

Planning for an Emergency: Strategies for Identifying and Engaging At-Risk Groups

A guidance document for Emergency Managers



Suggested Citation:

Centers for Disease Control and Prevention (CDC). Planning for an Emergency: Strategies for Identifying and Engaging At-Risk Groups. A guidance document for Emergency Managers: First edition. Atlanta (GA): CDC; 2015.

For additional information or to obtain copies, please contact:

CDC's Health Studies Branch at 4770 Buford Highway, MS F-60, Chamblee, GA 30341
Phone: +1 770-488-3410 Fax: +1 770-488-3450

You can electronically download this document from CDC's, Division of Environmental Hazards and Health Effects, Health Studies Branch Website at <http://www.cdc.gov/nceh/hsb/disaster/default.htm>.

Contents

| | |
|---|----|
| Acknowledgements | ii |
| Introduction | 1 |
| Purpose | 5 |
| Strategies for Identifying At-Risk Groups: Individual Approach | 6 |
| Use of Registries..... | 6 |
| Summary | 7 |
| Community Outreach Information Network Development..... | 8 |
| Phase 1: Define At-Risk Groups | 8 |
| Phase 2: Locate At-Risk Groups | 9 |
| Phase 3: Reach At-Risk Groups..... | 11 |
| Summary | 13 |
| Strategies for Identifying At-Risk Groups: Population Approach | 14 |
| Social Vulnerability Index | 14 |
| Integration of Data | 17 |
| Conclusion | 18 |
| Glossary | 19 |
| References | 20 |
| Notes | 21 |

Acknowledgements

This document was made possible by the CDC's Division of Environmental Hazards and Health Effects, Health Studies Branch, Disaster and Epidemiology Response Team (DERT). ATSDR's Geospatial Research, Analysis, and Services Program (GRASP) developed the SVI tool and provided content and support. DERT and GRASP contributors include Amy Wolkin, Sherry Burrer, Nicole Nakata, Elaine Hallisey, and Barry Flanagan.

We would like to acknowledge the Office of Public Health Preparedness and Response authors of CDC's Public Health Workbook to Define, Locate, and Reach Special, Vulnerable, and At-risk Populations in an Emergency. The content from the workbook was used to develop a significant section of this guidance document for emergency managers.

We also acknowledge the SciMetrika staff and the At-Risk Populations Review Panel who contributed to the guidance document development. The At-Risk Populations Review Panel included the following:

Stephanie Griese
Centers for Disease Control and Prevention

Justin Kates
The City of Nashua, NH

Angela Barton
Georgia Emergency Management Agency

Betsy Kagey
Georgia Department of Public Health

Sandra Shields
Los Angeles County Emergency Medical Services Agency

Sinan Khan
Los Angeles County Office of Emergency Management

Alynda Ponder
Mississippi Department of Human Services

Disclaimer

The findings and conclusions in this document are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Introduction



All regions of the United States (U.S.) experience disasters. Many of these disasters increase morbidity and mortality.¹ Some disasters are large scale, such as hurricanes, forest fires, and earthquakes. Others are more localized, such as tornadoes or mudslides. Disasters can lead to “severe physical injuries, emotional distress, loss of life, and property damage to the point of destroying communities.”²

Unfortunately, the number of disasters in the U.S. has been increasing, a trend that is expected to continue. At-risk groups, also referred to as socially vulnerable populations, require special attention in a disaster. During disasters, populations with higher levels of social vulnerability are more likely to be adversely affected.

In emergency preparedness, a major goal is to be able to reach every person in a community. To do this, you, as emergency managers, must be able to get information to community members quickly. To do that, you need to know which groups are at risk, where the people in these groups live and work, and the best ways they receive information.

Research by the National Center for Environmental Health (NCEH) at the Centers for Disease Control and Prevention (CDC) indicates that emergency managers would benefit from more information on how to identify at-risk groups within their communities.³ In response, NCEH, other centers at CDC, and volunteers from the emergency management community created this guidance document on processes and tools that could help in these efforts. By knowing vulnerabilities in your community, you, as emergency managers, can better anticipate needs and provide information to the right people at the right time before, during, and after disasters. This document describes a process that will help you identify at-risk groups in your community. You can use this information to reduce vulnerabilities and enhance outcomes for a broader population of those at risk.

Social vulnerability is defined in terms of the characteristics of a person or group that affect “their capacity to anticipate, cope with, resist, and recover from the impact” of a discrete and identifiable disaster in nature or society.⁴ A person’s vulnerability to disaster is influenced by many factors. The following six categories are among the most commonly accepted: socioeconomic status, age, gender, race and ethnicity, English language proficiency, and medical issues and disability.^{1,5}

These six categories described below can help you to identify the at-risk groups within your community that could be disproportionately affected by disasters.

Keep in mind that many people might fit more than one category.

Socioeconomic status

Socioeconomic status (SES) is one of the key factors of social vulnerability. It includes employment, income, housing (e.g., homelessness), and education level.^{6,7,8} People with lower socioeconomic status more likely lack resources needed to follow emergency preparedness instructions. They might be unable to stockpile food, for example. They might be unwilling or unable to stay home from work and lose a day's pay, or evacuate and leave their home during an emergency. By identifying at-risk groups ahead of time, you can plan more efficient evacuations and specifically target people who need transportation or special assistance (e.g., those without a vehicle).

Age

The old and the young are particularly vulnerable during emergencies.

Older adults are more likely to have medical problems that put them at an increased risk during a disaster. They might have chronic health problems or limited mobility. They might have limited sight, hearing, or cognitive ability. Any of these health issues can limit their capacity to follow instructions. Older adults might also have reduced income, putting them at increased risk because of their limited resources. Some older adults are also isolated by their living situations or limited mass media use, making communication with this group difficult.

Young children are also more at risk. They have yet to develop the resources, knowledge, or understanding to effectively cope with disaster, and they are more susceptible to injury and disease.^{1,9} Young children also are more vulnerable when they are separated from their parents or guardians, for example, at school or in daycare.





Gender

Gender does not necessarily indicate vulnerability or disadvantage. However, gender intersects with social patterns and inequalities can arise from gender differences.¹⁰ During a disaster, females might be more vulnerable because of differences in employment, lower income, and family responsibilities, as most single-parent households are single-mother families.^{11,12} However, females are a strong influence in mobilizing response to a warning. Females are also more likely to be effective risk communicators through being active participants in the community. They also might know more “neighborhood information” that can assist emergency managers.¹⁰ Although many families evacuate together, it is not uncommon for males to stay behind to guard the property or to continue working as the family provider. Males are also more likely to be risk takers and might not heed warnings.¹⁰

Race and ethnicity

Race and ethnicity contribute to social vulnerabilities.^{1,6,7,11} Race and ethnicity are tied to issues of SES. Social and economic marginalization contributes to the vulnerability of these groups.

English language proficiency

In the U.S., people with limited English proficiency (LEP) have a limited ability to read, speak, or write in English.¹ LEP groups might have trouble understanding public health directives if language barriers are not addressed when developing emergency preparedness messages.¹ Messages should also be culturally sensitive, paying attention to

dialects and social norms, to ensure that LEP populations receive and respond to emergency directives.¹ These considerations should be taken into account for both populations who speak English as a second language, as well as native English speakers who have difficulty reading, interpreting, and calculating from written materials.

Medical issues and disability

Persons with a disability include those with a cognitive, physical, or sensory impairment that limits a major life activity. People with physical impairments might include those with limited sight, hearing, or mobility or those who are dependent on electric power to operate medical equipment. For many people with medical conditions and disabilities, their ability to hear, understand, or respond to a warning is impaired. This category also includes individuals with access and functional needs, irrespective of diagnosis or status, and persons with medical conditions (e.g., cancer).

By identifying vulnerabilities within a community, you can design and implement community-based efforts during all four phases of disasters (preparedness, response, recovery, and mitigation).¹³ Having a clear understanding of how and where at-risk groups might be most affected during a disaster will help you allocate resources efficiently before, during, and after an emergency.²

You can use information on at-risk groups during each of the four phases of a disaster: preparedness, response, recovery, and mitigation.



Figure 1. *The Disaster Cycle (Source: FEMA)*

Phases of the disaster cycle

You can apply the individual and population approaches presented in this document to all four phases of a disaster. These include preparedness, response, recovery, and mitigation. Addressing these four phases in your emergency preparedness plan will help you identify the specific information you need to collect.

Preparedness: In this phase, you develop emergency preparedness plans to save lives and minimize damage that can occur during a disaster.¹⁶ During the preparedness phase, you will need to know:⁵

- Which groups are less likely to prepare for disasters?
- Which groups will lack essential emergency response items?

Response: During this phase, you take action to save lives and prevent additional damage during a disaster.¹⁶ During the response phase, you will need to know:¹⁷

- Which groups are least likely to hear, understand and respond to warnings?
- Which groups will have difficulty following emergency directives?
- Which groups will need emergency medical care or continuation of medical care, and which groups are least likely to have access to emergency services?

Recovery: After a disaster occurs, you and others act to help restore the community back to normal. This can include repairing, replacing, or rebuilding property.¹⁶ During the recovery phase, you will need to know:¹⁷

- Which groups are most likely to have suffered the most from impact?
- Which groups are most likely to have experienced the most economic or emotional stress or altered social factors?

Mitigation: This phase involves developing policies to reduce risks to people and property during a disaster.¹⁶ During the mitigation phase, you will need to know:¹⁷

- Which groups are most at risk during an emergency?
- What resources are needed by at-risk groups during an emergency?

The table below describes how you can use the information collected in each disaster phase for emergency management.

| Phase | Use of Information |
|--------------|---|
| Preparedness | <ul style="list-style-type: none">• Create evacuation and contingency plan• Conduct community outreach and engagement• Determine resource needs and allocation• Prepare shelter, supplies, transportation and evacuation plans |
| Response | <ul style="list-style-type: none">• Determine resource allocation• Provide targeted data to decision-makers and first responders• Prioritize response efforts• Tailor communication efforts |
| Recovery | <ul style="list-style-type: none">• Determine resource allocation• Identify subpopulations that are the least resilient• Track recovery and identify ongoing problems |
| Mitigation | <ul style="list-style-type: none">• Develop hazard mitigation plans• Set up community shelters• Develop structural planning and policies |

Table 1. Use of information on at-risk groups

Purpose



This document has been created for emergency managers. As defined by the National Emergency Management Association (NEMA), emergency managers are professionals at all levels of government and the private sector who prepare for, mitigate, respond to, assist in recovery from, and provide products and services for all emergencies, disasters, and threats to the nation's security.¹⁸

This document introduces the concept of at-risk groups (i.e., socially vulnerable populations). It also gives examples of approaches and tools that can be used alone or in combination to identify social vulnerabilities within your community. These approaches and tools can help you, as an emergency manager, identify, plan for, and assist the at-risk groups or socially vulnerable populations within your community. This document is divided into three sections:

1. The **Individual Approach**, in which data at the individual level are collected and used. The information in this section is based on *Public Health Workbook to Define, Locate, and Reach Special, Vulnerable, and At-risk Populations in an Emergency*, a document produced by CDC's office of Public Health Preparedness and Response. The section contains information on Community Outreach Information Networks (COIN) and registries.
2. The **Population Approach**, where data on a larger scale are used to identify socially vulnerable communities. It includes an introduction to CDC's Social Vulnerability Index (SVI). The SVI uses U.S. Census variables that reflect at-risk populations to identify and map vulnerable areas.
3. **Integration of Data** provides guidance on how to integrate data from both approaches to improve communication plans, identify gaps in preparedness, and develop a comprehensive picture of at-risk groups in your community.

As with any endeavor within your community, it is always recommended to contact other organizations within your area to assess what is already being done and collaborate with potential partners. Some of the most important partners you can have are your state or local health department, other state or local agencies that have disaster planning or community mapping responsibilities, and community organizations or businesses that are connected to the at-risk groups within your area.

Strategies for Identifying At-Risk Groups: Individual Approach

To identify at-risk groups, emergency managers can benefit from obtaining information on an individual level. Two methods of collecting individual information are registries and Community Outreach Information Networks (COINs). You can use these two methods, described below, to identify at-risk groups to improve communication methods and promote resiliency.

Use of Registries

A registry is “a voluntary database of individuals who meet the eligibility requirements for receiving additional emergency response services based on specific needs.”¹⁴ Using a registry, you will be able to identify people who require assistance before, during, or after an emergency. In addition, you will also know the specific form of help these individuals need.

The most common types of registries include the following:

Access and functional needs registries—These are broad scope registries that include any person who needs special assistance. This can include people with physical or mental disability, impaired mobility, or dependence on medication or medical equipment.

Medical needs registries—These are limited to people with specific medical needs. Individuals placed on medical needs registries can provide documentation from a doctor on their specific medical requirements.

Transportation registries—These registries will help identify people with impaired mobility or those who require assistance in evacuating a location during an emergency.

Developing a Registry

When developing a registry, identify the best method to collect information from at-risk community members. Recruiting people to participate in a registry might be difficult. Some groups might be distrustful of providing personal information to unknown people or organizations. Partnering with various community organizations can help in identifying and recruiting people to register.

People often do not self-identify as being at risk. They might not know they should register or how to do so. You can address this by improving messaging and communication to increase awareness and encourage people to self-register.

Options for outreach range from brochures and flyers to television announcements, websites, and community meetings. Some methods for collecting information from at-risk groups to create a database include the following:

- Web form that people can use to submit and update their information.
- Central phone number that people can call to register.
- Direct mail registration forms that people can fill out and return.
- Social service workers or volunteers who collect information from clients when they apply for other public health services.

You will also need to consider certain legal liabilities when establishing a registry to provide assistance during an emergency. People who enroll in the registry might expect guaranteed assistance during a disaster. Therefore, it is important to inform registrants of the following:

- With whom the information will be shared.
- How information will be used.
- Security measures in place for protecting information.
- The type of help that might be available.
- Limitations on help (i.e., help is not guaranteed).

Transient populations, such as homeless people, can be difficult to reach before and during an emergency. Even if some people are registered before an emergency, locating them during an emergency can be difficult.

Challenges and Limitations to Registry Implementation

After you develop a registry, you might face challenges during implementation, such as:

- Eligible participants might not enroll because of concerns regarding the privacy and protection of their medical and personal information.
- Potential enrollees might not believe they have a need for assistance.
- Registries do not identify every person who might need assistance during an emergency.
- Registry participants might believe that participation takes the place of personal preparedness.¹⁴

Maintenance of registries

Registries must be updated regularly to account for changes to information among listed persons. People move. Their health and physical needs change. Additional changes to your community will occur as people move in and out of your jurisdiction. All these changes should be factored into your plans for keeping your registry up-to-date.

Suggestions for Maintaining and Updating Registries

Suggestions include the following:

- Send annual reminders (e.g., with utility bills) to registrants to review their information.
- Maintain a database that people can update year-round by phone, online, or by mail.
- Require that participants re-register every year.
- Conduct calls regularly to ensure that registrants still need to be included in the registry.

Be sure to allocate the appropriate resources (e.g., funding and staff) needed to maintain your registry and ensure the information does not become outdated.

Summary

A registry can be helpful in emergency preparedness and response for at-risk groups. It gives you a database identifying community members and their specific needs.

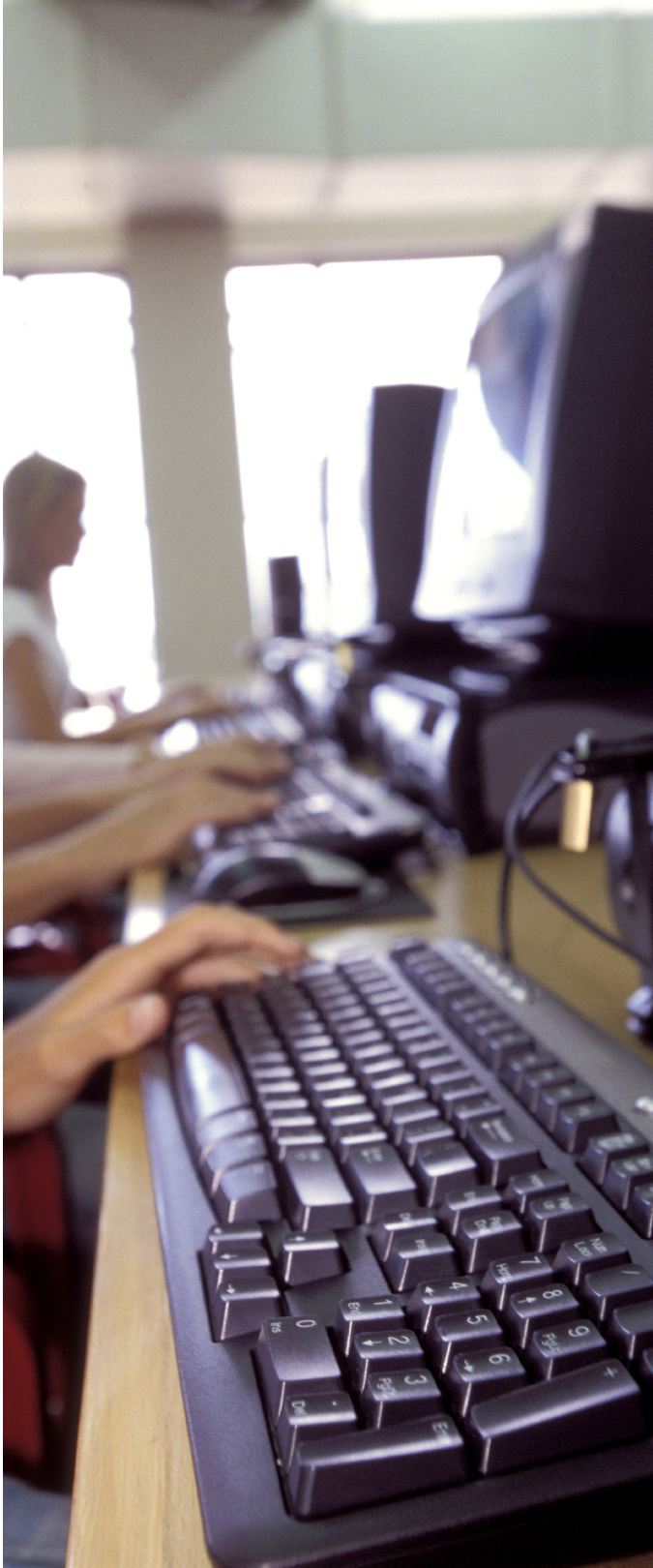
During a disaster you will know where these people live and the type of assistance they require. Mapping information within registries can provide a clear and specific picture of where at-risk groups live within your community. Having a visual representation of the areas with the most need will help you allocate resources appropriately before, during, and after a disaster.

Regularly maintaining and updating registries is necessary, but requires staffing and resources. Designing, implementing, and maintaining a registry is a complex process. It requires sustainable elements of funding, administration, outreach, recruitment, enrollment, education, data management, and response force commitments.

Outside of the planning, logistics, and operational obstacles, registries pose other challenges and limitations. Some challenges and limitations can be addressed by working with relevant stakeholders. These might include home health care agencies, durable medical goods suppliers, and national programs such as Meals on Wheels. Stakeholders can help educate potential enrollees about the benefits of registry participation. If you decide to implement a registry, ensure that you clearly communicate

- potential uses of personal information,
- security provisions and precautions in place to ensure personal privacy,
- potential uses of personal information,
- security provisions and precautions in place to ensure personal privacy,
- limitations of liability,
- limitations in service that may occur under various disaster situations, and
- the role of a registry program to support preparedness, not to replace personal preparedness plans.¹⁴

For more on the development and use of registries, please see CDC's *Identifying Vulnerable Older Adults and Legal Options for Increasing Their Protection During All-hazards Emergencies: A Cross-Sector Guide for States and Communities*. Available at: <http://www.cdc.gov/phpr/documents/aging.pdf>



Community Outreach Information Network (COIN) Development

In response to the Pandemic and All-Hazards Preparedness Act¹⁹, CDC created a process for public health planners to define, locate, and reach at-risk groups in an emergency.¹⁹ The process leads to the development of a Community Outreach Information Network (COIN). This is a grassroots network of people and trusted community leaders who can assist with emergency planning and the delivery of information to at-risk groups before, during, and after an emergency. A COIN composed of trusted community leaders will be helpful in identifying and reaching at-risk people.

There are three phases when developing a COIN, these are:

Phase 1: Define at-risk groups

Phase 2: Locate at-risk groups

Phase 3: Reach at-risk groups

Phase 1: Define At-Risk Groups

The first step in developing a COIN is to define and identify groups that you consider at risk in your community. Start by finding out what is already being done to identify and plan for at-risk groups within your community. A broad range of people and groups are considered at risk during an emergency. Before you initiate work on at-risk groups or add to what is already being done, conducting research to understand the demographics of your community might help you in finalizing your definition. You will need to learn about the spoken languages, cultural practices, belief systems, and the physical and mental limitations of your residents. From existing data about your community, you can begin to get a clear idea about the population groups that make up your community. Some data sources you can use for research include:

- U.S. Census data (<http://quickfacts.census.gov/qfd/index.html>),
- information provided by state and local health departments (<http://www.cdc.gov/mmwr/international/relres.html> and <http://www.naccho.org/about/lhd/>),

¹⁹Pandemic and All-Hazards Preparedness Act of 2006 Pub. L. No. 109-417 The Act provides new authorities for developing countermeasures, establishes mechanisms and grants to continue strengthening state and local public health security infrastructure, and addresses surge capacity by placing the National Disaster Medical System and the Emergency System for Advance Registration of Health Professions Volunteers under the purview of HHS.

- CDC's Social Vulnerability Index (<http://svi.cdc.gov/>), and
- United Way (<http://opportunityindex.org/#4.00/40.00/-97.00/>).

Review the data you collected and determine baseline criteria to use in defining at-risk groups within your community. This information can help to identify categories that are significant to your community and estimate the number of people in different population segments.

Defining at-risk groups requires an understanding of the unique vulnerabilities in your community. You will need to learn about the spoken languages, cultural practices, belief systems, and the physical and mental limitations of your residents

Phase 2: Locate At-Risk Groups

The next phase provides strategies to locate the groups you have identified as at risk within your community.

Identify organizations and key contacts

It is important to first identify any organizations or agencies already working in this area and what they have already done. You might, for example, check state, local, tribal, and territorial public health departments for information on the at-risk groups they serve. Locating at-risk groups will involve communicating and working with key organizations and contacts in your community to build a strong network of partners. Identify organizations that fund or partner with smaller, direct service providers to be part of your network. You might also include businesses and others who work with, represent, or belong to at-risk groups. In addition, you can ask COIN members about informal groups they belong to that reach at-risk groups. These contacts will be able to link you to organizations that serve at-risk groups in the community. As you identify potential organizations, also identify potential contacts within these organizations and the best way to reach them. After identifying key contacts to include in your network, your next step is to meet with these potential partners to discuss the importance of identifying at-risk groups during an emergency and the role they and their organization can play during an emergency.

Other organizations or groups you can consider reaching out to include the following:

- Faith-based organizations – These groups usually have missions or ministries that provide services to members of their local community.
- University students who have disabilities – These students often form organizations that provide support and advocacy. You can contact the student activities department of local colleges and universities to locate such groups.
- People who belong to various cultural and ethnic groups – These people might form close bonds with other people in the same groups. People who speak the same language or share a common country of origin or religion might gather in informal ways. Churches, mosques, or other houses of worship are often places where community needs, political opinions, and employment options are discussed. In some ethnic populations, community storefronts are gathering and information centers.

Isolation is an important factor to consider in locating some at-risk groups. People can be isolated from the community in many different ways. These include geographic isolation, temporary residency, undocumented immigrant status, and religious and cultural practices. Isolated individuals can be difficult to reach during an emergency, because they might not use traditional means of communication. Non-traditional partners, such as businesses and non-profit organizations, might serve as important contacts.

Trusted sources

It is important to include trusted or non-traditional leaders, such as a local pastor or respected teacher, as members of your COIN network.

- Trusted sources are more likely to reach at-risk groups during an emergency. They are viewed as more credible and have established trust within the community.
- A COIN might also include members of the media, especially those who have closer connections to at-risk

groups, such as local ethnic media outlets. These media outlets can be a very powerful voice and provide a close connection to the populations they serve.

- Another trusted source might be the director of a “culture-specific” community center or a community health worker. These contacts might already have a good network in place to reach community members through an e-mail listserv, telephone calling tree, mailing list, or simple word-of-mouth.

One barrier faced by emergency managers trying to communicate and work with at-risk groups is distrust of the government. Working with existing, trusted sources in your community can help overcome this mistrust. People are more likely to listen and react when the message comes from a trusted source they view as credible.

Existing services

Identify at-risk groups that might already receive services through your agency. You can reach out to other departments within your agency to conduct an inventory of their existing activities for locating at-risk groups. Questions you can ask the different department representatives include the following:

- Who are the at-risk groups served by the department?
- Where are their gathering places?
- What is the department’s process for locating these people?
- How do at-risk populations receive information from the department?
- Who are their trusted sources?

Gathering places

Another step is to locate and identify places where at-risk groups gather. These can include soup kitchens for homeless people, day-worker sites for undocumented immigrants, the post office, and shopping locations. Consult with your network of contacts to identify additional locations where at-risk groups gather.

Mapping

Mapping will give you a clear and specific picture of where at-risk groups live within your community. Having a visual guide to the areas with the most need will help you allocate resources appropriately before, during, and after a disaster. You can partner with organizations that have access to digital mapping resources to help you map the location of at-risk groups. Such organizations might include

- Metropolitan Planning Organization (MPO) (<http://www.planning.dot.gov/mpo.asp>) or regional planning council or commission that serves your area
- Local Community Development Office
- Disaster Counsel or Emergency Management Counsel
- State GIS coordinator
- State GIS data clearinghouse
- Geography department at local colleges and universities
- State department of transportation
- State or local department of emergency management (i.e., within your own agency)
- CDC’s Geographic Research, Analysis, and Services Program (SVI_Coordinator@cdc.gov)

You might also map the locations of members within your network to visualize your reach within the community.

Communication

It will be beneficial to engage with your COIN as you go through the process of creating, implementing, and disseminating emergency preparedness information.

- Establish ongoing communication strategies to engage your COIN members.
- Identify the best means of communication (face-to-face, phone, mail, e-mail, etc.) with members of your network.
- Provide brief updates on the progress of your work and seek feedback on emergency planning activities.
- Establish a protocol for maintaining confidentiality of your COIN members. Let them know how and when their contact information might be used. This will also help with maintaining trust within your network.

Keeping track

Finally, as you establish partnerships with various organizations, key contacts and trusted sources, consider creating a database to keep track of members within your network. Record information about key contacts at organizations and government agencies. Include their names, telephone numbers, and e-mail and postal addresses.

Once established, your COIN will require regular updating. Through ongoing monitoring of community members and organizations you will be aware of changes to existing members and can identify new members who should be approached and engaged.

Phase 3: Reach At-Risk Groups

In this phase, the goal is to identify the best communication method to share emergency messages with at-risk groups before and during a disaster. In an emergency, messages must inform, educate, and mobilize people to follow public health directives. Messages can be delivered through television, radio, newspaper, bill inserts, flyers, word-of-mouth, social and community networks, and other channels. As you develop your emergency preparedness plan you will benefit from identifying the most effective way to reach at-risk groups in your community.

Survey agencies and organizations

Conduct a survey of agencies and organizations that regularly work with at-risk groups or provide direct services to at-risk groups. This survey can include people within and outside your agency. Information you collect through the survey will allow you to learn of successful and failed strategies for communicating with at-risk groups. Incorporating these lessons will ensure that you develop an effective communication plan.

Conduct community assessments

Conduct a survey or focus group with members of the different at-risk groups you want to reach. This will allow you to collect firsthand information from your target population. You can ask questions on topics such as:

- Barriers to receiving information based on past experiences
- Assistive technology used
- Preferred methods of communication
- Key spokespersons and trusted sources for public health messages
- Media usage and habits
- Primary languages spoken
- Developing culturally competent messages

If you lack the resources to conduct these activities through your agency, consider seeking help from members of your COIN (e.g., public health department, nonprofit organizations). They might be able to conduct the assessment for you or help in recruiting participants for the surveys or focus groups, or moderate the discussion with at-risk groups. Be sure to also seek their suggestions on the most appropriate method (telephone interview, written survey, focus group) to collect information from at-risk groups.

Review the data from the surveys conducted with people who work with at-risk groups and the information you gather from members of the at-risk groups. Also, review the data collected during phases 1 and 2. Identify common characteristics, themes, and emerging patterns for a clearer idea of the best methods to reach at-risk groups.

Community Assessments for Public Health Emergency Response (CASPER)

CASPER is a public health tool used to gather information from households within a community. This effective epidemiologic method can be designed to provide planners and responders, such as emergency managers, with household-based information quickly and at low cost. During a CASPER, you can ask closed-ended questions such as:

- What is your main source of information regarding disaster or emergency events?
- What would be a reason that might prevent you from evacuating if asked to do so?
- Does your household currently have a 7-day supply of medication for each person who takes prescription meds?

Uses for emergency managers: Ask your public health colleagues about their use of CASPERs in all stages of the disaster lifecycle. Public health departments commonly use CASPER during a response to determine immediate needs, such as the number of households in the assessment area that do not have access to potable water. They also use it during the preparedness phase to help with preparedness planning. They might use it to learn, for example, the number of households in the assessment area that have an emergency preparedness kit. You can work with public health departments to determine when to conduct a CASPER and what questions to include to prioritize response efforts and distribution of resources.

For more information, go to:

http://emergency.cdc.gov/disasters/surveillance/pdf/CASPER_Toolkit_Version_2_0_508_Compliant.pdf



Focus groups

The purpose of a focus or stakeholder group is to reveal attitudes, perceptions, and behaviors of people participating in the discussion. This method can help you gain an in-depth understanding of at-risk groups in your community. During a focus group, you should ask specific and open-ended questions, such as the following:

- What sources do you usually use to get news and information?
- When there is a disaster, how do you get information?
- How do you prefer to have information communicated to you?
- In the past, what has kept you from receiving important information?

Uses for emergency managers: Focus groups are a common tool for obtaining feedback for existing public health interventions or information on designing new ones. You can work with public health departments to plan and conduct focus or stakeholder groups to collect information on attitudes, perceptions, and behaviors before, during, and after emergencies. Having a better understanding of the at-risk groups will increase your ability to reach and assist them.

Communication strategies

Data collected through surveys and focus groups will help you understand the cultural and language barriers facing at-risk individuals in your community. Your communication plan must accommodate the needs of at-risk groups to provide concise instructions before, during, and after a disaster. Keep these communication tips in mind:

- Use short sentences and plain language to allow for easy translation of materials. Consider using a sixth grade reading level or lower.
- Provide written materials in bilingual or multi-lingual format.
- Include visual aids such as pictures and maps to reinforce key messages.
- Repeat key information.
- Include directions and phone numbers.
- Use large fonts.
- Identify preferred communication methods (face-to-face, phone, word-of-mouth), and develop messages accordingly.
- Identify preferred media through which messages are delivered. Is it the local newspaper, ethnic radio station, or the church pastor?
- Consider working with media and communications specialists.

Gather information from your network community organizations on their communication experiences.

Identify trusted messengers

Some individuals in at-risk groups are apprehensive of people not considered part of their community. They will respond differently to messages based on the messenger. For example, people are more likely to be responsive to messages delivered by their neighbors than to those delivered by someone from a different background or community.

- When developing an emergency communication plan to reach at-risk groups, identify appropriate and trusted messengers to deliver information.
- Some members of your COIN might be considered trusted sources in the community.

- You can also identify trusted sources by asking community representatives or members of your network who they would recommend to disseminate messages before and during an emergency.
- Additional people to consider as messengers include the following:
 - Religious leaders.
 - Barbers and hair stylists.
 - Community and neighborhood leaders who are perceived as credible.
 - Reporters, editors, announcers, and news directors in media outlets that serve your community. Remember to include the ethnic media outlets as sources to disseminate your messages.
 - Many populations view certain individuals, such as the matriarch of a family or elders, as the most respected and trusted sources of information.

People who live in lower threat areas or who have not experienced a major disaster are less likely to respond to emergency preparedness information. Trusted messengers can engage people to help them understand their risk.

Summary

As you go through the different phases and steps to develop your COIN, you will create a comprehensive emergency plan that accounts for the distinct needs of at-risk groups before, during, and after an emergency. Your plan will clearly identify who you consider at risk in your community and the best strategies to communicate emergency directives to these groups.

For more on COIN development, please see CDC's *Public Health Workbook to Define, Locate, and Reach Special, Vulnerable, and At-risk Populations in an Emergency*. Available at: http://www.bt.cdc.gov/workbook/pdf/ph_workbookFINAL.pdf

Strategies for Identifying At-Risk Groups: Population Approach

As discussed under “Individual Approach,” you can use COINs and registries to identify at-risk groups using individual-level information. Another way to identify at-risk groups is the population approach. You can identify vulnerabilities for a community by assessing population-level statistics, such as U.S. Census data. Population-level statistics present a snapshot of a community and provide an estimate of the number of people in various social vulnerability categories within that community. This population approach is another way of looking at your jurisdiction’s population that can help you locate the socially vulnerable segments of your community – the at-risk groups. A number of tools are available to assess population-level vulnerabilities (e.g., Cutter’s SoVI or the Social Vulnerability Index). This guidance document focuses on CDC’s Social Vulnerability Index (SVI) tool, because it is freely available online and contains national-level data.⁷

Social Vulnerability Index

The SVI is a free, web-based tool developed at CDC by the Agency for Toxic Substance and Disease Registry’s Geospatial Research, Analysis and Services Program (GRASP). The SVI was designed to help emergency managers identify and map communities that will most likely need support before, during, and after a disaster.¹⁵ This tool allows you to visualize population-level social vulnerabilities to help emergency planners and responders better prepare for and respond to disasters. You can customize and localize the SVI. The Georgia Online Disaster Awareness Geospatial System (GODAWGS) is an example of a state-specific adaptation of the SVI. It was created in partnership by the Georgia Department of Public Health, the Georgia Emergency Management Agency (GEMA), and the North Carolina Preparedness and Emergency Response Research Center (NCPERRC). (See <https://godawgs.gema.ga.gov/GEMA2/Auth/Login.aspx?ReturnUrl=%2fgema2%2f>).

The SVI uses U.S. Census (<http://quickfacts.census.gov/qfd/index.html>) and American Community Survey (ACS) (<http://www.census.gov/acs/www/>) data to identify at-risk groups by ranking all U.S. census tracts by level of social vulnerability. Census tracts are subdivisions of counties for which the Census collects statistical data.¹⁵ The SVI ranks, at national-level or state-level, each tract on 14 social factors. Figure 1 shows these factors, grouped into four main themes.

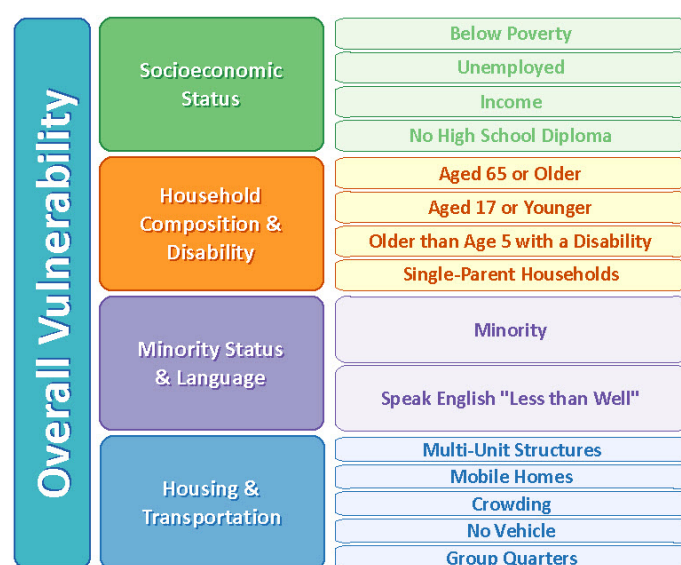


Figure 1. Social Vulnerability Index themes and social factors

The variable for disability (percent of persons older than 5 years with a disability) was dropped for 2010 because it was not included in the ACS that year, but will be included in the 2015 update.

Using the Social Vulnerability Index

You can access the SVI at <http://svi.cdc.gov/>. The site has a variety of tools and resources that can help emergency managers locate at-risk groups. These tools and resources are listed as topics and can be easily accessed from the main homepage.

Interactive Map

The SVI tool gives you an option to customize unique maps for your specific needs. When you select the “Interactive Map” option, the tool directs you to the SVI Mapping Dashboard. First, select the SVI year and theme. You can indicate which one of the four domains or themes (Socioeconomic, Household Composition, Minority Status/Language, or Housing/Transportation) you want displayed on your map. You also have the option to view all four themes by selecting “Overall Vulnerability.” Next, select your state or county and click “Go.” An interactive map will be displayed on the page. Clicking on any area of the map will bring up the selected tract’s vulnerability ranking within the state or nation. A pop-up box will show the estimated numbers of vulnerable persons.

Additional features can help you further customize your map. For example, you can zoom in and zoom out to view as much or as little detail that you require. You can narrow the area you assess by using ZIP Codes. To do so, enter the ZIP Code of interest in the space provided and click “Zoom to ZIP.” The selected ZIP Code of interest will be outlined and the map will display the area’s vulnerabilities. The SVI can also map the location of hospitals, nursing homes, day care centers, public schools, and the Federal Emergency Management Agency (FEMA) regions. You can easily customize the map to display road networks, natural features, and place names. You can also export a map as a PDF to use in planning for disasters.

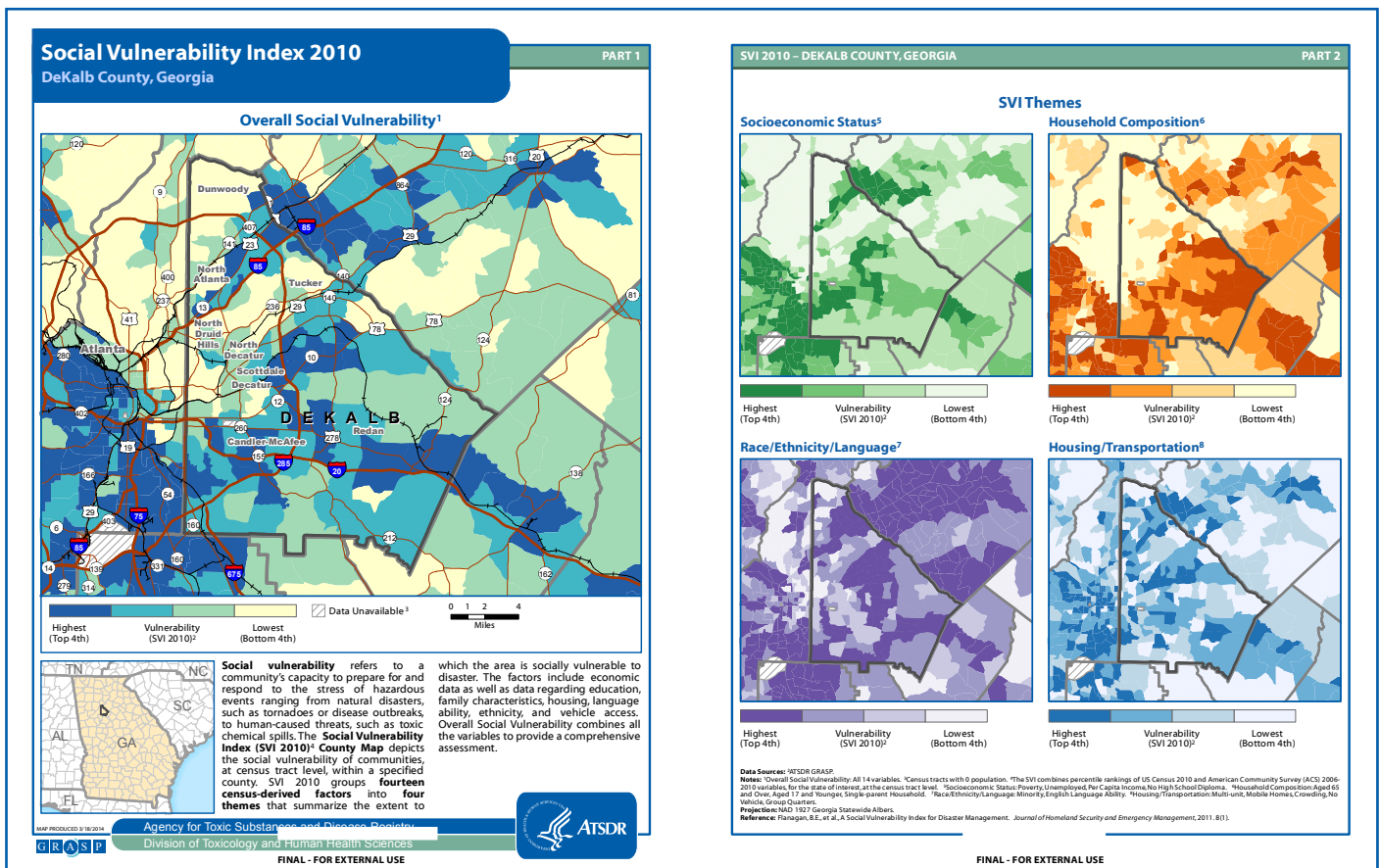


Figure 2. Social Vulnerability Index Report

*Map showing vulnerability for DeKalb County, Georgia

Prepared County Maps

You can also use the SVI to view prepared county maps. The maps display the social vulnerability for any county at the census tract level. After identifying your county of interest, use the dropdown menu to select the census tract year, state, and county, then click “View County Map.” The prepared county map is displayed as a PDF document showing the overall social vulnerability of a county and a breakdown by each of the four domains (see Figure 2). The areas with more vulnerable populations are indicated by the darker color and those less vulnerable are lighter in color.

Data Tools and Download

Emergency managers like you might find it helpful to use SVI data in emergency planning. Nationwide and state-specific data are available. The nationwide database provides data on all U.S. census tracts ranked against one another. This is most useful for nationwide or multi-state mapping and analysis. For individual state mapping, select the state-specific database in which census tracts within a state are ranked against one another. Decide on the type of data (e.g., vulnerabilities, census tract, ZIP Code-level, hospitals, and schools) and year, then download the database. The SVI data are in geodatabase format (mdb). You can download files for use in Microsoft Access or a Geographic Information System (GIS) software program such as ArcGIS or QGIS.

How recently information was collected and how accurate it is compared to the current status of your jurisdiction should be considered when using population-level information. The information from the SVI should be used along with local knowledge of the area and information on environmental risks to obtain the most accurate picture of vulnerability.

Summary

Information on the location and relative concentration of different types of social vulnerabilities in small geographic areas, such as census tracts can help emergency managers locate and plan for the specific needs of their communities. This type of information is especially helpful during the preparedness phase of disaster. If for example, you find that a particular area within your jurisdiction has a relatively high concentration of persons 5 years and older who speak English “less than well.” You might use local knowledge to determine languages other than English spoken in the area. You could then plan to translate your disaster communications into those languages.

CDC’s SVI is easy to access and relatively easy to use. If you do need assistance, partners within your community (public health, planning and development organizations, universities) who use SVI might be willing to help you get started. They can help interpret the information that you produce through SVI, or enrich your maps with additional social and geographic information specific to your community. You may also contact CDC’s SVI coordinator for assistance (svi_coordinator@cdc.gov).

Additional examples of SVI tool use include the following:¹⁷

- A. Estimate the amount of needed supplies like food, water, medicine, and bedding.
- B. Help allocate emergency preparedness funding, based on community need.
- C. Help decide how many emergency personnel are required to assist people.
- D. Identify areas in need of emergency shelters.
- E. Plan the best way to evacuate people, accounting for those who have functional and access needs. These might include people without vehicles, older adults, or people who do not understand English well.
- F. Identify communities that will need continued support to recover after an emergency or natural disaster.ⁱⁱ

ⁱⁱ In addition to vulnerability rankings, the SVI database (and interactive map) includes number of people in each of the vulnerability groups. These numbers can help you, as emergency managers, with planning (e.g., how much food is needed). This applies to examples A, C, and D. Simply knowing relative vulnerability may aid you with uses B and F. Simply knowing the number of people is important for function E, but using the SVI in a GIS you can add your own layers of data including roads and transportation data – adding your own relevant data increases the functionality of the SVI.

Integration of Data

You can use key findings from the individual and population approach to enhance existing communication plans by including at-risk population groups and designating appropriate, trusted spokespersons.¹⁶

- Information from the individual and population level can be combined to gain a broader picture of the needs of at-risk groups in the community.
- You can use the SVI to identify areas with the highest number of at-risk persons.
- You can use the SVI to choose areas where you need to focus and recruit community organizations and key partners to join your COIN.
- You can overlay information collected on the individual level onto SVI maps to identify gaps in coverage.

North Carolina's Approach to Integrating Data

The North Carolina office of Public Health Preparedness and Response (NC PHPR) in collaboration with the University of North Carolina's (UNC) North Carolina Preparedness and Emergency Response Research Center (NCPERRC), developed the Vulnerable and At-Risk Populations Resource Guide (<http://www.varpguide.com/>). The tool helps local health departments incorporate at-risk groups into their preparedness planning and activities by integrating both the population and individual approach.

At the population level, the Vulnerable and At-Risk Populations Resource Guide generates custom maps using the SVI to give the jurisdiction an overview of their at-risk groups. At the individual level, the tool provides population- and partner-specific tools, materials, and tips to identify and engage at-risk groups (e.g., lessons learned from other communities, MOUs, templates) in emergency preparedness activities.

Conclusion



This guidance document provides emergency managers like you with information on how to identify socially vulnerable or at-risk groups within their communities. These groups are disproportionately affected by disasters. The information in this document can help you better prepare and respond to the needs of these groups before, during, and after a disaster. This document focuses on two approaches to accomplishing this task, the individual approach and population approach.

The individual approach provides you with detailed instructions on how to identify and recruit key organizations and contacts in your community to assist with emergency plans and communication strategies. These contacts and organizations should have experience working with at-risk groups and should be viewed as trusted sources within the community. Creating and maintaining registries is another individual approach that might be beneficial to emergency managers, depending on availability of resources.

This document highlights the use of CDC's Social Vulnerability Index as a population level approach to planning for at-risk groups before and during a disaster. This index provides a visual representation of vulnerabilities within specified communities.

We encourage you to discuss the strategies presented here with other professionals involved in your local emergency management efforts. Effective emergency preparations require an integration of individual and population level approaches to overcome barriers to locating and reaching at-risk persons before and during an emergency. We hope the information provided here inspires emergency managers to think critically about the identification and engagement of at-risk groups and how to best serve them over the course of a disaster.

Glossaryⁱⁱⁱ

Access and functional needs population: A population that might require physical, program, or effective communication access. They might have additional needs before, during, or after an incident in functional areas, including but not limited to independence, communication, transportation, and health maintenance (this is a subset of socially vulnerable population).¹⁸

American Community Survey (ACS): An ongoing, mandatory statistical survey that annually samples a small percentage of the overall U.S. population. The SVI uses ACS and 2010 Census data (<http://www.census.gov/acs/www/>).

Assistive technology: Any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, used to increase, maintain, or improve functional capabilities of persons with disabilities. Also known as an assistive device.¹⁸

At-risk group: A group within the overall population having a higher degree of demographic or socioeconomic vulnerability, rendering them more likely to be adversely affected by disaster. Also known as socially vulnerable population.

Community Assessment for Public Health Emergency Response (CASPER): An epidemiologic tool designed to provide to decision-makers household-based information about an affected community's needs quickly and in a simple format.

Census: The enumeration of an entire population usually with details being recorded on residence, age, sex, and race and ethnicity. The United States conducts a census every 10 years. At the time of publication of this document, the most recent census was in 2010.

Census tract: A small, relatively permanent geographic entity within a county (or county equivalent) determined by local participants before to each census. Census tracts vary in population but average about 4,000 persons.

Community Outreach Information Network (COIN): A grassroots network of people and trusted community leaders who can help with emergency planning and the delivery of information to at-risk populations before, during, and after an emergency.

Emergency Manager: Professionals at all levels of government and the private sector who prepare for, mitigate, respond to, assist in recovery from, and provide products and services for all emergencies, disasters, and threats to the nation's security.

Geographic Information System (GIS): An information system designed to store, integrate, analyze, and display all types of spatial or non-spatial data.

Metropolitan Planning Organization (MPO): An organization comprised of a Policy Board and Advisory Committees that help in planning for various modes of transportation, including highways, public transit, bicycles and pedestrians, and freight. Federal transportation legislation requires that an MPO be designated for each urbanized area with a population of more than 50,000 people to carry out the metropolitan transportation planning process, as a condition for federal aid.

Registry: A voluntary database containing personally identifying and medical information about persons who might require assistance in the event of a disaster.¹⁸

Social vulnerability: A characteristic or characteristics of a person or group relating to their capacity to anticipate, cope with, resist, and recover from the impact of a discrete and identifiable disaster in nature or society.

Socially vulnerable population: A group within the overall population having a higher degree of demographic or socioeconomic vulnerability, rendering them more likely to be adversely affected by disaster. Also known as at-risk group.

ⁱⁱⁱ Many of the terms in this glossary are adapted from the Draft International Association of Emergency Managers (IAEM)-National Emergency Management Association (NEMA) Joint Task Force 2014 Quick Reference Glossary of Terminology for Emergency Management Whole Community Planning Efforts, developed by an IAEM-NEMA joint task force.

References

1. Flanagan BE, Gregory EW, Hallisey EJ, Heitgard JL, Lewis B. A social vulnerability index for disaster management. *J Homeland Secur Emerg Manage*. 2011;8.
2. Balbus JM, Malina C. Identifying vulnerable subpopulations for climate change health effects in the United States. *J Occup Environ Med*. 2009;51:33–7.
3. Wolkin A, Patterson J, Harry S, Burrer S, Soler E, McGeehin M, et al. Reducing public health risk during disasters: identifying social vulnerabilities. *J Homeland Secur Emerg Manage*. In press 2015.
4. Chen J, Wilkinson D, Richardson RB, Waruszynski B. Issues, considerations, and recommendations on emergency preparedness for vulnerable population groups. *Radiat Prot Dosimetry*. 2009;134:132-135.
5. Keim ME. Building human resilience: the role of public health preparedness and response as an adaptation to climate change. *Am J Prev Med*. 2008;35:508–16.
6. Wisner B, Blaikie P, Cannon T, Davis I. *At risk: natural hazards, people's vulnerability, and disasters*. London: Routledge; 1994. p. 11–25.
7. Cutter SL, Burton C, Emrich CT. Disaster resilience indicators for benchmarking baseline conditions. *J Homeland Secur Emerg Manage*. 2010;7(1):1–22.
8. Morrow BH. Identifying and mapping community vulnerability. *Disasters*. 1999;23(1):1–18.
9. Bartenfeld MT, Peacock T, Griese SE. Public health emergency planning for children in chemical, biological, radiological, and nuclear (CBRN) disasters. *Biosecur Bioterror*. 2014;12:201–7.
10. Phillips BD, Thomas DSK, Fothergill A, Blinn-Pike L., *Social vulnerability to disasters*. Boca Raton: CRC Press; 2010.
11. Yeletaysi S, Ozceylan D, Fiedrich F, Harrald JR, Jefferson T. A framework to integrate social vulnerability into catastrophic natural disaster preparedness planning. *Proceedings of the TIEMS Annual Conference; 2009 June 9-11; Istanbul*.
12. Mather M. U.S. children in single-mother families. Washington, DC: Population Reference Bureau; 2010. Available from: <http://www.prb.org/pdf10/single-motherfamilies.pdf>.
13. Cutter SL, Boruff BJ, Shirley WL. Social vulnerability to environmental hazards. *Soc Sci Q*. 2003;84:242–61.
14. US Department of Health and Human Services. *Registries: an emergency planning tool*. Washington, DC: US Department of Health and Human Services; 2013. Available from: <http://www.phe.gov/Preparedness/planning/abc/Pages/registries.aspx>
15. Agency for Toxic Substances and Disease Registry. *The Social Vulnerability Index*. Available from: <http://svi.cdc.gov/Documents/FactSheet/SVIFactSheet.pdf>.
16. Noji EK. *The public health consequences of disasters*. New York: Oxford University Press; 1997.
17. Hutton D. Vulnerability of children: more than a question of age. *Radiat Prot Dosimetry*. 2010;142:54–7.
18. International Association of Emergency Managers and National Emergency Management Association. *IAEM-NEMA Joint Task Force Quick reference glossary of terminology for emergency management whole community planning efforts*. IAEM-NEMA Joint Task Force. 2015. Available from: <http://www.iaem.com/documents/IAEM-NEMA-Quick-Reference-Glossary-Terminology-for-EM-Whole-Community-Planning-Efforts-16June2015.pdf>.
19. Centers for Disease Control and Prevention. *Public health workbook to define, locate, and reach special, vulnerable, and at-risk populations in an emergency*. Atlanta: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2010. Available from: http://www.bt.cdc.gov/workbook/pdf/ph_workbookFINAL.pdf.

Notes

Notes

**Centers for Disease Control and Prevention
Division of Environmental Hazards and Health Effects
National Center for Environmental Health
Health Studies Branch**

770-488-3410

www.cdc.gov/nceh/hsb