

PD-ABL-247

# **BASICS** **TRIP REPORT**

**Lessons from Arusha:  
Findings from the Field Test,  
February 20–March 18, 1995,  
of the WHO/UNICEF Course on  
Management of Childhood Illness**

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**Academy for Educational Development (AED)**

**John Snow, Inc. (JSI)**

**Management Sciences for Health (MSH)**

**1600 Wilson Boulevard, Suite 300; Arlington, VA, 22209; USA**



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**Bob Pond**

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Appendix A: List of Participants

Appendix B: Wall Charts

## ACRONYMS

ARI	Acute Respiratory Infection
BASICS	Basic Support for Institutionalizing Child Support Project
CDD	Control of Diarrheal Diseases
ICM	Integrated Case Management
IV	Intravenous
MCH	Maternal and Child Health
ORT	Oral Rehydration Therapy
RMA	Rural Medical Aides
SOW	Scope of Work
USAID	United States Agency for International Development
WHO	World Health Organization

## **Executive Summary**

From February 20 to March 18, 1995 WHO/CDR organized a field test in Arusha, Tanzania of the new course on the management of childhood illness. The course is designed to promote optimal outpatient management of sick children attending first-level health facilities. This report consists of two parts. Part one is a description of the training materials and the case management process they are designed to teach. Part two is a summary of the findings from the training in Arusha of 24 Tanzanian health workers.

The training materials for the participants include approximately 400 pages of text, two to three hours of video, and a booklet of color photographs. The course facilitators are provided with an additional 300 pages of facilitator guides. Forty to fifty percent of the course time is spent on hands-on clinical practice. The course itself is designed to take eleven days, but the facilitators for the Arusha field test were trained in nine days.

For the field test 12 facilitators were used to train 24 health workers, including eight medical assistants, eight rural medical aides (RMAs), and eight MCH aides. The medical assistants completed the course with ease. When provided with a modest amount of facilitation, the medical assistants demonstrated mastery of the written exercises and of the clinical skills. The RMAs, with more modest educations, were able to complete only 80 percent of the course and they struggled with the reading. They made major mistakes on roughly half of the written exercises, and frequently made mistakes during the clinical practice sessions. In spite of these problems, with active facilitation and frequent correction, the RMAs appeared to have mastered the core portions of the process for integrated management of the sick child. The MCH aides, the health workers at the field test with the least formal education, were able to complete only 60-70 percent of the course. To an even greater extent than the RMAs, they struggled with the reading; however, with heroic facilitation and frequent correction, by the end of the course these health workers appeared to have mastered the process of assessing and classifying sick children.

WHO/CDR will report in greater detail on the results of the field test after the analysis of the evaluations submitted by the facilitators and the participants.

The author draws six conclusions from the Arusha field test:

1. Primary health workers need to be trained in a systematic, integrated approach to managing sick children.
2. The technical challenge of developing simple integrated case management guidelines should not be underestimated.
3. Similar efforts to develop expert consensus must now be undertaken in each country that would introduce an integrated approach to the management of childhood illness.

4. A large percentage of health workers with the responsibility of treating sick children will not be able to master the current course in two weeks. Another, shorter version of the course should be prepared, or the course should be divided up into a series of two or more courses.
5. Beyond the need to shorten the course, it also seems necessary to use alternative teaching methods for health workers with modest formal educations. A significant number of the participants at the Arusha field test either did not read or did not comprehend or did not absorb the written text. Training of such participants depends upon the active interventions of well trained and qualified facilitators.
6. Some health workers will conclude that the lengthy case management process that is taught by the course is not practical unless it can be adapted to suit the organization of their health facilities. The organization of the health facilities should be investigated and taken into consideration during the process of adapting the course to each country. During training the process of optimally adapting the case management process to suit a particular health facility should be discussed with the participants.

## **Introduction**

From February 20 to March 18, 1995 WHO/CDR organized a field test in Arusha, Tanzania of a course on the management of childhood illness. This course, which has been developed over the last two to three years, represents the first "piece of the puzzle" in efforts to promote integrated management of the sick child. The course is designed to promote the optimal outpatient management (including referral, where appropriate) of sick children attending "first-level health facilities." First-level health facilities include dispensaries, health stations, health posts, health centers, and outpatient departments of hospitals.

The field test in Arusha consisted of a nine day facilitator training followed by an eleven day training of 24 Tanzanian health workers from health centers and dispensaries near to Arusha. The qualifications, prior education, and participants SOWs are discussed below.

BASICS was represented at the facilitator training by two persons: Paulre Desrosiers and Bob Pond. A full list of those attending the facilitator training is provided as Appendix A. A more complete report on the facilitator training has been prepared by Paulre Desrosiers. This report, while it includes the reactions of persons who attended only the facilitator training, will focus on the findings from the training of the 24 health workers.

## **Training Materials and Methods**

The training materials for the course were prepared by ACT, International of Atlanta, Georgia with direction from WHO/CDR and its partners. The training materials for the participants include approximately 400 pages of text with 41 written exercises, three group discussions, nine role plays, two to three hours of video, and a booklet of 69 color photographs. Forty to fifty percent of course time is spent on hands-on clinical practice, both in outpatient settings, and in the children's ward of a regional hospital (to practice identification of rare severe signs). The course facilitators were provided with an additional 300 pages of facilitator guides.

The text of the training materials for the participants is divided into six modules:

- Assess and Classify the Sick Child Age 2 Months up to 5 Years
- Identify Treatment
- Treat the Child
- Counsel the Mother
- Management of the Sick Young Infant Age 1 Week up to 2 Months
- Follow Up

## **The Integrated Case Management Protocol**

The clinical protocol for the management of childhood illness is summarized on four wall charts. All of the sections of these wall charts are included in a 46 page charts booklet<sup>1</sup>. The steps taught in the *Assess and Classify* and the *Identify Treatment* modules are summarized on the first wall chart and on the recording form which appears on page 5 of this report. This is the form that the health worker is taught to complete for each sick child who is managed. The recording form on page 5 is only a skeleton of the complete form used by the health worker. The complete form appears as Appendix B. The health worker is taught to ask the child's caretaker a series of questions and to check the child for various signs.

- What is the child's problem?
- Check the child for danger signs.
- Does the child have cough or difficult breathing?

If the answer to the last question is "No," then the health worker asks about other main symptoms

- Does the child have diarrhea?
- Does the child have fever?
- Does the child have an ear problem?

If the caretaker answers "Yes," the child does have one of these main symptoms, then the health worker asks additional questions and examines the child for a very limited number of physical signs related to the main symptom.

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<sup>1</sup>This charts booklet is the single most comprehensive and easily reproduced summary of the sick child case management protocol.

## MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Ask -- What is the child's problem?

ASSESS	CLASSIFY
<b>CHECK THE CHILD FOR DANGER SIGNS</b>	Danger sign present: Yes__ No__
DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING? <span style="float: right;">Yes__ No__</span>	
DOES THE CHILD HAVE DIARRHOEA? <span style="float: right;">Yes__ No__</span>	
DOES THE CHILD HAVE FEVER? <span style="float: right;">Yes__ No__</span>	
Look for signs suggesting MEASLES:	
If the child has measles:	
DOES THE CHILD HAVE AN EAR PROBLEM? <span style="float: right;">Yes__ No__</span>	
<b>THEN CHECK THE CHILD FOR MALNUTRITION AND ANAEMIA:</b>	
<b>CHECK THE CHILD'S IMMUNIZATION / VITAMIN A STATUS:</b>	

**ASSESS OTHER PROBLEMS:**

For example, shown on pages 7 and 8 are the sections of the wall charts related to the assessment, classification, and identification of treatment for cough or difficulty breathing. As shown on this section of the chart, the child's signs and symptoms related to cough or difficulty breathing are used to classify him or her into one of three different classifications. On the wall chart, the top row of the table on page 8 is colored pink to signify that this is a classification (SEVERE PNEUMONIA OR VERY SEVERE DISEASE) requiring urgent referral to a hospital. The middle row of the table on page 8 is colored yellow on the wall chart to signify that this is a classification (PNEUMONIA) requiring a specific medical treatment. For pneumonia, the first dose of an antibiotic is administered in the health facility and the caretaker is taught how to administer an oral antibiotic at home. The bottom row of the table on page 8 is colored green on the wall chart signifying that this is a classification (NO PNEUMONIA: COUGH OR COLD) requiring no specific medical treatment; the mother is taught how to manage the condition at home using simple home therapies.

After the main symptoms have been assessed and classified, the health worker assesses the sick child for malnutrition and anemia.

Finally, the health worker reviews the home-based immunization record of the child to determine whether he or she is due for any immunizations.

As shown on page 8, the treatment for each classification is identified on the first wall chart. The specifics of how to administer the treatment are taught in the module *Treat the Child*. Part of this module teaches health workers how to read tables, such as the one shown on page 9, to determine the correct dose of medicine for the child's age. As shown on page 10, the *Treat the Child* module also trains the health worker how to teach the mother to administer treatments at home, and how to ask questions to determine whether the mother has understood the instructions.

# ASSESS

## THEN ASK ABOUT MAIN SYMPTOMS:

Does the child have cough or difficult breathing?

### IF YES, ASK:

- For how long?

### LOOK, LISTEN, FEEL:

- Count the breaths in one minute.
- Look for chest indrawing.
- Look and listen for stridor.

CHILD MUST  
BE CALM

*Classify*  
**COUGH or**  
**DIFFICULT BREATHING**

# CLASSIFY

# IDENTIFY TREATMENT

THE ILLNESS USING ALL  
BOXES THAT MATCH THE CHILD'S  
SYMPTOMS OR PROBLEMS:

SIGNS:

CLASSIFY AS:

TREATMENT:

<ul style="list-style-type: none"><li>• Danger signs,</li><li>• Chest indrawing, or</li><li>• Stridor in calm child.</li></ul>	<b>SEVERE PNEUMONIA OR VERY SEVERE DISEASE</b>	<ul style="list-style-type: none"><li>▶ Give first dose of an appropriate antibiotic.</li><li>▶ Refer <b>URGENTLY</b> to hospital.*</li></ul>
<ul style="list-style-type: none"><li>• Fast breathing (50 per minute or more if child 2 months up to 12 months; 40 per minute or more if child 12 months up to 5 years), and</li><li>• No chest indrawing.</li></ul>	<b>PNEUMONIA</b>	<ul style="list-style-type: none"><li>▶ Give an appropriate antibiotic for 5 days.</li><li>▶ Soothe the throat and relieve the cough with a safe remedy.</li><li>▶ Advise mother to return with child in 2 days for reassessment, or earlier if the child is getting worse.</li></ul>
<ul style="list-style-type: none"><li>• No chest indrawing, and</li><li>• No fast breathing (Less than 50 per minute if child 2 months up to 12 months; Less than 40 per minute if child 12 months up to 5 years).</li></ul>	<b>NO PNEUMONIA: COUGH OR COLD</b>	<ul style="list-style-type: none"><li>▶ If coughing more than 30 days, refer for assessment.</li><li>▶ Soothe the throat and relieve the cough with a safe remedy.</li></ul>

\* If referral is not possible, manage the child as described in *Management of Childhood Illness: Treat the Child, "Annex A, Where Referral is Not Possible,"* and WHO guidelines for inpatient care.

## ▶ Give an Oral Antimalarial

First-line antimalarial: chloroquine

Second-line antimalarial: sulfadoxine - pyrimethamine

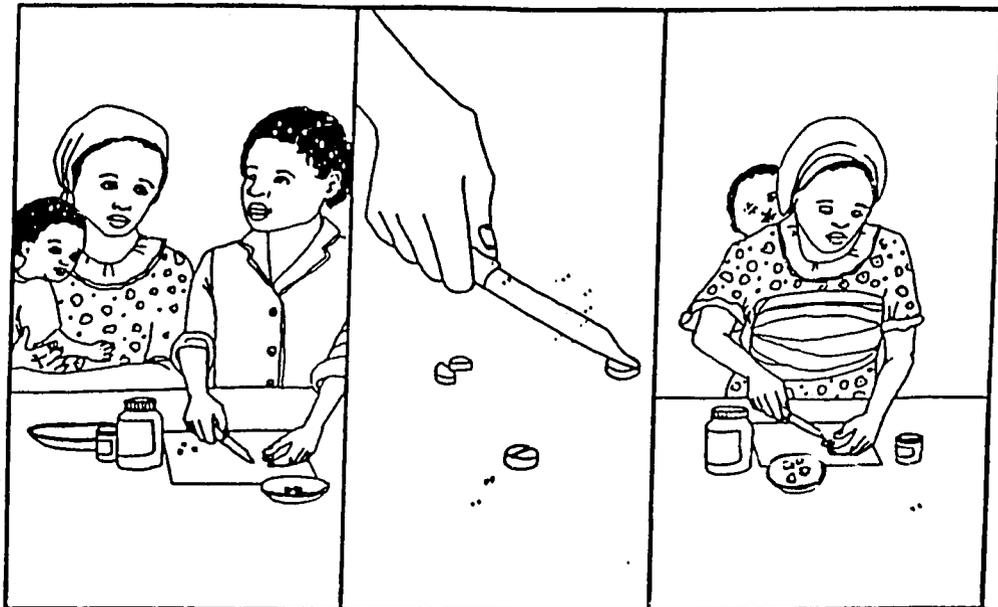
### ▶ IF CHLOROQUINE:

- Explain to the mother that she should watch her child carefully for 30 minutes after giving a dose of chloroquine. If the child vomits within 30 minutes, she should repeat the dose and return to the clinic for additional tablets.
- Explain that itching is a possible side effect of the drug, but is not dangerous.

### ▶ IF SULFADOXINE + PYRIMETHAMINE: Give single dose in clinic.

CHLOROQUINE ▶ Give for three days							SULFADOXINE + PYRIMETHAMINE ▶ Give single dose in clinic
AGE or WEIGHT	TABLET (150 mg base)			SYRUP (50 mg base per 5 ml)			TABLET (500 mg sulfadoxine + 25 mg pyrimethamine)
	DAY 1	DAY 2	DAY 3	DAY 1	DAY 2	DAY 3	
2 months up to 12 months (4 - < 10 kg)	1/2	1/2	1/2	7.5 ml	7.5 ml	5.0 ml	1/2
12 months up to 3 years (10 - < 14 kg)	1	1	1/2	15.0 ml	15.0 ml	5.0 ml	1
3 years up to 5 years (14 - 19 kg)	1 1/2	1 1/2	1/2				1

# COMMUNICATION SKILLS



Much of the module entitled, *Counsel the Mother*, emphasizes how to assess the child's feeding and provide nutritional counseling. The health worker is taught to assess the feeding of all children less than two years old, and all older children whose weight for age is less than two standard deviations below the mean. As shown on page 12, the health worker is trained to restrict the feeding assessment to a set of roughly ten questions. The health worker is taught to compare the caretakers' answers to the ideal feeding practices shown in the table on page 13, and counsel the caretaker accordingly.

The *Counsel the Mother* module also instructs the health worker to advise the caretaker about when it would be necessary to return immediately (e.g., child is unable to drink), and when to return for routine follow-up care.

The module on *Management of the Sick Young Infant Age 1 Week up to 2 Months* trains the health worker to assess and classify using the recording form shown on page 14. Although this form is superficially similar to the recording form for an older child, the process has two important differences. First, much of the management of a young infant involves screening him or her for a long list of danger signs (see page 15) requiring urgent referral to the hospital. There are relatively few conditions of young infants for which health workers are trained to treat outside a hospital.

The second major component of the *Young Infant* module is the instruction provided on assessment and counseling on breastfeeding (see page 16)<sup>2</sup>.

Finally, for those sick children whose mothers follow the health worker's advice and bring the child back for a return visit, the *Follow Up* module trains the health worker on how to provide follow-up care.

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<sup>2</sup>The health worker is taught to assess the breastfeeding of any young infant who is low weight for age, has (by mother's report) difficulty feeding, feeds less than six times per day, or is taking any other foods or drinks besides breastmilk and has no indications to refer urgently to hospital.



## FOOD

### ▶ ***Assess the Child's Feeding***

Ask questions about the child's usual feeding and feeding during illness. Compare the mother's answers to the *Feeding Recommendations* for the child's age in the box below.

**ASK -**

- ▶ Do you breastfeed your child?
  - How many times a day?
  - Do you also breastfeed during the night?
  
- ▶ Does the child take any other food or fluids?
  - What food or fluids?
  - How many times a day?
  - What do you use to feed the child?
  - If low weight for age: How large are servings? Does the child receive his own serving? Who feeds the child and how?
  
- ▶ During this illness, has the child's feeding changed? If so, how?

## ► Feeding Recommendations During Sickness and Health

<p><b>Up to 4 Months of Age</b></p>  <ul style="list-style-type: none"> <li>• Breastfeed as often as the child wants, day and night – at least 6 times a day.</li> <li>• Do not give other foods or fluids.</li> </ul>	<p><b>4 Months up to 6 Months</b></p>  <ul style="list-style-type: none"> <li>• Breastfeed as often as the child wants, day and night – at least 6 times a day.</li> <li>• If the child:           <ul style="list-style-type: none"> <li>- Is not gaining weight adequately,</li> <li>- appears hungry after breastfeeding, or</li> <li>- reaches for food</li> </ul> </li> </ul> <p>add complementary foods (listed under 6 months up to 12 months). Give these foods 1 or 2 times daily after breastfeeding.</p>	<p><b>6 Months up to 12 Months</b></p>  <ul style="list-style-type: none"> <li>• Breastfeed as often as the child wants.</li> <li>• Give adequate servings of thick, enriched uji or kideri, milk, or mashed foods such as beans, ndizi za kupika, rice, potato, ugali mixed with relish, pawpaw, banana or avocado.</li> <li>• Add a spoonful of extra fats to the child's food.</li> <li>• Feed at least 3 times a day if breastfed or 5 times a day if not breastfed.</li> </ul> <p>                First, breastmilk    Then, semisolids    Last, other fluids         </p> 	<p><b>12 Months up to 2 Years</b></p>  <ul style="list-style-type: none"> <li>• Breastfeed as often as the child wants.</li> <li>• Give mixed foods such as ugali with relish, ndizi za kupika, or other family foods.</li> <li>• Between family meals, give thick enriched uji or kideri, cow's milk and fruits, such as orange, pawpaw, banana, avocado.</li> <li>• Add a spoonful of extra fats to the child's food.</li> <li>• Feed 5 times a day.</li> </ul> <p>                First, semisolids    Then, breastmilk    Last, other fluids         </p> 	<p><b>2 Years and Older</b></p>  <ul style="list-style-type: none"> <li>• Give mixed foods such as ugali with relish, ndizi za kupika, or other family foods 3 times a day.</li> <li>• Also, twice daily, between family meals, give nutritious foods such as: thick enriched uji or kideri, cow's milk and fruits, such as orange, pawpaw, banana, avocado.</li> </ul> 
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\* A good daily diet should be adequate in quantity and include an energy-rich food (for example, thick cereal with added oil); meat, fish, eggs, or pulses; and fruits and vegetables.

### <sup>1</sup> FOR CHILD WITH PERSISTENT DIARRHOEA

Modify milk feeds as follows:

- If still breastfeeding, give more frequent, longer breastfeeds, day and night.
- If taking other milk, replace with increased breastfeeding,  
OR replace with fermented milk products, such as yoghurt  
OR replace half the milk with nutrient-rich semisolid food.

For other foods, follow feeding advice appropriate for the age group.

**ASSESS**

**CLASSIFY**

**CHECK THE YOUNG INFANT FOR POSSIBLE BACTERIAL INFECTION:**

**DOES THE YOUNG INFANT HAVE DIARRHOEA?**

Yes \_\_\_ No \_\_\_

**THEN CHECK THE YOUNG INFANT FOR LOW WEIGHT AND ASSESS FEEDING:**

**ASSESS BREASTFEEDING:**

**CHECK THE YOUNG INFANT'S  
IMMUNIZATION STATUS:**

**ASSESS OTHER PROBLEMS:**

**SIGNS:**

- Convulsions,
- Fast breathing (60 breaths per minute or more),
- Severe chest indrawing,
- Nasal flaring,
- Grunting,
- Difficult to wake,
- Infant cannot be calmed within an hour,
- Umbilical redness extending to the skin,
- Fever (more than 37.5°C\*) or low body temperature (less than 35.5°C\*),
- Bulging fontanelle,
- Less than normal movement, or
- Weak or absent cry.

**CLASSIFY AS:**

**POSSIBLE SERIOUS  
BACTERIAL  
INFECTION**

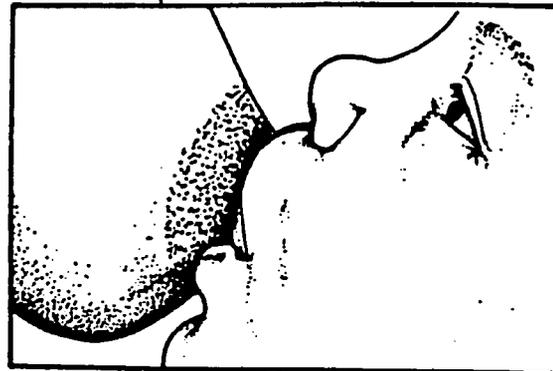
**TREATMENT:**

- ▶ Give first dose of intramuscular antibiotics.
- ▶ Advise mother how to keep the infant warm on the way to the hospital.
- ▶ Breastfeed the infant if possible. If not possible, give a small amount of expressed breastmilk, breastmilk substitute, or sugar water by cup or spoon before departure.
- ▶ Refer **URGENTLY** to hospital.\*\*

*A baby well attached  
to his mother's breast*



*A baby poorly attached  
to his mother's breast*



## **The Outcome of Health Worker Training in Arusha**

The remainder of this report summarizes the author's major findings from the Arusha training of 24 local health workers. WHO/CDR will report in greater detail on the results of the field test after the evaluations submitted by the facilitators and the participants are analyzed. There will be a meeting in Geneva on April 18-20, 1995 to discuss the findings from the field test. An in-depth report on the field test will be available from WHO/CDR following this meeting.

The Arusha field test of health worker training involved 12 facilitators and 24 health workers. All of the facilitators were physicians: four Tanzanians, seven WHO staff, one BASICS staff member, and one staff member of the University of Colorado.

The 24 Tanzanian health workers included eight medical assistants, eight rural medical aides (RMAs), and eight MCH aides. The facilitators and the health workers were divided into four small groups; each group with six participants and two or three facilitators.

In Tanzania, medical assistants are the senior clinicians at health centers. Their education includes primary school, four or more years of secondary school, and a three year medical assistant course. Few of the medical assistants trained in the Arusha *Management of Childhood Illness* course had prior in-service CDD training. None of them had prior in-service ARI training. This group of health workers completed the course with ease. When provided with a modest amount of facilitation, the medical assistants demonstrated mastery of the written exercises and demonstrated mastery of the clinical skills including counseling.

Rural medical aides are the senior clinicians at rural dispensaries in Tanzania. Their education consists of primary school, two or more years of secondary school, and a three year RMA course. During the field test in Arusha, they were able to complete only 80 percent of the course (excluding the *Management of the Young Infant* and *Follow Up* modules). They struggled with the reading; some appeared to skip the reading and go directly to the written exercises. They made major mistakes on roughly half of the written exercises, and frequently made mistakes during the clinical practice sessions. In spite of these problems, with active facilitation and frequent correction, the RMAs mastered the process of assessing, classifying, identifying treatment, and treatment. Even by end of the course, however, the nutritional counseling provided by some of the RMAs was awkward and hesitant.

The routine functions of MCH aides include growth monitoring/promotion and immunization. On occasion, they also are called upon to treat sick children. Their education typically consists of primary school and a MCH aide course. During the field test, they completed 60-70 percent of the course (excluding *Treat the Child*, *Management of the Young Infant*, and *Follow Up* modules). They struggled with the reading ("some spent 10 minutes on a single paragraph") and much of it had to be translated into Kiswahili. Even when the text was translated into Kiswahili, the MCH aides struggled with logical statements (e.g., "if ... then"). They made major mistakes on most of the written exercises (except those on immunization and growth monitoring), and

frequently made mistakes during the clinical practice sessions (except those on nutritional counseling). In spite of these problems, however, with heroic facilitation and frequent correction, these health workers mastered the process of assessing and classifying and appeared to do well with nutritional counseling.

### **Six Lessons from Arusha**

**1. Primary health workers need a systematic, integrated approach to managing sick children.**

To date, pre-service training has failed to emphasize the simple, affordable, and effective case management practices which could prevent most child deaths.

The minority of primary health workers who in the last fifteen years received adequate in-service training in management of childhood diarrhea lack a systematic, integrated approach to assessing and treating all of the major problems of the sick child. Thus, health workers trained in CDD are overlooking the majority of childhood pneumonia, malnutrition, and anemia. For lack of systematic guidelines, health workers also frequently adopt wasteful and irrational drug prescribing practices.

**2. The technical challenge of developing simple integrated case management guidelines should not be underestimated.**

A large portion of the energy devoted to the sick child initiative in the last two and a half years has gone towards resolving various bio-medical issues such as how best to diagnose anemia, how to reduce the over diagnosis of malaria, how to screen for clinically significant malnutrition, and how to screen young infants for possible serious bacterial infection. WHO/CDR has done a commendable job of developing consensus on these bio-medical issues among a variety of experts within and outside of WHO.

**3. Similar efforts to develop expert consensus must be undertaken in each country that would introduce an integrated approach to management of childhood illness.**

It is clear from the Arusha experience that the process of adapting the integrated algorithm to local policy and practice will be neither quick nor easy. For example, the Tanzanian facilitators at the field test noted that many clinicians in the country would object to use of oral cotrimoxazole to treat moderate pneumonia. Although national ARI program guidelines recommend such treatment, the guidelines have never been formally approved or disseminated. As another example, several of the Tanzanian facilitators including a malaria program manager and a leading professor of pediatrics, felt strongly that all children with signs of pneumonia and a fever should be treated with both an antibiotic and an antimalarial. For these Tanzanian

professionals, the WHO algorithm to treat both pneumonia and malaria with cotrimoxazole alone (i.e., without a conventional antimalarial) conflicted with national malaria policy.

At the field test in Arusha, representatives of WHO/CDR spoke frankly of the need for a "longer and deeper adaptation process" lasting six months or more.

The *Management of Childhood Illness* course attempts to improve the standards of care provided by front-line health workers. As such, the introduction of the course may involve a change in the role and the professional standing of certain primary health workers. In Tanzania, this would be true of efforts to train MCH aides in the management of childhood illness. The experience with the implementation of ARI programs is relevant for those seeking to introduce integrated case management. As noted in the USAID document *Guidelines for Acute Respiratory Infection Control* (Office of Health/Bureau for Research and Development, May, 1992):

Private physicians, as well as senior health administrators, are often quite uncomfortable with public health programs that give nurses and other front-line health workers responsibility for diagnosis and treatment of as serious a disease as pneumonia. [Thus]...one of the initial steps in planning the implementation of a new ARI [or ICM] program is to identify key national opinion-leaders from pediatrics, pharmacy, the ministry of health, the leading private voluntary organizations, and other relevant professional areas and to convene them for an introductory explanation and discussion. The new program will have to be 'sold' to them, through presentation of the size of the problem and the validity and substantial experience with the WHO Case Management protocols. Wherever possible this should be illustrated using local data and experience, even if it is not perfect epidemiologically. The help of this group is sought in adapting the program to local conditions. A difficult challenge will be to take the group's advice, where possible, (and therefore encourage their 'buying in' to the program) while retaining the essential characteristics of a cost-effective program.

**4. A large percentage of health workers with the responsibility for treating sick children will not be able to master the current course in two weeks.**

It is unlikely that there are any faster ways to teach the same material.

Extending the course into a third week would be counter-productive. Even if health workers could stay away from their posts for such a long period of time, they would probably not be able to concentrate on the course.

Thus, it appears that for a large percentage of health workers another, shorter version of the course should be prepared, or the course should be divided up into a series of two or more courses.

### **Which sections of the course should be shortened or shifted to a follow-on course?**

Assessing, classifying, and identification of treatment form the core of the course and of the systematic, integrated approach to the management of childhood illness. Even the MCH aides were able to master this process by the eighth day of the course. Aside from minor changes such as the simplification of wording in the dehydration section or the elimination, for many African countries, of the section on low malaria risk, there is little to be gained by reducing the time devoted to these sections.

Of the time spent on the *Treat the Child* module, at least half a day goes towards teaching participants how to draw up a dose of injectable medicine, how to dispense oral medications, and how to counsel mothers on the use of medicines at home. During clinical practice, the drug dispensing process actually interferes with interaction between the participant and the mother for about ten minutes. It is cumbersome because the clinical practice sites typically lack adequate seats and desks. In any case, these are functions which the majority of the participants at the field test in Arusha usually assign to other workers at their health facilities. (Isn't this the case in the majority of first-level health facilities throughout the world?)

### **Would it be appropriate to shift instruction on dispensing of drugs and counseling on home use of drugs to a follow-on course on drug management or on organization of the health facility?**

Several of those present at the facilitator training remarked that the instruction on nutritional counseling in the *Counsel the Mother* module was superficial. One of the participants at the facilitator training commented that the counseling that is taught is "too prescriptive and not sufficiently interactive." The participant is not trained to explore the practicality of the advice they are taught to offer, largely because there is not time to teach a more extensive approach to nutritional counseling.

Several participants at the facilitator training noted that the sections on breastfeeding assessment and counseling were also superficial. "There is no real depth to these sections. Is it worth it?" asked one participant. "Maybe we are fooling ourselves [that such brief instruction on these topics will be effective]." noted another participant. Dr. Felicity Savage remarked that the current course does not attempt to teach breastfeeding counseling. "Rather we are teaching relevant bits of breastfeeding management: what every health worker needs to know."

### **If the core course taught participants to promote active feeding during illness and convalescence, would it be appropriate to shift other instruction on feeding counseling to a follow-on course?**

One participant at the facilitator training commented that the module on the *Management of the Young Infant 1 Week up to 2 Months* adds an extreme layer of complexity at the end of a long

course." Another participant agreed and suggested that perhaps this material should be optional and included only in areas where quality referral services are accessible.

Participants need instruction in how to care for children who return for follow-up visits. In fact, the *Follow Up* module may already be too abbreviated. It is inappropriate to omit or under emphasize instruction on follow-up care when training in management of childhood illness. By default, however, since *Follow Up* is the last module, it was omitted during the pre-test of the course in Gondar, Ethiopia, and from the training of most of the participants in Arusha.

**5. Beyond the need to shorten the course, it also seems necessary to use alternative teaching methods for health workers with modest formal educations.**

From their experience training health workers in Arusha, facilitators made various comments to this effect:

"The participants are not used to this style of learning. They are not used to a course that involves so much individual reading."

"Some of the participants have read more in these eleven days than they have in the past several years."

"The MCH aides have difficulty visualizing in their minds situations described in writing, even when it is translated into Kiswahili."

"Several of the participants [RMAs as well as MCH aides] have problems with "if ... then" statements and other forms of logic."

"The MCH aides don't comprehend well hypothetical questions such as, 'What if the child was more than 12 months old? What breathing rate would be fast for such a child?' You must present a whole new child for them to be able to visualize him."

"Drills may be more important than the text."

"To teach the MCH aides, maybe we should skip the reading." [laughter]

There is a clear need for alternatives or supplements to the reading beyond the clinical practice sessions. A significant number of the MCH aides and RMAs either did not read or did not comprehend or did not absorb the written text. Facilitators who taught in Kiswahili felt that difficulty with English language was only part of the problem. In any case, for many health workers elsewhere in the world, literacy in vernacular is no better than literacy in English, French, or Spanish.

The teaching methods need to be adapted to the participants' level of education. This will mean that even in a single country, there will often be a need for more than one version of the course in order to train different cadres of health workers. This issue should be examined carefully in each country during the planning for the implementation/adaptation of the course. As a corollary to this, the participants for any given course should be reasonably uniform in educational background.

Until now, those designing the course have expressed a reluctance to use teaching methods such as lectures or demonstrations which depend upon the intervention of a quality facilitator. Experience with past courses has shown that the quality of facilitators can decline considerably as the course moves down the training cascade.

In Arusha, teaching the RMAs and the MCH aides required very active facilitation using drills and other teaching methods developed *ad hoc* by the numerous, well paid, enthusiastic, determined, and experienced facilitators. For example, facilitators had to instruct participants on how to move through the wall chart or chart booklet in a standardized, systematic way; how to find certain information on the chart or in the chart booklet; and how to complete the recording form.

Many of these alternative teaching methods are not well documented in the facilitator guides. The facilitator guides clearly need further development. It is not very helpful, however, for those reviewing the course to remark that the teaching methods need to be improved. This is well recognized and frankly acknowledged by those who have developed the training materials. What is needed now are specific, practical suggestions for improved training approaches.

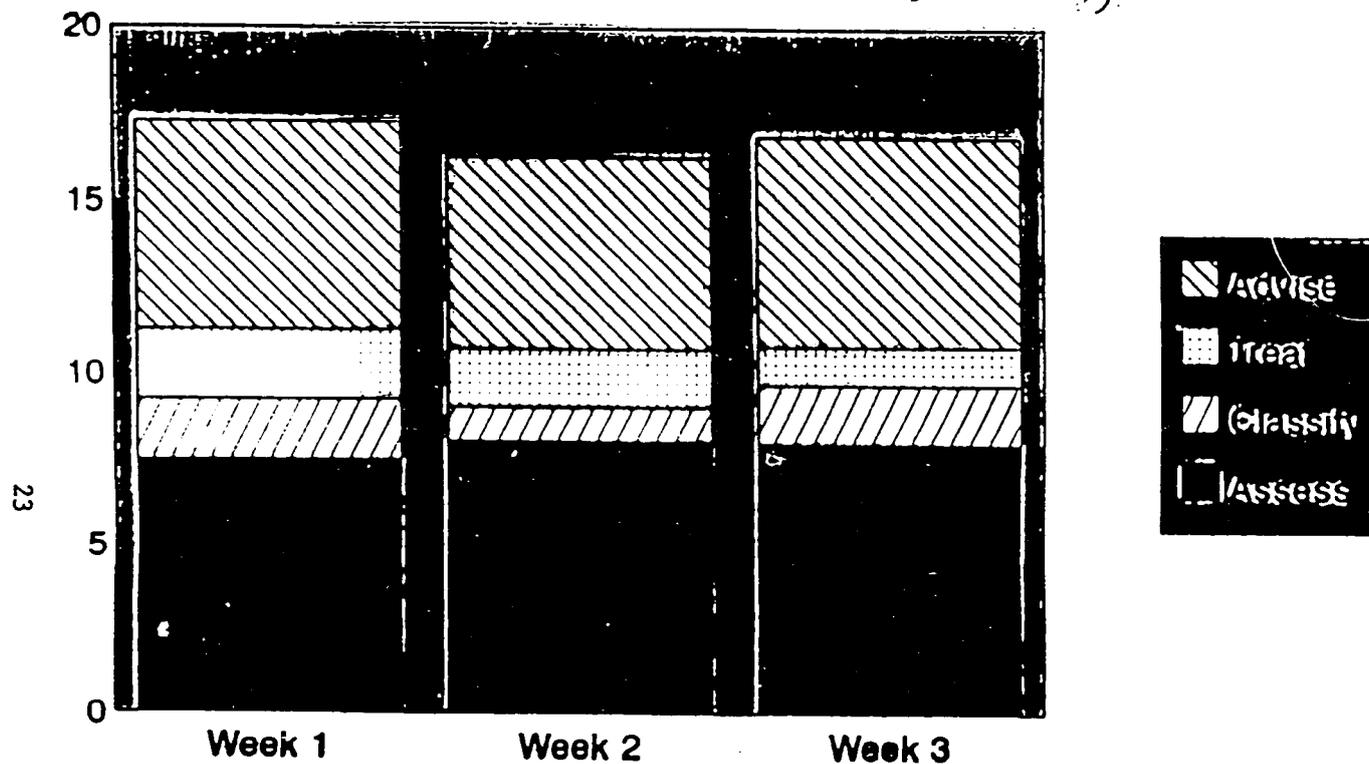
Even after further development of the facilitator guides, it may remain essential that the quality of facilitators used for the *Management of Childhood Illness* course be kept at a higher level than has been the case for past CDD training. More so than with previous courses, the ratio of facilitator to participant may need to be kept at a ratio of 1:3, or less.

**6. Will health workers sustain the integrated case management process when they return to their health facilities?**

Experience in Arusha confirmed the findings from Gondar, Ethiopia that the integrated case management process is quite time consuming, shown by the data presented on the following page from Eric Simoes who observed health workers for three weeks after the Gondar, Ethiopia course. Health workers spent an average of eight minutes on assessment and classification and an average of 18 minutes to complete the entire process. During the Arusha field test, several of the participants commented that it would not be practical for them to spend this long with each sick child.

# Time for Sick Child Case Management

(average time in minutes per child to assess, classify, treat & counsel)



Weeks after the integrated case management training in Gondar

all - median

In many health facilities, some of the functions taught during the course might best be carried out by auxiliary staff. Examples include the following:

- Triage to identify sick children who warrant full assessment.
- Weighing and plotting the weight of children.
- Measuring the temperature of children with a history of fever.
- Drug dispensing and counseling of mothers on home treatment, including home care for diarrhea or local infections.
- Immunizations.
- Injections and IV therapy.
- Nutrition/breastfeeding assessment and counseling.
- Counseling mothers in the ORT corner.
- Counseling mothers on when to return.
- Record filing and retrieval.

Without a better understanding of how a health facility is organized, it is not possible to predict whether the integrated case management process can be adapted to make it practical for that health facility. The optimal adaptation of the process to a given facility requires knowledge of factors such as clinic utilization, staffing levels, training and expertise of various staff, current SOW of various staff, staff motivation, hours of operation, space, seating, noise levels, lighting, and (last but not least) drugs and supplies.

These factors should be investigated during the adaptation process and discussed with each individual participant as part of the course. Dr. Abate of USAID/Ethiopia suggested that the facilitators should discuss with participants various simple and practical adjustments to clinic organization that might make implementation of the protocol feasible. Given that the course is already too long, it may be appropriate to teach reorganization of the health facility in a separate course. This might be added to the drug management course that has already been developed. As with the drug management course, it would be ideal if the facilitator could visit the participants' health facility after the course to help the participants institute appropriate changes in clinic organization.

The Arusha field test confirmed the finding from the Gondar pre-test that the recording form is an indispensable crutch for guiding health workers during the assessment and classification of sick children. Health workers should be provided with erasable plastic coated copies of this job aid.

There is a pressing need for studies that follow the case management practices of health workers after integrated case management training. Such studies should attempt to unobtrusively monitor the intermediate term impact of this training on health worker performance. Until such studies have documented that health workers are willing and able to implement the integrated case management process on a sustained basis, there will be little basis for judging the practicality of the present protocol.

## **Afterward**

In light of various findings from the Arusha field test it is appropriate to note several comments made by Mr. Bob Hogan of WHO/CDR during the facilitator training, prior to the health worker training. Mr. Hogan remarked that perhaps the current version of the course represents too enormous a leap for some countries. Maybe the process of adaptation should lead to courses that vary tremendously from one country to another. Perhaps, Mr. Hogan suggested, as much as 70 percent of the course should change as a result of the adaptation process.

Mr. Hogan and Dr. Jim Tulloch (WHO/CDR) appealed to those present in Arusha and to the organizations that they represented, to review the training materials and methods and to share with the course designers suggestions on alternative ways in which the course content might be conveyed in something other than its current form.

## **APPENDICES**

**APPENDIX A**

**MAILING LIST**

1. Patricia Whitesell  
ACT International  
57 Executive Park Suite 380  
Atlanta, GA 30329  
USA
  
2. Dr. Raimos M.S. Olomi  
Kilimanjaro Christian Medical Centre (KCMC)  
P.O. Box 3010  
Moshi  
Tanzania
  
3. Dr. Mabel Alli  
WHO CDD/ARI Regional Officer for East Africa  
P.O. Box 9292  
Dar es Salaam  
Tanzania
  
4. Dr. Godlove Ernest Kavavila  
Arusha Regional Hospital  
P.O. Box 3092  
Arusha  
Tanzania Tel. 057-3351, 057-2212
  
5. Dr. S.M. Egwaga  
Dept. of Prevention of Diseases  
Ministry of Health  
P.O. Box 9083  
Dar es Salaam  
Tanzania
  
6. Dr. Vijay Kumar  
M.O. ARI, WHO  
South East Asia Regional Office  
Indraprastha Estate  
New Delhi  
India  
Home: 1 Babar Road, New Delhi India

7. Prof. Abel Msengi  
Department of Paediatrics & Children  
Muhimbili University College of Health Sciences  
P.O. Box 65001  
Dar es Salaam  
Tanzania
8. Dr. Charlote Brun  
APO CDD/ARI  
WHO  
P.O. Box 9292  
Dar es Salaam - Tanzania
9. Dr. Bob Pond  
BASICS Project  
1600 Wilson Blvd  
Arlington, VA  
USA
10. Dr. Andrea Bosman  
WHO - CDT/MAL  
1211 - Geneva  
Switzerland
11. Eric Simoes  
Dept. of Pediatrics, Div. of Infections Diseases  
Box C - 227, Univ. of Colorado Health Sciences Centre  
4200 E 9th Avenue  
Denver CO 80262  
USA
12. Dr. Sandy Gove  
WHO/CDR  
CH 1211  
Geneva, Switzerland
13. Dr. Ivan Lejnev  
CDR/HQ  
20, Avenue Appia  
CH-1211, Geneva 27  
Switzerland

LIST OF PARTICIPANTS, QUALIFICATION AND ADDRESS

<u>NAME</u>	<u>QUALIFICATION</u>	<u>ADDRESS</u>
1. Mgaya J. Msangi	Clinical Officer	District Hospital P.O. Box 85 Babati
2. Jonathan Mollel	Clinical Officer	Mt. Meru Hospital P.O. Box 3092 Arusha
3. Mr. H. J. Ndossi	Clinical Officer	Mt. Meru Hospital P.O. Box 3092 Arusha
4. Mr. Ally S. Mgonja	Clinical Officer	Mt. Meru Hospital P.O. Box 3092 Arusha
5. Ms. Carol Kishe	Clinical Officer	Mt. Meru Hospital P.O. Box 3092 Arusha
- 6. Mr. Emillian Urassa	Clinical Officer	Monduli Dist. Hosp. P.O. Box 12 Monduli
7. Mr. Issa Mwilima	RMA	Mamire Dispensary P.O. Box 85 Babati
8. Mr. Flavian Tarimo	Clinical Officer	P.O. Box 12 Monduli
9. Mr. William Mollel	Asst. Clinical Officer II	P.O. Box 1653 Arusha
10. Mr. Solomon Ole Logilumore	Clinical Officer	Municipal Council P.O. Box 120 Arusha
11. Mr. Japhet King'obu Laiser	SRMA	Mkonoo Health centre P.O. Box 3013 Arusha
12. Remisere Ndossy	SRMA I	Bashanet dispensary P. O. Box 2 Bashanet- Babati

- |     |                           |       |  |
|-----|---------------------------|-------|--|
| 13. | Mrs. Stella Mshana        | RMA   | Kijenge R/C Dispe.<br>P.O. Box 3071<br>Arusha    |
| 14. | Mrs. Sophia Waziri        | MCHA  | Engaruka Dispensary<br>P.O. Box 38<br>Mto wa Mbu |
| 15. | Ms. Rahel J. Mrema        | RMA   | Monduli Juu Disp.<br>P.O. Box 151<br>Monduli     |
| 16. | Ms. Hadija Tina           | MCHA  | Babati Hospital<br>P.O. Box 85<br>Babati         |
| 17. | Mr. Wilfred Ole<br>Soilel | RMA   | Kijenge R.C. Disp.<br>P.O. Box 3050<br>Arusha    |
| 18. | Ms. Matulo Abeid          | MCHA  | Municipal council<br>P.O. Box 3013<br>Arusha     |
| 19. | Ms. Riadha Mohammed       | MCHA  | Madunga Dispensary<br>P.O. Box 402<br>Babati     |
| 20. | Ms. Wilhelmina Wilbrod    | MCHA  | Dareda Hospital<br>P.O. Box 247<br>Babati        |
| 21. | Ms. Monica Said           | SMCHA | Bonga Dispensary<br>P.O. Box 85<br>Babati        |
| 22. | Emanuel Nelson            | RMA   | Madunga Dispensary<br>P.O. Box 400<br>Babati     |
| 23. | Ms. Florence Mbughuni     | MCHA  | Mswakini dispensary<br>P.O. Box 12<br>Monduli    |
| 24. | Ms. Margreth Kaaya        | MCHA  | St. Elizabeth Hosp.<br>P.O. Box 498<br>Arusha    |

**APPENDIX B**

# MANAGEMENT OF THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS

Ask – What is the child's problem?

Name: \_\_\_\_\_ Age: \_\_\_\_\_

## ASSESS (Circle all signs present)

## CLASSIFY

<p><b>CHECK THE CHILD FOR DANGER SIGNS</b></p> <p>NOT ABLE TO DRINK VOMITS EVERYTHING HE DRINKS CONVULSIONS</p> <p style="text-align: right;">ABNORMALLY SLEEPY OR DIFFICULT TO WAKE</p>	<p>Danger sign present: Yes ___ No ___</p>
<p><b>DOES THE CHILD HAVE COUGH OR DIFFICULT BREATHING?</b> Yes ___ No ___</p> <p>Ask: ● For how long? ___ Days</p> <ul style="list-style-type: none"> <li>● Count the breaths in one minute. ___ breaths per minute Fast breathing?</li> <li>● Look for chest indrawing.</li> <li>● Look and listen for stridor.</li> </ul>	
<p><b>DOES THE CHILD HAVE DIARRHOEA?</b> Yes ___ No ___</p> <p>Ask: ● For how long? ___ Days</p> <ul style="list-style-type: none"> <li>● Is there blood in the stool?</li> </ul>	<p>for dehydration:</p> <p>persistent diarrhoea:</p> <p>and dysentery:</p>
<p><b>DOES THE CHILD HAVE FEVER?</b> Yes ___ No ___</p> <p>Decide malaria risk: High Low</p> <p>Ask: ● For how long has the child had fever? ___ Days</p> <p>If more than 7 days, has the fever been present every day?</p>	<ul style="list-style-type: none"> <li>● Measure temperature (or feel the child for fever): ___ °C</li> <li>● Look or feel for neck stiffness.</li> <li>● Look for runny nose.</li> </ul> <p>Look for signs suggesting MEASLES:</p> <ul style="list-style-type: none"> <li>● Generalized rash and</li> <li>● One of these: cough, runny nose, or red eyes</li> </ul>
<p>If the child has measles:</p>	<ul style="list-style-type: none"> <li>● Look for sore mouth and mouth ulcers.</li> <li>● Look for pus draining from the eye.</li> <li>● Look for clouding of the cornea.</li> </ul>
<p><b>DOES THE CHILD HAVE AN EAR PROBLEM?</b> Yes ___ No ___</p> <p>Ask: ● Is there ear pain?</p> <ul style="list-style-type: none"> <li>● Is there ear discharge?</li> </ul> <p>If Yes, for how long? ___ Days</p>	<ul style="list-style-type: none"> <li>● Look for pus draining from the ear.</li> <li>● Feel for tender swelling behind the ear.</li> </ul>
<p><b>THEN CHECK THE CHILD FOR MALNUTRITION AND ANAEMIA:</b></p> <ul style="list-style-type: none"> <li>● Look for visible severe wasting.</li> <li>● Look for palmar pallor.</li> <li>● Look for clouding of the cornea.</li> <li>● Look for foamy patches on the white of the eyes.</li> <li>● Look for oedema of both feet.</li> <li>● Weigh the child. Then determine weight for age. Child's weight: _____ kg Low ___ Not Low ___</li> </ul>	
<p><b>CHECK THE CHILD'S IMMUNIZATION / VITAMIN A STATUS:</b></p> <p>Circle any immunizations needed today.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <input type="checkbox"/> BCG         </div> <div style="text-align: center;"> <input type="checkbox"/> DPT 1         </div> <div style="text-align: center;"> <input type="checkbox"/> DPT 2         </div> <div style="text-align: center;"> <input type="checkbox"/> DPT 3         </div> <div style="text-align: center;"> <input type="checkbox"/> Measles         </div> <div style="text-align: center;"> <input type="checkbox"/> Vitamin A Supplementation         </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;"> <input type="checkbox"/> OPV 0         </div> <div style="text-align: center;"> <input type="checkbox"/> OPV 1         </div> <div style="text-align: center;"> <input type="checkbox"/> OPV 2         </div> <div style="text-align: center;"> <input type="checkbox"/> OPV 3         </div> </div> <p style="text-align: right; margin-top: 10px;">Return for next immunization on: _____</p>	<p>Feeding Problems:</p>

**ASSESS OTHER PROBLEMS:**

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ASSESS (Circle all signs present)

CLASSIFY

**CHECK THE YOUNG INFANT FOR POSSIBLE BACTERIAL INFECTION:**

- Ask: ● Has the infant had convulsions? ● Count the breaths in one minute. Repeat if elevated.  
 \_\_\_\_\_ breaths per minute Fast breathing?
- Look for severe chest indrawing.
  - Look for nasal flaring.
  - Look and listen for grunting.
  - See if the young infant is difficult to wake.
  - See if the distressed young infant can be calmed.
  - Look for pus draining from the ear.
  - Look at the umbilicus - Is it red or draining pus? Does the redness extend to the skin?
  - Look for skin pustules.
  - Measure temperature (or feel for fever or low body temperature) \_\_\_\_\_ °C
  - Look and feel for bulging fontanelle.
  - Look at young infant's movements. Less than normal?
  - Listen: Is the cry weak or absent?

**DOES THE YOUNG INFANT HAVE DIARRHOEA?**

Yes \_\_\_\_\_ No \_\_\_\_\_

- Ask: ● For how long? \_\_\_\_\_ Days  
 ● Is there blood in the stool?
- Look at the young infant's general condition. Is the infant:  
*abnormally sleepy or difficult to wake?*      *restless and irritable?*      *well and alert?*
  - Look at the infant's eyes. Are they:  
*very sunken and dry?*      *sunken?*      *normal?*
  - Look and feel whether the infant's mouth is:  
*very dry?*      *dry?*      *moist?*
  - Pinch the skin of the abdomen or thigh. Does it go back:  
*very slowly (longer than 2 seconds)?*      *slowly?*      *quickly?*

for dehydration:  
  
 persistent diarrhoea:  
  
 and dysentery:

**THEN CHECK THE YOUNG INFANT FOR LOW WEIGHT AND ASSESS FEEDING:**

- Ask: ● Is there any difficulty feeding? ● Weigh the young infant and determine weight for age.  
 ● Is the infant breastfed? If YES, how many times a day? \_\_\_\_\_ Infant's weight: \_\_\_\_\_ kg Low \_\_\_\_\_ Not Low \_\_\_\_\_  
 ● Does the infant usually receive any other foods or drinks? If YES, how often? \_\_\_\_\_  
 ● Look for ulcers or white patches in the mouth (thrush).

If the infant has any difficulty feeding, is feeding less than 6 times a day, is low weight for age, or is taking any other food or drinks AND has no indications to refer urgently to hospital:

**ASSESS BREASTFEEDING:**

- Ask: ● Has the infant breastfed in the previous hour? If infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.
- Is the infant able to attach (that is, chin touching breast, mouth wide open, lower lip turned outward, more areola visible above than below the mouth)?  
*no attachment at all*      *not well attached*      *good attachment*
  - Is the infant sucking effectively (that is, with slow deep sucks in bursts with pauses)?  
*not sucking at all*      *not sucking effectively*      *sucking effectively*

**CHECK THE YOUNG INFANT'S IMMUNIZATION STATUS:**

Circle any immunizations needed today

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BCG	DPT 1	DPT 2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OPV 0	OPV 1	OPV 2

Return for next immunization on:  
 \_\_\_\_\_

**ASSESS OTHER PROBLEMS:**

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