

LESSON 2-1

CHRONIC AND ACUTE CONDITIONS

Lesson: Chronic and acute conditions

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Intended Audience of Learners

A broad range of health professionals who may work with the older adult population.

Competencies

This lesson supports learning related to the following competencies, with regard to *acute and chronic conditions present in the geriatric population that impact their disaster preparedness, response, and recovery*:

Core Competencies and Subcompetencies from Walsh L, Subbarao I, Gebbie K, et al. Core competencies for disaster medicine and public health. *Disaster Med Public Health Prep.* 2012;6(1):44-52. doi: 10.1001/dmp.2012.4.¹

Core Competency 7.0 "Demonstrate knowledge of principles and practices for the clinical management of all ages and populations affected by disasters and public health emergencies, in accordance with professional scope of practice."

Subcompetency 11.1 "Describe clinical considerations for the recovery of all ages and populations affected by a disaster or public health emergency."

Learning Objectives

At the end of this lesson, the learner will be able to:

- 2-1.1 Describe chronic conditions present in the geriatric population that influence their disaster preparedness, response, and recovery.
- 2-1.2 Describe acute conditions present in the geriatric population that influence their disaster preparedness, response, and recovery.

Estimated Time to Complete this Lesson

120 minutes

Content Outline

Module 2: Conditions present in the older adult population that impact disaster preparedness, response, and recovery

Lesson 2-2: Chronic and acute conditions

Note: In this lesson, when age is not specified, the terms the elderly, older persons, seniors, or geriatric population refer to men and women who are 65 years of age or older.

- I. Epidemiology
 - a. Disasters expose significant numbers of people to extreme conditions or events that often result in injury, loss of life, and destruction of or damage to property or livelihood.
 - b. The elderly are among the most vulnerable to direct or indirect harm from disaster² and experience disruption from the event longer than others in different age groups. They are more likely than the general population to be susceptible to injury and disease and to be poorly nourished.³
 - c. In 2005 when Hurricane Katrina made landfall, the elderly made up 11.7% of New Orleans's population, but of the 10,435 evacuees seen as patients in one evacuee medical clinic set up in Houston after Katrina, 56% were older than 65 years of age, and of the 1200 people who died because of the storm, 74% were older than 60 years of age.⁴
 - d. Older persons are identified as a group meriting special care during disasters,⁵ especially those within that age group who have preexisting chronic conditions.² As people age, the risk of having multiple chronic conditions rises, and the risk of mortality, poor functional status, and health care complexity increases.⁶
 - i. Having multiple chronic conditions means disease management is more complex.⁷
 - ii. The proportion of the older adult population with multiple chronic conditions is increasing, according to the National Health Interview

Survey.⁷ The survey identified 9 self-reported chronic conditions. About 30,000 people participated in the survey each time.

- a. Forty-nine percent of US men and 42.5% of women 65 years of age and older have 2 or more chronic conditions.
 - b. Overall, the percentage of Americans of this age group with 2 or more chronic conditions grew more than 20% between the 1999-2000 National Health Interview Survey and the 2009-2010 survey ($p < .05$), and significant increases were seen for those in this age group in the 3 largest racial or ethnic groups—blacks and whites (not of Hispanic descent) and Hispanics.
 - c. Increases also occurred over most income groups.
 - d. Significant increases ($p < .05$) also occurred in the 3 most common combinations of chronic conditions, each of which included hypertension.
 - e. Older persons, like all people, merit culturally competent care. To be most effective, health care needs to be tailored so that it respects patients' cultural, social, and linguistic needs and their belief systems.^{8,9} For a list of standards of culturally competent care, see the National Cultural and Linguistically Appropriate Services Standards (<http://www.thinkculturalhealth.hhs.gov/content/clas.asp>).¹⁰
 - i. Effective communication focusing on information, mediation of cultures, and a safe environment for patients may best be provided by an interpreter; family members may best participate as advocates but not as interpreters.¹¹
 - ii. Providers may want to consider the patient's cultural beliefs about such issues as male-female roles, folk illness beliefs and behaviors, expectations about care from other generations, level of acculturation, and other factors while recognizing that no group is culturally homogeneous and that diversity exists among group members.⁹
- II. Chronic illnesses common in older persons
- a. Heart disease is the leading cause of death in US adults who are 65 years of age or older.¹² Of those 50 years of age and older with hypertension, 22.3% have difficulty walking up or down steps and 18.7% have difficulty standing, according to a Johns Hopkins Bloomberg School of Public Health analysis¹³, which indicates the strain a disaster, particularly evacuation, would impose.
 - i. Cardiac death—Leor et al.¹⁴ found that the number of witnessed sudden cardiac deaths occurring on the day of an earthquake in Los Angeles in 1994 rose from a daily average of 4.6 ± 2.1 in the preceding week to 24

- ($z=4.41$; $p<.001$) on the day of the earthquake. Of those who died from atherosclerotic cardiovascular disease, average age was 70.2 ± 13.5 years. The authors estimated that 19 of the sudden deaths occurring on that day could be linked solely to the earthquake.
- ii. High blood pressure—Of adults 65 years of age and older, greater than 50% have hypertension, and its prevalence has been rising.¹³ Physiologic changes in older adults, including a decrease in endothelin-dependent vasodilation and an increase in peripheral resistance, result in a tendency toward hypertension.¹⁵ Among 228 Hurricane Katrina evacuees (mean age, 66.1 ± 12.72 years) assessed by a multidisciplinary team focused on unaccompanied older adults, 54% were found to have hypertension. Experts concluded that hypertension was exacerbated during the hurricane because patients could not maintain health without medications and special diets.⁴ Likewise, patients with high cholesterol could anticipate lack of disease control without medications.
 - iii. Syncope (temporary loss of consciousness caused by a fall in blood pressure)—Declines in heart function allow a tendency toward syncope.¹⁵ The elderly and those with high blood pressure are among those most vulnerable to heat exhaustion and its warning signs, which include syncope.¹⁶ Poor replacement of fluids and high temperatures, conditions that promote heat exhaustion, may be experienced by the elderly in extreme weather conditions or as consequences of natural disasters, when normal environmental controls and routines are absent.
- b. Cerebrovascular disease occurs more commonly in African Americans (4.6%) than in whites (2.4%), and it is the most common cause of serious adult disability in the United States.¹³ Of those older than 50 years of age who have had stroke, 37% suffer impairments in 3 or more activities of daily living, and Medicare beneficiaries with cerebrovascular disease in 2006 averaged an office visit every 11.4 days.
 - i. Cognitive impairment is sometimes a result of stroke, and it can complicate care (see below) and prevent accurate information transmission in disaster assessment settings about medical history, medications, need for adaptive devices, or ability to perform activities of daily living.⁴
 - ii. Stroke, like congestive heart failure and kidney disease, carries a higher probability of comorbidity.¹³
 - c. Cancer risk increases with age, and about three-quarters of all cancers are diagnosed in people 55 years of age or older.¹⁷ Changes in physiology with age,

- including DNA damage and diminished DNA repair capacity, reduced oxidative capacity, and accelerated cell senescence, increase cancer risk.¹⁵
- i. Patients with cancer are likely to experience disruption in access to chemotherapy and/or radiation during a public health emergency, such as a natural disaster. Records should be stored on thumb drives and/or hard copies:
 - (a) Patients should consider reviewing medications at every medical visit or admission and keep a hard copy.
 - (b) If patients have cancer or another chronic illness, they should request and store a document indicating diagnosis, treatment plan and summary, and care plan.
 - ii. To prepare to meet emergency needs in a disaster, investigators examined National Hospital Ambulatory Medical Care Survey data from 2004 to identify the drug classes most often administered in emergency departments for chronic conditions; for cancer, they found it was narcotic analgesics.¹⁸ For other common chronic conditions, the drug classes most frequently needed were antianginal agents/vasodilators (heart disease), nonnarcotic analgesics (stroke), antiasthmatics/bronchodilators (chronic obstructive pulmonary disease), and hypoglycemic agents (diabetes).¹⁸
 - iii. Immunocompromised patients with cancers, particularly those who have undergone blood and bone marrow transplantation are at special risk when influenza prevalence rises.¹⁹
- d. Diabetes is a chronic condition in approximately 15% of Americans 50 and older, and among adults 65 years of age and older, it increased by more than 50% between 1997 and 2006.¹³
- i. During disasters, patients are often separated from their medications and from foods that help them avoid hyperglycemia and hypoglycemia, which can affect energy levels and cognitive function and the risk of coma.
 - ii. Planners should not underestimate the need to meet the needs of patients with diabetes. Data from the Behavioral Risk Factor Surveillance System, including data from 14 states, indicated that patients with diabetes were no more prepared for natural or other disasters than were those without diabetes and were only slightly more likely than others to have a 3-day supply of medicine.²⁰
 - iii. A Japanese commission designed guidelines for nonmedical personnel who triage elderly evacuees after a disaster. For evacuees with hyperglycemia, the commission recommended (a) eating regular meals,

- (b) preventing dehydration by drinking sufficient water, and (c) if possible, taking medication with meals and not skipping basal insulin injections (type 1 diabetes). Those in charge should monitor blood glucose more frequently than usual or consult a doctor when an evacuee with hyperglycemia has little appetite or a fever. For evacuees with hypoglycemia, the commission recommended (a) avoiding exercise or working when hungry, (b) eating meals regularly, (c) eating carbohydrates, (d) raising their glucose control goal higher than usual (150-200 mg/dL), and (e) reducing or skipping hypoglycemia medication when unable to eat a meal.²¹
- e. Cognitive impairment occurs in 1 of every 6 (16.7%) older persons.⁴
- i. Cognitive impairment can prevent accurate information transmission in disaster assessment settings about medical history, medications, need for adaptive devices, or ability to perform activities of daily living.⁴
 - ii. Impaired cognitive function and lack of physical strength can put older persons at risk for exploitation.⁴ Losses by those with cognitive impairment sheltering at the Houston Astrodome complex after Katrina included loss of money, medications, and what sparse belongings some had.
 - iii. Recommendations for disaster planning for those with cognitive impairment include housing such patients in special accommodations, not standard shelters, that provide health services required by mental and/or physical impairments.⁴
 - (a) One example of how this could be implemented comes from Florida where statutes require that emergency and disaster planning include assistance for those with disabilities or limitations. The statutes describe those who may need special assistance as those with “physical, mental, cognitive impairment, or sensory disabilities,” the existence of special needs shelters, and a registry for identifying and assisting these persons “in preparation for, and during and following, a disaster.” The computer-based registry began in January of 2015 and can be found at <https://snr.floridadisaster.org/Signin?ReturnUrl=%2f>.²²
 - (b) After Katrina, elder evacuees to Houston’s Reliant Astrodome Center spontaneously segregated themselves (able-bodied elders) along with frail elders from other evacuees in the cavernous Astrodome. Physicians, including geriatricians, gerontological social workers, and others serving this special needs group, therefore, had easy access to them, and the specific location encouraged focus on and attention to

their special needs. These folks might have cognitive disabilities or mental illness or practical problems, which might include the need for additional blankets, provision of special diets, or special accommodations for walkers, canes, or wheelchairs.⁴

III. Special issues

- a. Frail elders demand special attention. Frail elders, typically 85 years of age or older, represent the most vulnerable of older adults and the least capable of disaster prevention and mitigation or emergency preparedness.⁵
 - i. They are characterized by a decreased capacity to function and increased dependence on others, which prevents them from having the ability to respond effectively to disaster stressors.
 - ii. The presentation of the ailments they do have is atypical.
 - iii. Specialized disaster assistance may be required, depending on the patient's inability to perform activities of daily living or to be completely mobile, and assistance needs will rise during the disaster.⁴
- b. Frail elderly need rapid assessment.
 - i. Korteweg et al. (2010)²³ recommended in a systematic review of 33 papers that in disasters a rapid assessment is particularly important for the elderly and those with preexisting conditions.
 - (a) Korteweg et al.²³ reported that development in the United States of rapid assessment tools in the 1980s resulted in development by the World Health Organization of protocols for rapid assessment in emergencies. Subsequently, agencies in the United States honed their assessments.
 - (b) The review yielded the following recommendations about handling assessments of the elderly in disasters when the standard health system is not operating normally: (a) combine information from the registries (created by governments, hospitals, and physicians) with a brief questionnaire, (b) verify the content and add any exposure assessment, (c) ensure before the emergency that language needs of subpopulations are met, (d) collect information face to face or by phone, and (e) recognize that multiple evaluations in the first few weeks after a disaster may be necessary.²³
 - ii. In triage of Katrina evacuees at the Astrodome complex in Houston, the Seniors Without Families Team (SWiFT) assessed 228 evacuees who were 65 years of age or older by using a 13-item tool meant to measure medical, mental, financial, and social needs.^{4,24} The SWiFT assessment is available online at <http://www.bcm.edu/pdf/bestpractices.pdf>.

- c. Frail elderly, specifically those who are nonvocal, need special attention from professional and family caregivers to prevent isolation and unintentional neglect.
 - d. Frail elders need to overcome barriers to ongoing access to prescription drugs during disasters.
 - i. According to the National Center for Chronic Disease Prevention and Health Promotion,¹² adults aged 60 years and older are more likely than other age groups to take 2 or more prescription drugs. Overall, 88.4% of adults in this age group take 1 or more prescribed drugs, more than 76% take 2 or more, and 36.7% take 5 or more. The most commonly taken drugs in this age group are cholesterol-lowering drugs (44.9%), beta-blockers (26.4%), and diuretics (19.9%). California researchers²⁵ using focus group interviews with patients and key informant interviews with physicians, insurers, and pharmacists found that patients face barriers to obtaining disaster medication reserves: rules restrict insurance payments for more than a 30-day supply; the elderly themselves resist ordering drugs by mail, which often offers 90-day supplies; and the cost of drugs often exceeds what elders can pay.
 - ii. In the United States, investigators employed mixed methods to determine ways to strengthen continuity in prescription medicine delivery during disasters, and they concluded that flexible dispensing policies that allow building of reserves, improving disaster planning, and building stakeholder collaborative partnerships are beneficial.²⁵ In Japan, efforts after the Great Hanshin-Awaji Earthquake and Chuetsu Earthquake secured changes in laws, but the change had little effect; therefore, a survey was undertaken, which provided information for establishing an effective distribution system in case of disaster.²⁶
- IV. Disaster preparedness
- a. Disaster preparedness experts should make some preparations specifically for the elderly.²⁷
 - i. To be effective for the elderly, evacuation and treat-in-place plans need to be designed for them specifically.
 - ii. Plans should be reevaluated periodically, ensuring capacity and ability to be retrofitted for post-disaster use.
 - iii. Plans should be practiced.
 - iv. Mental health staff who understand the needs of the elderly should be a component of planning.

- v. Institutions and governments that will need to evacuate immobile elders must include transportation provision and coordination in planning.
 - b. Older adults should make preparations for emergencies, including disasters.²⁸
 - i. Assemble a kit of food, water, medications, power sources (batteries or chargers), a radio, and supplies for any needed service animal.
 - ii. Create a network for support of family members, friends, neighbors, members of religious or social groups, and make sure phone numbers and addresses (street and e-mail) are recorded and accessible.
 - iii. Prepare a personal evacuation bag.
 - iv. Make a personal plan.
 - v. Consider downloading and learning to use a mobile application from the Federal Emergency Management Agency, the Red Cross, or the Substance Abuse and Mental Health Services Administration.
- V. Response to disaster: Risk of mortality and acute and chronic conditions from disaster
- a. Older persons and those with lower socioeconomic status are disproportionately represented in the fatalities from disasters. In New Orleans before Hurricane Katrina made landfall, the elderly, who lacked the resources to evacuate or failed to leave because of fear or other reasons, made up almost half of those who died in storm-related events.²⁹ They were also more likely than those in other age groups to die after a tsunami in Indonesia, heat waves in Chicago and in Europe, and forced relocations by foot in Cambodia.³⁰
 - b. Older adults may be less likely to follow admonitions to evacuate.³⁰ Some may be reluctant to leave because of having to leave behind pets.³¹ Other older adults who are poor and have little trust in local government officials or television evacuation admonitions also may be less likely to evacuate.³² Also, overwhelming physical frailties may discourage some from leaving. Reasons for staying may include having no transportation, having nowhere to go, and believing someone must stay to protect property.³²
 - c. Institutionalized older adults may experience significant negative health effects as a result of a disaster. In a secondary analysis of Medicare claims and other data, investigators found statistically significant increases in 30-day and 90-day mortality and hospitalizations and in the rate of functional decline in nursing facility residents (all of whom were 65 years or older) in Louisiana and Mississippi when post-Katrina measures were compared with measures in 2003 and 2004.³³
- VI. Impact of acute illness after a disaster

- a. Risk of acute myocardial infarction mortality increases with age, and 82% of people who die after a heart attack are 65 years of age or older.³⁴
 - i. Acute myocardial infarction rates shortly after disaster have been examined. Leor et al.¹⁴ found that the number of witnessed sudden cardiac deaths occurring on the day of an earthquake in Los Angeles in 1994 rose from a daily average of 4.6 ± 2.1 in the preceding week to 24 ($z=4.41$; $p<.001$) on the day of the earthquake. Of those who died from atherosclerotic cardiovascular disease, average age was 70.2 ± 13.5 years. The authors estimated that 19 of the sudden deaths occurring on that day could be linked solely to the earthquake.
 - ii. Acute myocardial infarction rates within a long-term period after disaster have also been examined. Relying on data from death certificates 5 years before and 3 years after the Niigata-Chuetsu earthquake (6.8 on the Richter scale) of October 2004, Nakagawa et al. (2009)³⁵ found significant increases in long-term acute myocardial infarction mortality in men (+13.4%; $p=.017$), women (+14.9%; $p=.018$), and overall (+14.0%; $p=.0008$). The investigators point out that Japan has the lowest heart attack rate in the world and that earthquakes in areas with higher rates of heart attack could result in higher mortality than that reported here.
- b. Risk of cerebrovascular disease increased after earthquake and tsunami in Japan.
 - i. After the Great East Japan Earthquake (9.0 on Richter scale) and Tsunami of 2011, investigators compared standardized incidence ratios of cerebrovascular disease in the year of the earthquake with those in the previous 3 years, examining two 4-week periods before the earthquake and two 4-week periods after the earthquake. In areas with high flooding, men 75 years and older had rates of cerebral infarction more than twice as high as before the storm (odds ratio=2.34; 95% confidence interval [CI], 1.34-3.34).³⁶
 - ii. Investigators subsequently categorized the 12 coastal communities facing the epicenter by flood severity (4 groups) and seismic intensity (3 groups). They found increases in cerebrovascular disease (odds ratios, 95% CIs) already observed in the first 4 weeks following the earthquake (compared with the same periods in 2008, 2009, and 2010) were related in a linear fashion to flood severity, from 0.94 (0.59-1.30) at <20% to 1.98 (1.25-2.72) at $\geq 60\%$.³⁷
- c. Risk of cardiovascular disease mortality increased in areas of Ukraine contaminated by the Chernobyl nuclear accident of 1986, most markedly in the

- group oldest at the time of the accident (40-60 years of age) and exposed to the highest cumulative effective doses (21.00-50.99 mSv).³⁸
- d. Risk of carbon monoxide poisoning rises when disasters are followed by a loss of electricity.³⁹ In Texas after Hurricane Ike hit the Gulf Coast in 2008 with 110-mile-per-hour winds, 95% of 2.26 million electricity customers lost power.⁴⁰ Afterward, 15.6% (12/77) of hurricane-related carbon monoxide exposures occurred in the population >64 years of age. Counts were extracted from poison center call reports, requests for hyperbaric oxygen treatments, emergency department visit records, and mortality records collected by the state. Up to 87% of exposures were owed to improper generator use. None of the deaths occurred in the population ≥65 years old.
 - e. Risk of suicide was shown to rise in areas affected by 2 or more disasters within 24 months. Krug et al.⁴¹ found in a 1999 analysis of 377 US counties affected by 1 disaster that suicide rates per 100,000 population did not rise significantly; however, rates did rise significantly (14.8%; 95% CI, 5.4%-24.2%; $p < .001$) in a subset of 70 counties in which 2 disasters (flood, hurricane, severe storm, tornado, or earthquake) were separated by no more than 24 months.
 - f. Risk of post-traumatic stress disorder (PTSD). In the wake of traumatic events, PTSD is a common psychopathology, and about half of those who experience it have it for greater than 3 months after the event that triggered it.⁴² As an acute and chronic consequence of disasters, PTSD has been documented in the elderly, for example, following typhoons,⁴³ terrorist bombings,⁴⁴ and earthquakes.⁴⁵ Because studies of those directly affected by the 9/11 New York terrorist attacks on the World Trade Center focused on those experiencing the attack geographically firsthand, few elderly are included (those ≥65 years of age made up only 1.5% of study participants in one report, for example⁴⁶). Research not specifically in the elderly recognizes a clear dose-response correlation between exposure to a horrific event and the consequence of experiencing PTSD,⁴⁷ though a subsequent review of 9/11 scientific studies of PTSD calls attention to “enduring emotional reactions” across the country and effects that were comparable in groups with indirect as well as direct exposure.⁴⁶ (See the *Diagnostic and Statistical Manual of Mental Disorders* for criteria for PTSD.⁴⁸)
- VII. Atypical presentation of conditions in old age¹⁵
- a. Older persons do not present with the characteristic or classic signs and symptoms of disorders.
 - b. Geriatric syndromes, multifactorial in origin and characterized by a constellation of nonspecific manifestations, commonly accompany complaints.

- c. Because of their familiarity with these presentations and their experience communicating with older patients, geriatricians working with geriatric teams—social workers, nurses, psychiatrists, and other health care professionals who specialize in geriatrics—are best suited for meeting older patients' needs.⁴

VIII. Recovery

- a. Recovery with support from mental health professionals⁴⁹
 - i. Mental health professionals should be prepared to respond to delirium, behavioral and psychological symptoms of dementia, depression, PTSD and other psychiatric symptoms that are the result of disaster's environmental changes and medical conditions and to coordinate services with medical providers.
 - ii. Support needed may include helping elders create a new community and to take action to prevent debilitating depression, behavioral and psychological symptoms of dementia, alcohol dependence, or suicidal ideation.
- b. Individual recovery³⁰
 - i. Persistent chronic stress after the disaster can have a negative impact on health status and lead to poor outcomes. In the aftermath of a disaster, continual stress may prove more damaging than the event itself.
 - ii. Control of medications and adherence to medication regimen may promote recovery.
 - iii. Socioeconomic recovery may be slower and less robust for older men than for men who are younger.
 - iv. In certain cases, older persons have exhibited psychological resilience after disaster that outpaced that of all who were younger. Experience from other challenges, positivity, and better coping styles have been suggested as reasons for such resilience.³⁰
 - (a) In a comparison after Florida hurricanes between adults older than 60 years of age and adults aged 18-19 years, the older adults had lower levels of PTSD symptoms, less general anxiety disorder, and fewer depressive episodes related to functional impairments.⁵⁰
 - (b) In Web-based surveys of a sample of 2240 US adults (age range, 18-101 years) conducted 6 times over 3 years after the September 11, 2001, World Trade Center attack, respondents of older age were found, in comparison with younger adults, to report less change in fear of subsequent attacks, lower overall generalized stress, and a steeper decline specifically in symptoms of post-traumatic stress.⁵¹

Suggested Learner Activities for Use in and Beyond the Classroom

1. Ask learners to complete the following activity: Create a briefing for colleagues in your profession in your work setting or anticipated work setting. The briefing should be about chronic and acute conditions present in the geriatric population that influence their disaster preparedness, response, and recovery. Assume for your briefing that your colleagues are well versed in caring for older adults in nondisaster settings. However, your colleagues may not have thought about the impact of acute and chronic conditions among older adults related to disasters. Your briefing should address the following questions:
 - a. What acute and chronic conditions among older adults are you most likely to provide care for given your professional role and work setting?
 - b. In what ways are these conditions relevant for the disaster setting?
 - c. What should your colleagues be thinking about as they anticipate caring for older adults with these conditions in a disaster?

For this activity, learners can work in small groups and develop a briefing outline, list of bullet points, or slide deck to answer the questions above.

2. Ask each learner, working individually, to reflect on the older adults they know in their lives and their current acute and chronic conditions. How might these conditions affect the ways that these older adults would need to prepare for disasters? Create a table listing the acute and chronic conditions present in the older adults in your life. See the sample table below. In the first column of the table, list the acute and chronic conditions. In the second column of the table, explain how each condition would be significant in a disaster.

| Acute or Chronic Condition | How Is This Condition Significant Before, During, and After a Disaster | | |
|----------------------------|--|--|---|
| | Before | During | After |
| <i>Example: Diabetes</i> | <i>Preparation for a disaster requires having extra supplies, including drugs, on hand and ensuring others know of condition in case of emergency.</i> | <i>Avoid missing doses of medication and protect energy reserves. Loss of glucose control can result in coma or death.</i> | <i>Maintaining regular meal and medicine intake despite other disruptions can help keep condition stable.</i> |
| | | | |
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Readings and Resources for the Learner

- Required Resources
 - Freid VM, Bernstein AB, Bush MA. Multiple chronic conditions among adults aged 45 and over: trends over the past 10 years. *NCHS Data Brief*. 2012;(100):1-8.
- Supplemental Resources
 - Aldrich N, Benson WF. Disaster preparedness and the chronic disease needs of vulnerable older adults. *Prev Chronic Dis*. 2008;5(1):A27. http://www.cdc.gov/pcd/issues/2008/jan/07_0135.htm. Accessed December 29, 2014.

Learner Assessment Strategies

1. Ask learners to prepare a list of acute and chronic conditions (at least 5 total) present in older adults that could influence their disaster preparedness, response, and recovery. For each condition listed, ask the learner to describe at least one implication of the condition for the geriatric population in the disaster setting.

Readings and Resources for the Educators

- Required Resources
 - Core competencies. Walsh L, Subbarao I, Gebbie K, et al. Core competencies for disaster medicine and public health. *Disaster Med Public Health Prep*. 2012;6:44-52.¹
 - *Recommendations for Best Practices in the Management of Elderly Disaster Victims*. Baylor College of Medicine and the American Medical Association. <https://www.bcm.edu/pdf/bestpractices.pdf>. Accessed February 3, 2015.⁴
 - CLAS and the CLAS standards. Office of Minority Health. US Department of Health and Human Services website. <http://www.thinkculturalhealth.hhs.gov/content/clas.asp>. Accessed January 11, 2015.¹⁰

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