



# **Health Indicators for Disaster-Affected Pregnant Women, Postpartum Women, and Infants**

**Guide for Assessment and Surveillance of the Health of Disaster-Affected Pregnant and Postpartum Women and Infants by Using Common Epidemiologic Indicators to Affect Public Health Interventions**

National Center for Chronic Disease Prevention and Health Promotion  
Division of Reproductive Health



**HEALTH INDICATORS FOR DISASTER-AFFECTED PREGNANT WOMEN,  
POSTPARTUM WOMEN AND INFANTS**

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## INTRODUCTION

Disaster has been associated with a decrease in access to healthcare and medications, increased stress and maternal risk factors, and poor birth outcomes. However, these associations have not been shown consistently, perhaps partly due to disparate study designs, measures of exposure, and outcomes. To bring consistency to the study of post-disaster factors affecting pregnant and postpartum women and infants, the CDC Division of Reproductive Health (DRH) Emergency Preparedness and Response Program initiated a collaborative process with partners to identify a list of common post-disaster epidemiologic indicators for this at-risk group. The purposes for developing a list of common epidemiologic indicators for pregnant and postpartum women and infants affected by disaster were to:

1. Identify salient conditions (e.g. infant feeding, gender-based violence) and outcomes (e.g. maternal and birth outcomes) to be monitored via surveillance or post-disaster data collection.
2. Promote use of consistent measures across post-disaster studies.
3. Build scientific knowledge regarding disaster effects on pregnant and postpartum women and infants.

### Focus

The focus was on catastrophic events, defined as any disaster “including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions” [National Response Framework](#). For this project we did not focus on infectious diseases or pandemic illnesses.

### Populations of Interest

Women who are pregnant, infants  $\leq 6$  months old, and women who gave birth to an infant  $\leq 6$  months ago.

### Process

We started with large group conversations at national meetings during 2011-2012 to learn about practical field issues and perceived needs of pregnant and postpartum women and infants after disaster. Then we conducted focused monthly discussions with a nationwide group where we invited 28 federal, state, American Indian/Alaska Native, and academic partners to further define perceived needs and outcomes and how they could be measured. This document is a product of these discussions and includes indicators, suggested measures, and sample questions for each population group.

The ‘Other Measures’ section capture measures that frequently came up in the conversations but were not critical for assessing the selected indicators. The document also contains new or adapted measures that need to be pretested.

### Use of Indicators

The following indicators are primarily to guide assessment and surveillance and affect public health interventions to disaster-affected pregnant and postpartum women and infants. Hence, wherever

possible, the focus is on actionable items where public health programs, interventions, and policy can be used or adapted to meet needs. We do not envision that all indicators or measures will be used in every assessment or surveillance tool, but that the user will select what indicators are important and what aspects of the indicator (measures) need to be explored in a setting.

## **Important Considerations**

This document contains sample questions for measures; it is not a questionnaire. Thus, as you select questions for your questionnaire, you will need to ensure that you add interviewer directions, transitions, appropriate skips, and response codes. For example, you need to direct the interviewer in the event the mother gave birth to more than one infant during the last pregnancy. Your directions could read like this: *“For respondents with more than one infant 6 months old or younger, questions pertaining to the infant should be asked regarding the firstborn.”*

Some aspects of this survey, such as the section on gender based violence, are sensitive in nature. As such, a concerted effort should be made to train all interviewers on the ethical components of survey implementation, including protecting the confidentiality, privacy, and safety of all respondents. In addition, interviewers should provide information on referral services when service needs are identified. For sample interviewer scripts, training, and referral lists, please consult the Reproductive Health Assessment After Disaster Toolkit ([RHAD Toolkit](#)).

Several data collections tools are referenced throughout this document, including the following:

- Behavioral Risk Factor Surveillance System ([BRFSS](#))
- Reproductive Health Assessment after Disasters Toolkit ([RHAD Toolkit](#))
- Natural Disaster Morbidity Surveillance Individual Form ([NDMSIF](#))
- National Immunization Survey ([NIS](#))
- National Intimate Partner and Sexual Violence Survey ([NISVS](#))
- National Survey of Children's Health ([NSCH](#))
- Pregnancy Risk Assessment Monitoring System ([PRAMS](#))

## **PREGNANT WOMEN**

The following 9 indicators are those specific to pregnant women.

### **Indicator 1: Health Problems during Pregnancy**

Chronic and pregnancy induced conditions can affect the health of a woman during and after pregnancy and impact pregnancy outcomes. The conditions identified below require additional medical monitoring during pregnancy.

#### **Measure**

1.1 Health problems during pregnancy

#### **Definition**

Proportion of women reporting health problems that require ongoing care. Includes diabetes, vaginal bleeding, urinary tract infections, severe nausea and vomiting, hypertensive disorders, heart problems, and any others identified by the interviewee. This item has been pretested.

#### **Question Number**

N1

### **Indicator 2: Access to Prenatal Care**

It is widely agreed that receipt of prenatal care (PNC) is associated with improved pregnancy outcomes, especially among women with medical and/or social risk. Post-disaster studies have demonstrated that access to PNC may be affected by a variety of system and personal barriers. Decreasing barriers to needed medical, nutritional, and social services is a public health core function.

#### **Measure**

2.1 Trimester of prenatal care (PNC) initiation

#### **Definition**

PNC initiation reported in weeks or months of pregnancy, and then converted to trimester. This item has been pretested.

#### **Question Number**

E1

#### **Measure**

2.2 Access to PNC since disaster

#### **Definition**

Series of questions about whether woman obtained PNC since the disaster, site where woman obtained PNC, and barriers if she did not obtain PNC. These items have **not** been pretested.

#### **Question Numbers**

E2, E3, E4

### **Indicator 3: Access to Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)**

WIC is a government program that provides supplemental foods, breastfeeding promotion and support, nutrition education, and health care referrals for low-income pregnant and postpartum women, as well as infants and children up to age five who are found to be at nutritional risk. A disaster may greatly impact a pregnant woman's access to food and nutritional services. Programs such as WIC or Food Stamps may help to meet these needs.

**Measure**

3.1 Use of WIC services before disaster

**Definition**

Proportion of pregnant women reporting that they were on WIC before the disaster. This item has **not** been pretested.

**Question Number**

H1

**Measure**

3.2 Access to WIC or other nutritional services

**Definition**

Series of questions about whether a pregnant woman has used WIC services since the disaster, location where services were obtained, and barriers to access if services were not obtained. These items have **not** been pretested.

**Question Numbers**

H2, H3, H4

**Indicator 4: Disaster Exposure and Access to Mental Health Services**

Post-disaster studies have demonstrated that disaster-affected pregnant women may have increased mental issues but not necessarily psychopathology. Furthermore, access to mental health services may be affected by a variety of system and personal barriers.

**Measure**

4.1 Disaster Exposure

**Definition**

Measures 8 severe experiences, including feeling that one's life was in danger, experiencing illness or injury to self or a family member, walking through floodwaters, significant home damage, not having electricity for more than 1 week, having someone close die, or seeing someone die. High exposure has been defined as having a score  $\geq 3$ . These items have been pretested.

**Question Numbers**

K1, K2

**Measure**

4.2 Access to mental health services since disaster

**Definition**

Series of questions about perceived need for mental health services, whether the woman could access the service, site where woman obtained mental health services, and barriers if she did not obtain mental health services. These items have **not** been pretested.

**Question Numbers**

C1, C2, C3, C4

**Indicator 5: Gender-Based Violence**

Disasters have been associated with violence against women. Acts of violence often result in negative physical and emotional health effects. Disaster-affected women may have a current need for services to meet physical/psychological needs and legal/protective services.

**Measure**

5.1 Physical intimate partner violence since disaster

**Definition**

Proportion of pregnant women reporting physical violence by husband or partner since the disaster. This item has been pretested.

**Question Number**

M1

**Measure**

5.2 Physical violence by persons other than intimate partners since disaster

**Definition**

Proportion of pregnant women reporting physical violence by person other than husband or partner since the disaster. This item has **not** been pretested.

**Question Number**

M2

**Measure**

5.3 Sexual violence by anyone, including intimate partners since disaster

**Definition**

Proportion of pregnant women reporting sexual violence by anyone including husband or partner since the disaster. This item has **not** been pretested.

**Question Number**

M3

**Measure**

5.4 Perpetrator of sexual violence since disaster

**Definition**

Pregnant woman's relationship to the perpetrator of the sexual violence. This item has **not** been pretested.

**Question Number**

M4

**Measure**

5.5 Perceived effect of violence on physical or emotional health

**Definition**

Proportion of pregnant women reporting perceived effects of the violence on physical or emotional health. This item has been pretested.

**Question Number**

M5

**Measure**

5.6 Sought treatment for effects of violence

**Definition**

Proportion of pregnant women who have experienced violence since the disaster and sought treatment from a doctor, counselor, or any other medical care provider for resulting physical and/or emotional problems. This item has been pretested.

**Question Number**

M6

**Measure**

5.7 Current need for services for family violence

**Definition**

Proportion of pregnant women reporting current need for services to reduce violence in family. This item has **not** been pretested.

**Question Number**

M7

**Indicator 6: Substance Use**

Tobacco use leads to disease and disability, and second hand smoke can lead to negative health effects for an infant. Tobacco use may begin or increase after a disaster given the possible increase in stressors. Also, alcohol and drug problems present significant health risks to the user. A self-reported need for help for an alcohol or drug problem can offer a critical window for intervention.

**Measure**

6.1 Current number of cigarettes smoked per day

**Definition**

Average number of cigarettes currently smoked per day. This item has been pretested.

**Question Number**

R2

**Measure**

6.2 Need help to quit smoking

**Definition**

Proportion of pregnant women who report that they currently need services to help them quit smoking. This item has **not** been pretested.

**Question Number**

R3

**Measure**

6.3 Average weekly alcohol consumption since disaster

**Definition**

Average number of alcoholic drinks consumed during an average week since the disaster. This item has been pretested.

**Question Number**

R4

**Measure**

6.4 Self-reported need for help for an alcohol or drug problem

**Definition**

Proportion of pregnant women who report that they currently need services to help with an alcohol or drug problem. This item has **not** been pretested.

**Question Number**

R5

## **Indicator 7: Family and Social Support**

Family and social support networks are important for pregnant women, especially after a disaster event. A disaster may result in a woman losing her support network.

### **Measure**

7.1 Effect of disaster on social network

#### **Definition**

Proportion of women reporting that they were separated from loved ones whom they felt close to because of disaster. This item has **not** been pretested.

#### **Question Number**

L1

### **Measure**

7.2 Frequency of receipt of social and emotional support since the disaster

#### **Definition**

Reported frequency of receipt of social and emotional support since the disaster among pregnant women. This item has **not** been pretested.

#### **Question Number**

L2

### **Measure**

7.3 Presence of social support since the disaster

#### **Definition**

Proportion of pregnant women who report that someone would help them if a problem came up since the disaster. This item has **not** been pretested.

#### **Question Number**

L3

### **Measure**

7.4 Perceived tangible support since the disaster

#### **Definition**

Series of questions that list tangible supports that the pregnant woman perceives as available to her since the disaster: someone would loan her \$50, someone would help her if she was sick and needed to be in bed, someone would take her to the clinic or doctor's office if she needed a ride, and someone would talk with her about her problems. These items have **not** been pretested.

#### **Question Number**

L4

## **Indicator 8: Access to Sexually Transmitted Infection (STI) Services**

Treatment of STIs during pregnancy is important for maternal and infant health. Access to STI treatment may be affected by a variety of system and personal barriers.

### **Measure**

8.1 Access to STI services since disaster

#### **Definition**

Series of questions about perceived need for STI services, whether the woman could access the service, site where woman obtained STI services, and barriers if she did not obtain STI services. These items have **not** been pretested.

#### **Question Numbers**

F1, F2, F3, F4

## **Indicator 9: Need for Services**

Pregnant women are an at-risk population with unique service needs after a disaster event. Access to many services may be affected by a variety of system and personal barriers.

### **Measure**

9.1 Identified need for services

### **Definition**

Self-reported need for health and social services, including housing, food stamps, school or vocational training, transportation, medical services, dental services, and various social support services. This item has been pretested.

### **Question Number**

P1

## POSTPARTUM WOMEN

The following 10 indicators are those specific to postpartum women.

### **Indicator 1: Breastfeeding**

Breastfeeding is the safest and often the only reliable source of nutrition for infants affected by disasters. Breastmilk alone is sufficient to support optimal growth and development for approximately six months after birth.

#### **Measure**

1.1 Ever breastfed

#### **Definition**

Proportion of postpartum women who breastfed or pumped any amount of breastmilk to feed their infant at any point after delivery. This item has been pretested.

#### **Question Number**

J1

#### **Measure**

1.2 Currently breastfeeding

#### **Definition**

Proportion of postpartum women who are currently breastfeeding or feeding any amount of pumped milk to their infant. This item has been pretested.

#### **Question Number**

J2

#### **Measure**

1.3 Relactation because of disaster

#### **Definition**

Proportion of postpartum women who initiated relactation because of the disaster. For some mothers and infants, once breastfeeding has stopped, it may be resumed successfully. This item has **not** been pretested.

#### **Question Number**

J3

#### **Measure**

1.4 Disaster impact on breastfeeding

#### **Definition**

Proportion of postpartum women who chose not to initiate breastfeeding, to stop breastfeeding, or to supplement breastmilk with formula because of the disaster. This item has **not** been pretested.

#### **Question Number**

J3

#### **Measure**

1.5 Reasons for not initiating, adding formula, or stopping breastfeeding completely

#### **Definition**

Reasons given for not initiating breastfeeding, stopping breastfeeding, or supplementing breastmilk with formula. This item has **not** been pretested.

#### **Question Number**

J4

## **Indicator 2: Access to Infant Care Supplies**

Disasters have the potential to disrupt a postpartum woman's access to necessary infant supplies. Postpartum women who are not breastfeeding may need access to potable water to mix with powdered formula for their infant. Safe storage and preparation of pumped breastmilk and infant formula may require access to refrigeration and heating. Lack of access to safe storage and sterile preparation can be detrimental to the health and wellness of the infant. These women, along with postpartum women who are pumping breastmilk, also need potable water to clean bottles.

### **Measure**

2.1 Access to supplies needed to care for infant

#### **Definition**

Series of questions identifying the proportion of postpartum women reporting difficulty accessing supplies to care for their infant because of the disaster, the specific supplies that were difficult to access, location where supplies were sought, and barriers to access if supplies were not obtained. These items have **not** been pretested.

#### **Question Numbers**

G1, G2, G3

### **Measure**

2.2 Difficulty accessing potable water to mix formula or clean bottles

#### **Definition**

Proportion of postpartum women who needed potable water to mix formula and/or clean bottles, but had difficulty accessing it because of the disaster. This item has been pretested.

#### **Question Number**

G4

### **Measure**

2.3 Difficulty storing and/or preparing formula or milk

#### **Definition**

Proportion of postpartum women who experienced difficulty refrigerating and/or heating formula or pumped milk because of the disaster. This item has been pretested.

#### **Question Number**

G5

## **Indicator 3: Access to WIC**

WIC is a government program to provide supplemental foods, breastfeeding promotion and support, nutrition education, and health care referrals for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age five who are found to be at nutritional risk. A disaster may greatly impact a postpartum woman's access to food and nutritional services. Decreasing barriers to needed medical, nutritional, and social services is a public health core function.

### **Measure**

3.1 Use of WIC services before disaster

#### **Definition**

Proportion of postpartum women reporting that they were on WIC before the disaster. This item has **not** been pretested.

#### **Question Number**

H1

**Measure**

3.2 Access to WIC or other nutritional services

**Definition**

Series of questions about whether a postpartum woman has used WIC services since the disaster, location where services were obtained, and barriers to access if services were not obtained. These items have **not** been pretested.

**Question Numbers**

H2, H3, H4

**Indicator 4: Access to Contraception**

Access to contraception is critical in the prevention of unintended pregnancies. A disaster may make it difficult for a woman to access her usual or preferred contraceptive method.

**Measure**

4.1 Current use of a permanent method

**Definition**

Proportion of postpartum women who have had their tubes tied or whose partner has had a vasectomy; identifies those who should not be asked the series of questions below about access to contraception. This item has been pretested.

**Question Number**

A1

**Measure**

4.2 Use of family planning before disaster

**Definition**

Proportion of postpartum women who were using a contraceptive method just before the disaster. This item has been pretested.

**Question Number**

A2

**Measure**

4.3 Currently practicing family planning

**Definition**

Proportion of postpartum women who are currently practicing family planning with their partner, including natural family planning methods. This item has been pretested.

**Question Number**

A3

**Measure**

4.4 Family planning method currently used

**Definition**

The method being used among postpartum women who are currently practicing family planning with their partner, includes natural family planning methods. This item has been pretested.

**Question Number**

A4

**Measure**

4.5 Source of contraception

**Definition**

Location where postpartum women currently using contraception last obtained their contraceptive method. This item has **not** been pretested.

**Question Number**

A5

**Measure**

4.6 Preferred family planning method

**Definition**

The desired method of contraception among postpartum women. This item has **not** been pretested.

**Question Number**

A6

**Measure**

4.7 Difficulty accessing contraception after the disaster

**Definition**

Proportion of postpartum women who have had difficulty accessing their contraceptive method since the disaster. This item has been pretested.

**Question Number**

A7

**Indicator 5: Access to Postpartum Care**

A postpartum checkup is recommended 4-6 weeks after delivery for all women who have given birth. Disasters may present unique challenges to women trying to access postpartum care. Decreasing barriers to needed medical, nutritional, and social services is a public health core function.

**Measure**

5.1 Access to postpartum care

**Definition**

Series of questions about whether or not a postpartum woman received a postpartum checkup after giving birth, location where postpartum care was obtained, and barriers to access if postpartum services were not obtained. These items have **not** been pretested.

**Question Numbers**

D1, D2, D3

**Measure**

5.2 Disaster related difficulty when accessing postpartum care

**Definition**

Proportion of postpartum women who experienced difficulty obtaining a postpartum checkup because of the disaster. This item has been pretested.

**Question Number**

D4

## **Indicator 6: Access to Mental Health Services**

Post-disaster studies have demonstrated that disaster-affected postpartum women may have increased mental health issues but not necessarily psychopathology. Furthermore, access to mental health services may be affected by a variety of system and personal barriers after a disaster.

### **Measure**

6.1 Access to mental health services since disaster

### **Definition**

Series of questions about perceived need for mental health services, whether the woman could access the service, site where woman obtained mental health services, and barriers if she did not obtain mental health services. These items have **not** been pretested.

### **Question Numbers**

C1, C2, C3, C4

## **Indicator 7: Gender-Based Violence**

Disasters have been associated with violence against women. Acts of violence often result in negative physical and emotional health effects. Disaster-affected women may have a current need for services to meet physical/psychological needs and legal/protective services.

### **Measure**

7.1 Physical intimate partner violence since disaster

### **Definition**

Proportion of postpartum women reporting physical violence by husband or partner since the disaster. This item has been pretested.

### **Question Number**

M1

### **Measure**

7.2 Physical violence by persons other than intimate partners since disaster

### **Definition**

Proportion of postpartum women reporting physical violence by person other than husband or partner since the disaster. This item has **not** been pretested.

### **Question Number**

M2

### **Measure**

7.3 Sexual violence by anyone, including intimate partners since disaster

### **Definition**

Proportion of postpartum women reporting sexual violence by anyone including husband or partner since the disaster. This item has **not** been pretested.

### **Question Number**

M3

### **Measure**

7.4 Perpetrator of sexual violence since disaster

### **Definition**

Postpartum woman's relationship to the perpetrator of the sexual violence. This item has **not** been pretested.

### **Question Number**

M4

**Measure**

7.5 Perceived effect of violence on physical or emotional health

**Definition**

Proportion of postpartum women reporting perceived effects of the violence on physical or emotional health. This item has been pretested.

**Question Number**

M5

**Measure**

7.6 Sought treatment for effects of violence

**Definition**

Proportion of postpartum women who have experienced violence since the disaster and sought treatment from a doctor, counselor, or any other medical care provider for resulting physical and/or emotional problems. This item has been pretested.

**Question Number**

M6

**Measure**

7.7 Current need for services for family violence

**Definition**

Proportion of postpartum women reporting current need for services to reduce violence in family. This item has **not** been pretested.

**Question Number**

M7

**Indicator 8: Substance Use**

Tobacco use leads to disease and disability, and second hand smoke can lead to negative health affects for an infant. Tobacco use may begin or increase after a disaster given the possible increase in stressors. Also, alcohol and drug problems present significant health risks to the user. A self-reported need for help for an alcohol or drug problem can offer a critical window for intervention.

**Measure**

8.1 Current number of cigarettes smoked per day

**Definition**

Average number of cigarettes currently smoked per day. This item has been pretested.

**Question Number**

R2

**Measure**

8.2 Change in smoking behavior since disaster

**Definition**

Proportion of postpartum women whose smoking behavior increased since the disaster. This item has **not** been pretested.

**Question Number**

R1

**Measure**

8.3 Need help to quit smoking

**Definition**

Proportion of postpartum women who report that they currently need services to help them quit smoking. This item has **not** been pretested.

**Question Number: R3**

**Measure**

8.4 Self-reported need for help for an alcohol or drug problem

**Definition**

Proportion of postpartum women who report that they currently need services to help with an alcohol or drug problem. This item has **not** been pretested.

**Question Number**

R5

**Indicator 9: Family and Social Support**

Family and social support networks are important for postpartum women, especially after a disaster event. Disasters have the potential to disrupt a woman's support network.

**Measure**

9.1 Effect of disaster on social network

**Definition**

Proportion of postpartum women reporting that they were separated from loved ones whom they felt close to because of disaster. This item has **not** been pretested.

**Question Number**

L1

**Measure**

9.2 Frequency of receipt of social and emotional support since the disaster

**Definition**

Reported frequency of receipt of social and emotional support since the disaster among postpartum women. This item has **not** been pretested.

**Question Number**

L2

**Measure**

9.3 Presence of social support since the disaster

**Definition**

Proportion of postpartum women who report that someone would help them if a problem came up since the disaster. This item has **not** been pretested.

**Question Number**

L3

**Measure**

9.4 Perceived tangible support since the disaster

**Definition**

Series of questions that list tangible support that the postpartum woman perceives as available to her since the disaster: someone to loan her \$50, someone to help her if she was sick and needed to be in bed, someone to talk with her about her problems, someone to take care of her baby, and someone to help if she was tired and feeling frustrated with her new baby. These items have **not** been pretested.

**Question Number**

L5

## **Indicator 10: Need for Services**

Postpartum women have unique service needs after a disaster event. Access to many services may be affected by a variety of system and personal barriers.

### **Measure**

10.1 Identified need for services

### **Definition**

Self-reported need for health and social services, including housing, food stamps, school or vocational training, transportation, medical services, dental services, and various social support services. This item has been pretested.

### **Question Number**

P1

# INFANTS

The following 6 indicators are those specific to infants.

## Indicator 1: Birth Outcomes

Birth outcomes measure select aspects of infant health at birth. These outcomes are important measures among disaster affected communities as they are associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices.

### Measure

1.1 Place of delivery

### Definition

Location of delivery. This item has **not** been pretested.

### Question Number

I2

### Measure

1.2 Full term low birth weight (LBW)

### Definition

Proportion of postpartum women who reported their infants weighed less than 2500 g (5.5 lb.) at birth. This item has been pretested.

### Question Number

I3

### Measure

1.3 Preterm birth

### Definition

Proportion of postpartum women who reported they delivered a live singleton baby at least 3 weeks before their due date. This item has been pretested.

### Question Number

I4

## Indicator 2: Infant Feeding and Access to WIC

In a disaster event, special consideration must be given to infant nutrition. Breastfeeding is the safest and often the only reliable source of nutrition for infants affected by disasters. Breastmilk alone is sufficient to support optimal growth and development for approximately six months after birth. Disasters may present unique barriers to breastfeeding initiation or continuation. WIC provides federal grants to states for supplemental foods, breastfeeding promotion and support, nutrition education, and health care referrals for low-income pregnant and postpartum women, and to infants and children up to age five who are found to be at nutritional risk. These services are especially important among at-risk disaster-affected populations.

### Measure

2.1 Ever breastfed

### Definition

Proportion of postpartum women who breastfed or pumped any amount of breastmilk to feed their infant at any point after delivery. This item has been pretested.

### Question Number

J1

**Measure**

2.2 Currently breastfeeding

**Definition**

Proportion of postpartum women who are currently breastfeeding or feeding any amount of pumped milk to their infant. This item has been pretested.

**Question Number**

J2

**Measure**

2.3 Relactation because of disaster

**Definition**

Proportion of postpartum women who initiated relactation because of the disaster. For some mothers and infants, once breastfeeding has stopped, it may be resumed successfully. This item has **not** been pretested.

**Question Number**

J3

**Measure**

2.4 Disaster impact on breastfeeding

**Definition**

Proportion of postpartum women who chose not to initiate breastfeeding, to stop breastfeeding, or to supplement breastmilk with formula because of the disaster. This item has **not** been pretested.

**Question Number**

J3

**Measure**

2.5 Reasons for not initiating, adding formula, or stopping breastfeeding completely

**Definition**

Reasons given for not initiating breastfeeding, stopping breastfeeding, or supplementing breastmilk with formula. This item has **not** been pretested.

**Question Number**

J4

**Measure**

2.6 Access to supplies needed to care for infant

**Definition**

Series of questions identifying the proportion of postpartum women reporting difficulty accessing supplies to care for their infant because of the disaster, the specific supplies that were difficult to access, location where supplies were sought, and barriers to access if supplies were not obtained. These items have **not** been pretested.

**Question Numbers**

G1, G2, G3

**Measure**

2.7 Use of WIC services before disaster

**Definition**

Proportion of postpartum women reporting that they were on WIC before the disaster. This item has **not** been pretested.

**Question Number**

H1

**Measure**

2.8 Access to WIC or other nutritional services

**Definition**

Series of questions about whether a postpartum woman has used WIC services since the disaster, location where services were obtained, and barriers to access if services were not obtained. These items have **not** been pretested.

**Question Numbers**

H2, H3, H4

**Indicator 3: Infant Health and Safety Outcomes**

Disaster related injuries and illnesses can exact an enormous toll on population health and well-being. The questions below capture protective measures (such as immunizations) as well as illnesses and injuries.

**Measure**

3.1 Ever vaccinated

**Definition**

Proportion of caregivers who reported infants received immunization in the form of a shot or drops. This item has **not** been pretested.

**Question Number**

01

**Measure**

3.2 Access to immunization records

**Definition**

Proportion of caregivers who had access to infant immunization records. This item has **not** been pretested.

**Question Number**

02

**Measure**

3.3 Help seeking for infant medical concerns

**Definition**

Proportion of caregivers who sought medical help for infant. This item has **not** been pretested.

**Question Number**

03

**Measure**

3.4 Reasons for seeking medical help for infant

**Definition**

Reasons why caregiver sought medical help for infant, includes a list of symptoms for acute illness and communicable diseases. This item has **not** been pretested.

**Question Number**

04

**Measure**

3.5 Type of injury

**Definition**

Types of injuries reported. This item has **not** been pretested.

**Question Number: 05**

**Measure**

3.6 Cause of injury

**Definition**

Cause of injury reported. This item has **not** been pretested.

**Question Number**

06

**Indicator 4: Access to Subspecialty Services**

A key component of coordinating healthcare services for disaster affected communities is identifying infants who require subspecialty care and special services and connecting those children to needed services.

**Measure**

4.1 Access to subspecialty services

**Definition**

Proportion of caregivers who reported that 1) infant required subspecialty care, 2) infant received/did not receive subspecialty care, 3) reasons why infant did not receive subspecialty care. These items have **not** been pretested.

**Question Number**

B1, B2, B3, B4

**Measure**

4.2 Infant transferred

**Definition**

Proportion of infants transferred before mother's discharge. This item has **not** been pretested.

**Question Number**

B5

**Measure**

4.3 Mother transferred

**Definition**

Proportion of postpartum women who reported that they were transferred prior to delivery. This item has **not** been pretested.

**Question Number**

B6

**Measure**

4.4 Needed assistance in care coordination

**Definition**

Proportion of caregivers who reported they needed extra help coordinating care for their infant. This item has **not** been pretested.

**Question Number**

B7

**Measure**

4.5 Received assistance in care coordination

**Definition**

How often caregivers received assistance in coordinating their infant's care. This item has **not** been pretested.

**Question Number**

B8

## **Indicator 5: Safe Sleep Environment**

Helping parents and primary caregivers establish a safe sleeping environment for the infant is an important public health function. This is especially important in disaster events when usual sleep space and pattern may be disturbed.

### **Measure**

5.1 Baby sleeps in a crib

### **Definition**

Proportion of postpartum women who reported that their infant sleeps in crib or portable crib. This item has been pretested.

### **Question Number**

Q1

### **Measure**

5.2 Bed sharing

### **Definition**

Proportion of postpartum women who reported that their infant sleeps in the same bed as mother or someone else. This item has been pretested.

### **Question Number**

Q2

### **Measure**

5.3 Sleep position and surface

### **Definition**

Proportion of postpartum women who reported the position in which their infant sleeps (her/his sides, back, and/or stomach), as well as the surface on which the infant sleeps (firm or hard mattress, with pillows, with pads, with blankets, with stuffed toys, and/or with another person). This item has been pretested.

### **Question Number**

Q3

## **Indicator 6: Access to Well Baby Care**

Infants are at increased risk of morbidity and mortality during the first six months following delivery. It is important to assess the type and level of care disaster-affected infants receive.

### **Measure**

6.1 Ever well-baby checkup

### **Definition**

Proportion of women reporting their infant had at least one well-baby checkup. This item has been pretested.

### **Question Number**

S1

### **Measure**

6.2 Well-baby visit location

### **Definition**

Self-reported location of well-baby checkup by postpartum women. This item has **not** been pretested.

**Question Number**

S2

**Measure**

6.3 Type of well-baby checkup

**Definition**

The type of care received by infant at a well-baby checkup. This item has **not** been pretested.

**Question Number**

S3

**Measure**

6.4 Well-baby visits impacted by disaster

**Definition**

Proportions of women who report it has been more difficult to get well-baby checkups because of a disaster event. This item has been pretested.

**Question Number**

S4

**Measure**

6.5 Barriers to well-baby checkup

**Definition**

Proportion of postpartum women who report barriers to attending well-baby checkups. This item has been pretested.

**Question Number**

S5

## OTHER MEASURES

### Other Measures for Pregnant and Postpartum Women

Other nationally recognized measures used to screen for depression, stress, anxiety, disaster exposure, and alcohol dependency.

#### Measure

Postpartum Depression

#### Tool

Edinburgh Postnatal Depression Scale

#### Definition

This scale has 10 questions and is designed to screen women for symptoms of emotional distress during pregnancy and the postnatal period. Each item is scored on a four-point scale from 0-3, with minimum and maximum overall scores ranging 0 to 30. Scores 0-9 may indicate some symptoms, but are not likely to interfere with day to day ability to function. Scores 10-12 indicate presence of symptoms of distress that may be discomforting. Scores 13+ require further assessment and referral to a mental health specialist should be considered.

#### Public Health Significance

Exposure to disasters and the subsequent stressors that arise as a result may impact a woman's mental health. Depression can significantly disrupt quality of life and make it difficult to perform daily tasks. Depressed women are at increased risk for poor health outcomes and may have difficulty coping with a disaster event.

#### Known Application in the United States

A score  $\geq 12$  has been used to indicate depression among disaster-affected pregnant and postpartum women following Hurricane Katrina.

Xiong, X., Harville, E. W., Mattison, D. R., Elkind-Hirsch, K., Pridjian, G., & Buekens, P. (2008). Exposure to Hurricane Katrina, post-traumatic stress disorder and birth outcomes. *American Journal of the Medical Sciences*, 336(2), 111-115.

Ehrlich, M., Harville, E. W., Xiong, X., Buekens, P., Pridjian, G., & Elkind-Hirsch, K. (2010). Loss of Resources and Hurricane Experience as Predictors of Postpartum Depression Among Women in Southern Louisiana. *Journal of Women's Health*, 19(5), 877-884. doi: 10.189/jwh.2009.1693

#### Measure

Depression

#### Tool

Beck Depression Inventory (BDI)

#### Definition

The BDI is one of the most widely used instruments to measure the severity of depression and consists of 21 questions scored on a scale of 0-3. The severity of depression is scored as follows in the most up-to-date tool (1996): Minimal (0-13), Mild (14-19), Moderate (20-28), Severe (29-63).

#### Public Health Significance

Exposure to disasters and the subsequent stressors that arise as a result may impact a woman's mental health. Depression can significantly disrupt quality of life and make it difficult to perform daily tasks. Depressed women are at increased risk for poor health outcomes and may have difficulty coping with a disaster event.

#### Known Application in the United States

Application of the BDI among pregnant and postpartum women after the World Trade Center (9/11) disaster used criteria from an older version (BDI-IA, 1978) to determine severity of depression; normal (0-9), mild depression (10-18), moderate depression (19-29), severe depression ( $\geq 30$ ).

Engel, S. M., Berkowitz, G. S., Wolff, M. S., & Yehuda, R. (2005). Psychological trauma associated with the World Trade Center attacks and its effect on pregnancy outcome. *Paediatric and Perinatal Epidemiology*, 19(5), 334-341.

**Measure**

Post-Traumatic Stress Disorder (PTSD)/ Post Traumatic Stress Symptoms (PTSS)

**Tool**

Post-traumatic Stress Disorder Checklist (PCL)

**Definition**

This scale is a commonly used, 17-item inventory of PTSD-like symptoms, with response alternatives ranging from 1 (not at all) to 5 (extremely). This scale performs particularly well when assessing PTSD relative to a specific event.

**Public Health Significance**

Disasters may result in significant trauma for the individuals who experience them, and may result in PTSS or PTSD. PTSD can significantly disrupt quality of life and make it difficult to perform daily tasks. People with PTSS or PTSD may be a greater risk for adverse health outcomes and may have difficulty coping with a disaster event. There is some evidence in post-disaster literature that PTSD may be associated with low birth weight and preterm birth.

**Known Application in the United States**

There are several variations in cut off scores when applied to disaster-affected pregnant and postpartum women. For example, a post-Hurricane Katrina study used a cut off of 50, a study after the World Trade Center disaster (9/11) used a cut off of  $\geq 44$ , while a different post-9/11 study used a completely different approach where  $\geq 1$  moderately distressing symptom of intrusive thoughts (PCL items 1-5),  $\geq 3$  moderately distressing symptoms of avoidance or numbing (PCL items 6-12), and  $\geq 2$  moderately distressing symptoms of hyperarousal (PCL 13-17).

Xiong, X., Harville, E. W., Mattison, D. R., Elkind-Hirsch, K., Pridjian, G., & Buekens, P. (2008). Exposure to Hurricane Katrina, post-traumatic stress disorder and birth outcomes. *American Journal of the Medical Sciences*, 336(2), 111-115.

Lipkind, H. S., Curry, A. E., Huynh, M., Thorpe, L. E., & Matte, T. (2010). Birth Outcomes Among Offspring of Women Exposed to the September 11, 2001, Terrorist Attacks. *Obstetrics and Gynecology*, 116(4), 917-925. doi: 10.1097/AOG.0b013e3181f2f6a2

**Measure**

Anxiety

**Tool**

State-Trait Anxiety Inventory

**Definition**

Measures anxiety through an inventory composed of 40 questions based on a 4-point likert scale. Scores range from 20 to 80, with higher scores correlating with greater anxiety. Engel et al (2005) determined those with "high anxiety" by creating categories and comparing subjects having total scores greater than the 75th percentile with those at or below the 75th percentile.

**Public Health Significance**

Experiencing a disaster can exacerbate existing anxiety and result in new stressors, which may facilitate new anxieties for a disaster-affected woman. Anxiety may influence poor mental health outcomes.

**Known Application in the United States**

This inventory was applied among pregnant and postpartum women following the World Trade Center disaster. Results were not significant.

Engel, S. M., Berkowitz, G. S., Wolff, M. S., & Yehuda, R. (2005). Psychological trauma associated with the World Trade Center attacks and its effect on pregnancy outcome. *Paediatric and Perinatal Epidemiology*, 19(5), 334-341.

**Measure**

Stress

**Tool**

Perceived Stress Scale (PSS4)

**Definition**

Measures the relative severity of perceived stress through four questions based on a 4-point likert scale.

### **Public Health Significance**

Experiencing a disaster can be a major life stressor. Chronic stress can result in negative health consequences and may influence poor mental health outcomes.

### **Known Application in the United States**

No known application in disaster situations, but is a global measure of perceived stress validated in the US.

Cohen S, Kamarck T, & Mermelstein R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385-396.

Cohen, S., and Williamson, G. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan and S. Oskamp (Eds.), *The social psychology of health: Claremont Symposium on applied social psychology*. Newbury Park, CA: Sage.

### **Measure**

Screening for alcohol use and dependence

### **Tool**

CAGE and T-ACE screening tests

### **Definition**

4 item scales used by clinicians and others to identify patients with alcohol problems. Both scales have been demonstrated as useful in a variety of settings and populations. The T-ACE was designed for use among pregnant women.

### **Public Health Significance**

Alcohol consumption may begin or increase after a disaster given the subsequent stressors.

### **Known Application in the United States**

These scales are designed for use by counselors and/or clinicians. To our knowledge they have not been used in population-based surveys.

## **Other Measures for Infants**

The table below lists other ways to explore infant health outcomes using vital records. The tools identified include the 2003 birth certificate (BC), 1989 BC, and the 2003 death certificate.

### **Measure**

Place of birth

### **Tool**

2003 Birth Certificate (BC), Q26 1989 BC, Q6a

### **Definition**

Location of most recent delivery.

### **Public Health Significance**

Disasters may impact access to delivery services, or 24 hour/ 72 hour usual baby check-ups. This measure examines where infant was born.

### **Known Application in the United States**

Used by all States. Variability in access to data by State.

### **Measure**

Full term low birth weight

### **Tool**

2003 BC, Q49; 1989 BC, Q5

### **Definition**

Proportion of postpartum women who reported their infants weighed less than 2500 g (5.5 lb.) at birth.

**Public Health Significance**

Low birth weight is an important indicator of the health and welfare among disaster affected populations, as it may reflect disparities in access to early and continuous maternity care and adequate prenatal nutrition.

**Known Application in the United States**

Used by all States. Variability in access to data by State.

**Measure**

Preterm birth

**Tool**

2003 BC, Q50; 1989 BC, Q20

**Definition**

Proportion of postpartum women who reported they delivered a live singleton baby 3 weeks before their due date.

**Public Health Significance**

Preterm birth is a leading cause of infant mortality and morbidity. Preterm births data are readily available in all state health departments and can be used to examine the contributions of environmental exposures and other modifiable risks.

**Known Application in the United States**

Used by all States. Variability in access to data by State.

**Measure**

Infant mortality

**Tool**

2003 BC, Q57; 1989 BC, Q26

**Definition**

Number of postpartum women who reported infant death.

**Public Health Significance**

Infant mortality is an important indicator of the health of a nation or community because it is associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices.

**Known Application in the United States**

Used by all States. Variability in access to data by State.

**Measure**

Cause of death

**Tool**

2003 Death Certificate, Q32

**Definition**

'Cause of death' as stated on death certificate.

**Public Health Significance**

Infant deaths within disaster-affected local community.

**Known Application in the United States**

Used by all States. Variability in access to data by State.

# **Post-Disaster Indicators for Pregnant/Postpartum Women and Infants: Question Index**

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## A. Access to Contraception

**A1) Have you had your tubes tied or has your husband or partner had a vasectomy?** {RHAD, 401} (If answer is yes, woman should not be asked any more questions about access to contraception)

Yes  
No  
Don't know  
No Response

**A2) Just before the disaster, were you or your husband or partner using *any* birth control method to keep from getting pregnant? Some things people do to keep from getting pregnant include not having sex at certain times [rhythm] or withdrawal, and using birth control methods such as the pill, condoms, vaginal ring, or IUD.** {RHAD, 402}

Yes  
No  
Don't know  
No Response

**A3) Are you or your husband or partner doing anything *now* to keep from getting pregnant?** {RHAD, 404}

Yes  
No  
Don't know  
No Response

**A4) What kind of birth control method are you or your husband or partner using *now* to keep from getting pregnant?** {RHAD, 406} (Circle all mentioned – if answered 'yes' to A3)

Pill  
Condoms  
Injection once every 3 months (Depo-Provera®)  
Contraceptive implant (Implanon®)  
Contraceptive patch (OrthoEvra®)  
Diaphragm, cervical cap, or sponge  
Vaginal ring (NuvaRing® or others)  
IUD (including Mirena®)  
Rhythm method or natural family planning  
Withdrawal (pulling out)  
Not having sex (abstinence)  
Emergency contraception ("morning after" pill)  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**A5) Where did you last obtain your birth control method?** {RHAD, 407 *Adapted*} (if answered 'yes' to A3; except for women who answer "rhythm method", "withdrawal", or "abstinence" in A4 )

Private doctor's office or HMO facility  
Family planning/Planned Parenthood  
Community health center  
Health department clinic  
Hospital or urgent care center  
Pharmacy or store  
Hospital emergency room  
Medical relief station/tent  
Local shelter  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**A6) Which birth control method would you prefer to use?** {NEW}

Pill  
Condoms  
Injection once every 3 months (Depo-Provera®)  
Contraceptive implant (Implanon®)  
Contraceptive patch (OrthoEvra®)  
Diaphragm, cervical cap, or sponge  
Vaginal ring (NuvaRing® or others)  
IUD (including Mirena®)  
Rhythm method or natural family planning  
Withdrawal (pulling out)  
Not having sex (abstinence)  
Emergency contraception ("morning after" pill)  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**A7) At any point in time since the disaster, has it been more difficult to get your birth control method?**  
{RHAD, 403}

Yes  
No  
Don't know  
No Response

## **B) Access to Infant Subspecialty Care**

**B1) Since the disaster, did you or a doctor think that your infant needed to see a specialist? Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and others who specialize in one area of health care. {NCHS K4Q25 Adapted}**

- Yes
- No
- Don't know
- No response

**B2) Where did you go to get care from a specialist? {NEW} (if answered 'yes' to B1)**

- Private doctor's office or HMO facility
- Community health center
- Health department clinic
- Hospital or urgent care clinic
- Hospital emergency room
- Medical relief station/tent
- Local shelter
- Home visit
- Other (specify) \_\_\_\_\_
- Don't know
- No Response

**B3) How much of a problem, if any, was it to get the care from the specialists that your infant needed? Would you say it was a big problem, a small problem, or not a problem? {NSCH K4Q26, Adapted} (if answered 'yes' to B1)**

- Big problem
- Small problem
- Not a problem
- Don't know
- No Response

**B4) Did any of these things keep you from getting the specialty care that your baby needed? {New} (Read all and circle all that apply – if answered 'big problem' or 'small problem' to B3)**

- Couldn't get an appointment when you wanted one
- Not enough money or insurance to pay for visit
- No transportation to get to the clinic or doctor's office
- Couldn't take time off from work or school
- Didn't have your Medicaid (or state Medicaid name) card
- No one to take care of children or other family members
- Had too many other things going on
- Didn't know where to go to receive care
- The wait time in the office was too long
- Afraid to leave where I was staying
- Road conditions made it unsafe to travel
- Don't know
- No Response

**B5) After your baby was born, was he or she transferred to another hospital?** {PRAMS, K11, *Adapted*}

No  
Yes  
Don't Know  
No Response

**B6) After your baby was born, were you transferred to another hospital?** {PRAMS, K12, *Adapted*}

No  
Yes  
Don't Know  
No Response

**B7) Since the disaster, how often did you need assistance with arranging or coordinating your infant's care? Would you say never, sometimes, or usually?** {NSCH, K5Q21, *Adapted*}

Never  
Sometimes  
Usually  
Don't Know  
No Response

**B8) Since the disaster, how often did you get as much help as you wanted with arranging or coordinating your infant's care? Would you say never, sometimes, or usually?** {NSCH, K5Q22, *Adapted*}

Never  
Sometimes  
Usually  
Don't know  
No Response

## C) Access to Mental Health Services

**C1) Since the disaster, do you feel that you have needed mental health services (counseling, medications, support groups, etc.)? {NEW}**

Yes

No

Don't Know

No Response

**C2) Were you able to get the mental health services that you needed? {NEW} (if answered 'yes' to C1)**

Yes

No

Don't Know

No Response

**C3) Where did you receive the mental health services that you needed? {NEW} (Circle all mentioned – if answered 'yes' to C2)**

Private doctor's office or HMO facility

Mental health clinic

Community health center

Health department clinic

Hospital or urgent care clinic

Hospital emergency room

Medical relief station/tent

Local shelter

Home visit

Other (specify) \_\_\_\_\_

Don't Know

No Response

**C4) Did any of these things keep you from getting the mental health services that you needed? {New}**

(Read all and circle all that apply – if answered 'no' to C2)

Couldn't get an appointment when you wanted one

Not enough money or insurance to pay for visit

No transportation to get to the clinic or doctor's office

Couldn't take time off from work or school

Didn't have your Medicaid (or state Medicaid name) card

No one to take care of children or other family members

Had too many other things going on

Didn't know where to go to receive care

The wait time in the office was too long

You were worried about what others would think if you sought help

You were worried that someone would try to take away your children if you sought help

You were afraid to leave where you were staying

Road conditions made it unsafe to travel

You were sick or injured and could not travel

Other (specify) \_\_\_\_\_

Don't know

No Response

## D) Access to Postpartum Care

**D1) Since your baby was born, have you had a postpartum checkup for yourself? (A postpartum checkup is the regular checkup a woman has after she gives birth) {RHAD, 305}**

- Yes
- No
- Don't know
- No Response

**D2) Where did you go for your postpartum checkup? {NEW} (Circle all mentioned – if answered 'yes' to D1)**

- Private doctor's office or HMO facility
- Community health center
- Health department clinic
- Hospital or urgent care clinic
- Hospital emergency room
- Medical relief station/tent
- Local shelter
- Home visit
- Other (specify) \_\_\_\_\_
- Don't know
- No Response

**D3) Did any of these things keep you from getting your postpartum checkup? {RHAD, 306 Adapted}**  
(Read all and circle all that apply – if answered 'no' to D1)

- Didn't know a postpartum checkup was recommended
- Couldn't get an appointment when you wanted one
- Not enough money or insurance to pay for visit
- No transportation to get to the clinic or doctor's office
- Couldn't take time off from work or school
- Didn't have your Medicaid (or state Medicaid name) card
- No one to take care of children or other family members
- Had too many other things going on
- Didn't know where to go to receive care
- The wait time in the office was too long
- Afraid to leave where you were staying
- Road conditions made it unsafe to travel
- Sick or injured and could not travel
- Other (specify) \_\_\_\_\_
- Don't know
- No Response

**D4) Was getting a postpartum checkup more difficult for you because of the disaster? {RHAD, 307}**

- Yes
- If yes, why \_\_\_\_\_
- No
- Don't know
- No Response

## E) Access to Prenatal Care

**E1) How many weeks or months pregnant were you when you had your first visit for prenatal care? Do not count a visit that was only for a pregnancy test or only for WIC. Prenatal care includes visits to a doctor, nurse, or other health care worker before your baby was born to get checkups and advice about pregnancy.** {RHAD, 203} (Enter months and weeks OR weeks)

Months [ ][ ] and Weeks [ ][ ]

**OR**

Weeks [ ][ ]

I have not seen anyone for prenatal care

Don't know

No Response

**E2) Since the disaster, have you had any prenatal care visits?** {NEW} (if women reports prenatal care in E1)

Yes

No

Don't Know

No Response

**E3) Where did you go for your prenatal care visits?** {NEW} (Circle all mentioned - if answered 'yes' to E2)

Private doctor's office or HMO facility

Community health center

Health department clinic

Hospital or urgent care clinic

Hospital emergency room

Medical relief station/tent

Local shelter

Home visit

Other (specify) \_\_\_\_\_

Don't Know

No Response

**E4) What kept you from getting your prenatal care visits?** {RHAD, 205; *Adapted*} (Read all and circle all that apply – if answered 'no' to E2)

It was not time for my next visit

Couldn't get an appointment when you wanted one

Not enough money or insurance to pay for visit

No transportation to get to the clinic or doctor's office

Couldn't take time off from work or school

Didn't have your Medicaid (or state Medicaid name) card

No one to take care of children or other family members

Had too many other things going on

Didn't know where to go to receive care

The wait time in the office was too long

You were afraid to leave where you were staying

Road conditions made it unsafe to travel

You were sick or injured and could not travel

Other (specify) \_\_\_\_\_

Don't know

No Response

## **F) Access to Sexually Transmitted Infections (STI) Services**

**F1) Since the disaster, do you feel that you have needed treatment for any sexually transmitted infection (Chlamydia, Gonorrhea, genital warts, HPV, HIV, etc.)? {New}**

Yes  
No  
Don't Know  
No Response

**F2) Were you able to get the treatment that you needed for the sexually transmitted infection? {New}**  
(if answered 'yes' to F1)

Yes  
No  
Don't Know  
No Response

**F3) Where did you get the treatment that you needed for the sexually transmitted infection? {New}**  
(Circle all mentioned – if answered 'yes' to F2)

Private doctor's office or HMO facility  
Community health center  
Health department clinic  
Hospital or urgent care clinic  
Hospital emergency room  
Medical relief station/tent  
Local shelter  
Home visit  
Other (specify) \_\_\_\_\_  
Don't Know  
No Response

**F4) What kept you from getting the treatment that you needed for the sexually transmitted infection? {New}** (Read all and circle all that apply – if answered 'no' to F2)

Couldn't get an appointment when you wanted one  
Not enough money or insurance to pay for visit  
No transportation to get to the clinic or doctor's office  
Couldn't take time off from work or school  
Didn't have your Medicaid (or state Medicaid name) card  
No one to take care of children or other family members  
Had too many other things going on  
Didn't know where to go to receive care  
The wait time in the office was too long  
You were worried about what others would think if you sought help  
You were worried that someone would try to take away your children if you sought help  
You were afraid to leave where you were staying  
Road conditions made it unsafe to travel  
You were sick or injured and could not travel  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

## G) Access to Supplies to Care for Infant

**G1) Did you have difficulty getting any of the following items to take care of your baby because of the disaster?** {NEW} (Read all - circle all that apply)

Infant formula  
Bottles  
Breast pump  
Diapers  
Crib or portable crib  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**G2) What made it difficult for you to get the items you needed to take care of your baby after the disaster?** {NEW} (Circle all mentioned – if any supplies are mentioned in G1)

I was afraid to leave where I was staying in search of supplies  
I did not have any transportation  
Road conditions made it unsafe to travel  
I was sick or injured and could not travel to get supplies  
No one to take care of children or other family members while I went out  
The wait time for supplies was too long  
I did not know where to go  
I did not have any way to pay  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**G3) Where did you go to get the items you needed to take care of your baby?** {NEW} (Circle all mentioned)

Store  
A local shelter  
Place of worship (church, temple, mosque, etc)  
Local health department  
Disaster relief station/tent  
Extended family members  
Friends  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

**G4) Did you have difficulty getting clean water to mix formula or clean bottles for feeding because of the disaster?** {RHAD, 313}

I did not use formula or bottles  
No, I did not have difficulty  
Yes, I needed water for formula  
Yes, I needed water to clean bottles  
Don't know  
No Response

**G5) Did you have difficulty finding refrigerated storage or ways to heat pumped milk or formula for your baby because of the disaster? {NEW} (Read all - circle all that apply)**

No, I did not experience these difficulties

Yes, I had difficulty finding refrigerated storage for pumped milk or mixed formula

Yes, I had difficulty finding ways to heat up pumped milk or formula

Don't know

No Response

## H) Access to WIC

**H1) Before the disaster, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?** {PRAMS Core 22; *Adapted*}

- Yes
- No
- Don't Know
- No Response

**H2) Since the disaster, have you used WIC services?** {NEW}

- Yes
- No
- Don't Know
- No Response

**H3) Where did you get WIC services?** {NEW} (Circle all mentioned – if answered 'yes' to H2)

- WIC clinic
- Local health department
- Place of worship (church, temple, mosque, etc.)
- Private doctor's office or HMO facility
- Community health center
- Hospital or urgent care clinic
- Medical relief station/tent
- Local shelter
- Local store
- Home visit
- Other (specify) \_\_\_\_\_
- Don't Know
- No Response

**H4) What are the reasons that you have not used WIC services since the disaster?** {NEW} (Circle all mentioned – if answered 'no' to H2)

- I have not needed WIC or nutritional services
- I do not think I am eligible for WIC or nutritional services
- I crossed state lines and am no longer eligible for WIC or nutritional services
- WIC clinics were closed because of the disaster
- Road conditions made it unsafe to travel
- I did not have any transportation
- I was afraid to leave where I was staying
- I was sick or injured and could not travel
- No one to take care of children or other family members while I went out
- The wait time was too long
- I did not know where to go
- Other (specify) \_\_\_\_\_
- Don't Know
- No Response

## I) Birth Outcomes

**I1) Have you given birth to a baby who is currently six months old or younger?** {RHAD, 301} (Women who answer 'no' to I1 should not be asked any other questions in this section)

Yes  
No  
Don't know  
No Response

**I2) Where did you deliver your baby?** {PRAMS, WY56, *Adapted*}

Hospital  
Freestanding birth center  
Clinic/doctor's office  
Residence (at home)  
Other \_\_\_\_\_  
Unknown  
Did not answer

**I3) How much did the baby weigh at birth?** {RHAD, 303}

Pounds [\_|\_] |  
Ounces [\_|\_] |  
Don't know  
No Response

**I4) Was the baby born more than 3 weeks before his or her due date?** {RHAD, 304}

Yes  
No  
Don't know  
No Response

## J) Breastfeeding

**J1) Did you ever breastfeed or pump breast milk to feed your new baby after delivery, even for a short period of time?** {PRAMS, 45, core}

No  
Yes  
Don't know  
No Response

**J2) Are you currently breastfeeding or feeding pumped milk to your baby?** {RHAD, 311} (if answered 'yes' to J1)

No  
Yes  
Don't know  
No Response

**J3) Did the disaster impact your choice or ability to breastfeed your baby in any of the following ways?** {NEW} (Read all)

I chose not to start breastfeeding my baby when he/she was born  
I stopped breastfeeding my baby  
I started breastfeeding my baby  
I continued to breastfeed, but I added formula  
Don't know  
No Response

**J4) Why did you stop breastfeeding, reduce breastfeeding, or choose not to breastfeed your baby?** {NIS; 39 C, D - *Adapted*} (Circle all mentioned - if answered 'chose not to start,' 'stopped' or 'added formula' to J3)

### HEALTH ITEMS

Baby had difficulty nursing  
Not producing enough breast milk  
Baby not gaining enough weight  
Nipples sore, cracked or bleeding  
Mother or baby became sick

### TIME/DUTY ITEMS

Other children to take care of  
Went back to work or school  
Wanted my body back to myself  
Wanted/needed someone else to feed the baby  
Too many household duties

### PREFERENCE ITEMS

Did not like breastfeeding  
Did not want to be tied down  
Embarrassment  
Husband/partner did not want me to breastfeed  
Felt it was the right time to stop  
Other (specify) \_\_\_\_\_  
Don't know  
No Response

## **K) Disaster Exposure**

### **K1 How damaged was your home by the disaster? (RHAD Toolkit Q106)**

My home was not damaged

Minor (Living areas of dwelling still livable)

Major (Living areas of dwelling are not livable)

Destroyed

Don't know

No Response

### **K2. Did you experience any of the following because of the disaster? (Read all. Circle all that apply) (RHAD Toolkit Q502)**

You felt like your life was in danger when the disaster struck

You had an illness or an injury

A member of your household had an illness or an injury

You walked through floodwater or debris

You were without electricity for one week or longer

Someone close to you died in the disaster

You saw someone die in the disaster

You were living in temporary housing or in conditions that you were not accustomed to before

You lost personal belongings

You were separated from loved ones who you feel close to

You had difficulty getting services or aid from the government and/or insurance

Your husband or partner lost his/her job

You lost your job even though you wanted to go on working

You argued with your husband or partner more than usual

You had a lot of bills you couldn't pay

You were in a physical fight

Your husband or partner or you went to jail

Someone very close to you had a problem with drinking or drugs

## L) Family and Social Support

**L1) Were you separated from loved ones who you feel close to because of the disaster?** {RHAD 502 (J); *Adapted*}

- Yes
- No
- Don't Know
- No Response

**L2) Since the disaster, how often do you get the social and emotional support you need? Please include support from any source.** {BRFSS, 2011, Module 30, Item 1, *Adapted*} (Read all – choose only one response)

- Always
- Usually
- Sometimes
- Rarely
- Never
- Don't Know
- No Response

**L3) Since the disaster, who would help you if a problem come up? (For example, who would have helped you if you needed to borrow \$50 or if you got sick and had to be in bed for several weeks?)** {PRAMS standard W1, *Adapted*} (Circle all mentioned)

- My husband or partner
- My mother, father, or in-laws
- Other family member or relative
- A friend
- Religious community
- Someone else (specify) \_\_\_\_\_
- No one would have helped me
- Don't Know
- No Response

**L4) Since the disaster, would you have the kinds of help listed below if you needed them?** {PRAMS standard W2, *Adapted*} (For each one, circle **Y** (Yes) if you would have had it or circle **N** (No) if not.)

	No	Yes
Someone to loan me \$50 .....	N	Y
Someone to help me if I were sick and needed to be in bed.....	N	Y
Someone to take me to the clinic or doctor's office if I needed a ride .....	N	Y
Someone to talk with about my problems .....	N	Y

**L5) Since the disaster, would you have the kinds of help listed below if you needed them?** {PRAMS standard, W4, *Adapted*} (For each one, circle **Y** (Yes) if you would have it or circle **N** (No) if not.)

**No Yes**

- |  |   |   |
|--|---|---|
| Someone to loan me \$50 .....  | N | Y |
| Someone to help me if I were sick and needed to be in bed.....                   | N | Y |
| Someone to talk with about my problems .....                                     | N | Y |
| Someone to take care of my baby .....  | N | Y |
| Someone to help me if I were tired and feeling frustrated with my new baby ..... | N | Y |

## M) Gender Based Violence

**M1) Since the disaster, has your current or ex romantic or sexual partner pushed, hit, slapped, kicked, choked or physically hurt you in any other way?** {RHAD, 601; Adapted & NISVS, PV; Adapted}

- Yes
- No
- Don't Know
- No Response

**M2) Since the disaster, has anyone else pushed, hit, slapped, kicked, choked or physically hurt you in any other way?** {RHAD, 602 Adapted & NISVS, PV; Adapted}

- Yes
- No
- Don't Know
- No Response

**M3) Since the disaster, did anyone, including your current or ex romantic or sexual partner, force or coerce you to take part in kissing, touching or any sexual activity when you did not want to?** {RHAD, 603 Adapted & NISVS, PV; Adapted}

- Yes
- No
- Don't Know
- No Response

**M4) Who did this to you?** {NEW} (if answered 'yes' to L3) (Circle all mentioned)

- A current romantic or sexual partner
- A ex romantic or sexual partner
- A family member
- Someone else that I was living with after the disaster
- Other (specify) \_\_\_\_\_
- Don't know
- No Response

**M5) Do you believe that these incidents of violence affected your physical or emotional health?** {RHAD, 604} (if answered 'yes' to L1 OR L2 OR L3)

- Yes
- No
- Don't Know
- No Response

**M6) Did you see a doctor, counselor, or any other medical care provider for treatment of these problems?** {RHAD, 605} (if answered 'yes' to L1 OR L2 OR L3)

- Yes
- No
- Don't Know
- No Response

**M7) Do you feel that you need help to reduce violence in your home?** {RHAD, 514 (I); Adapted}

- Yes
- No
- Don't Know
- No Response

## **N) Health Problems During Pregnancy**

**N1) Do you have any of the following health problems that require ongoing care which started before or during this pregnancy?** {RHAD, 207} (Read all – circle all that apply)

High blood sugar (diabetes or gestational diabetes)

Vaginal bleeding

Asthma

Kidney or bladder (urinary tract) infection

Severe nausea, vomiting or dehydration

High blood pressure, hypertension (including pregnancy- induced hypertension) preeclampsia or toxemia

Heart problems

Other (specify) \_\_\_\_\_

Don't know

No Response

## **O) Infant Health and Safety Outcomes**

**O1) Has your infant ever received an immunization or vaccination that is a shot or drops?** {NIS B1\_X, Adapted}

Yes  
No  
Don't know  
No Response

**O2) Do you have a copy of your child's immunization (vaccine) records?** {NEW}

Yes  
No  
Don't know  
No Response

**O3) Since the disaster, has your baby had any medical problem that caused you to go to the hospital or seek medical help?** {PRAM O1, Adapted}

Yes  
No  
Don't know  
No Response

**O4) What kind of medical problem caused you to go into the hospital or seek medical help?** {PRAMS O3, NDMMF; Adapted}(Circle all mentioned - If yes to question N3)

Eye irritation  
Dehydration  
Skin rash and infection (including, lice, scabies)  
Fever (100°F or 37.8°C)  
Cough  
Diarrhea  
Nausea or vomiting  
Jaundice  
Meningitis/encephalitis  
Other \_\_\_\_\_

**O5) Since the disaster, has your baby had any of the following injuries?** {NDMMF, Adapted} (Read all - circle all that apply)

No Injuries  
Cut, abrasion, laceration  
Amputation,  
Head injury  
Fracture  
Sprain/strain  
Other \_\_\_\_\_  
Don't know  
No Response

**06) How was your baby injured?** {NDMMF, *Adapted*} (Circle all mentioned - If injury was reported in question N5)

Bite, sting

Burn

Cold or heat exposure

Electric shock

Fall, slip, trip,

Hit by or against an object

Motor vehicle crash

Non-fatal drowning

Poisoning

Violence/assault

Other \_\_\_\_\_

Don't know

No Response

## **P) Need for Services**

**P1) Do you feel you currently need any of the following services?** {RHAD, 514} (Read all – circle all that apply)

Housing

Food stamps, WIC vouchers, or money to buy food

School or vocational training

Transportation

Dental services

Medical services

Help to quit smoking

Help with alcohol or drug problem

Help to reduce violence in your home

Counseling information for family and/or personal problems

Help with or information about breastfeeding

Other (specify) \_\_\_\_\_

Don't know

No Response

## Q) Safe Sleep Environment

**Q1) Listed below are some things that describe how your new baby usually sleeps.** {PRAMS, F3} (Read all - For each item, circle T (True) if it usually applies to the baby or F (False) if it doesn't usually apply to the baby.)

**True False**

My new baby sleeps in a crib or portable crib.....	T	F
My new baby sleeps on a firm or hard mattress.....	T	F
My new baby sleeps with pillows .....	T	F
My new baby sleeps with bumper pads.....	T	F
My new baby sleeps with plush blankets.....	T	F
My new baby sleeps with stuffed toys .....	T	F
My new baby sleeps with another person .....	T	F

**Q2) How often does your new baby sleep in the same bed with you or anyone else?** {PRAMS, F2}

Always  
Often  
Sometimes  
Rarely  
Never  
Don't know  
No Response

**Q3) In which one position do you most often lay your baby down to sleep now?** {PRAMS, 49 core}

On his or her side  
On his or her back  
On his or her stomach  
Don't know  
No Response

## **R) Substance Use**

**R1) Has your smoking behavior changed since the disaster? {NEW}**

No, it has remained the same  
Yes, it has increased  
Yes, it has decreased  
Don't know  
No Response

**R2) How many cigarettes do you smoke on an average day now? (A pack has 20 cigarettes) {PRAMS Core 28}**

41 cigarettes or more  
21 to 40 cigarettes  
11 to 20 cigarettes  
6 to 10 cigarettes  
1 to 5 cigarettes  
Less than 1 cigarette  
I don't smoke now  
Don't know  
No Response

**R3) Do you feel that you need help to quit smoking? {RHAD, 514 (G); Adapted} (if woman reports smoking in Q2)**

Yes  
No  
Don't Know  
No Response

**R4) Since the disaster, how many alcoholic drinks have you had in an average week? (One alcoholic drink is a 12 oz beer, a 5 oz glass of wine, or a drink with 1 shot of liquor) {RHAD, 510}**

14 drinks or more a week  
7 to 13 drinks a week  
4 to 6 drinks a week  
1 to 3 drinks a week  
Less than 1 drink a week  
I have not had an alcoholic drink since then  
Don't know  
No Response

**R5) Do you feel that you need help for an alcohol or drug problem? {RHAD, 514 (H); Adapted}**

Yes  
No  
Don't Know  
No Response

## S) Well Baby Care

**S1) Has your baby had a checkup with a doctor since he or she was born?** {RHAD, 308}

- Yes
- No
- Don't know
- No Response

**S2) Where did you take your new baby for well-baby checkups?** {PRAMS, X8- *Adapted*} (Circle all mentioned - if answered 'yes' to R1)

- Private doctor's office or HMO facility
- Community health center
- Health department clinic
- Hospital or urgent care clinic
- Hospital emergency room
- Medical relief station/tent
- Local shelter
- Home visit
- Other (specify) \_\_\_\_\_
- Don't know

**S3) During your most recent well-baby checkup, did the care provider do any of the following?** {NEW}  
(Circle all mentioned- if answered 'yes' to R1)

- Measure the size and growth of baby's head
- Watch for soft spots and flat spots on baby's head
- Check for fluid in the ears
- Screen for hearing and vision
- Examine the eyes, mouth, and skin for signs of problems
- Listen to your baby's heart and lungs
- Check for the development of movement, hearing, vision, and other normal progress
- Ask about lead poisoning
- Give baby shots/immunization
- Discussed newborn screening results
- Don't know
- No Response

**S4) Was it more difficult for you to get a checkup with a doctor for your baby because of the disaster?**  
{RHAD, 310}

- Yes
- If yes, why \_\_\_\_\_
- No
- Don't know
- No Response

**S5) Did any of these things keep your baby from having a checkup with a doctor when you wanted one?** {RHAD, 309} (Read all - circle T (True) if it applies or F (False) if it does not apply - if answered 'no' to R1)

**True False**

- Not enough money or insurance to pay for it .....T F
- No transportation to the clinic or doctor's office ..... T F
- No one to take care of children or other family members .....T F
- Couldn't get an appointment .....T F
- Baby was too sick to go for routine care .....T F
- The wait time in the office was too long.....T F
- Didn't know where to go to receive care ..... T F
- Had too many things other things going on .....T F
- I was afraid to leave where I was staying .....T F
- I did not have any transportation.....T F
- Road conditions made it unsafe to travel .....T F
- I was sick or injured and could not travel to get supplies.....T F
- I did not know where to go.....T F
- Other (specify) \_\_\_\_\_
- Don't know
- No Response

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