Infant Feeding in Emergencies and Natural Disasters

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Faculty Disclosure Information

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The Devastation

Hurricane Rita  Sept 24 declared disaster parishes (counties)

Hurricane Katrina Aug 29 declared disaster parishes (counties)

NOAA

FEMA

Shreveport

New Orleans

330 miles
"We put them on a plane, the plane took off and the next plane would pull up. And no plane went in the same direction. Some of these people didn't just move once. They moved four or five times."

- Red Cross spokeswoman Renita Hosler
The Planes and Buses Left...

- ~1/3 of Louisiana’s population was displaced
  - 1,300,000 people!
  - 300,000 households
- >100,000 evacuees were still in shelters more than 1 month later
- More than 1 million people moved throughout U.S. during initial evacuation
  - Some moved up to 7-8 times!
- Shreveport took in 25,000
4 Red Cross shelters opened in Shreveport and Bossier City for Hurricane Katrina; down to just one shelter 3 days before Rita

4 Red Cross shelters opened for Hurricane Rita
3 new ones plus one existing shelter that was still open for Katrina evacuees

1,300 Katrina evacuees from the Cajundome in Lafayette were transported by bus to shelters in Shreveport for Rita

In Louisiana alone, 956,226 Hurricane Katrina evacuees were registered with FEMA for housing assistance 4 weeks after Katrina struck.

Another 90,435 people were displaced by Hurricane Rita.
Some of the Local Shelters...
Fragmented Care

Bossier City
• Bossier Civic Center
• Martin Luther King Jr. Recreation Center at Hooter Park
• Century-Tel Center

Shreveport
• Broadmoor Baptist Church
• Caddo Animal Control (for pets)
• Camp Forbing
• Hirsch Memorial Coliseum
• LSU-Shreveport: One University Place
• Morningstar Baptist Church
• New Zion Missionary Baptist Church
• North Shreve Baptist Church
• Pinecroft Baptist Church
• Providence Baptist Church
• Southern University in Shreveport
• The Waterford
• Expo Hall
• Centenary College

Elsewhere in Caddo Parish
• Camp Bethany
• Ida Town Hall

Surrounding parishes (≤70 miles)
• Calvary Baptist Church, Many
• Camp Harris, Claiborne-Webster line
• Caney Conference Center, Minden
• Clara Springs Baptist Encampment, Pleasant Hill
• First Baptist Church, Robeline
• First United Methodist Church, Many
• Lake Bistineau State Park, Doyline
• Minden City Hall
• Moore’s Chapel Baptist Church, Mansfield
• Northwestern State University, Natchitoches
• Red River High School, Coushatta
• Ruston Civic Center
• Southside Baptist Church, Mansfield
• Springhill Civic Center
• St. Joseph Catholic Church, Zwolle

East Texas (≤100 miles)
• American Red Cross, Texarkana, TX
• L. Simon Recreation Center, Nacogdoches, TX
• Maude Cobb Activity Center, Longview, TX
• Panola Charter School, Panola, TX
The Real Katrina and Rita Tragedy...

Almost no breastfeeding moms were found...
The Real Failures...

• Information was not readily available to help in the support of optimal infant nutrition.
• Rescue workers had not been trained in breastfeeding support and management.
In a Disaster...

In a disaster, you need:

- Food
- Water
- Shelter
- Clothing
- Medicine

What is the best food for babies?
Breastfeeding and the Use of Human Milk

PEDIATRICS Vol. 115 No. 2 February 2005, pp. 496-506

...exclusive breastfeeding for the first 6 months...

AAP, ACOG, AAFP, ABM, WHO, UNICEF, and many others
Advantages include health, nutritional, immunologic, developmental, psychologic, social, economic, and environmental benefits:
- species-specific
- decreased infections
- decreased SIDS, DM, leukemia, obesity, asthma
- increased child spacing
- health benefits for mother (DMT2, breast ca, ovarian ca)
- increased bonding
- decreased health care costs
- decreased work-absenteeism
- decreased waste
- decreased energy demands for formula production
Breastfeeding Rates
Where the Storms Made Landfall

Ever Breastfed

2005 National Immunization Survey,
http://cdc.gov/breastfeeding/data/NIS_data/images/map_1_2005.gif
In the U.S.:
Who Breastfeeds and Who Doesn’t?

More likely to breastfeed:
- white
- upper-middle income
- married/live-in companions
- higher educational level
- does not receive WIC
- not born or raised in the U.S.

Less likely to breastfeed:
- non-hispanic blacks
- lower income
- single
- lower educational level
- WIC recipient
- born and/or raised in the U.S.
Our Challenge...
There is a vital need to support breastfeeding, especially in the early days of an emergency.

...death rates among <5 yr generally higher than for any other age group...

and

non-breastfed infants up to 20 times more likely to die
What Did SOBr* Do To Help?

- Contact with CBCs from Section on Breastfeeding
- Information sharing from many members of the Section on Breastfeeding Leadership Team, Academy of Breastfeeding Medicine Colleagues, La Leche League, International Lactation Consultants Assoc., U.S. Breastfeeding Comm.
- Help from our International colleagues: Emergency Nutrition Network (ENN), UNICEF, WHO

*AAP Section on Breastfeeding
Perspectives From a Private Pediatric Practice

Mitchell Gruich, Jr. MD, FAAP
Pediatrics, Volume 117, Number 5, May 2006
The **Peds-21** session and reception at the 2006 AAP NCE was titled "Disaster Preparedness, Response & Recovery for Children & Pediatricians."

**Resources**

- Children, Terrorism, and Disasters Web site

**Breastfeeding was not discussed.**
Section on Breastfeeding Goes Into Action!

With the assistance of AAP Breastfeeding Initiative Manager, Lauren Barone, a subcommittee was formed to decide how to better prepare our CBCs in ADVANCE of the next disaster.

After much review of the available literature and resources... the AAP Fact Sheet was born!
Infant Nutrition During a Disaster
Breastfeeding and Other Options


Key Strategy: Increasing the current rate of breastfeeding in the United States is fundamental to optimize infant nutrition, especially when disaster strikes.

Breastfeeding Facts
1. With appropriate support and guidance, stress does not cause milk to dry up.
2. Malnourished women can breastfeed.
3. Optimal human milk supply is maintained by infant demand.
4. For some mothers and babies, once breastfeeding has dropped, it may be resumed successfully.

Disadvantages of Formula Use During a Disaster
1. It may not be available.
2. It may be contaminated.
3. Errors in formula preparation may occur.
4. Water that is mixed with prewarmed or concentrated formula may be contaminated.
5. There may be no equipment to store the formula, bottles, or nipples.
6. If there is no water, prewarmed prepared formula cannot be prepared in the environment.

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For more information: please call or e-mail American Academy of Pediatrics
Breastfeeding Initiatives at 301-262-9806 or lactatinginfo@aap.org.
HELP US, PLEASE!
In An Emergency...

Where is the clean drinking water?
Where is the sterile environment?
Can you clean and sterilize feeding utensils?
Breast Milk: Cleanest, Safest Food

Nutritionally perfect
Readily available
Protective against infectious diseases
Right temperature
Oxytocin release during breastfeeding promotes sense of well-being, relieving maternal stress and anxiety
Disadvantages of Formula Use:
It May Not Be Available

Rescue may not come for days
Long hours may be spent in traffic jams.
Cars run out of gas.
Gas stations run out of gas.
Stores are closed because employees are also evacuating.
Evacuees frequently arrive with few or no belongings, little or no money, no available transportation to get needed supplies.
There may be no uniformity to supplies contributed.
Disadvantages of Formula Use: It May Not Be Available

When an entire town is wiped out, how close is the nearest help?

How do you get there?
Disadvantages of Formula Use: Logistics of Preparation

Supplies available to clean and sterilize utensils?

Cold storage available, i.e. electricity and refrigerators, ice, etc?

Language or literacy barriers for instructions for formula preparation or storage?
Disadvantages of Formula

Different formulations/preparations?

Supplies available to prepare, measure, store it?

Preparing ready-to-feed

Preparing concentrate

Preparing powder

Ready-to-feed; concentrate; powder
Summary of Disadvantages of Formula Use

- It may become contaminated.
- Errors in formula preparation may occur.
- Water that is mixed with powdered or concentrated formula may be contaminated.
- There may be no method to sterilize the formula, bottles, or nipples.
- Without electricity, open prepared formula cannot be preserved safely.
What Can Pediatricians Do?

Pediatricians Can Act!
The 10 Steps
1. Advocate Breastfeeding with Relief Agencies

- Disaster Medical Assistance Team (DMAT) [www.dmat.org](http://www.dmat.org)
- Federal Emergency Management Agency (FEMA) [www.fema.gov](http://www.fema.gov)
- United Way [www.unitedway.org](http://www.unitedway.org)
- Red Cross (National and Local) [www.redcross.org](http://www.redcross.org)
- Salvation Army (National and Local) [www.salvationarmyusa.org](http://www.salvationarmyusa.org)
- Shelters (Government, church or privately run)
- Hospital OB and pediatric wards; nurseries; pediatric, OB and FP clinics; ERs
- Local AAP Chapter [http://www.aap.org/member/chapters/chapserv.htm](http://www.aap.org/member/chapters/chapserv.htm)
- State and local health departments
- Samaritan’s Purse [www.samaritanspurse.org](http://www.samaritanspurse.org)
- Catholic Relief Services [www.crs.org](http://www.crs.org)
- LLLI and the local LLL chapter [www.llli.org](http://www.llli.org)
- International Lactation Consultants (ILCA) [www.ilca.org](http://www.ilca.org)
2. Keep Families Together
3. Create Safe Havens

Create safe havens to keep families together from the start
4. Reassure and 5. Advocate

Assure mothers that human milk contributes significant nutrition for the first year of life and beyond.

Advocate for optimal feeding options for orphaned infants, including HIV negative donor milk.
6. Assist and Encourage

Assist new mothers to breastfeed within the first hour, and promote exclusive breastfeeding for the first 6 months of life.
7. Provide Support

Provide support for breastfeeding through assessment of hydration and nutritional status.
8. Breastfeeding and Vaccinations

Vaccinations may be necessary for evacuees

All routine vaccinations may be safely given to lactating women

Order posters at lactation@aap.org
9. Breastfeeding and Specific Diseases

www.cdc.gov for specific disease and treatment information as concerns lactating women
10. If Formula IS Necessary...

- Ready-to-feed is **THE** formula of choice!
- Use concentrated or powder formula only if bottled or boiled water is available.
Remember the Facts

- A stressed mother still can produce milk
- A malnourished mother can effectively nurse her child
- Infant demand increases milk supply
- Relactation may be useful
  - Frequent suckling necessary
  - Decrease supplementation accordingly
  - Works best with younger infants
  - Encourage moms!
Relactation*

- Usual indications for relactation:
  - recent weaning or still occasionally nursing
  - easier if infant <6 months but possible in infant up to 12 months if previously breastfed

- Necessary conditions for relactation
  - highly motivated mother
  - stimulation of the breasts essential
  - ongoing support

*Emergency Nutrition Network (ENN) website provides detailed information about relactation
Starting Relactation

• Provide encouragement and support
  – daily at first
• Infants who have previously breastfed may suckle at the breast even before much milk is produced.
  – offer the breast whenever the infant shows interest
• Giving milk supplements
  – the drop and drip technique
  – breastfeeding supplementer technique
• Lactogogues rarely necessary
Starting Relactation (cont.)

- Monitor infant’s weight and activity level
- Signs of milk production
  - breast changes
  - less supplement consumed
  - infant does not take second breast
  - stool changes
- Reduce the supplement as necessary and as indicated
  - want to encourage longer and more frequent breastfeeds
  - don’t reduce so much that baby becomes too hungry or too lethargic to feed properly
Infant Feeding During Disasters
Flowchart Part I

Mother and Infant/Child Together

Mother Breastfeeding Pre-Crisis
- Lactation OK → Breastfeeding Support
- Lactation Reduced/Interrupted → Relactation Support

Mother Not Breastfeeding Pre-Crisis
- Lactation Possible → Relactation Support
- Lactation Not Possible
  - HIV Negative Donor Breast Milk Available → Relactation Support
  - Donor Breast Milk Not Available → Provide Ready to Feed Formula
Infant Feeding During Disasters
Flowchart Part II

Mother and Infant/Child Not Together

Lactation Not Possible

HIV Negative Donor Breast Milk Available

Donor Breast Milk Not Available

Provide Ready to Feed Formula
Increasing the current rate of breastfeeding in the United States is fundamental to optimizing infant nutrition when disaster strikes.
“When the baby is born, it wants many things: among others air and food, mostly food. Maternal milk is the only safe nutriment for the little stranger.”

Abraham Jacobi M.D.
JAMA 58(2) 1735-1744, June 8, 1912
Babies were born to be breastfed.
References

• “Infant Nutrition During a Disaster: Breastfeeding and Other Options” AAP Fact Sheet 2007
• “Breastfeeding and the Use of Human Milk” Pediatrics Vol. 115 No.2 February 2005, pp.496-506

http://emergency.cdc.gov/