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Emergency Preparedness in Obstetrics

Meeting Unexpected Key Challenges

Melissa J. Maher, MSN, RN

ABSTRACT

Large-scale natural or environmental disasters, infectious disease outbreaks, and terrorist attacks are becoming increasingly common in developed countries. In response to these local, national, and international tragedies, many healthcare systems have developed hospital preparedness programs to manage catastrophic disasters while maintaining essential patient care. However, emergency preparedness initiatives that specifically address the unique needs of pregnant women are lacking. The purpose of this article is to identify challenges that impact perinatal patients during disasters and provide strategies and recommendations for emergency preparedness. Specific emphasis is placed on perinatal emergency preparedness including obstetric triage, surge capacity, sheltering in place, trauma in pregnancy, mental health, and management of special pathogens. Guidance to hospitals on the immediate evaluation, stabilization, acute management, and transfer of pregnant patients and neonates following these events is provided.

Key Words: disaster planning, emergency preparedness, maternity levels of care

Tsunamis, floods, terrorist attacks, and disease outbreaks disrupt the normalcy of life in dramatic form. Worldwide, 160 million people are affected annually by natural disasters. In 2017, disasters including Hurricane Harvey and unprecedented California wildfires impacted nearly 8% of the United States (US) population.[1,2] Although all individuals are at risk from the effects of a disaster, vulnerable populations including those who face inequities in health, finances, and housing, namely, women, children, and the elderly, are at greatest risk.[3] In the aftermath of the 2018 Indonesian earthquake and tsunami, nearly 1.5 million people including 45 000 pregnant women were impacted.[4] With homes and infrastructure destroyed, many were displaced to overcrowded camps lacking adequate sanitation and insufficient access to healthcare workers who were prepared to assist with delivery and possible perinatal complications.[4] All types of disasters demand familiarity with emergency preparedness strategies for the entire population including perinatal patients and newborns.

During the phases of a disaster, a community's infrastructure can be destroyed including utilities such as electricity, water, sanitation, and transportation. In addition, tangible supplies may be exhausted as medications, food, and materials diminish or become inaccessible. Pregnant women are at risk for poor health outcomes due to depletion of valuable resources, trauma, mental health issues, and exposure to infection and disease. When catastrophic events occur, the obstetric population is further affected by complications including preterm birth, intrauterine growth restriction, and even fetal demise.[5] Special attention to the unique needs of the obstetric population during the perinatal and postpartum periods is warranted. It is crucial that obstetric nurses, providers, hospitals, and healthcare systems meet the challenge of emergency preparedness. The purpose of this article is to identify key challenges that impact perinatal patients during disasters and provide strategies and recommendations for emergency preparedness.

Author Affiliation: Obstetrics and Gynecology Care Center, Women & Infants Hospital, Providence, Rhode Island.

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Corresponding Author: Melissa J. Maher, MSN, RN, Obstetrics and Gynecology Care Center, Women & Infants Hospital, 101 Dudley St, Providence, RI 02905 (MMaher@wihri.org).

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BACKGROUND

Disaster response is a reactionary approach to the often unpredictable nature of both natural and man-made events. However, creation of the structured fire service, concepts of the triage process, and development of volunteer organizations such as the Red Cross are all programs that grew out of the response to disaster. Emergency preparedness within hospital settings has a long-standing history. Organized systems to prevent, plan, and respond to emergent and nonemergent events have been incorporated into the fabric of modern healthcare. Hospitals and the health systems that support them are structured to manage predictable and unpredictable events each day. Scenarios include the expected uptick in patient volume and acuity as seen during the yearly influenza virus season or the unexpected volume surge that occurs after an outbreak of a foodborne illness. Hospitals plan for both internal and external emergencies. Power outages, supply shortages, inclement weather, and staffing challenges occur, and hospitals actively call upon their emergency operations plans to manage alternate procedures and mitigate the risk to operations and recover functionality following a disaster.

Members of the multidisciplinary healthcare team are involved in all 5 aspects of disaster response—nondisaster, predisaster, impact, emergency, and recovery stages.[6] In the nondisaster stage, personnel serve on hospital preparedness committees where hospital and community vulnerabilities are recognized, emergency operations plans are developed, and hospital capacity and service line capabilities are determined. Within the nondisaster stage, education, training, and simulation drills, both small and large scale, are the mainstays of the continuous readiness cycle.[6] In the predisaster phase, healthcare leaders and frontline staff, as part of the multidisciplinary care team, begin to mobilize resources as the threat of natural disaster nears or immediately in the aftermath of a man-made event.[6] Hospital incident command structures are put into place, where all aspects of emergency response from supplies to staffing are deployed. During the impact stage, the clinical expertise of the healthcare team, the skills developed during training and simulation, and the community and individual toll become the central focus of disaster response.[6] As the emergency stage unfolds, the triage process takes place and risk-reduction activities are deployed including advanced communication skills and defined leadership structure.[7] Evaluation and mitigation of hazard risk such as transmission of infectious disease or chemical agent exposure to healthcare workers and others are acted upon, and assessment of mental health needs for those affected occurs within the emergency stage.[6,8] Finally, in the recovery stage, a return to the predisaster state occurs with the recognition that the community, including the hospital community, has been affected by the occurrence and will likely identify opportunities to improve upon preexisting policies and procedures.[6] During the recovery stage, lessons learned are discussed, preplanning for future events occurs, and new infrastructure may need to be added such as the addition of a hospital decontamination unit or increased levels of hospital security.

Those considered vulnerable populations are disproportionally impacted by public health crises, including pregnant women and newborns, who are at greater risk for morbidity and mortality following both naturally occurring and man-made events.[5] Healthcare teams specialized in caring for vulnerable populations are trained to respond to the unique needs of these populations. Obstetricians, midwives, advanced practice nurses, obstetric nurses, neonatologists, and behavioral health specialists are only a subset of the multidisciplinary team that remain in a state of continuous readiness to care for the distinctive needs of the maternal-newborn dyad. Formalized plans for caring for pregnant women and newborns are developed using the 5 stages of disaster response. As pregnant women seek medical attention surrounding a disaster or crisis, whether for themselves, the fetus, or the newborn, obstetric triage and emergency department staff members are the frontline responders attending to the specific needs of this patient subset.

KEY CHALLENGES IN PERINATAL DISASTER PREPAREDNESS

Care of the obstetric patient offers significant challenges across the perinatal spectrum. Throughout pregnancy, patients encounter variable medical needs and changing acuity requiring constant assessment and reassessment of available resources.[9] During a disaster, pregnant patients could be at risk for placental abruption due to concussive trauma from a bombing, they could experience dehydration and symptoms of preterm labor due to lack of access to clean water post–flooding incident, or they may experience behavioral health issues including anxiety and depression after their home or loved ones are impacted by wildfires. Additional challenges include vulnerability to intimate partner violence and sexual assault following a disaster, as pregnant women may be isolated, separated from family, forced into overcrowded shelters, and exposed to lapses in societal norms that can occur when infrastructure collapses and resources are scarce.[5]

Obstetric triage

Implementing a triage method that is unique to obstetric patients is crucial for providers as they determine the resource needs of women and newborns.[9] Acuity tools including the Emergency Severity Index (ESI) and the Canadian Triage and Acuity Scale (CTAS), which apply 5-level acuity scales to establish urgency of treatment, have been widely implemented in emergency departments to increase standardization and reliability in the triage process.[10] These screening methods guide users on the basis of the number of resources required for treatment and vital sign measurements as outlined in the ESI or through an assessment establishing ability to "wait for treatment" as delineated by the CTAS.[10] Unique to the ESI is the additional consideration to patient throughput and disposition ending in admission, discharge, or transfer.[10] Although both tools have been deemed valid and reliable, they do not take into account the physiologic needs of obstetric patients.

The Maternal Fetal Triage Index (MFTI), developed by the Association of Women's Health, Obstetric, and Neonatal Nurses as a means to create a standard nomenclature for obstetric triage, prioritizes pregnant women using a 5-tiered system.[10,11] The MFTI examines maternal and fetal physiologic signs including vital signs, fetal heart rate, and gestational age as well as subjective patient complaints comprising pain, fetal movement, and perceived management of pain to determine acuity.[10,11] Time to treatment is not a focus of the MFTI; however, level of care is taken into account as some healthcare institutions utilizing this triage method may not be equipped to care for advanced, maternal-fetal complications.[11] As an obstetric assessment tool, the MFTI is not applicable to gynecologic or general women's health emergencies, and institutions may be challenged by the need to implement additional methods of triage for these patient populations.[10] Of paramount importance, comprehensive staff education on the use of standard triage methods and ongoing competency assessment are requisite practices in emergency departments, regardless of the population served, to ensure accurate triage and timely access to medical treatment.

Surge capacity

Patient volume can significantly impact hospitals even when well-developed triage processes that expedite patient treatment are established. Planning for obstetric surge capacity can be quite challenging, given the dynamic nature of the patient census. Hospitals continually evaluate surge capacities to determine a status of conventional, contingency, or crisis mode.[9,12] On a daily basis, hospitals function in a state of conventional capacity, during contingency capacity increased volume occurs but has a minimal effect on daily operations including patient care, and during crisis capacity daily operations are significantly impacted but adequate care is maintained.[9,12]

Utilizing the principle of disaster planning as a continuous cycle requires thinking creatively when preparing for the possibility of surge. With an impending disaster, such as a weather event, early patient discharge may be considered for stable patients.[12] Ambulatory office visits and elective procedures can be postponed, and alternative care sites such as large conference spaces can be outfitted to support an increased patient volume.[12,13] Another strategy that can be applied is to proactively hospitalize patients scheduled for induction or cesarean delivery ahead of an impending event, such as a snowstorm or hurricane, when conventional capacity and resources are still at the usual state.[12,13]

During unexpected events, surge is less predictable and contingency plans may be more difficult to implement. Establishing a regional support network during the disaster planning phase of nondisaster is essential. When crisis capacity no longer provides sufficient care in the setting of a catastrophic disaster, consideration must be given to patient transport when available.[12] It is critical that hospitals and healthcare systems develop an emergency preparedness plan unique to the disaster threat and specific to that institution. Special attention must be given to avoid interruption of prenatal care alongside rapid allocation of additional resources and staff. In concert, the development of strategies to ensure appropriate stabilization and transfer of patients when appropriate is needed.

The American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal Fetal Medicine's Maternal Levels of Care classification system can guide providers as they assess the need to transfer patients to regionalized birth centers based upon that facilities capabilities and the training of workforce to manage perinatal patients.[12,14] In addition to determining maternal levels of care during the nondisaster phase of planning, the adoption of a triage assessment tool specific to surge and evacuation can serve as standard language between facilities transferring and receiving obstetric patients, providing added structure during crisis. The Obstetric Triage by Resource Allocation for Inpatient tool (OB TRAIN) is an exemplar that utilizes distinct parameters for antepartum/labor and delivery and postpartum patients.[9] These parameters are scored on the basis of acuity and then color-coded for rapid identification by the multidisciplinary disaster response and medical care teams.[9] Special care is taken to avoid separation of a mother and newborn.

Creating a shared decision-making model that includes the patient is a crucial component of successful readiness efforts.

Sheltering in place

The ACOG recognizes that additional considerations for pregnant women and newborns must be established during disaster preparedness. These considerations include methods for "sheltering in place" when a patient cannot be safely transported, ethical considerations related to resource allocation, temporary modifications in standard of care, and infectious disease response and management while considering parental bonding and breastfeeding issues.[12]

Having disaster preparation plans is important for all community members. During pregnancy, patients can become involved in the development of general emergency preparedness plans that incorporate the needs of the pregnant woman, fetus, or newborn that may arise if evacuation or "sheltering in place" is necessary.[13] During prenatal office visits and childbirth education classes, nurses and obstetric providers have the opportunity to provide pregnant women with education about the signs and symptoms of potential complications from disasters including miscarriage, preterm labor, and placental abruption, among other obstetric emergencies.[13] During impending emergencies, preparedness and safety plans can be activated by the pregnant patient to minimize risk such as evacuating to an emergency shelter during a storm. Preparation for birth outside of the hospital setting is an essential part of a pregnant woman's emergency plan. As noted in Table 1, patients are encouraged to create a simple and inexpensive emergency birth kit that can be utilized when childbirth must occur outside of a birthing facility.[15]

The need to "shelter in place" can also occur within the hospital setting throughout the emergency stage of disasters. During disasters, hospitals face vulnerabilities including structural failures, loss of internal systems including electricity or oxygen supply, and exhaustion of resources due to unpredictable events. Interhospital transfer plans and intrahospital alternate care sites can be identified during the preplanning stage, but as a disaster unfolds, obstetric providers and nurses may need to rapidly assess the safety of the surroundings and move patients accordingly. In some circumstances, patient transfer may not be a viable option when delivery is imminent even when conditions are severely impacted.[9] Alterations in standard of care including limited fetal monitoring, vital sign assessment, and clinical documentation could be necessary.[9,13] Ethical considerations including intravenous fluid distribution, antibiotic usage, and allocation of oxygen and compressed gas supply must be taken into account as the possibility of resource depletion can happen during crisis mode.[12,13] Challenged by the fragility of both mothers and newborns in the postdisaster period, the care team could be faced with difficult decisions regarding keeping postpartum women and newborns together.

Trauma in pregnancy

Disasters can have varying effects on pregnant women depending on the nature of the event. The often unpredictable nature of disasters could place pregnant women and newborns at risk for catastrophic injuries including burns, penetrating injuries, and fractures. Domestic and intimate partner violence may increase as

Table 1. Birth kit supplies[a]

- Large adult brief or plastic backed shower curtain to protect surfaces from body fluids
- Hand sanitizer
- Sheets, towels, and washcloths
- Box of disposable gloves (sterile if possible)
- Sharp scissors for cutting umbilical cord
- White shoelaces to tie umbilical cord
- Several large trash bags for placenta and linen disposal
- Over-the-counter analgesic (acetaminophen or ibuprofen)
- Cold packs
- Large pack of peripads/sanitary napkins
- Small bulb syringe (ear syringe)
- Bottle of isopropyl alcohol
- Bag of cotton balls
- Newborn hat
- Baby blankets
- Package of newborn diapers
- Baby clothing (socks, sleeper)
- Hot water bottle

Additional items:

- Flashlight (extra batteries)
- Drinking water
- First Aid kit
- Emergency responder information (local/state contact information, Red Cross, local shelter information)

[a]Adapted with permission from Williams.[15]

disruption in social stability, infrastructure, and community structure alteration occur.

In the wake of disaster, stabilization of pregnant women affected by trauma including rapid assessment of airway, breathing, circulation, and stabilization of the cervical spine is of paramount importance.[10] Immediate medical intervention focused on maternal stability is necessary to reduce maternal/fetal morbidity or mortality. Throughout pregnancy, maternal physiology is in a state of constant transformation. Major organ systems are affected, producing cardiovascular, respiratory, gastrointestinal, and hematologic changes. When maternal trauma occurs, insult to the vascular supply that supports the gravid uterus can lead to poor maternal and fetal outcomes.[10] In a systematic review, the incidence of maternal trauma was estimated at 1 in 12 pregnancies in the United States.[16] The most common form of intentional trauma to pregnant women is domestic violence/intimate partner violence, which have a significant impact on fetal outcomes including preterm birth, low birth weight, and spontaneous abortion.[16] Motor vehicle crashes account for the majority of unintentional injuries that can vary from noncatastrophic to catastrophic ranging from minor neck and back strain, bruising, and contusions to maternal circulatory collapse, placental abruption, uterine rupture, and maternal/fetal death.[10,16]

Resuscitative efforts in the setting of maternal cardiopulmonary collapse are altered by physiologic changes during pregnancy that may necessitate delivery of a preterm or even previable infant to optimize maternal outcomes.[10] The anatomic alterations of the gravid patient present a challenge to those healthcare providers who are more familiar with the care of the nonpregnant population. Familiarization with the techniques of cardiopulmonary resuscitative measures for pregnant women and the recognition that standard trauma protocols are continued are essential for all emergency responders to optimize the outcome for the pregnant woman and the fetus.[13]

Providing medical care to pregnant patients posttrauma is challenging as concurrent maternal and fetal evaluation is imperative. Emergency departments and obstetric triage units that have access to multiple clinical specialists including obstetric providers, emergency medicine physicians, neonatologists, and anesthesiologists can provide coordinated medical care with a focus on maternal stabilization to improve fetal outcomes.[10,16]

Mental health

Disasters can trigger anxiety, depression, and fear in pregnant women including those not directly touched by the event. Predisaster fears about evacuation or home birth can cause increased stress and decreased coping ability.[13] Unpredictable societal impact from disasters such as loss of jobs, housing, and access to food, medications, and medical care can elicit significant distress.[9] While perinatal patients may present to hospital emergency departments and obstetric triage units with medical complications, mental health status must not be overlooked. Validated evidence-based assessment tools including the Patient Health Questionnaire-9 (PHQ-9), Edinburgh Postpartum Depression Screen, and the Posttraumatic Stress Checklist for DSM-5 (PCL-5) can guide providers in determining the appropriate safety and treatment plans for perinatal patients.[17–19] Early identification of depressive symptoms, anxiety, and suicidal ideation can allow obstetric providers to partner with behavioral medicine specialists to develop both acute care treatment plans, such as measures to prevent self-inflicting behavior, and long-term follow-up safety and treatment goals, such as coordinated postdischarge care to monitor for postpartum depression. Depression, sadness, and grief can have an adverse effect on maternal-child bonding, requiring the support of the multidisciplinary team including lactation specialists, spiritual care, peer support, and community health workers.

Domestic and intimate partner violence may increase in times of stress placing pregnant women at great risk of intentional trauma. Sexual violence against women can increase postdisaster as general societal norms and practices are affected by chaos.[5] Displacement from one's home and family support and protection can put women at increased risk of gender-based violence.[5] Emergency departments can be equipped to provide social/emotional support, forensic evidence collection, and prophylactic infectious disease treatment and coordinate follow-up care for pregnant and nonpregnant sexual assault victims.

Management of special pathogens

Physiologic and immunologic changes in pregnancy can affect how women react to infections agents.[20] Much is known about the effects of conventional infectious diseases such as the parasitic diseases malaria and toxoplasmosis.[20] However, less established is the effects of emerging infections and their impacts on maternal-fetal outcomes.[20] As the global threat of bioterrorism is no longer a distant possibility in society, obstetric care teams are challenged with creating robust systems to assess and treat patients with novel and emerging pathogens.

With limited testing of medications on pregnant women, uncertainties about the teratogenic effects of standard treatment options including vaccines and established medications lead to challenges in treatment decision making.[21] Ultimately, the risk to benefit ratio

is taken into account in an effort to impact positive maternal fetal outcomes.[21] The establishment of infection control practices is as essential as the medical treatment options. In the nondisaster phase of emergency preparedness, hospital infection control teams comprising infection preventionist nurses, infectious disease specialists, obstetricians, advanced practice nurses, registered nurses, and environmental services professionals establish institution-specific infection control practices that are mobilized when a pregnant patient presents with a differential diagnosis of an infectious disease.

In the hospital setting, early identification of infectious disease threats requires that a standardized screening process is in place for all patients at potential risk. Once patients are determined to be at risk for an infectious disease process, prompt isolation can then occur. Special considerations with respect to infection control practices that are unique to the obstetric population include the role of familial involvement in the birthing process and the importance of lactation and early parental bonding in the immediate neonatal period.[12]

One example that illustrates a disaster-specific emergency preparedness plan is related to the ongoing Ebola threat. To ensure that healthcare providers and facilities in the United States are prepared to safely identify, isolate, treat, and transport patients with Ebola or other emerging pathogens, the US Department of Health and Human Services launched the National Ebola Training and Education Center (NETEC).

As one example in the northeast United States, 9 regional Ebola treatment centers were initially identified as a part of a special network of 55 total treatment centers. In Rhode Island, Women & Infants Hospital, the ninth largest obstetric service in the country and a leader in specialty hospitals serving women and newborns, was designated as one of 2 (state and federally selected) Special Pathogens Assessment Hospitals for the state of Rhode Island. With this designation, the hospital's specialty emergency department exclusively for women with acute obstetric or gynecologic medical issues partnered with the Rhode Island Department of Health alongside Rhode Island Hospital (an acute adult medical facility) to receive, identify, assess, stabilize, and provide initial care for perinatal/neonatal patients with suspected/confirmed Ebola or other special or emerging pathogens. Creation of such a program streamlines the process for early identification of an infectious threat, timely isolation, and subsequent activation of emergency preparedness initiatives. As an assessment hospital, it has the capability to evaluate and care for individuals who have a travel history and symptoms compatible with Ebola for up to 96 hours and initiate or coordinate Ebola virus testing as well as testing for alternative diagnoses until arrangements are made to transfer to a designated facility.

As a part of the comprehensive preparedness training program, providers in the emergency department attended educational programs hosted by the NETEC and worked to develop department-specific policies, patient care protocols, and monitoring mechanisms for healthcare workers and patient suspected to have a seriously communicable disease. As a Special Pathogens Assessment Hospital, this freestanding women's hospital can now serve the community as a local and national leader in emergency preparedness specific to the pregnant population exposed to the Ebola threat.

DISCUSSION

While emergencies and disasters are often sudden, they can be anticipated and prepared for. Healthcare organizations that provide obstetric care are vulnerable, given the unique challenges of pregnancy and the immediate postpartum period. Accordingly, some essential components of perinatal disaster preparedness that institutions and providers need to address include obstetric triage, surge capacity, sheltering in place, trauma in pregnancy, mental health, and management of special pathogens.

A critical first step in disaster preparedness is planning during the nondisaster phase where solid emergency operations procedures are established, team structure is determined, and vulnerabilities and resources are identified. The continuous readiness cycle is instituted and emergency drills are practiced and debriefed to identify a hospital system's strengths and weaknesses. Standardized triage processes establishing urgency of treatment that accounts for maternal and fetal outcomes are crucial for facilities that may receive patients during the impact and emergency stages of a disaster.[10,11,22] Healthcare facilities can be challenged with the use of an obstetric-specific tool if the population served does not usually include obstetric patients. Incorporation of obstetric triage methods into yearly emergency department staff education would be a fundamental component of the emergency preparedness readiness cycle.

Birth is a highly unpredictable process, and birthing units are susceptible to erratic surges in patient census and acuity alongside urgent need for specific resources that may be intensified during disasters.[12] Escalation in clinical and operational decisions is made throughout the 3 phases of surge capacity—conventional, contingency, and crisis. Predisaster when conventional capacity has not been impacted, emergency operations plans including early discharge or cancellation of elective procedure are implemented. As surge capacity is

impacted during and postdisaster, the recognition that a facility may not be equipped to manage complex maternal/fetal conditions may necessitate evacuation.[8] In conjunction with accurate triage systems that define internal hospital capacity, determination of regional hospital facilities' clinical and resource capabilities to care for perinatal patients and neonates is part of the emergency planning process.[14] Use of a standardized triage system that examines patients medical and transport needs, such as OB TRAIN, and the knowledge of regional maternal levels of care aids in the patient evacuation plan.[9]

When evacuation is no longer possible, pregnant patients in the community and within the hospital setting may need to "shelter in place." Nurses, obstetric care providers, and patients can formulate emergency preparedness plans that include early evacuation when an emergency is impending, education on obstetric complications that could occur postdisaster, and planning for the possibility of a home birth including the development of a birth kit if necessary. Within the hospital, "sheltering in place" may be complicated by infrastructure loss, limited resources, and ethical challenges. Alterations to the standards of care while maintaining safe practices could be necessary. Incorporating "sheltering in place" scenarios into nondisaster phase simulation training would allow healthcare providers to identify institution-specific key challenges and recognize possible unforeseen complications.

Trauma in pregnancy is uniquely challenging for healthcare providers as they rapidly assess and stabilize the maternal trauma victim while aiming to optimize efforts to preserve fetal outcome. Knowledge of maternal physiologic changes is essential for all first responders as clinical needs vary throughout stages of pregnancy.[10] Recognition that standards of trauma care and modified cardiopulmonary resuscitation procedures are of primary importance in caring for the pregnant trauma patient is paramount.[13]

Exposure to infectious disease agents can present substantial uncertainty for healthcare providers and institutions. Physiologic changes of pregnancy may result in alterations in infectious disease progression leading to rapid deterioration of the maternal and fetal clinical condition.[20] Early identification of possible infectious disease exposure and isolation of exposed patients are vital. Isolation of perinatal patients presents a struggle for providers as family involvement in birth and neonatal bonding and lactation establishment must be weighed against the known or unknown transmission and outcome of infectious disease exposure. Incorporation of infection control plans, simulation of isolation practices and use of personal protective equipment, and delineated infectious disease management structures as seen in Special Pathogens Assessment Hospitals are recommended practices.

The disaster recovery phase is as impactful as the other stages of disaster. Recovery of hospital services may take hours, days, or months. Community resource recovery may take significantly longer, resulting in continued strain on the population. Grief, anxiety, depression, and stress can result from exposure to disaster. Early identification of mental health issues in perinatal patients using evidence-based tools such as the PHQ-9, Edinburg Postpartum Depression Screen, and PCL-5 allows obstetric providers to partner with behavioral health specialists on establishing appropriate treatment plans for patients.[17–19] All healthcare teams are part of the community affected by disaster, and recognition of staff burnout, stress, and anxiety is also critically important. Conducting postdisaster debriefing sessions, encouraging the use of employee assistance programs, and making behavioral health specialist, clergy, and peer counselors available to staff are crucial.

CONCLUSION

Implementation of protocols at the institutional, local, and state levels, with specific emphasis on the unique care needs of pregnant women and newborns, is critical for optimizing maternal and fetal outcomes. Accurate triage, determination of hospital capacity, response to unpredicted volume surges, and resultant resource demands are central components of an obstetric-specific emergency operations plan.[12,14] Clinicians working collaboratively with the nursing staff from the nondisaster through the recovery phase are essential to ensure that all pregnant patients receive the highest level of care at times of disaster.

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