



Planning Considerations for the Extremely Obese for Disasters and Public Health Emergencies

Extreme obesity (defined as a body mass index ≥ 40) is associated with serious physiological and psychological comorbidities such as cardiovascular disease, diabetes, cancer, kidney failure, liver disease and depression. Results from the latest National Health and Nutrition Examination Survey (NHANES), indicate that an estimated 5.7% of U.S. adults aged 20 years and over are extremely obese. Considerations for extremely obese individuals are critical when planning for emergency preparedness, response, and recovery, as they will require more resources and may present significant logistical challenges in patient transport and patient care.

Considerations for Individuals with Extreme Obesity

- ✓ **Ensure Adequate Oxygen Supply and Meet Specific Positional Requirements**
 - Extremely obese individuals require more oxygen than non-obese individuals due to their diminished lung capacity. They are also more likely to have obstructive sleep apnea (OSA), where complete and partial obstructions of the upper airway may occur during sleep.
 - Check oxygen requirements, and ensure oxygen supply is available when transported via air. The amount of oxygen supply during air transport may need to be increased compared to the amount required on the ground.
 - Maintaining a supine position may impede respiration in some extremely obese patients, especially during sleep. Situating the head in an elevated position may be necessary for adequate respiration and oxygen saturation throughout transport.

- ✓ **Ensure Availability of Resources to Accommodate Physiological Characteristics:**

Identify the weight loading capacity and dimensions for medical, transportation and shelter resources to determine whether they are adequate for extremely obese patients. The following resources are a list of some equipment that may need to be considered for this population.

 - **Medical Resources**
 - Larger blood pressure cuffs
 - C-PAP (continuous positive airway pressure) machines, tracheal tubes, laryngoscope, flexible bronchoscope to support respiration, and intubation.
 - Wheelchair accessible scale and standing scales with greater weight limit
 - Larger gowns and masks
 - **Transportation Resources:** *Extremely obese patients and equipment take up more space, reducing the overall number of patients that can be evacuated at one time.*
 - Bariatric wheelchairs: ensure size, weight capacity, and ease of movement with weight
 - Bariatric stretchers: some models offer a powered transport feature, built in scales, and other features that allow for ease in repositioning the head section.
 - Heavy duty Patient Lifts and/or Lateral transfer aids: move patient from one area to the other, or to reposition individual
 - **Shelter Resources:**
 - Bariatric beds: ensure adequate dimensions, weight capacity. Bariatric beds may also be utilized for transport purposes.
 - Bariatric commodes: ensure easy access and secure (floor/wall) mounting is maintained with the capability to support increased weight with adaptive equipment

- ✓ **Ensure Safety for the Staff**
 - Staff need to consider their personal health and safety when transporting and caring for bariatric patients. Adequate preparation for the care of extremely obese patients will reduce the risk for serious injury for the staff and the patient.

✓ **Recognize Individuals Who May Have Recently Undergone Bariatric Surgery**

- Be aware of special dietary needs: depending on time since bariatric surgery, individuals may be placed on a special diet (eg. liquid foods, soft foods, small meals, etc.) to prevent side effects and complications following surgery. The diet guidelines vary according to the type of bariatric surgery conducted, and as well as the physician.

✓ **Be Aware of Behavioral Health Considerations**

- Extremely obese patients may experience depression, social isolation, and loss of self-esteem associated with past discrimination and prejudice due to their morbid obesity. Stress induced from disasters and public health emergencies may exacerbate pre-existing behavioral health conditions among extremely obese patients, especially if they experience various constraints in transportation and care. Staff must be cognizant of the sensitive issues extremely obese patients may face, and consider behavioral health needs as part of caring for extremely obese individuals.

Additional Information

Please refer to the following resources for more descriptive information on the planning considerations for extremely obese individuals during disasters and other emergencies

- **Take a Proactive Approach To Extremely Obese Patient Needs.** Provides insight into the various medical and transport equipment necessary for the extremely obese population.
https://www.ecri.org/Documents/News/20070601_MaterialsManagementinHealthCare_Bariatric.pdf
- **EMS Challenges with Extremely Obese Patients: Treatment and Techniques.** This two-part series provides an overview on issues and techniques when caring for, transporting, mobilizing and evaluating the extremely obese patient.
Part 1: <http://carolinafirejournal.com/articles/article-detail/articleid/1586/ems-challenges-with-bariatric-patients.aspx>
Part 2: <http://www.carolinafirejournal.com/articles/article-detail/articleid/1767/ems-challenges-of-bariatric-patients.aspx>
- **The Inclusion of the Extremely Obese Population.** Although this is a document targeted for hospital settings, it provides useful information on various types of medical, transport and shelter equipment that may be applicable during disaster settings.
http://iwsp.human.cornell.edu/file_uploads/IWSP_4350_2009_DILEMMA_Strongwater-Bariatric.pdf
- **Gastrointestinal and Nutritional Complications After Bariatric Surgery.** A scientific article describing the various complications and considerations for individuals after bariatric surgery.
<http://gidiv.ucsf.edu/course/things/ajgcomp.pdf>

Key Takeaways: An interdisciplinary approach is necessary for the transport, shelter, and care of extremely obese individuals

- **Know community demographics beforehand:** Extreme obesity affects nearly 6% of the U.S. population. Understanding the prevalence of obesity in specific communities is the first step to ensure planning among responders, staff, and the community can address the management and logistical requirements of the extremely obese.
- **Educate staff on bariatric care:** The morbidly obese often feel mistreated, forgotten and misunderstood by medical and non-medical personnel. It is important for staff to remain nonjudgmental to be able to preserve the privacy and dignity of the bariatric individuals during public health emergencies and disasters.
- **Assess the existing equipment:** Identifying the weight capacity and size limits of the resources and equipment will help determine whether existing equipment is appropriate for the care of bariatric individuals

References

Brodsky, J.B., Lemmens, H.J.M., Brock-Utne, J.G., Saidman, L.J., Levitan, R (2003). Anesthetic considerations for bariatric surgery: proper positioning is important for laryngoscopy. 96(6), 1841-1842