Preparing for Disasters: Perspectives on Women

ABSTRACT: Emergency plans that specifically address the needs of women, infants, and children during disasters are currently underdeveloped in the United States. Pregnant women, infants, and children are adversely affected by disasters resulting in an increased number of infants with intrauterine growth restriction, low birth weight, and a small head circumference. There is an increased incidence of preterm delivery. To provide for a healthy pregnancy and delivery, pregnant women affected by disasters need to be assured of a continuation of prenatal care. Those in the third trimester should be aware of established local health care facilities that can provide prenatal care and obstetric services during a disaster. Establishing and maintaining lactation before, during, and after a disaster is important for infant nutrition. Decreasing the number of unintended pregnancies can be achieved by providing both prophylactic and emergency contraception. Women involved in disasters are also at an increased risk for sexual assault and should be provided a safe and secure environment in evacuation shelters. In addition to emergency contraception, sexual assault forensic examiners or sexual assault nurse examiners should be available for victims of sexual assault.

Catastrophic disasters can greatly affect the health care system. Not only does the health care system become overwhelmed with medical emergencies but it also can be disrupted. Following the events of 9/11 and the anthrax letters of 2001, the Hospital Preparedness Program, a sector of the U.S. Department of Health and Human Services, was developed to address hospital preparedness for bioterrorism, natural disasters, and epidemics. Although great strides have been made in improving the health care system in preparation for disasters, the Evaluation Report from the Hospital Preparedness Program released in March 2009, reveals hospitals in the United States are not currently prepared for a major disaster (1). Additionally, the aftermath of Hurricane Katrina revealed the vulnerability of women, infants, and children during disasters. As a result, in 2005 and 2006 the National Working Group for Women and Infant Needs in Emergencies in the United States extensively reviewed most U.S. preparedness plans and found that these plans seldom included the needs of mothers and children during the acute or recovery phases of a disaster (2). The American College of Obstetricians and Gynecologists is a member of the White Ribbon Alliance that supported this working group. The obstetrician–gynecologist has a unique role in developing and carrying out an emergency preparedness plan that addresses the safety and medical needs of women in the event of bioterrorism, natural disasters, and epidemics.

Effect of Disasters on Pregnant Women, Newborns, and Infants

Pregnant women, newborns, and infants may be disproportionately harmed by natural disasters. The lack of resources, such as food and clean water, lack of access to health care and medications, as well as psychologic stress in the aftermath of disasters increase pregnancy-related morbidities. After Hurricane Katrina, the Centers for Disease Control and Prevention found that the 14 Federal Emergency Management Agency designated counties and parishes affected by the hurricane had a significant increase in the number of women who received late or no prenatal care. In the designated counties in Mississippi, the percentage of inadequate prenatal care increased significantly from 2.3% to 3.3% (3). In Louisiana, among Hispanic women, it increased from 2.3% to 3.9% (3). Infants who were born to pregnant women living within a 2-mile radius of the World Trade Center on 9/11 were found to have a higher rate of intrauterine growth restriction, decreased birth weight, and a small head circumference (4, 5). In a study that monitored birth
outcomes following Hurricane Katrina, women who experienced three or more severe traumatic situations during the hurricane, such as feeling as though one’s life was in danger, walking through flood waters, or having a loved one die, were found to have a higher rate of low birth weight infants and an increase in preterm deliveries (6). Additionally, disruption of the health care system may result in the separation of mothers and infants. For example, during Hurricane Katrina, many critically ill hospitalized infants were transported to medical facilities outside of New Orleans without their mothers. The separation of mothers and their infants can interfere with breastfeeding as well as create additional stress for the mothers.

These pregnancy morbidities can be prevented by developing an emergency plan that addresses them. As providers of women’s health care, the involvement of the obstetrician–gynecologist in disaster response is essential (see box, “Physician Guide to Emergency Preparedness for Women and Infants”). This can be done at the local level through a hospital emergency preparedness committee or a community group attached to the fire department or police department and at the state level through the Department of Homeland Security.

**Disaster Preparedness for the Health Care System and Providers Caring for Pregnant Women**

Although a “one-size fits all” emergency plan is difficult to apply to all disasters, there are common distresses experienced by all pregnant women regardless of the nature of the disaster. Pregnant women should be encouraged to develop evacuation plans in the event there is enough forewarning to allow for evacuation. The American Red Cross provides emergency preparedness checklists for specific disasters (7). However, when evacuation is not possible, the health care for women in the antepartum, intrapartum, and postpartum periods needs to be safely managed. For women in the antepartum period, maintaining prenatal care is of utmost importance. Health care providers outside the perimeter of the disaster should be willing to accept evacuees in an effort to ensure continuation of prenatal care. State and local governments should establish local facilities where prenatal care and obstetric services can be provided for those women unable to evacuate. Accessing prenatal records is important in maintaining prenatal care. This will be impossible if written records are destroyed because of the disaster or if interruption in electricity prohibits access to electronic medical records. In preparation, clinicians should make patients aware of their specific prenatal issues as well as provide them with key portions of their medical records. This is especially true in areas where natural disasters are seasonal and may be likely to occur. Also, health care providers of prenatal care should increase patients’ awareness of the signs of preterm labor and other obstetric emergencies and the action to take in the event of these emergencies.

Obstetric care at a designated facility is ideal, and it is the role of public health officials in an area to designate and equip obstetric care facilities, publicize which facilities in a given area will offer obstetric services, identify alternative safe delivery sites, and arrange for the staffing of the facilities. Individual obstetric care providers are urged to assist public health officials and to practice with-in the obstetric care system that is established. However, there are several factors that may contribute to difficulty in accessing obstetric health care facilities during a disaster. The health care system may become inundated with other health emergencies, which could decrease the resources available to pregnant women. Also, physical barriers, such as impassible roads, demolished bridges and fire lines, may serve as obstacles to accessing obstetrical care facilities. These hindrances may result in women giving birth outside of health care facilities. To prepare, clinicians should make pregnant women who reside in locations subject to seasonal or frequent environmental emergencies aware of the availability of emergency birth kits (see box, “Emergency Birth Kits for Patients”). These kits have all of the essential equipment necessary should a birth occur outside of a birthing facility.

During a disaster, women who are not breastfeeding may have difficulty in providing food for their newborns. Some new mothers may plan to bottle-feed their newborns. However, during a disaster, there may not be access to clean water for sterilization of bottles or access to formula. Encouraging and establishing breastfeeding as a part of routine care ensures that mothers are able to feed their newborns in the event of a disaster. Additionally, health care providers should be educated in lactation to assist new mothers in initiating breastfeeding in the immediate phase of a disaster. For mothers who are less than 6 months postpartum, even if they have not previously established lactation, relactation can be estab-

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**Physician Guide to Emergency Preparedness for Women and Infants**

- Encourage patients to develop an evacuation plan in the event of a disaster.
- Inform pregnant patients on the signs of preterm labor and other obstetric emergencies.
- Work with public health officials to identify facilities that can provide prenatal and obstetric services during a disaster.
- Encourage patients to develop an emergency birth kit.
- Promote lactation and relactation during a disaster.
- Encourage local and state governments to provide facilities that are safe and secure for women and children.
- Inform patients and be aware of the signs of mental distress. Promote prompt attention to mental health needs.
Committee Opinion No. 457

Prevention of Violence Against Women During a Disaster

Women are subjected to and vulnerable to intimate partner violence and sexual assault during disasters (9, 10). Similar to the conditions found in refugee camps where sexual violence also is increased, during the phases of a disaster women are isolated from their families and without physical protection. The United Nations Refugee Agency, in developing guidelines for prevention and response to sexual violence against refugees, has identified some contributing circumstances: 1) male perpetrators’ dominance over female victims, 2) psychologic strains in refugee camps, 3) absence of support systems for protection, 4) crowded facilities, 5) lack of physical protection, 6) general lawlessness, 7) alcohol and drug abuse, 8) politically motivated violence against refugees, and 9) single females separated from male family members (5). Ironically, these same circumstances existed among the Hurricane Katrina evacuees and were likely responsible for the many personal accounts of rape that occurred in evacuation shelters. Establishing safety, order, and the rule of law in shelters for disaster survivors is paramount to the protection of women from sexual assault. In the event that sexual violence does occur, appropriate and sensitive services should be available to victims, including emergency contraception and sexual assault forensic examiners or sexual assault nurse examiners.

Conclusion

Disasters are unplanned but can be anticipated. Emergency preparedness is essential to maintaining healthy pregnancies and ensuring good outcomes for pregnant women and their infants who endure disasters. Developing an evacuation plan is the first step. However, if evacuation is not possible, identifying local health care facilities that can provide obstetric care, discussing the availability of emergency birth kits, and emphasizing the importance of lactation are key steps to facing the many challenges of a disaster that are unique to pregnant women. Postpartum and nonpregnant women must have access to contraception. Women’s health care providers are needed to advise, assist, and support public health authorities in planning for and serving during a disaster. Clinicians also should encourage local and state governments to provide shelters that are safe and secure to prevent violence against women.

References


Emergency Birth Kits for Patients

- 10 blue pads
- 1 plastic “peri-bottle”
- 1 newborn hat
- 6 packs of sterile lubricant
- 2 plastic newborn cord clamps
- Sterilized scissors
- 12 alcohol prep pads, individually wrapped
- 1 dozen sanitary pads
- 1 dozen sterile gauze pads
- 1 bulb syringe
- 1 bottle of peroxide
- Neonatal thermometer
- Battery powered radio with extra batteries
- Instructions for use


Mental Health Considerations

Involvement in a disaster situation causes and exacerbates tremendous anxiety, depression, and grief. Postdisaster, patients and health care providers need to be aware of the signs of mental distress requiring medical attention. The Centers for Disease Control and Prevention offers information and resources for mental health care during and after disasters. This can be accessed at http://www.bt.cdc.gov/mentalhealth/.

Disaster Preparedness for the Health Care System and Providers Caring for Nonpregnant Women

Providing contraception for postpartum and nonpregnant women during a disaster is also important to prevent unintended pregnancies. Contraception should be provided in the form of emergency contraception as well as prophylactic contraception. Providing condoms allows for the prevention of not only unintended pregnancies but also decreases the transmission of sexually transmitted diseases. For women who are using reversible contraception in the form of pills, the ring, or the patch, these prescription medications should be provided to enable these women to maintain their current form of birth control. When possible, emergency health care facilities should stock and dispense a variety of contraceptive products.

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