Emergency Situations:
Restricted Access to Healthcare

• 3 P’s to determine need for self-care during emergency situations
  ◦ Based on sheltering and isolation risk
  1. Proximity
  2. Predictability
  3. Preparedness

Emergency Situations:
Restricted Access to Healthcare

- Natural Disasters
  - Floods
  - Tornadoes
  - Extreme Heat
  - Thunderstorms
  - Winter Storms
  - Drought
  - Hurricanes
  - Tsunamis
  - Earthquakes
  - Volcanoes
  - Landslides
  - Wildfires

- Declared Disasters
  - Nuclear Plants
  - Technological
  - Pandemic
  - Hazardous Materials
Emergency Situations: Restricted Access to Healthcare

Natural Disasters

- Hurricanes
  - Tropical cyclone and/or tropical storm
  - Major safety risk: flying debris, floods, landslides
  - Seasonal: June – November (Atl), May – November (Pcf)
  - Predictability: 48-96-hour notice

- Tornado
  - Rotating funnel-shaped cloud that extends from thunderstorm to ground
  - Major safety risk: flying debris, wind damage
  - Semi-Seasonal: associated with thunderstorms
  - Predictability: limited. Up to 12 hours warning

- Earthquake
  - Sudden rapid shaking of the earth
  - Major safety risk: falling objects, debris, collapsing walls
  - Predictability: impossible

- Wildfires
  - Fire in woodland setting, rural area, or remote mountain site
  - Predictability: associated with dry weather. No warning
Emergency Situations: Restricted Access to Healthcare

- 84 y.o. AA female with early onset dementia is married to a 80 y.o. AA male with HTN, Type II DM with secondary retinopathy & renal insufficiency. The couple refused admission to LTAC and currently live at home in Gulfport, MS. The couple does have an evacuation plan and emergency kit, including emergency supplies, but no medications.

- The National Weather Service has just issued a Category 2 hurricane warning for the MS coastline to make landfall within 48 hours.

Based on the 3 P’S, should the couple shelter in place and engage in self-care?

a. Yes, there is not enough warning to evacuate
b. Yes, hurricanes typically cause isolated damage, so health care should be available in their area
c. No, the hurricane warning has provided sufficient time to evacuate
d. A & B are correct
e. None of the above

Emergency Situations: Restricted Access to Healthcare

Hurricane Katrina Victims Trapped

- First priority is surviving flood waters
- Association between poor health management and survival may be overlooked
- Emergency rescue could take hours to days

Need for self-care is imminent!!

Source: Jocelyn Augustino, Public Domain, via FEMA

Emergency Situations: Restricted Access to Healthcare

Devastation 7 months post Katrina

- Survival remains as first priority
- Shelter-in-Place
- Emergency shelter
- Evacuate
  • Private vs. public health insurance
- Association between poor health management and survival may be overlooked
- Restoration of health resources

Need for self-care is imminent!!

Source: Infrogmation.CC2.5G, via Wikimedia
Emergency Situations:
Restricted Access to Healthcare

Charity Hospital and Clinics:
Regional Safety-Net Health System post Katrina

- Immediately closed
- Later permanently closed
- Months to years post Katrina
  - Satellite hospital to replace damaged hospital
  - Level I trauma center
  - Ambulatory health centers

Need for self-care is imminent!!!

Source: Infrogmation, CC2.5G, via Wikimedia

Emergency Situations:
Restricted Access to Healthcare

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Source: Infrogmation, CC2.5G, via Wikimedia

Emergency Situations:
Restricted Access to Healthcare

Memorial Baptist Hospital and Clinics: Private Health System post Katrina

- Immediately closed
- Health care replaced immediately by volunteers (red cross) or redistributed to open facilities
- Years post Katrina
  - Acquired and reopened by another private health system

Need for self-care is imminent!!!

Source: Infrogmation, CC2.5G, via Wikimedia
Emergency Situations: Restricted Access to Healthcare

Memorial Baptist Hospital and
Frieds - Private Health System post
Katrina
- Immediately closed
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  by volunteers (red cross) or
  redistributed to open facilities
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    system

Source: Infrogmation, CC2.5G, via Wikimedia

Emergency Situations: Restricted Access to Healthcare

Red Cross Medical Tent and
Emergency Supplies
- Opened weeks to months post
  Katrina
- Minimal medical services
  provided to treat urgent
  conditions
- Resource for limited medical
  supplies and medication

Source: Infrogmation, CC2.5G, via Wikimedia

Emergency Situations: Restricted Access to Healthcare

- Declared Disasters
  - Industry / Technology Related
    - Hazardous Materials
      - Released improperly during production, storage, transportation, or disposal
      - Safety risk: explosive, flammable, combustible, poisonous, and radioactive
      - Predictability: can determine susceptibility. No warning
    - Nuclear Power Plants
      - Radioactive material released into atmosphere accidentally
      - Safety risk: exposure (contact or inhalation) to radioactive material
Emergency Situations: Restricted Access to Healthcare

- Declared Disasters
  - Bioterrorism
    - Bombs
    - Deliberate explosion used as weapon
    - Predictability: limited ability to determine susceptibility. No warning.
    - Proximity: usually confined to small geographic area.
  - Nuclear Blast
    - Explosion emitting intense light and heat, damaging pressure wave, and widespread radioactive material
    - Predictability: limited ability to determine susceptibility. No warning.
    - Proximity: usually widespread geographical area targeted

Graniteville, SC Derailment
- Survival remains as first priority
- Shelter-in-Place
- Emergency shelter
- Evacuate
- Association between poor health management and survival may be overlooked
- Evacuation orders could take hours to days

Need for self-care is imminent!!

Source: EPA, CC2.5G, via Wikimedia
Generational Trends: Restricted Access to Healthcare

- Economic Implications
  - Delayed Retirement
    - Wellness (healthful eating, healthful exercise, poly-pharmacy / natural products)
  - Focus on living at home long-term
    - Assisted living technology replacing need for assisted living facility
  - Boomers are taking care of elderly
  - Can’t afford evacuation

Generational Trends: Restricted Access to Healthcare

- Wellness & Self-Care
  (Tension between the pursuit of a healthy lifestyle, and the anxiety that the whole system could collapse at any time)
  - Strong focus on nutrition, exercise
  - Expectation for cure – research their own treatments
  - Natural products – less side effects, free from commercial bias

MEDICATION & LIFESTYLE CONSIDERATIONS FOR CONDITIONS REQUIRING MANAGEMENT IN AN EMERGENCY SITUATION

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Shocking Statistics

- Approximately 80% of adults ≥ 65 years old have at least one chronic health condition
- Approximately 50% of older adults have at least two chronic conditions
- Adults aged 65 or older
  - Nearly ½ have hypertension
  - 35.6% have arthritis
  - 20.4% have coronary heart disease
  - 19.9% have cancer
  - 15.2% have diabetes
  - 8.6% have had a stroke

Hurricane Katrina (2005)

- Adults aged 60 and over
  - 15% of the total population
  - 74% of hurricane-related deaths
- Estimated 200,000 people with chronic medical conditions, who were evacuated or isolated after Hurricane Katrina, lacked access to their medications and usual sources of care
- 49% of adult evacuees sheltered at Austin Convention Center arrived with acute illnesses
  - 31% had special dietary needs

Hurricane Katrina (2005)

- Survey of 680 evacuees living in Houston shelters in September 2005
  - 41% reported having chronic health conditions such as heart disease, hypertension, diabetes, and asthma
  - 43% indicated that they were supposed to be taking a prescription medication
  - 29% of those who were supposed to take prescription drugs said they had problems getting prescriptions filled

1. Gatty, B. Long-Term Living, 58(8), 2009
2. Adelman & Legg. JNG, 36(8), 2010
3. Aldrich N, Benson WF. Prev Chronic Dis, 2008
4. The state of aging and health in America 2006
8. Adult N, Benson WF. Prev Chronic Dis, 2008
Disaster Vulnerability of Older Persons

Phases of Disaster

Pre-disaster Self-Management Scenario

- Shelters
- Evacuee/In-Transit
Shelters

- Sheltering-In-Place
- Emergency Shelter
- Temporary Shelter
- Temporary Housing
- Permanent or Replacement Housing
- Medical Needs Shelter

Evacuee/In-Transit

- Length of Evacuation Unknown
- Access to Resources Unknown

Major Conditions for Medication Management Consideration

**ACUTE**
- Myocardial infarction
- Mental health (depression, anxiety, etc.)
- Over-the-counter (cough, cold, etc.)
- Stroke
- Pneumonia

**CHRONIC**
- Diabetes
- Hypertension
- Respiratory (COPD/Asthma)
- Heart failure
- Alzheimer’s / Dementia
- Arthritis

Include Caregiver in Discussion
What May Be Different?

- Diet
- Physical Activity
- Self-Management

Diet
- Meal, Ready-to-Eat (MRE) packages
  - Full of fat, sodium, and calories
- Prepackaged, Non-Perishable Snacks
- Portion Control
- Eat Regularly
  - Glucose tabs or gel
  - Other source of glucose

Physical Activity
- Walk around shelter (if permitted)
- Weight-bearing exercises
  - Own body weight
  - Common objects
- Chair exercises
Medication Management:
Self-Management
- Supplies?
- Goals?
- Critical Values/Signs & Symptoms?
  - Treatment
- Medication
  - Shortage
  - Alternatives
  - Storage

Chronic Condition Self-Management:
Type 2 Diabetes
- Diet
  - Focus on complex, low carbohydrate foods
    - Whole grains
    - Foods packaged in natural juices
    - Proteins
    - Water
    - Sugar-free beverages

Chronic Condition Self-Management:
Type 2 Diabetes
- Physical Activity
  - Aerobic Activity
    - 150 minutes/week
    - 30 minutes/day for 5 days
    - May be broken up into smaller increments (at least 10 minutes)
  - Weight Bearing Exercise
    - At least 2 days/week
    - Yoga, resistance bands

Chair Exercises

Chronic Condition Self-Management:
Type 2 Diabetes

- **Avoid Exercise**
  - Fasting glucose levels > 250 mg/dl + ketosis

- **Use Caution**
  - Glucose levels > 300 mg/dl + no ketosis

- **Levels > 100 mg/dl**
  - Ingest more carbohydrates

ADA: Diabetes Mellitus and exercise, Diabetes Care, 2002

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Chronic Condition Self-Management:
Type 2 Diabetes

- **Supplies**
  - Glucometer
  - Strips
  - Lancets
  - Alcohol Swabs
  - Source of Glucose

- **Goals: Blood Glucose**
  - Fasting: 70-130 mg/dL
  - Post-Prandial: < 180 mg/dL

Critical Values/Signs & Symptoms
- Hypoglycemia
- Hyperglycemia
  - Increase insulin
  - Double oral medication
    - Up to max dose
  - Consume sugar-free fluids

Chronic Condition Self-Management:
Type 2 Diabetes

Medication
- Shortage
- Alternatives
- Storage
  - Oral medication
    - Room temperature
    - Keep away from water
  - Insulin
    - Store in refrigerator prior to opening
    - May store at room temperature once open for up to 1 month

Acute Condition Self-Management:
Hypoglycemia
- Glucose (15–20 g)
  - OJ or Soda
  - Hard Candy
  - Glucose Tabs/Gel
  - Table Sugar
- 15 - 20 min after
  - Repeat
- Once normal
  - Consume a meal or snack

2. Cryer, P.D. Diabetes. 2008
Emergency Kits

- Medical Supplies
  - Glucometers
  - Strips
  - Lancets
  - Alcohol Swabs
  - Batteries
  - Blood Pressure Monitors
  - Diapers
  - Wound Care Items
- Eye Glasses/Contact Lenses
- Assisted Walking Devices
- Hearing Aids
  - Including batteries
- Paper records
  - WATER-PROOF!!!
- Emergency Health Information Card
  - Medication list
  - OTC, herbal, Supplements
  - Current conditions
  - Physicians
- Eye Glasses/Contact Lenses

Review Your Plan Yearly

Medication Storage

- Water-proof
- Insulated
- Ice or cold packs

Practice Tips

- Self-Management
  - Diet
  - Physical Activity
  - Medication

- Review Plan & Check Kit
  - Annually
  - Medically Related Changes
  - Caregiver

Case Study

- 84 y.o. AA female with early onset dementia is married to a 80 y.o. AA male with HTN, Type II DM with secondary retinopathy & renal insufficiency. The couple refuse admission to LTAC and currently live at home in Gulfport, MS. The couple does have an evacuation plan and emergency kit including emergency supplies but no medications.

- As hurricane season approaches, the couple would like to add medications to their emergency kit. What should the health care professional recommend for this man and his wife with vision impairment and dementia, respectively?
  a. A prefilled pill box with Braille & large letters for at least a seven day supply of medication
  b. An audible glucometer
  c. A preset alarm wrist watch to utilize for diet, exercise, and medication reminders
  d. Self-care guidelines to assess and manage acute diabetes, hypertension, and dementia episodes
  e. All of the above
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Thank You for Your Attention!!!

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Evans, J. (2010). Mapping the vulnerability of older persons to disasters. International Journal of Older People Nursing, 5, 63–70

Resources

Information on Herbals & Supplements

- FDA

Out of medication ???

- Emergency Prescription Assistance Program (EPAP)
  - Federally-identified disaster area
  - Valid prescription or other means to verify an existing prescription
  - No other public or private drug or durable medical equipment (DME) coverage
  - Up to 90 days supply for acute illness
  - Replacement of maintenance medication and DME
  - Direct result of disaster
  - Secondary while in transit from disaster area to designated shelter

For More Information on EPAP http://www.phe.gov/Preparedness/planning/epap/Pages/default.aspx
Resources

- **Emergency Preparedness**
  - *PrepareNow.Org*: Supporting special needs and vulnerable populations in disaster
    - [http://www.preparenow.org/prepare.html](http://www.preparenow.org/prepare.html)
  - *FEMA* – Caring for someone with dementia in a disaster
Be Red Cross Ready
Get a kit. Make a plan. Be informed.

It’s important to prepare for possible disasters and other emergencies. Natural and human-caused disasters can strike suddenly, at any time and anywhere. There are three actions everyone can take that can help make a difference ...

At a minimum, have the basic supplies listed below. Keep supplies in an easy-to-carry emergency preparedness kit that you can use at home or take with you in case you must evacuate.

- Water—one gallon per person, per day (3-day supply for evacuation, 2-week supply for home) • Food—non-perishable, easy-to-prepare items (3-day supply for evacuation, 2-week supply for home) • Flashlight • Battery-powered or hand-crank radio (NOAA Weather Radio, if possible) • Extra batteries • First aid kit • Medications (7-day supply) and medical items • Multi-purpose tool • Sanitation and personal hygiene items • Copies of personal documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies) • Cell phone with chargers • Family and emergency contact information • Extra cash • Emergency blanket • Map(s) of the area

Consider the needs of all family members and add supplies to your kit. Suggested items to help meet additional needs are:

- Medical supplies (hearing aids with extra batteries, glasses, contact lenses, syringes, cane) • Baby supplies (hottles, formula, baby food, diapers) • Games and activities for children • Pet supplies (carrier, leash, ID, food, carrier, bed) • Two-way radios • Extra set of car keys and house keys • Manual can opener

Additional supplies to keep at home or in your kit based on the types of disasters common to your area:

- Whistle • N95 or surgical masks • Matches • Rain gear • Towels • Work gloves • Tools/supplies for securing your home • Extra clothing, hat and sturdy shoes • Plastic sheeting • Duct tape • Scissors • Household liquid bleach • Entertainment items • Blankets or sleeping bags

Make a plan

- Meet with your family or household members.
- Discuss how to prepare and respond to emergencies that are most likely to happen where you live, learn, work and play.
- Identify responsibilities for each member of your household and plan to work together as a team.
- If a family member is in the military, plan how you would respond if they were deployed.

Plan what to do in case you are separated during an emergency

- Choose two places to meet:
  - Right outside your home in case of a sudden emergency, such as a fire
  - Outside your neighborhood, in case you cannot return home or are asked to evacuate

- Choose an out-of-area emergency contact person. It may be easier to text or call long distance if local phone lines are overloaded or out of service. Everyone should have emergency contact information in writing or programmed into their cell phones.

Plan what to do if you have to evacuate

- Decide where you would go and what route you would take to get there. You may choose to go to a hotel/motel, stay with friends or relatives in a safe location or go to an evacuation shelter if necessary.
- Practice evacuating your home twice a year. Drive your planned evacuation route and plot alternate routes on your map in case roads are impassable.
- Plan ahead for your pets. Keep a phone list of pet-friendly hotels/motels and animal shelters that are along your evacuation routes.

Learn what disasters or emergencies may occur in your area. These events can range from those affecting only you and your family, like a home fire or medical emergency, to those affecting your entire community, like an earthquake or flood.

- Identify how local authorities will notify you during a disaster and how you will get information, whether through local radio, TV or NOAA Weather Radio stations or channels.
- Know the difference between different weather alerts such as watches and warnings and what actions to take in each.
- Know what actions to take to protect yourself during disasters that may occur in areas where you travel or have moved recently. For example, if you travel to a place where hurricanes are common and you are not familiar with them, make sure you know what to do to protect yourself should one occur.
- When a major disaster occurs, your community can change in an instant. Loved ones may be hurt and emergency response is likely to be delayed. Make sure that at least one member of your household is trained in first aid and CPR and knows how to use an automated external defibrillator (AED). This training is useful in many emergency situations.
- Share what you have learned with your family, household and neighbors and encourage them to be informed.

Emergency Contact Cards for All Household Members
Get your cards online at http://www.redcross.org/prep/ECCard.pdf.

- Print one card for each family member.
- Write the contact information for each household member, such as work, school and cell phone numbers.
- Fold the card so it fits in your pocket, wallet or purse.
- Carry the card with you so it is available in the event of a disaster or other emergency.

Let Your Family Know You’re Safe

Tell your loved ones about the American Red Cross Safe and Well Web site available through RedCross.org. This Internet-based tool should be integrated into your emergency communications plan. People within a disaster-affected area can register themselves as “safe and well” and concerned family and friends who know the person’s phone number or address can search for messages posted by those who self-register. If you don’t have Internet access, call 1-866-GET-INFO to register yourself and your family.

For more information on disaster and emergency preparedness, visit RedCross.org.
Medical Advice for People with Diabetes in Emergency Situations

The American Diabetes Association has received a number of questions concerning what a person with diabetes should do in an emergency situation such as a hurricane. It is very difficult to give advice that will be correct for every person involved as each person’s situation may be very different from another person with diabetes. This being said, we do offer the following suggestions:

1. **Identify yourself as having diabetes.** The most important priority should be to identify yourself as having diabetes so that you can get the care you need. In situations such as a hurricane, the relief workers making decisions as to where a person should go and how they should be cared for will be based in part on the seriousness of their medical condition. Identifying yourself as having diabetes, and any diabetes-related complication you might have (such as heart or kidney problems) will significantly increase the chance that you will get the care you need.

2. **Dehydration.** A major concern in some emergency situations for people with diabetes is the effect of on-going hyperglycemia (high blood sugar) leading to dehydration. When the blood glucose (sugar) level is abnormally high, the body attempts to reduce the glucose level by dumping glucose into the urine so it can then be eliminated from the body. In order to do this, water must leave the body with the glucose. Over time, this can lead to dehydration unless a person is able to drink enough fluids to keep up with the increased urination. Additional fluid loss can occur through perspiration or sweating. With on-going dehydration, serious medical problems can occur. Therefore, one of the most important things that a person with diabetes can do is to make sure that they take in enough fluid to meet the body's needs. Obviously this must be done safely and the best choices for fluid intake would be clean water or non-carbohydrate containing fluids. Dehydration can also be a particular problem for those taking the diabetes medication called metformin (Glucophage).
3. **Hypoglycemia.** A second short-term complication of diabetes is hypoglycemia (low blood sugar). This will only occur in a person who is taking medications that lower their blood glucose (insulin and/or pills which cause the body to make more insulin). If at all possible, a person with diabetes should try to keep something containing sugar with them at all times to treat hypoglycemia should it occur.

Each person reacts to hypoglycemia differently, but some symptoms include:

- Shakiness
- Nervousness
- Sweating
- Irritability, sadness, or anger
- Impatience
- Chills and cold sweats
- Fast heartbeat
- Light-headedness or dizziness
- Drowsiness
- Stubbornness or combativeness
- Lack of coordination
- Blurred vision
- Nausea
- Tingling or numbness of lips or tongue
- Headaches
- Strange behavior
- Confusion
- Personality change
- Passing out

Due to serious concerns regarding hypoglycemia and the unusual circumstances faced in the aftermath of hurricanes witnessed recently in our country – particularly if a patient is not able to monitor their blood glucose level because they do not having access to a blood glucose meter – it may be best to not strive to keep blood glucose levels as close to normal as possible (as we generally advise for people with diabetes) but to allow your glucose levels to be somewhat higher. It is important to consider that the requirements for the various medications used to treat diabetes may be very different in somebody in a situation such as a hurricane due to significant changes in diet and activity levels.

4. **Prevent infections.** A third area of concern is the prevention of infectious disease, particularly foot infections. People with diabetes are at higher risk to develop infections of the feet due to nerve and blood vessel problems so it is very important that they do their best to avoid walking through contaminated water or injuring their feet. Feet should be inspected visually on a regular basis to look for any cuts, sores, or blisters so proper care can be obtained. Should any of the usual signs of infection (swelling, redness, and/or discharge from a wound) be seen, immediate medical help should be obtained.
5. **Medications.** In response to questions about what a person with diabetes should do if they do not have access to their usual diabetes medications, only general advice can be given. Obviously, people with type 1 diabetes are at greatest risk because they are completely dependent on injected insulin. These patients usually take insulin a number of times per day. If insulin is not available, the consumption of carbohydrates should be reduced if possible. If a person with type 1 diabetes does not have any access to insulin, the most important priority should be to maintain adequate intake of fluids to avoid dehydration (as discussed above). As quickly as insulin becomes available, these individuals need to return to their usual insulin regimen, keeping in mind, as noted above, that their requirements for insulin may be quite different at this particular time. If one’s usual type and brand of insulin is not available, using a different type or brand of insulin as directed by medical personnel is quite safe.

For a person with type 2 diabetes, who may or may not be on insulin, not receiving their medications on a regular basis presents fewer problems than in the person with type 1 diabetes but should be restarted as soon as possible. Again, avoiding hyperglycemia, which can lead to dehydration, is the most important priority. As medications become available, they should be restarted cautiously, keeping in mind that a person's needs for a particular medication and dosage may have changed if significant weight loss has occurred or a person has gone without adequate intake of food for a significant period of time.

In the affected areas pharmacies may allow you to get your medicines without a prescription if you have the pill bottles. Many people with diabetes take medicines for high blood pressure and cholesterol as well. These should also be restarted as soon as possible.

The American Diabetes Association is the nation’s leading voluntary health organization supporting diabetes research, information and advocacy. Founded in 1940, the Association has offices in every region of the country, providing services to hundreds of communities. For more information, please call the American Diabetes Association at 1-800-DIABETES (1-800-342-2383) or visit [www.diabetes.org](http://www.diabetes.org). Information from both these sources is available in English and Spanish.

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