Control of Acute Respiratory Infections (ARI) Program

ARIs form a main cause of morbidity & mortality among children in developing countries. ARIs contribute to 30-60% of all children attending outpatient department of health facilities, 70% of which are upper ARIs. Although the overall incidence of ARIs among children in developing & developed countries is within the same range, the annual incidence of **pneumonia** is 3-4 % in children <5 years of age in developed countries compared to 10-20% in developing countries. This shows that the majority of these infections are mild & can be treated at home **without the use of antibiotics.** Therefore, one of the objectives of ARI control program is to be able to identify the few serious cases of ARI, and to follow the standard case management guidelines for ARI cases.
The primary agents are usually viruses, which are responsible for a high proportion of the primary infections, while bacteria may be primary or secondary agents. Streptococcus pneumonia & Haemophilus influenzae are the most frequent causes of pneumonia & account to 2-4% of cases in developed countries and 20% of cases in developing countries.

The Standard Case Management of ARI Cases according to WHO recommendation includes:

Assessment, Classification & Management.

1- Assessment:

History taking is very important. Ask the mother about:
1) age, 2) feeding habits, 3) fever, 4) convulsions, 5) irregular breathing, 6) history of treatment during the illness, 7) activity

Physical examination:

Count the breaths in one minute:

Breathing count depends on the age of the child, count respiratory rate for a minute. Fast breathing is present when RR is:

- 60 breaths /min or more in a child less than two months of age
- 50/min or more in child aged 2months upto 12 months
- 40 breaths/min or more in a child aged 12 months upto 5 years

Chest indrawing:

- Look for chest indrawing when child breaths in.
- Child has indrawing if the lower chest wall goes in when the child breaths in.
- Occurs when the effort required to breath in ,is much greater than normal

Stridor:

- Harsh noise while breathing IN is stridor
- Occurs due to narrowing of trachea ,larynx or epiglottis
- These conditions often called croup

Wheeze:

- A child with wheeze makes a soft whistling noise OR
- shows signs that breathing OUT is difficult
- This is due to narrowing of the air passages

Fever

- Check for body temperature

Cyanosis

Sign of hypoxia

Malnutrition:

- If malnutrition is present its high risk and case fatality rates are higher. In severely malnourished: 1) children with pneumonia,

fast breathing and chest indrawing may not be evident.

2)Impaired or absent response to hypoxia and a weak or absent cough reflex. 3)Careful evaluation and management

2- Classification:

Is done according to age group.

1- Two months up to 5 years: After the assessment is completed, one of the following four classifications is reached:

a. **Very Severe Disease:** is made when any of the following danger signs is detected:
   - Not able to drink
   - Convulsions
   - Abnormally sleepy or difficult to wake
   - Stridor in a calm child
   - Severe undernutrition

   This child is at high risk of dying, so we should act urgently.

b. Severe Pneumonia: A child with chest indrawing, who may also have nasal flaring, grunting or cyanosis. This child is also at high risk of dying, so we should act urgently.

c. Pneumonia: No chest indrawing, but the child has fast breathing: 50+/minute (2-12 months) and 40+/minute (12 months-5 years).

d. No Pneumonia (cough or cold): No chest indrawing & no fast breathing.

2. Less than 2 months: Young infants become sick and die very quickly. They frequently have non-specific signs and symptoms such as poor feeding or low body temperature and may normally have mild

chest indrawing because of their soft chest wall. After the assessment is completed, one of the following three classifications is reached:

a. Very Severe Disease: is made when any of the following danger signs is detected:

- Abnormally sleepy or difficult to wake
- Convulsions
- Stridor in a calm child
- Stopped feeding well
- Wheeze
- Fever (38°C) or low body temperature < 35.5°C
- Grunting
- Cyanosis

b. Severe Pneumonia: Fast breating (60+/minute) or severe chest indrawing.

c. No Pneumonia: No fast breathing, no chest indrawing and no danger signs.

3- Management:

Very Severe Disease or Severe Pneumonia: The management of children with these two classifications the lines of management are the same for all age groups. It is as follows:

1. Give the first (Pre-referral) dose of paranteral antibiotics.
2. Refer urgently to hospital.
3. Treat fever, if present.

Pneumonia: This diagnosis is peculiar to children between 2 months and 5 years. The child is treated at home with antibiotics. One of the

following drugs is given for five days: Cotrimoxazole, amoxicillin (syrup or tablets) or Procaine Penicillin (daily i.m. injections). The rules are:

- Give the first dose in the health centre
- Teach the mother how to give the dose, how much, how many doses per day and for how many days.
- Advise on home care.
- Reassess in two days**.**

No Pneumonia (Cough or cold): Advice home care.

Two months-5 years:

- No antibiotics
- Advise mother to give home care (clear the nose, feed the child during the illness, and increase feeding after the illness; give extra fluids to drink and breast feed; soothe the throat and relieve cough with a safe remedy; return quickly if any of the following develops- breathing becomes difficult- breathing becomes fast- the child is not able to drink- the child becomes sicker)
- Treat fever, if present
- Treat wheezing, if present

< Two months:

- No antibiotics
- Advise home care: keep warm, breast feed frequently, clear nose, watch for danger signs, return immediately if: breathing becomes difficult, breathing becomes fast, feeding becomes a problem, the infant becomes sicker or has high fever).