual:
https://drexel.edu/~/media/Files/dornsife/CPHRC/PHRAT%20Guide.ashx?la=en

Additional Resources:

Red Cross Needs Assessment/Guidelines for Emergency Assessment: Guidelines that provide a framework for an assessment to be organized. "By working through the guidelines, you should be able to cover all the main issues required for a successful assessment."

Chapters 1 to 3 cover general concepts.

Chapters 4 to 8 focus on the assessment process. The order of the chapters is roughly equivalent to the order in which tasks are carried out in a real assessment – planning, fieldwork, analysis and reporting. However, assessment is not a linear process and most of these tasks overlap.

Chapters 9 and 10 focus on the content of an assessment. Part 2 provides guidance on the elements to look at in order to gain a better understanding of an emergency situation.
https://www.ifrc.org/en/what-we-do/disaster-management/responding/disaster-response-system/emergency-needs-assessment/

WHO Rapid Health Assessment Protocols for Emergencies: Guidelines for conducting health assessments for specific emergencies that include: Epidemics of infectious origin, Meningitis outbreaks, outbreaks of viral hemorrhagic fever, including yellow fever, outbreaks of acute diarrheal disease, sudden−impact natural disasters, sudden population displacements, nutritional emergencies, chemical emergencies, complex emergencies (NOT A NEEDS ASSESMENT TOOL)
http://www.wpro.who.int/vietnam/publications/rapid_health_assessment_protocols.pdf

PAHO/WHO Examples of Needs Assessments: This report summarizes acute public health events recorded in the WHO's secure Event Management System (EMS) between 2001 and 2014. These events constituted a public health risk to countries through the international spread of disease or that may have required a coordinated international response from the perspective of the WHO Regional Office for the Americas (the Pan American Health Organization, PAHO/WHO) and the WHO Regional Office for Europe. https://www.paho.org/hq/dmdocuments/2015/2015-cha-acute-ph-aro-who-americas-report.pdf