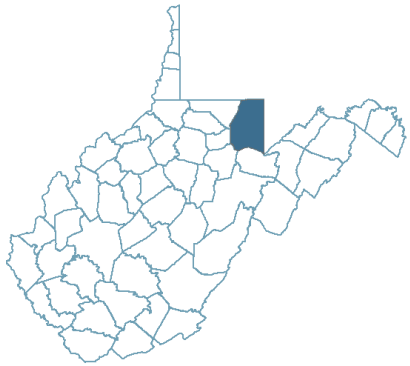
HEALTH RISK ASSESSMENT (HRA):
SAMPLE COUNTY REPORT

Fall 2012

Center for Threat Preparedness
West Virginia Department of Health and Human Resources



State Contact: Rebecca Schmidt
Rebecca.A.Schmidt@wv.gov

County Contact: Name Name
name@wv.gov

Executive Summary

Background

In March 2011, the Centers for Disease Control and Prevention published 15 Public Health Preparedness Capabilities[1] to guide state and local preparedness planning. Capability 1, Community Preparedness, instructs public health jurisdictions to conduct a risk assessment that identifies and assesses hazards to public health and health systems. Health departments receiving Public Health Emergency Preparedness (PHEP) funds are required to include community partners in this assessment and to define risk, identify hazards and hazard impacts, and list strengths and areas for improvement to reduce hazard impact.

To meet this requirement, the West Virginia Bureau for Public Health's Center for Threat Preparedness (CTP) engaged an advisory committee and a workgroup composed of representatives from multiple state agencies and seven local health departments. These groups developed the Health Risk Assessment (HRA)[2] toolkit used by each local health department to meet the risk assessment requirement. Data from assessments in the 49 local health jurisdictions, providing services for West Virginia's 55 counties, will be used to provide a baseline health preparedness dataset for counties, regions and the state.

Public Health Preparedness Capabilities
Community Preparedness
Community Recovery
Emergency Operations Coordination
Emergency Public Information and Warning
Fatality Management
Information Sharing
Mass Care
Medical Countermeasure Dispensing
Medical Materiel Management and Distribution
Medical Surge
Non-pharmaceutical Interventions
Public Health Laboratory Testing
Public Health Surveillance and Epidemiological Investigation
Responder Safety and Health
Volunteer Management

Purpose

Risk assessments are included in the planning cycle for public health preparedness. The three steps outlined in the Public Health Preparedness Capabilities are as follows:

1) Assess Current State: assessing response roles and responsibilities in your county; assessing resources available to your health department and partners; and assessing your progress and needs in developing the 15 capabilities.
2) Determine Goals: reviewing jurisdictional planning and assessment documents; prioritizing which of the 15 capabilities to focus on; and developing short and long-term goals to address the gaps or needs in the prioritized capabilities.
3) Develop Plans: implementing goals in your agency; planning for how to build and sustain your preparedness capabilities; and evaluating the progress you've made in implementing your goals.

The toolkit utilized in this assessment included questions to help address each of the three planning steps. In particular, the toolkit was designed to encourage you to: discuss response roles and responsibilities with your partners, assess your agency's current preparedness status and identify areas on which to focus future planning and exercises.

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[1] The Hospital Preparedness Program, administered by the Assistant Secretary for Preparedness and Response (ASPR) in the US Department of Health and Human Services, has also developed a set of preparedness capabilities – Healthcare Preparedness Capabilities. Capability 1, Healthcare System Preparedness, closely mirrors the Community Preparedness capability and also includes a risk assessment component.

[2] The Health Risk Assessment is another term for the jurisdictional risk assessment. In order to distinguish our assessment from traditional emergency management assessments and to clarify the focus, we added "health" to the title.

Under Capability 1: Community Preparedness, there are four functions (see below). The HRA process incorporated each of these functions:

Function	HRA component linked to function:
1) Determine risks to the health of the public health jurisdiction/county	*Participant Tool*: The tool included a process to identify and rank hazards in each county that posed the greatest risk to public health.
2) Build community partnerships to support health preparedness	*Local HRA Planning*: The process required health departments in each county to invite at least 5 outside participants.
3) Engage with community organizations to foster public health, medical, and mental/behavioral health social networks	*Local Data Collection:* The HRA was completed with an average of 5.5 (median 4) external partners in each county.
4) Coordinate training or guidance to ensure community engagement in preparedness efforts	*Reports:* This report and the companion Resource and Training Guide provide opportunities and support for community engagement.

Overview

Each section of this report begins with a summary page which includes the purpose of that section of the HRA, limitations of the section, and ideas on how to use the data from the report in health preparedness planning in your county. The sections are as follows:

- **Section 1: Hazard Identification and Ranking –** The five hazards that your participants identified as posing the greatest risk to the health and health systems in your county
- **Section 2: Hazard Impact –** How the top-ranked hazard will affect the health of your citizens and the services and infrastructure of your health and public health systems
- **Section 3: Agency Mitigation –** What measures county agencies have in place to mitigate against this hazard
- **Section 4: Community Mitigation –** What measures your county/community has in place to decrease hazard impact. These steps taken by your community focus on partnerships, coalitions and planning related specifically to:
  - Outreach to and engagement with vulnerable or at-risk populations
  - Traditional public health functions
  - Volunteer and donations management
- **Appendices:** Definitions of terms and the scales used to rank hazard risk, impact and mitigation
- ***HRA: Resource and Training Guide for Hazard Planning and Mitigation, Version 1***

Participating Agencies

Local Emergency Management/911

Local Primary Care Center

Regional Behavioral Health Center

Emergency Medical Services

Local Board of Health

Hospital Infection Control

Board of Education

Report Limitations: This toolkit was created to assess current state, determine goals, develop plans, and build community partnerships in a participatory process at the local level. The HRA did not include an exhaustive list of risks, nor was the assessment a rigorous data driven model. Results are intended for discussion and planning purposes. The number and representation of agencies in your process, among other factors, can affect the applicability of these results. Planning is an imperfect process that relies on assumptions. Plans must be constantly updated and revised according to changing assumptions, new data, exercise results and response to events. The HRA is one tool of many to draw on in your preparedness activities.

Section 1: Hazard Identification and Ranking

Section 1 Purpose

The Hazard Identification and Ranking Section of the HRA Toolkit was developed to:

1) Consider how hazards apply specifically to the health and health systems in your county
2) Consider how impact, probability and mitigation change risk
3) Consider and discuss how different hazards may relate to each other
4) Consider and discuss which hazards may be unique to your county or community

Based on your results on the following pages…

…consider using the following…

Next Steps

- Use *Section 1: Hazard Identification and Ranking* of the *Resource and Training Guide for Hazard Planning and Mitigation* to research hazards in your county
- Develop exercises and planning scenarios among health system partners using one of the top five hazards
- Continue/start discussions with your emergency manager about the health and health system perspective in planning and response
- Hold community discussions on how different hazards may affect the health and health systems in your county
- Discuss results in comparison with other assessment processes (including Hazard Vulnerability Analyses conducted by emergency management and hospitals)
- Consider the capabilities public health would rely on in your county to respond to each of the hazards

Section 1 Limitations: There are many risk equations in the literature, each with strengths and limitations. The equation *Risk = Probability * (Impact-Mitigation),* was chosen because of the inclusion of mitigation and its relative simplicity for use in a community setting. Due to time limitations, the concept of relative risk was not addressed. To arrive at the hazard ranking, an abbreviated method to identify hazards was adopted, as was an abbreviated list of mitigation measures and impacts. Due to logistical constraints and the lack of quantitative data on hazard probabilities and impact related indicators, a subjective process relying on subject matter expertise was adopted in the HRA. Detailed scenarios for each hazard were not developed because of the diversity of infrastructure, industry and geography across the state. Finally, not all counties followed the same process to arrive at their top five hazards – some counties used consensus and some used a group average of hazard scores.

Top 5 Hazards for Health and Health Systems: SAMPLE County[3]

Biological or Chemical Release

Score: 30

Public Health's Role:
COOP. Providing support to emergency management as requested. Implementing additional surveillance measures.

Communications or IT Failure

Score: 25

Public Health's Role:
Implementing necessary COOP activities including back-up communications such as amateur radio. Providing support to emergency management as requested.

Severe Winter Storm

Score: 15

Public Health's Role:
Assisting with sheltering and mass care activities. Providing suppor to emergency management as requested.

Dam Failure

Score: 9

Public Health's Role:
Implementing COOP. Provding support to emergency management as requested. Implementing additional surveillance measures.

Tornado or Windstorm

Score: 8

Public Health's Role:
COOP and mass care activities.

Public Health Comments Related to Prioritized Hazards	
Question	**Response**
1) Factors that limit public health's ability to mitigate these hazards	Staffing an ICS structure for 24 hour shifts would be a major challenge. Funding to pay staff and supply needed resources is inadequate.
2) Steps public health has taken to collaborate with local partners to mitigate these hazards	Through committees and collaboration more are becoming aware of the need for planning and preparedness. More MOU's with private entities. OES notifications and dialogues, letters of education, surveys. Community preparedness presentations at civic groups and businesses.
3) County-specific complications that public health considers in preparedness planning	Small county, few resources. Most people "wear numerous hats." We have no interstate system nearby and are often cut off from the rest of the world during weather emergencies. Thus our communications through internet/phone are often down and the road can be impassible.

[3] *The full list of hazards, including hazard definitions, can be found in the Health Risk Assessment (HRA) Participant Tool. For a copy of the tool, please e-mail Rebecca.A.Schmidt@wv.gov or contact your local health department. Scores for the hazards were created using a group process.*

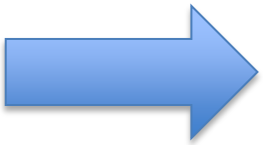
Section 2: Hazard Impacts[4]

Section 2 Purpose

The Hazard Impact section of the HRA Toolkit was developed to:

1) Identify specific areas (health and public health services and infrastructure, physical and emotional health, etc.) that would be impacted by the top hazard
2) Consider the levels of resources needed to address the top hazard
3) Consider when additional assistance would be requested both from other agencies and from surrounding counties and the state

Based on your results on the following pages…



…consider using the following…

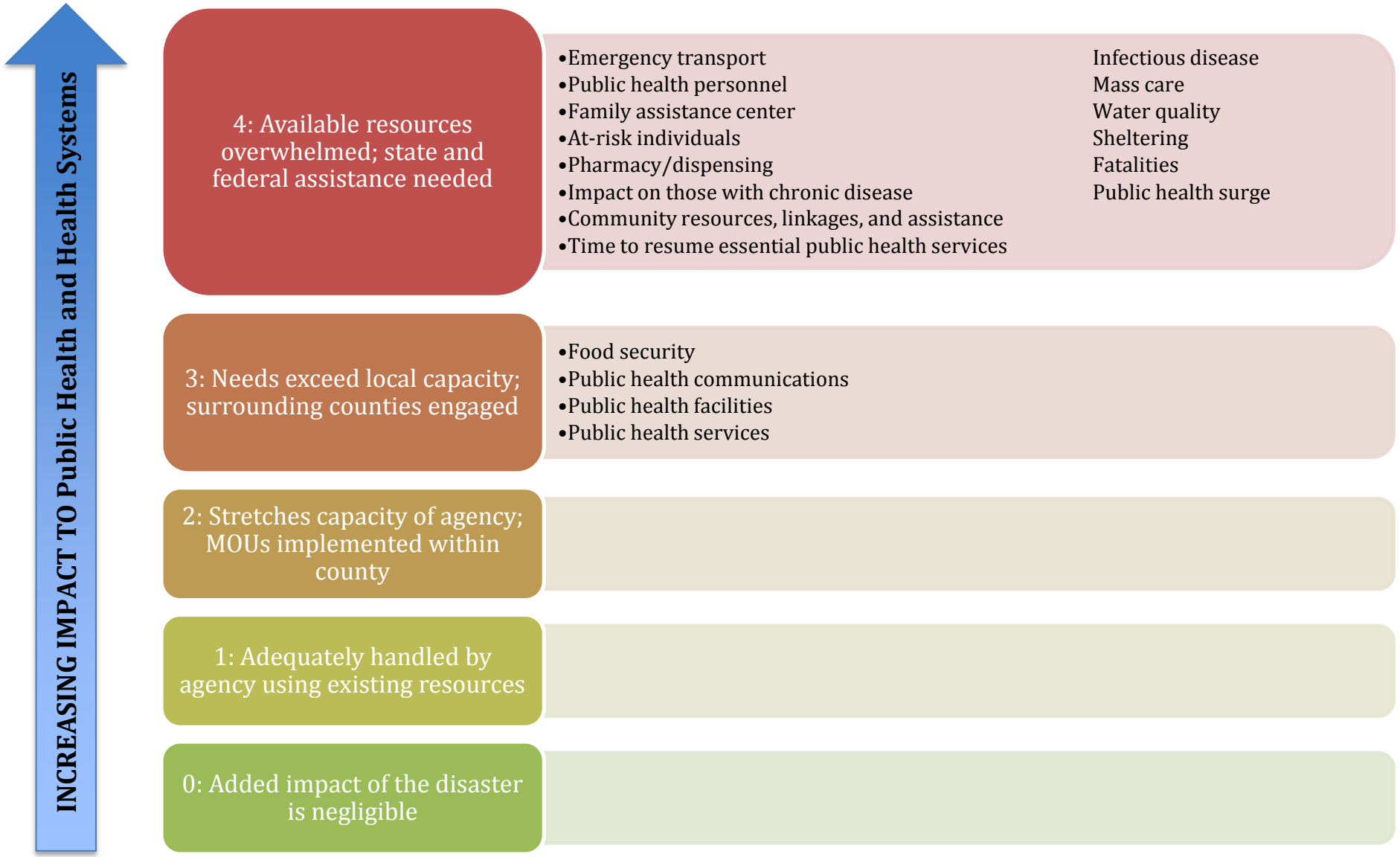
Next Steps

- Use *Section 2: Hazard Impacts* of the *Resource and Training Guide for Hazard Planning and Mitigation* to raise awareness and increase training on the many possible impacts of hazards
- Consider completing the *Hazard Impact Section* of the *HRA Participant Tool* with partners in your county for the other hazards that your group prioritized.
- Consider the impacts with rankings of 3-4; which agencies would be responsible for these areas in a response situation? Are there any resources that your county or agency could access locally or regionally to reduce these impacts?
- Consider incorporating high ranked impacts into your next exercise scenario, if applicable

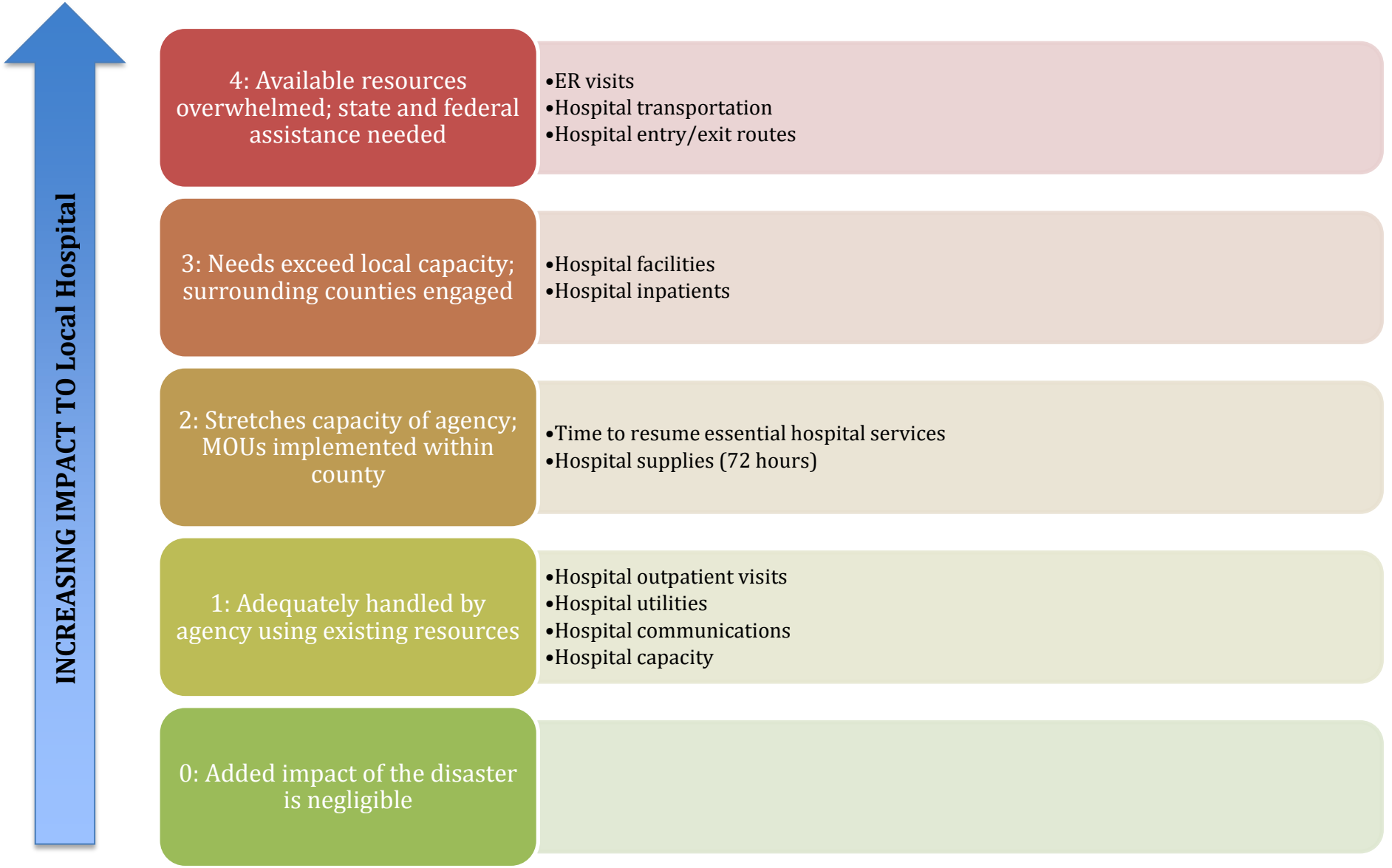
Section 2 Limitations: Due to the limited timeframe and our focus on creating a participatory process, we limited the assessment by focusing on the specific impacts of the highest ranked hazard. The validity of impact rankings may be limited by the lack of a scenario and/or lack of participation by subject matter experts. Participants were instructed to separate baseline conditions from hazard specific impacts; however, baseline data was not available except through local knowledge and expertise. We used counties as the unit impacted by hazards. The validity of this decision is limited by the fact that a) two health departments operate in multi-county jurisdictions, b) many border counties in West Virginia coordinate with counties in surrounding states for response, and c) many health and behavioral health systems operate regionally rather than by county.

[4] *The full list of impact definitions can be found in the Health Risk Assessment (HRA) Participant Tool. For a copy of the tool, please e-mail Rebecca.A.Schmidt@wv.gov or contact your local health department.*

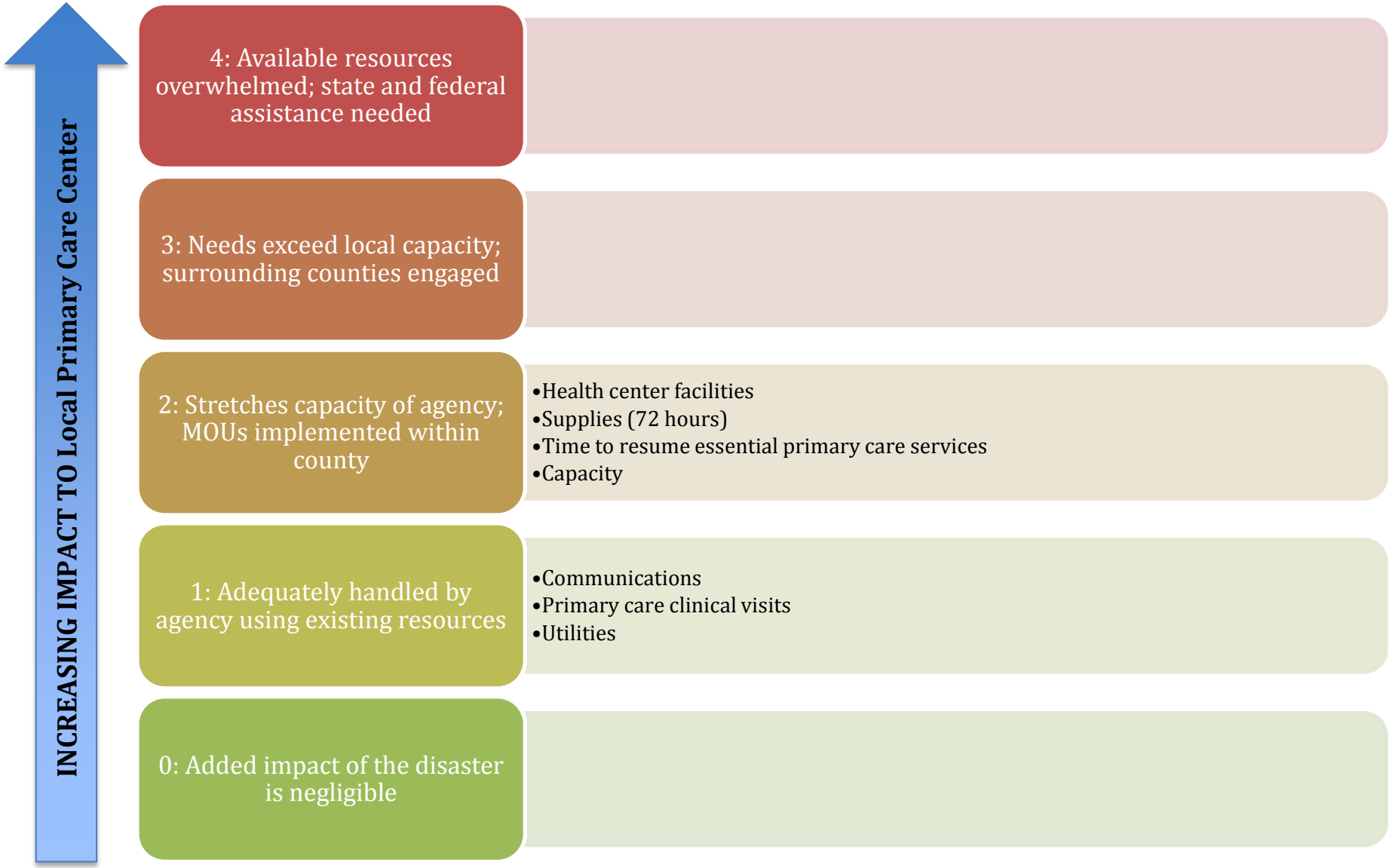
Impacts of Biological or Chemical Release on the Public's Health in SAMPLE County



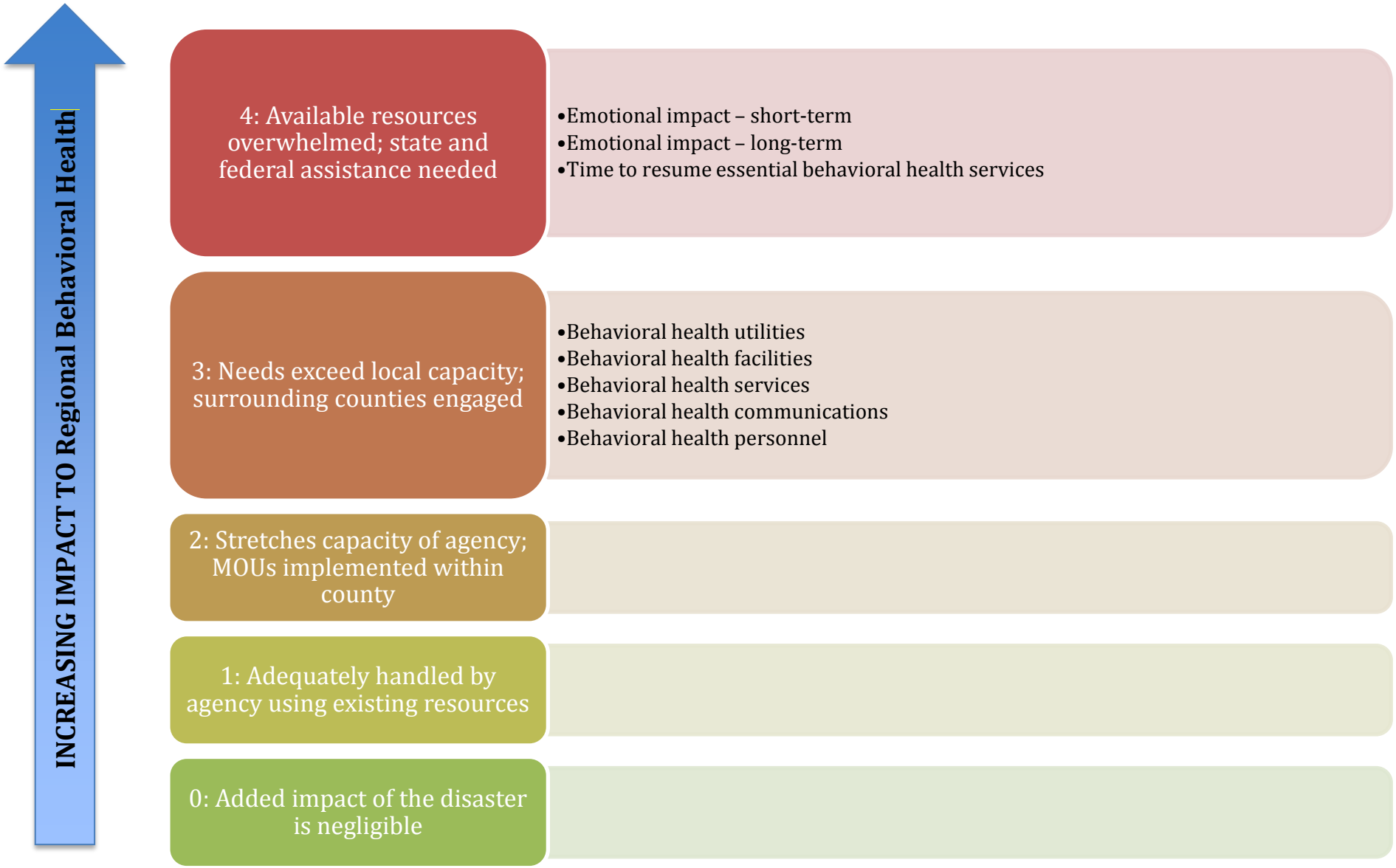
Impacts of Biological or Chemical Release on Local Hospital in SAMPLE County



Impacts of Biological or Chemical Release on Local Primary Care Center in SAMPLE County



Impacts of Biological/Chemical Incident on Regional Behavioral Health in SAMPLE County



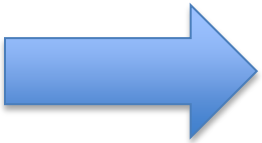
Section 3: Agency Mitigation

Section 3 Purpose

The Agency Mitigation section of the HRA Toolkit was developed to:

1) Give you a standardized tool to measure key preparedness indicators in your agency
2) Identify partnership strengths and opportunities for improvement
3) Compare and contrast preparedness training needs and expertise in your county
4) Encourage intra-agency communication and sharing of plans and response expectations

Based on your results on the following pages…



…consider using the following…

Next Steps

- Use *Section 3: Agency Mitigation* of the *Resource and Training Guide for Hazard Planning and Mitigation* to identify training and resources to support your agency's preparedness. Consider:
  - Whether or not agency plans are consistent with the planning structure that your county's emergency management uses
  - Using the resources to revise/develop your plans and exercises
- Consider sharing your plans with other counties or contacting counties in your region for assistance
- Consider hosting a Memorandum of Understanding (MOU) training and update meeting through your Local Emergency Planning Committee or health department
- Contact regional, state and federal partners for assistance

Section 3 Limitations: The rankings used to assess planning required some awareness of and familiarity with agency plans. The validity of this ranking is thus limited by the awareness of agency representatives contributing to the process. We used standardized rankings to assess partnerships between agencies. However, not all of the ranking categories fit the various agency relationships. For example, not every partnership requires an MOU – your agency's needs and responsibilities during a response determine whether or not a written agreement is necessary. You were asked to rank your annex specific to the top hazard identified by the group. This ranking may be more or less applicable, depending upon the structure of your plans (i.e. whether or not your agency/county uses an annex model).

Agency Mitigation: Continuity of Operations Planning

Level of Planning	Agency Name
My agency has no plan.	
My agency has a written plan.	
My agency has a written plan, and it has been reviewed in the past 12 months.	•Local Primary Care Center •Local Behavioral Health Center
My agency has a written plan, which has been reviewed in the past 12 months and exercised in the last 5 years.	•Local Emergency Medical Services •Local Board of Education •Local Emergency Management •Local Hospital
My agency has a written plan, which has been reviewed in the past 12 months and used in a real event in the last 5 years.	•Local Health Department

Agency Mitigation: All-Hazards/Emergency Operations Planning

INCREASING LEVEL OF PLANNING

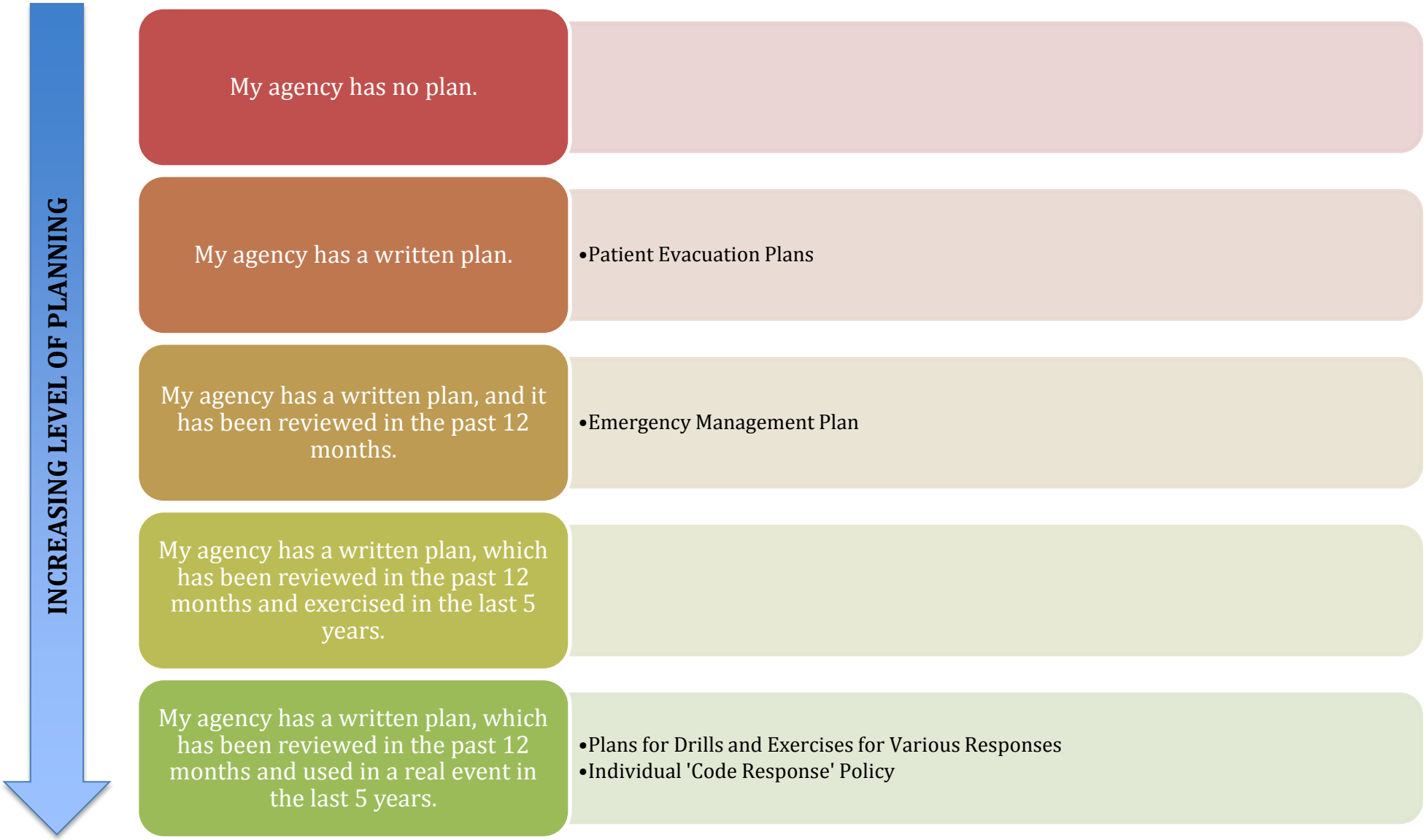
Level of Planning	Agency Name
My agency has no plan.	
My agency has a written plan.	
My agency has a written plan, and it has been reviewed in the past 12 months.	•Local Primary Care Center •Local Behavioral Health Center
My agency has a written plan, which has been reviewed in the past 12 months and exercised in the last 5 years.	•Local Health Department
My agency has a written plan, which has been reviewed in the past 12 months and used in a real event in the last 5 years.	•Local Emergency Medical Services •Local Board of Education •Local Emergency Management •Local Hospital

Agency Mitigation: Annex for Biological or Chemical Incident

Level of Planning	Agency Name
My agency has no annex.	•Local Primary Care Center •Local Behavioral Health Center
My agency has a written annex.	•Local Health Department
My agency has a written annex, and it has been reviewed in the past 12 months.	•Local Emergency Medical Services •Local Board of Education
My agency has a written annex, which has been reviewed in the past 12 months and exercised in the last 5 years.	•Local Emergency Management •Local Hospital
My agency has a written annex, which has been reviewed in the past 12 months and used in a real event in the last 5 years.	

Agency Mitigation: Additional Public Health Plans

Agency Mitigation: Local Primary Care Center Additional Plans

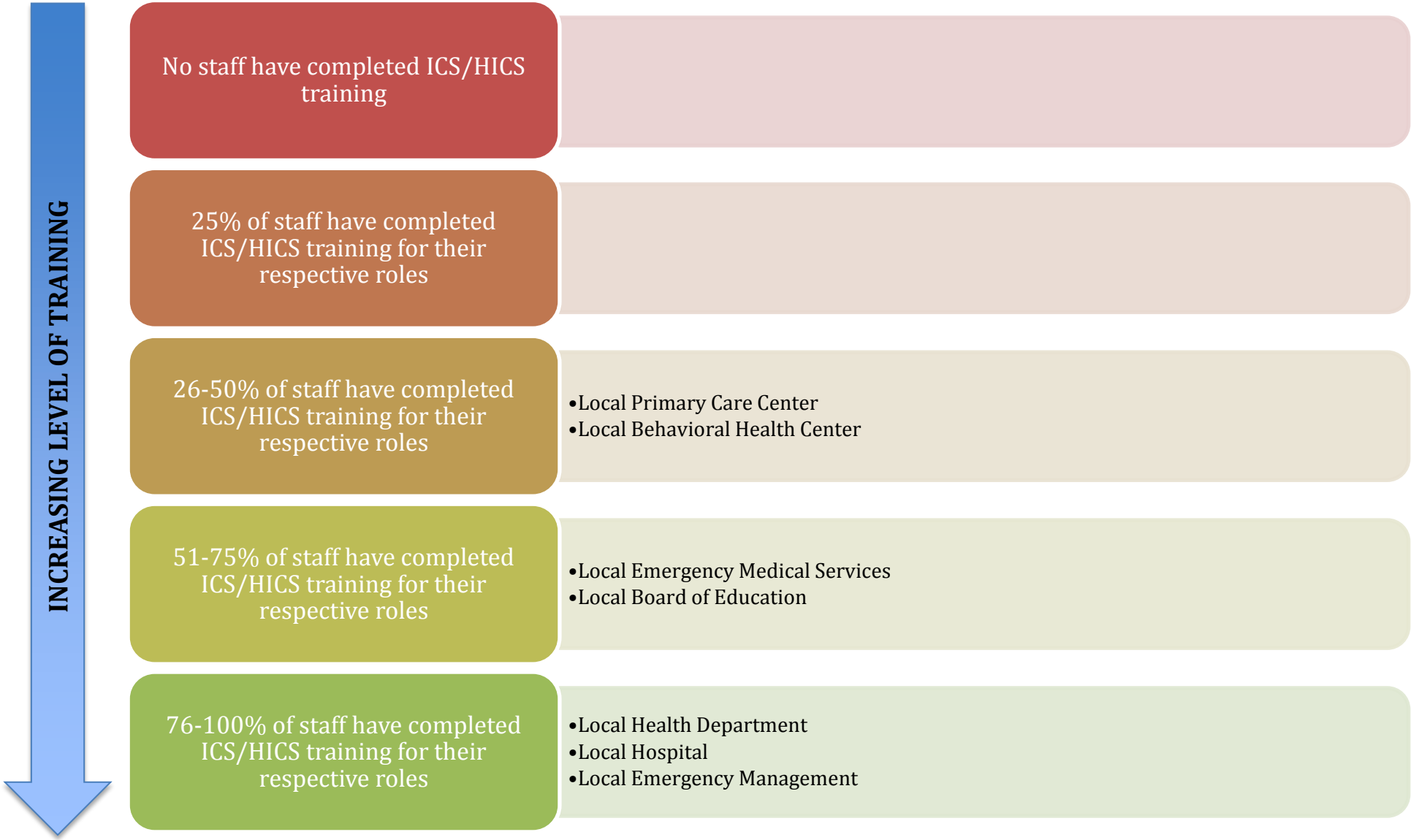


Agency Mitigation: Local Hospital Additional Plans

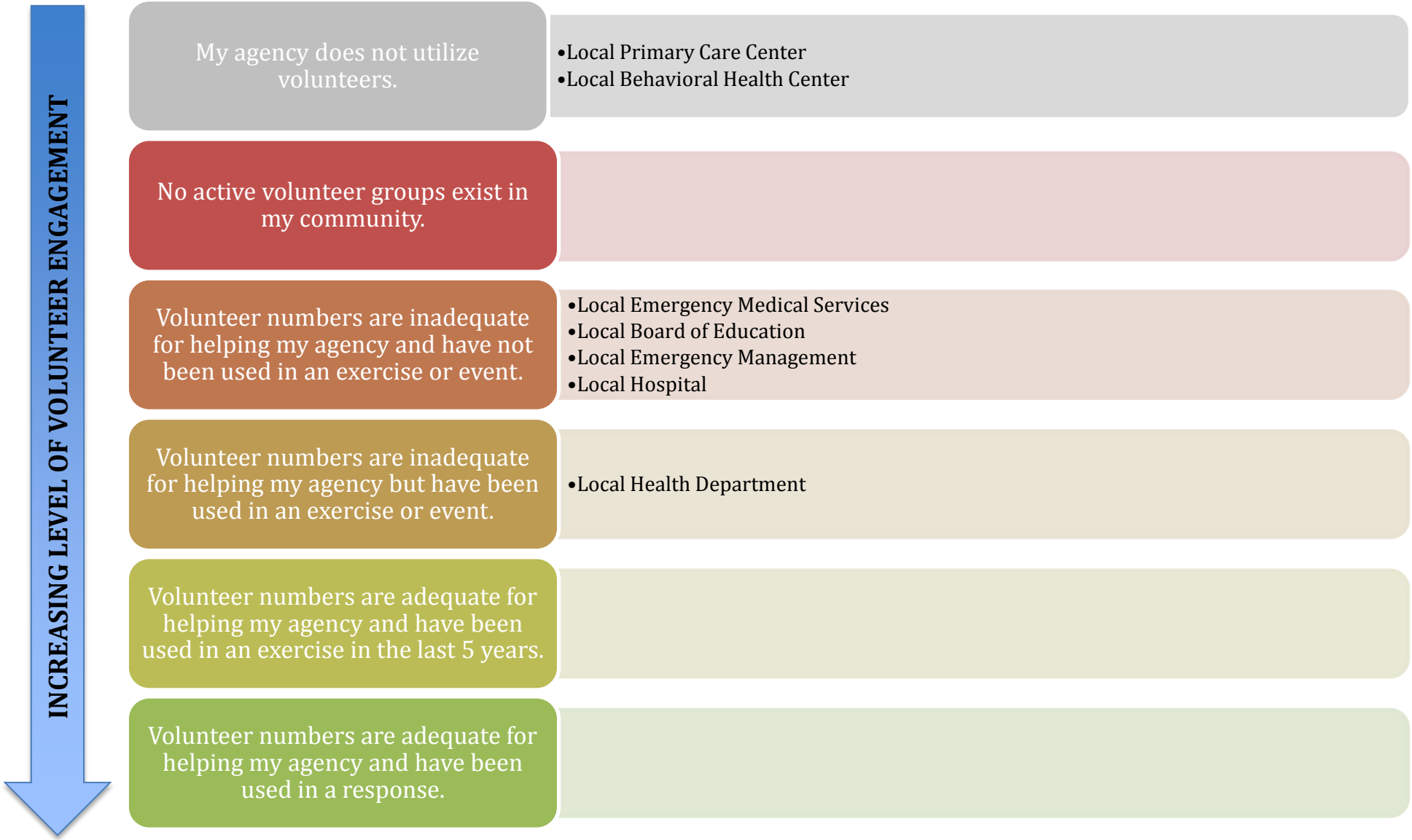
Agency Mitigation: Regional Behavioral Health Center Additional Plans

Level of Planning	Type of Plan	Level of Planning	Type of Plan
My agency has no plan.	•Patient Evacuation Plans •Crisis and Emergency Risk Communications (CERC) Plan	No such team exists within my community.	
My agency has a written plan.		A plan exists to form this team within my community.	
My agency has a written plan, and it has been reviewed in the past 12 months.		An informal team has been formed within my community.	•Community Assesment Teams
My agency has a written plan, which has been reviewed in the past 12 months and exercised in the last 5 years.		A formal team has been created in my community and members have been trained.	•Crisis Intervention Teams
My agency has a written plan, which has been reviewed in the past 12 months and used in a real event in the last 5 years.		The formal team exists, members have been trained, and the team is active in my community.	

Agency Mitigation: Incident Command System (ICS) Training



Agency Mitigation: Volunteer Engagement



Agency Mitigation: Partnerships

	WVHA Disaster Taskforce	Local Emergency Management	Law Enforcement	Local EMS	Local Health Department	Pharmacies	Behavioral Health Centers	LEPC	WV REDI	Local Hospital	Fire Department	Primary Care Centers	Red Cross	Regional Epidemiologist	Regional Environmental Health	Schools, Colleges, Universities	Public Service Districts	Solid Waste Authority	Funeral homes	Long-term care facilities	Private Behavioral Health Partners	Local Behavioral Health Coalitions
Local Health	--	4	3	1	--	3	1	1	--	3	1	1	1	4	4	3	1	1	3	1	--	--
Hospital	4	4	3	4	3	1	1	1	1	--	1	--	--	--	--	--	--	--	--	--	--	--
Emergency Management	--	4	4	4	4	1	0	4	--	4	3	0	2	--	--	--	--	--	--	--	--	--
Behavioral Health	--	0	2	2	1	4	4	1	--	0	0	0	1	--	--	--	--	--	--	--	4	4
Primary Care	--	0	0	1	1	2	0	1	--	1	0	4	0	--	--	--	--	--	--	--	--	--
EMS	--	4	4	4	1	1	2	3	--	4	4	1	1	--	--	--	--	--	--	--	--	--
School Board	--	3	4	3	3	1	1	1	--	0	3	1	0	--	--	--	--	--	--	--	--	--
Etc.	--								--					--	--	--	--	--	--	--	--	--
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Etc.	--								--					--	--	--	--	--	--	--	--	--

Partnership Legend

-- = Not applicable; agency was not asked to assess this partnership.
0 = My agency does not meet or communicate with this group.
1 = My agency has met or talked with this group.
2 = My agency has a written understanding with this group, which has been reviewed in the past 12 months.
3 = My agency has a written understanding, which has been reviewed in the past 12 months and exercised in the last 5 years.
4 = My agency has a written understanding, which has been reviewed in the past 12 months and activated in a real event in the last 5 years.

Agency Mitigation: Events and Exercises (1)

In the past five years, has your agency…

	…required additional staffing for an event?	**…implemented Memorandums of Understanding (MOUs) with partners?**	**…been a partner in shelter set-up and/or management?**	**…conducted an emergency notification drill for staff?**
Local Health Department	Yes	H1N1 2009-2010	Flood 2011	Quarterly
Local Hospital	No	Yes	Yes	Yes
Emergency management	No	2009, 2010, 2011	Flash flood 2011	Yearly
Local Primary Care Center	No	No	No	Yes
School Board	Yes	No	Yes	Yes
Behavioral Health	Yes	Yes	Yes	No
EMS	No	Yes	No	Yes

Agency Mitigation: Events and Exercises (2)

In the past five years, has your agency…

	…communicated emergency information to the public?	**…utilized volunteers for a real event?**	**…used radios in a drill, exercise or event?**	**…shared your MOUs with relevant partners (i.e. to assess overlap of services)?**	**Does your agency have a Public Information officer? (Y/N)**
Local Health Department	H1N1 2009-2010	H1N1 2009-2010	H1N1 2009	No	**Y**
Local Hospital	Yes	Yes	Yes	Don't know	**Y**
Emergency management	Road closures, water distribution	No	Yearly	State, local, regional	**Y**
Local Primary Care Center	No	No	Yes	Yes	**N**
School Board	Yes	Yes	Yes	Yes	**Y**
Behavioral Health	Yes	No	Yes	No	**N**
EMS	No	No	Yes	No	**Y**
Etc.					

Agency Mitigation: Additional Measures to Reduce Hazard Impact

	Additional mitigation measures
Local Health Department	Generator tested quarterly, MOU with surround health departments for support
Local Hospital	
Emergency management	
Local Primary Care Center	
School Board	
Behavioral Health	
EMS	
Other: Etc.	

Emergency incidents (ex. floods, outbreaks) that employees who are paid with Public Health Emergency Preparedness (PHEP) funds have responded to in the last 5 years: *H1N1, Derecho Windstorm, Boy Scout Jamboree, white powder incident response*

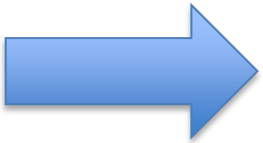
Section 4: Community Mitigation

Section 4 Purpose

The Community Mitigation section of the HRA Toolkit was developed to:

1) Identify and discuss critical response areas and agency response roles
2) Identify and track mitigation measures in your community including measures that have been linked to increasing community resilience and social capital. These include: comprehensive planning; engaging with different sectors and different populations; and training, exercises and real events

Based on your results on the following pages…



…consider using the following…

Next Steps

- Use *Section 4: Community Mitigation* of the *Resource and Training Guide for Hazard Planning and Mitigation* to:
  - Identify and engage populations that you have not previously engaged in planning
  - Conduct outreach to new populations and partners
- Consider forming a preparedness advisory group of individuals from agencies representing access and functional needs or linking them with your LEPC
- Consider conducting a Community Assessment for Preparedness and Emergency Response (CASPER) to assess your county preparedness
- Consider contacting DHSEM/CTP/surrounding counties for assistance on incorporating individuals with access and functional needs into planning

Section 4 Limitations: We used counties as the unit impacted by hazards. The validity of this decision is limited by the fact that a) two West Virginia health departments operate as multi-county jurisdictions, b) many border counties in West Virginia coordinate with counties in surrounding states for response, and c) many health and behavioral health systems operate regionally rather than by county.
While a list of potentially at-risk populations/populations with access and functional needs was included in the HRA, not all populations may be applicable to your county (i.e. incarcerated persons, if no facility is located in your county). We asked you to rank several annexes in your county plans. This ranking may be more or less valid, depending upon the structure of your plans (i.e. whether or not your agency/county uses an annex model) and depending on whether emergency management was able to participate.

Community Mitigation:
Actions Taken by your County to Reduce Hazard Impact

Coalitions

- LEPC (Local Emergency Planning Committee)
- SNS (Strategic National Stockpile)
- Public health region

Exercises

- SNS functional exercise
- Communications drills quarterly
- COOP exercise 2012
- County Airport exercise, 2011

Populations*

- **Older adults**
- Children
- **Persons with disabilities**
- Persons with chronic conditions
- Persons with limited English
- Ethnic minorities
- Incarcerated persons
- Persons with behavioral health needs
- **Transient populations (i.e. migrant workers, temporary workers, university students, homeless)**
- The private sector
- **Faith communities**
- Other

Other

- Does your county have a Special Needs Registry? **Yes**
- Has your county opened a shelter in the past five years? **Yes**
- Has your county opened a family assistance center in the past five years? **No**

*__Please note:__ Bold indicates populations that your county has engaged in exercises and planning activities such as coalitions.

Community Mitigation: Planning

INCREASING LEVEL OF PLANNING

Level of Planning	Type of Plan/Annex
My county has no plan/annex ***or*** participants are not aware of this plan.	•Large Animal Sheltering •Donations Management •Pet Sheltering
My county has a written plan/annex.	•Volunteer Management •Fatality Management
My county has a written plan/annex, and it has been reviewed in the past 12 months.	
My county has a written plan/annex, which has been reviewed in the past 12 months and exercised in the last 5 years.	
My county has a written plan/annex, which has been reviewed in the past 12 months and used in a real event in the last 5 years.	

Additional County Mitigation Measures: *We have a large group of trained and equipped volunteers: CERT; MRC. Also have shelter supplies.*

APPENDIX: DEFINITIONS

All-Hazards Planning: All-Hazards Planning is based on the concept that jurisdictions should develop, exercise and revise core plans that address all hazards, whether natural, accidental, negligent or intentional.

Behavioral Health Center: Includes any office/center whose primary mission is to provide behavioral health care. Behavioral health is defined as the blending of substance (alcohol, drugs, and tobacco) abuse and mental health disorders prevention and treatment for the purpose of providing comprehensive services.

Community Resilience: The ongoing and developing capacity of the community to account for its vulnerabilities and develop capabilities that aid that community in (1) preventing, withstanding, and mitigating the stress of a health incident; (2) recovering in a way that restores the community to a state of self-sufficiency and at least the same level of health and social functioning after the health incident; and (3) using knowledge from a past response to strengthen the community's ability to withstand the next health incident.[5]

Continuity of Operations Plan: Continuity of Operations (COOP), as defined in the National Continuity Policy Implementation Plan (NCPIP) and the National Security Presidential Directive-51/Homeland Security Presidential Directive-20 (NSPD-51/HSPD-20), is an effort within individual executive departments and agencies to ensure that Primary Mission Essential Functions (PMEFs) continue to be performed during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies.

Hazard: Source of danger.

Health: State of physical, mental and social wellbeing and not merely the absence of disease or infirmity; condition of being sound in body, mind or spirit.

Individuals with access and functional needs: Individuals who may have greater difficulty accessing the public health and medical services they require following a disaster or emergency. At-risk individuals have needs in one or more of the following functional areas: communication, medical care, maintaining independence, supervision, and transportation. At-risk groups may include children, senior citizens, and pregnant women as well as people who have disabilities, live in institutionalized settings, are from diverse cultures, have limited English proficiency or are non-English speaking, are transportation disadvantaged, have chronic medical disorders, or have pharmacological dependency. Individuals with access and functional needs have also been referred to as "at-risk," "special needs" or "vulnerable" populations.[6]

Jurisdictional Risk Assessment (JRA): Identify the potential hazards, vulnerabilities, and risks in the community that relate to the jurisdiction's public health, medical, and mental/behavioral health systems, the relationship of those risks to human impact, interruption of

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[5] Chandra A, Acosta J, Stern S, Uscher-Pines L, Williams MV, Yeung D, Garnett J, and Meredith LS, *Building Community Resilience to Disasters: A Way Forward to Enhance National Health Security*, Santa Monica, California: RAND Corporation, TR-915-DHHS, 2010 (http://www.rand.org/pubs/technical_reports/TR915.html).

[6] Assistant Secretary for Preparedness and Response (ASPR) (April 23, 2012). At-Risk Individuals. In *Public Health Emergency*. Retrieved April 30, 2012 from http://www.studygs.net/citation.htm.

public health, medical, and mental/behavioral health services, and the impact of those risks on the jurisdiction's public health, medical, and mental/ behavioral health infrastructure.[7]

Local Emergency Planning Committee (LEPC): In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA) of 1986. Title III of this legislation requires that each community establish a Local Emergency Planning Committee (LEPC) to be responsible for developing an emergency plan for preparing for and responding to chemical emergencies in that community. These committees have expanded in many jurisdictions to include all-hazards planning.

Memorandum of Understanding (MOU): A document describing a bilateral or multilateral agreement between parties (including private, public and non-governmental). MOUs for preparedness planning are often developed between partners to identify and agree upon resource engagement in an emergency situation.

Mitigation: The strategies and resources used by agencies, individuals and communities to eliminate or reduce the frequency, magnitude or severity of a hazard event.

Risk: Expected loss; probability of the hazard occurring multiplied by the impact of the hazard minus the measures in place to mitigate the hazard's impact.

Strategic National Stockpile (SNS): CDC's Strategic National Stockpile (SNS) has large quantities of medicine and medical supplies to protect the American public if there is a public health emergency (terrorist attack, flu outbreak, earthquake) severe enough to cause local supplies to run out. Once Federal and local authorities agree that the SNS is needed, medicines will be delivered to any state in the U.S. in time for them to be effective.[8] West Virginia has plans to receive and distribute SNS medicine and medical supplies to local communities as quickly as possible. Local health departments have plans to receive SNS medicine and supplies from the state and distribute to their counties.

Vulnerability: Open to attack, damage or being wounded. "*Vulnerability* is the pre-event, inherent characteristics or qualities of a social system that create potential harm. Vulnerability is a function of exposure (who or what is at risk) and sensitivity to the system (the degree to which people and places can be harmed)".[9]

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[7] Centers for Disease Control and Prevention (CDC). 2011. Capability 1: Community Preparedness. *Public Health Preparedness Capabilities: National Standards for State and Local Planning*.
[8] Centers for Disease Control and Prevention (CDC). 2008. Strategic National Stockpile. Accessed October 5th, 2012 at www.cdc.gov/phpr/stockpile/stockpile.htm
[9] Cutter, Susan L., Lindsey Barnes, Melissa Berry, Christopher Burton, Elijah Evans, Eric Tate, and Jennifer Webb. 2008. A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, *18*(4), 598-606.