

**TRAINING FOR IMPROVED PRACTICE:
Public Health and Nutrition in Emergencies**

COMMUNICABLE DISEASES:

Overview of Diarrheal Diseases

UNICEF Core Corporate Commitments Training

In collaboration with:

Feinstein International Famine Center, Tufts University

Mailman School of Public Health, Columbia University

International Emergency and Refugee Health Branch,

Centers for Disease Control

Overview of the Session

- Identify the contribution of diarrheal diseases to mortality in emergencies
- Specify prevention and control measures, including the role of a laboratory
- Discuss care of children with diarrhea, including ORS
- Identify UNICEF's role in control of diarrheal diseases in emergencies

No Madonna and Child could touch that picture of a mother's tenderness for a son she soon will have to forget.

The air was heavy with odors of diarrhea of unwashed children with washed-out ribs and dried-up bottoms struggling in labored steps behind blown empty bellies.

Most mothers there had long ceased to care but not this one; she held a ghost smile between her teeth and in her eyes the ghost of a mother's pride as she combed the rust-colored hair left on his skull and then - singing in her eyes - began carefully to part it...

In another life this would have been a little daily act of no consequence before his breakfast and school; now she did it like putting flowers on a tiny grave.

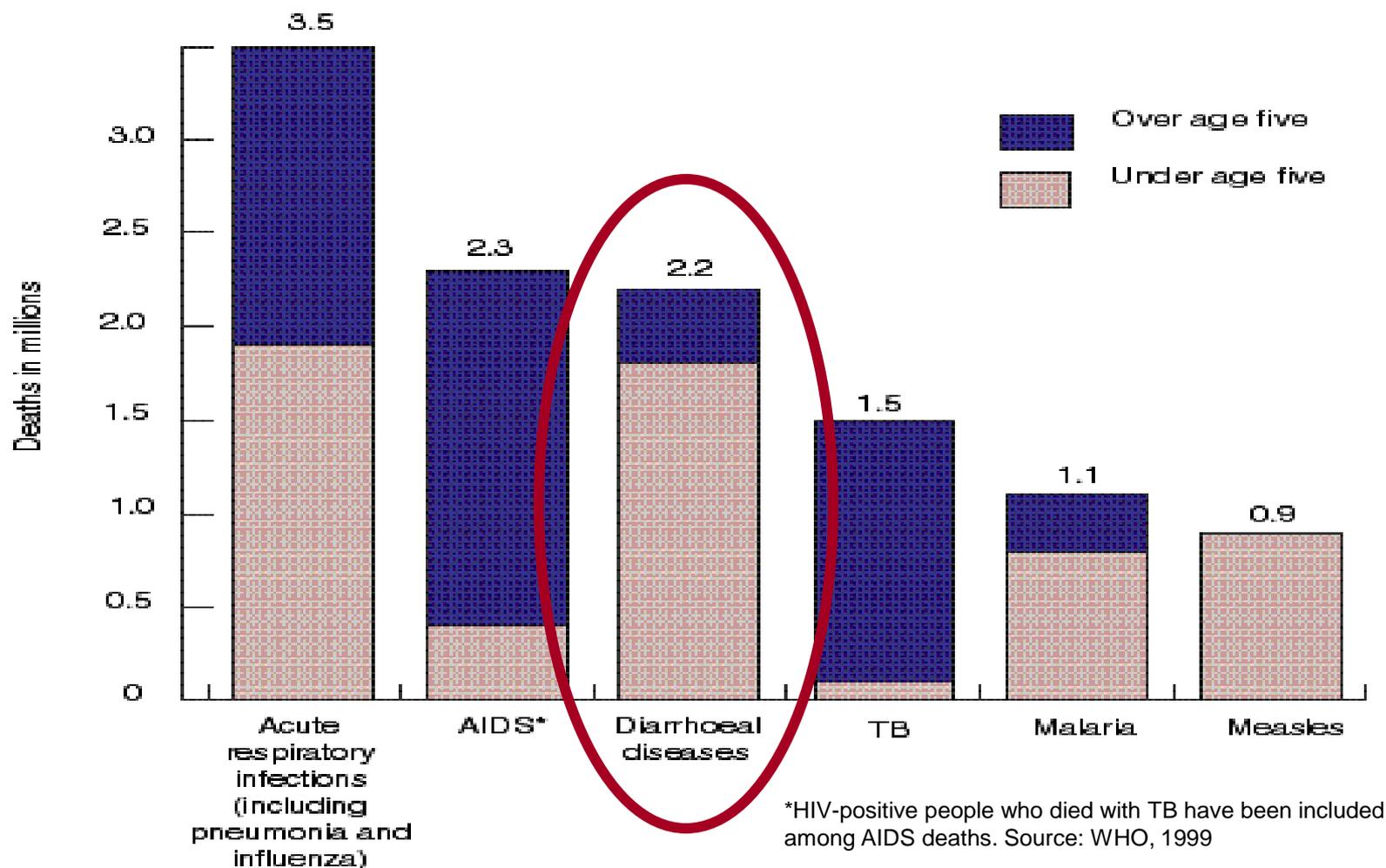
Chinua Achebe

Diarrheal Diseases

- Often the major cause of mortality in acute phase of emergency
- Important cause of morbidity in emergencies where initial mortality is low, and then again in the post-emergency phase
- Caused 70% of deaths among Kurdish refugees and 90% of deaths among Rwandan refugees in Goma
- Major epidemics of cholera and dysentery have occurred, but...
- Most diarrheal illness is NOT caused by cholera or dysentery

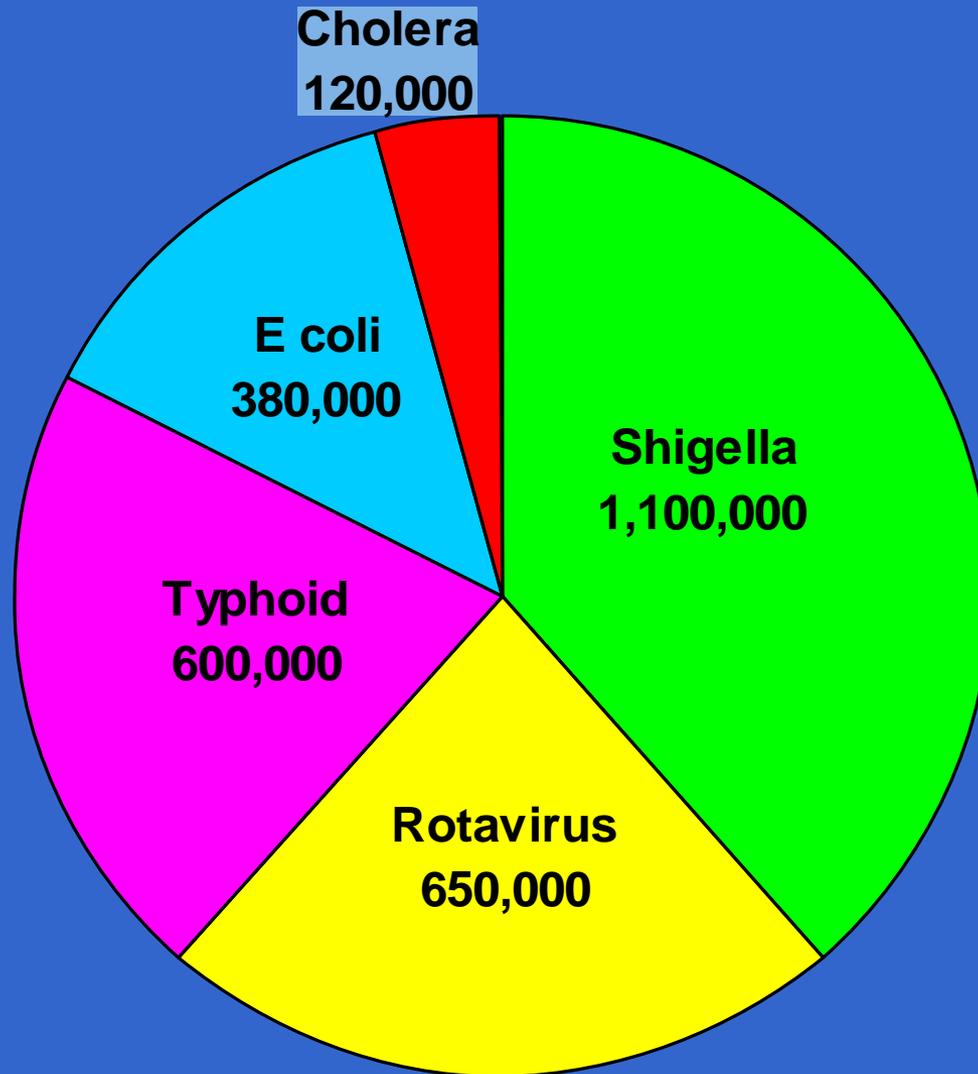
Leading infectious killers

Millions of deaths, worldwide, all ages, 1998

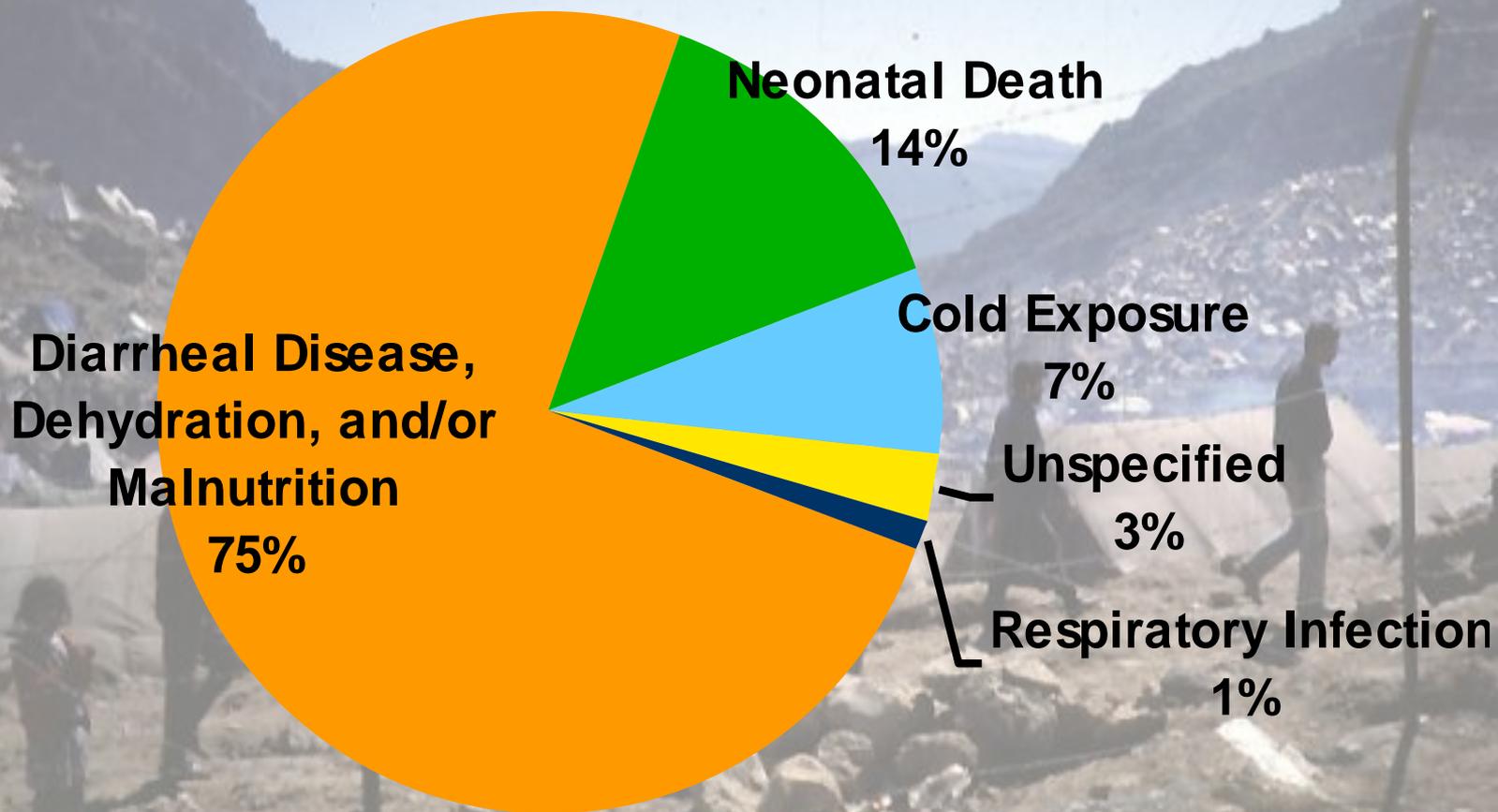


Estimated annual mortality from diarrhoeal diseases

– Total 2.85 million deaths globally, 2000, WHO



Causes of Death of Kurdish Refugees April-May, 1991



Source: R. Yip and T.W. Sharp, Acute Malnutrition and High Childhood Mortality Related to Diarrhea: Lessons from the 1991 Kurdish Refugee Crisis. JAMA, Aug.4,1993;270(No. 5):589.

Severe floods hitting the Mekong Delta for the third year, 2002

- Over 1.4 million people displaced / affected by floods
- Hundreds of thousands of children are facing serious threats to their health from polluted drinking water and extremely poor sanitary conditions.



- UNICEF Viet Nam requires US\$540,750 to provide flood-affected children and their families with basic immediate and medium-term assistance.

In small groups:

What are some of the early interventions to focus on in order to try to control the high toll that diarrheal diseases can take in emergencies?

Diarrhoea Prevention and Control

- Reduce mortality by reducing number and duration/severity of cases by:
 - Adequate basic relief (water, food, shelter, etc)
 - Outbreak preparedness
 - Surveillance
 - Treatment: ORS, breastfeeding, food, and (in some cases) medicine
- Aim for diarrhoeal cases :
 - Incidence $<1\%$ / month
 - CFR $<1\%$ including

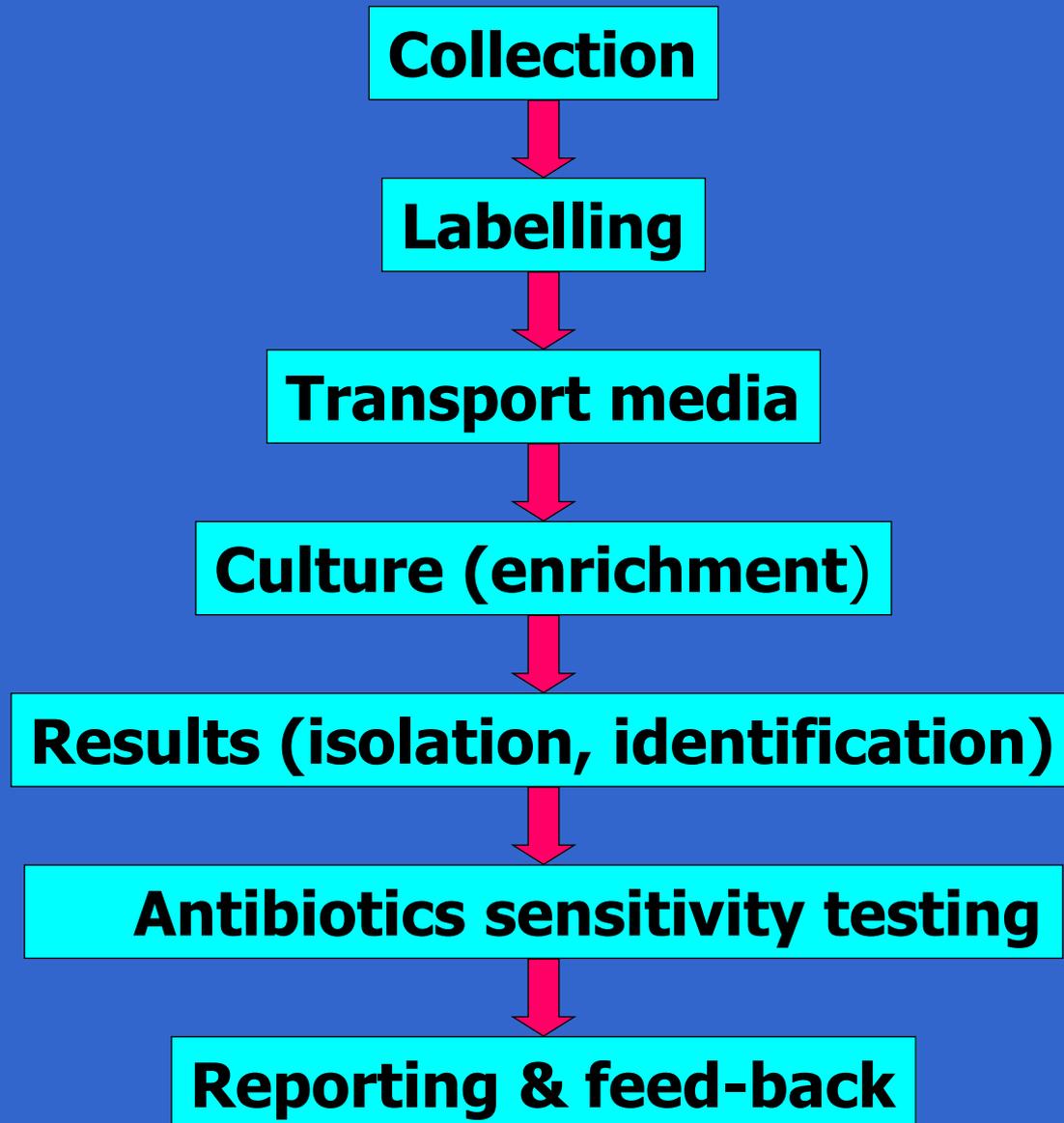
Role of the laboratory

- Confirm causative organism
- Antimicrobial sensitivity

!!! Supplies and equipment are needed !!!



Clinical laboratory service



Laboratory functions re: diarrheal diseases

- Update laboratory technicians on cholera and shigella identification every two years.
- Collect fecal specimens from (a sample of) suspected cases.
- Use Cary Blair medium for suspected cholera cases and buffered glycerol saline for suspected dysentery cases.
- Plate the specimen within 24 hours of collection.
- Include confirmation of a proportion of cases at a reference laboratory.
- Use TCBS agar and alkaline peptone enrichment for suspected cholera cases and at least two standard enteric media for suspected dysentery cases.
- Carry out antibiotic sensitivity tests on a sample of cholera and shigella isolates.
- Report cholera and shigella results to the national authorities at least monthly.

**What is the first line
treatment for
dehydration?**

If a child has diarrhea, classify dehydration

- ➔ No dehydration
- ➔ Some dehydration
- ➔ Severe dehydration



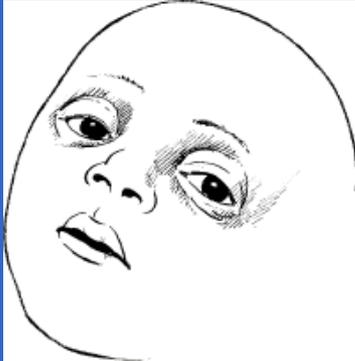
- *Diarrhoea with no dehydration* should be diagnosed if the child **does not** have two or more of the following signs which characterize some or severe dehydration:
 - restlessness/irritability
 - lethargy or unconsciousness
 - not able to drink or drinks poorly
 - thirsty and drinks eagerly
 - sunken eyes
 - skin pinch goes back slowly or very slowly.

Assessing dehydration



- If the child has *two or more* of the following signs, the child has **some dehydration**:
 - restlessness/irritability
 - thirsty and drinks eagerly
 - sunken eyes
 - skin pinch goes back slowly.

Assessing dehydration



- If any *two* of the following signs are present, **severe dehydration** should be diagnosed:



- lethargy or unconsciousness
- sunken eyes
- skin pinch goes back very slowly (2 seconds or more)
- not able to drink or drinks poorly.



Diarrhea treatment plan A

Diarrhea with no dehydration

Diarrhoea Treatment Plan A: Treat diarrhoea at home

Counsel the mother on the 3 rules of home treatment:

give extra fluid, continue feeding, when to return

1. GIVE EXTRA FLUID (as much as the child will take)

⇒ TELL THE MOTHER:

- Breastfeed frequently and for longer at each feed.
- If the child is exclusively breastfed, give ORS or clean water in addition to breastmilk.
- If the child is not exclusively breastfed, give one or more of the following: ORS solution, foodbased fluids (such as soup, rice water, and yogurt drinks), or clean water.

It is especially important to give ORS at home when:

- the child has been treated with Plan B or Plan C during this visit.
- the child cannot return to a clinic if the diarrhoea gets worse.

⇒ TEACH THE MOTHER HOW TO MIX AND GIVE ORS. GIVE THE MOTHER 2 PACKETS OF ORS TO USE AT HOME.

⇒ SHOW THE MOTHER HOW MUCH FLUID TO GIVE IN ADDITION TO THE USUAL FLUID INTAKE:

- | | |
|-----------------|--------------------------------------|
| Up to 2 years | 50 to 100 ml after each loose stool |
| 2 years or more | 100 to 200 ml after each loose stool |

Tell the mother to:

- Give frequent small sips from a cup.
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue giving extra fluid until the diarrhoea stops.

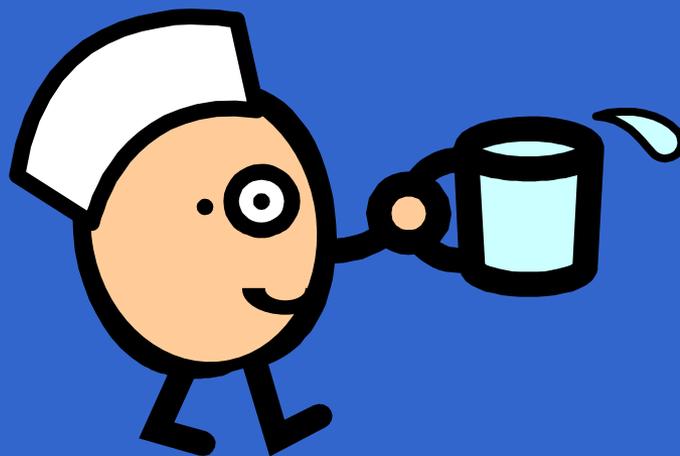
2. CONTINUE FEEDING

3. WHEN TO RETURN

} See Mother's Card (page 119)



Diarrhoea Treatment Plan B: Treat some dehydration with ORS



Give in clinic recommended amount of ORS over 4-hour period

➔ DETERMINE AMOUNT OF ORS TO GIVE DURING FIRST 4 HOURS.

AGE*	Up to 4 months	4 months up to 12 months	12 months up to 2 years	2 years up to 5 years
WEIGHT	< 6 kg	6–< 10 kg	10–< 12 kg	12–19 kg
In ml	200–400	400–700	700–900	900–1400

* Use the child's age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the child's weight (in kg) by 75.

- If the child wants more ORS than shown, give more.
- For infants under 6 months who are not breastfed, also give 100–200 ml clean water during this period.

➔ SHOW THE MOTHER HOW TO GIVE ORS SOLUTION

- Give frequent small sips from a cup.
- If the child vomits, wait 10 minutes. Then continue, but more slowly.
- Continue breastfeeding when ever the child wants.

➔ AFTER 4 HOURS:

- Reassess the child and classify the child for dehydration.
- Select the appropriate plan to continue treatment.
- Begin feeding the child in clinic.

➔ IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT:

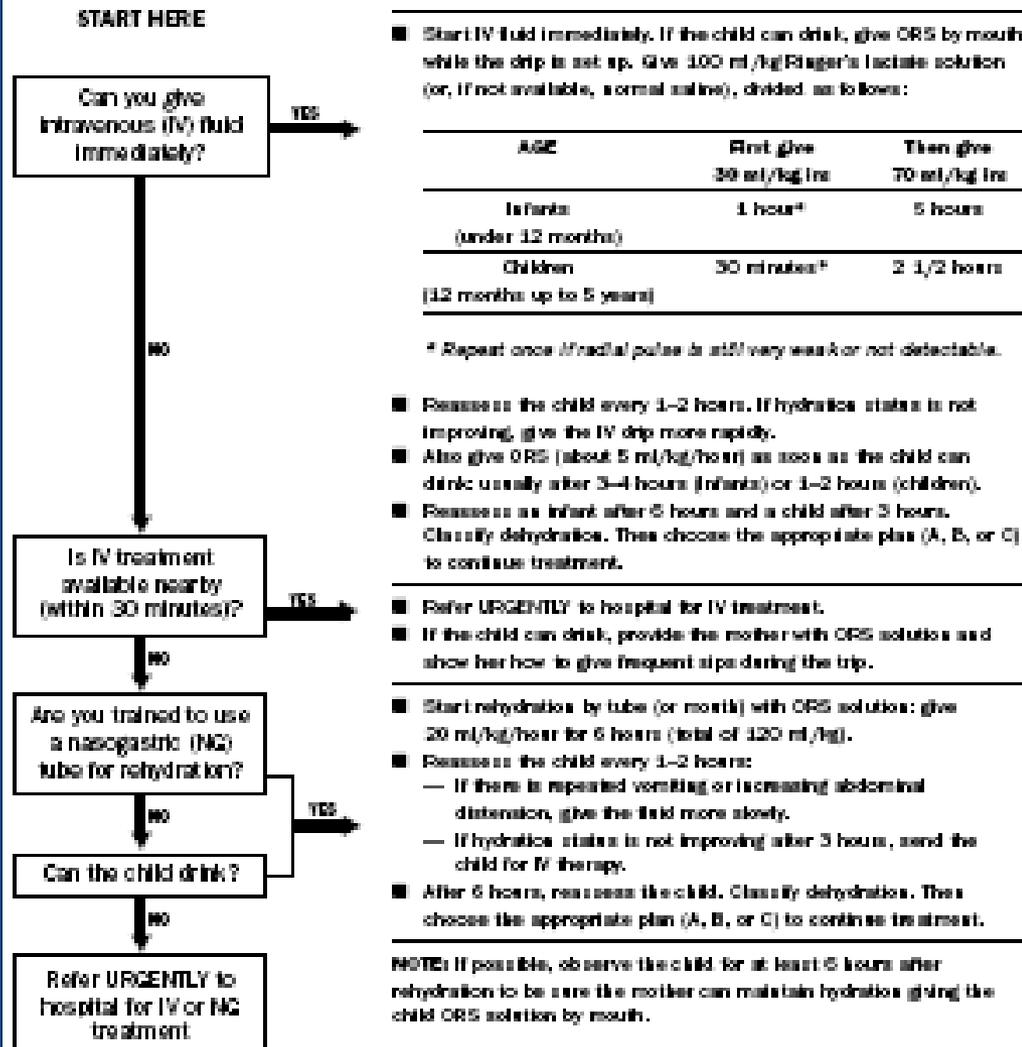
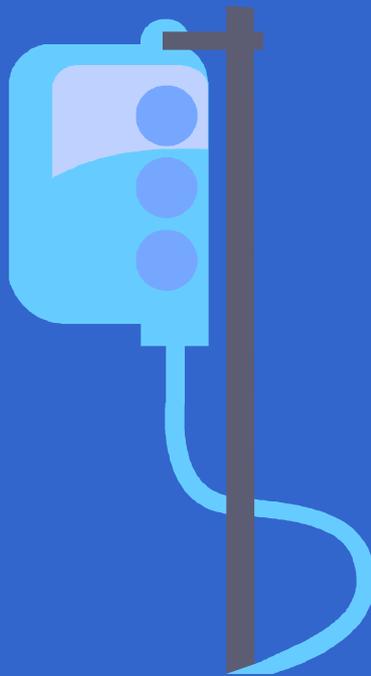
- Show her how to prepare ORS solution at home.
- Show her how much ORS to give to finish 4-hour treatment at home.
- Give her enough ORS packets to complete rehydration. Also give her 2 packets as recommended in Plan A.
- Explain the 3 Rules of Home Treatment:

1. GIVE EXTRA FLUID
2. CONTINUE FEEDING
3. WHEN TO RETURN

} See Diarrhoea Treatment Plan A (page 50)
and
Mother's Card (page 110)

Diarrhoea Treatment Plan C: Treat **severe** dehydration quickly

→ FOLLOW THE ARROWS. IF ANSWER IS "YES", GO ACROSS. IF "NO", GO DOWN.



UNICEF Responsibilities in Control of Diarrheal Diseases in Emergency Settings

- ➡ Equipment & funds for the production and distribution of materials to support public education and social mobilization
- ➡ Material & funds for the training of health workers, including production & distribution of local language materials
- ➡ Material for treatment of dehydration, e.g., ORS, NG tubes, jugs, measuring cups, etc to supply ORT corners, IV fluids
- ➡ Support for health information and logistics systems
- ➡ ...

