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COMMUNITY INVOLVEMENT IN DIAGNOSIS AND MANAGEMENT OF ACUTE RESPIRATORY INFECTIONS IN CHILDREN *

by

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Introduction

Acute respiratory infections (ARI) in children are responsible for a large number of deaths and high morbidity. Mortality is many times higher in developing than in developed countries[1]. A reduction in mortality is the main objective of the ARI control programme. The target population of this programme is half a billion children under five years of age, 80 per cent of whom live in developing countries and the vast majority in rural areas. Many of the deaths in these countries are not attended by health personnel and utilization of health services is poor due to low health awareness, poverty, working parents, long distances, difficult terrain, poor transportation, paucity of health manpower and cultural differences between health personnel and the local community.

Until recently, health services in developing countries were not structured to include active involvement of the community and the services offered by governmental health systems are often accepted passively. Experience has shown that a top-down approach to planning, organising and managing health care results in the local people being increasingly dependent on outside resources. Grass-roots movements are now pioneering the community, and the family centred approach, based on initiatives from the people themselves and on the principle of self-reliance and community involvement, has formed an integral part of the WHO goal of Health for All by the Year 2000 through a primary health care approach.

Community involvement

A community is a group of people which can be identified as living in and feeling a sense of belonging to a geographic area and sharing common values, needs and interests[2]. Depending on the settlement pattern and population density, a community may consist of a village, a town, or part of a village or town, or several non-contiguous settlements, or a group of nomads.

Community involvement is an active process covering a wide spectrum of responsibility which the members of the community voluntarily take upon themselves to initiate and design and then take action to meet their common needs[2]. Although such involvement can be spontaneously generated from within the community, it is often precipitated by an event that strongly affects the majority or as a response to the stimulus of an external agent. Involvement of the community is the vital factor in acceptibility of health services.

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Pre-requisites of community involvement

Sensitization of health professionals as to the capability of the community:
It is important to convince the health professionals about the hidden capability of families and the community to participate in the various development programmes, including health. This sort of sensitization of health personnel is long-lasting if they are given a demonstration from an on-going programme in which families and communities are actively involved.

Knowing how a community sees the problem of ARI:
The community has a customary way of handling illness locally, and it is only in the event of an unsuccessful outcome from their attemps that they will resort to the health centre facilities, if these are within easy reach. All communities have ways and methods of diagnosing and managing various illnesses. Before initiating any community approach, it is important to find out how members of the community perceive and manage the problem of ARI.

Sensitisation of the community about ARI:
It is vital for the community to appreciate the value of prevention, early diagnosis and management of ARI in children, involving an alternative approach and appropriate technology. To this end, the community needs to be sensitised about ARI through appropriate information on the problem definition, how it is potentially possible for them to diagnose and manage children suffering from ARI in the home and in the community, and what and how appropriate action can be taken for serious cases. Sensitisation of the community is easier when those of their own trusted people who are in a position to take action, such as primary health workers, traditional healers, traditional birth attendants, teachers, and agriculture extension workers, are involved. It is difficult to work in a community without involving the formal and informal leaders such as political and religious figures, school and day care teachers, and members of development-oriented groups such as women's organizations, youth clubs and child-to-child programmes and other specific interest groups.

Dialogue between health agents and the community:
It is important to identify with the community what is available and what is required in the prevention, diagnosis, management and referral of children suffering from ARI. Involvement of the community in all aspects of programme planning ensures that the new technology and services are adapted to the people's life-style. The health personnel and local health agents such as primary health workers, traditional healers and traditional birth attendants should initiate and continue the dialogue with the community on various aspects of the ARI programme.

Education about ARI:
Health education and orientation training of community resource persons including mothers and elderly family members regarding prevention, recognition, symptomatic management and timely referral of children with ARI are pre-requisites of better utilisation of an alternative approach to health care on ARI. The community resource groups and change agents, if sensitised to and informed on the problem of ARI, can themselves educate mothers and other family and community members about simple ways and methods to prevent, diagnose, manage and monitor ARI. Educational material should provide information on recognition of symptoms and signs of ARI and acute lower respiratory infection, treatment at home, prevention aspects such as value of immunization, breast-feeding, reduction of passive smoking, home ventilation and indigenous methods to increase humidity. The training material of the primary health worker should incorporate all these elements and be suitable for individuals with limited education.

Involvement of the community in prevention, diagnosis and management of ARI

The diagnosis and management of many common illnesses do not call for the services of a physician or a nurse. The involvement of the family and the community, including primary health workers, traditional healers and community groups, can be of considerable help in bridging both the cultural and the manpower gaps between the health services and the community. The vast majority of episodes of ARI are mild and self-limiting and information

on the knowledge of common pathogens responsible for different types of ARI and their drug sensitivity is incomplete[3]. Hence, the challenge for the health workers is to help mothers and families to diagnose and manage mild cases of ARI at home and to recognise when the disease is progressive and requires health service intervention. The involvement of the community can be at two levels: mother and family level, and primary health workers/community groups level.

Involvement of mothers and family members

Mothers and family members can be involved, as described below, in prevention, diagnosis and management of ARI, if they are told of ways and methods of doing so and supported with timely help by primary health workers, the nurse/midwife or the physician.

(i) Preventive action by mothers and family:

- Respiratory infections in children, such as measles, diphtheria, whooping cough and severe forms of tuberculosis are preventable by immunization and children should be immunized at the right age.
- Exposure to the irritants of the respiratory tract, for example, smoke and passive tobacco smoking, should be reduced.
- Feeding of children, including breast-feeding, should be continued during illness.

(ii) Diagnosis by the mother and family:

a. A cough or running nose, accompanied by mild to moderate fever, are important symptoms which parents can recognize. Other symptoms include sore throat, ear pain, acute ear discharge, refusal of feeds, listlessness and irritability.

b. Diagnosis of children at high risk of developing severe ARI:
If taught how to recognise the following conditions when a child with ARI is at high risk and needs immediate referral, the parents will be better able to identify such children:
- infants under six months of age
- low birth-weight babies during infancy and early childhood
- child having measles or whooping cough
- severely malnourished child.

c. Diagnosis of children needing referral:
Mothers or family members can possibly be taught to recognise the serious symptomatology of ARI which would warrant taking the child to a nurse or physician:
- rapid breathing
- nasal flaring
- noisy breathing
- wheezing
- indrawing of subcostal, intercostal or suprasternal spaces and
- cyanotic hue.

(iii) Management by the mother and family:
Families have their own ways and methods of managing ARI. Innocent practices should not be criticised but may be permitted to continue, if the parents desire. Efforts should be made to educate families to avoid harmful practices. However, some health practices which are familiar to the family or community may be helpful and should be reinforced. With proper explanation and demonstration, mothers and other family members can acquire the skills necessary for the following elements of management:

- cleaning of the nose for comfortable breathing
- provision of humidity by hanging wet cloths or use of steam
- administration of drugs prescribed by primary health workers or other health personnel
- contacting nurse or physician when there is no improvement.

Involvement of primary health workers and other community groups

By active collaboration in prevention, diagnosis and management between the primary health workers, traditional healers, traditional birth attendants and the various community groups including day care teachers, it is possible to reduce the mortality and morbidity of ARI to a considerable extent. There are some specific actions which they can undertake, as mentioned below.

(i) Preventive actions:
- Arrangement for immunization of all eligible children under five years of age
- Monitoring of nutritional status of children using home-based records
- Provision of nutrition supplements to severely malnourished children
- Education of mothers and family members on how to prevent, diagnose, symptomatically manage ARI at home and identify those who need referral.

(ii) Diagnosis of ARI:
by
- Measuring temperature (with thermometer or other simplified technique)
- Counting respiratory rate (using a watch, hour glass or other simplified method)
- Recognizing stridor, whoop, wheeze and hoarse voice
- Recognizing indrawing of intercostal, subcostal and suprasternal spaces
- Distinguishing congested from normal throat
- Assessing nutritional status by using weight for age or arm strip
- Identifying acute lower respiratory and high risk children having ARI.

(iii) Management of ARI:
By advice and demonstration to mothers and family members on:
- How to clean blocked nose and secretion in throat
- How to keep room humid
- How to keep normal temperature of the child with ARI
- To continue feeding, including breast-feeding
- To administer antimicrobials like sulphanomide or penicillin and antipyretics like aspirin or paracetamol
- To keep the child under observation
- To continue management of those serious cases of children who cannot go to the health centre for consultation and treatment, and inform nurse or doctor
- To refer or show child to nurse or physician when the child has:
  - rapid breathing
  - indrawing of intercostal, subcostal or suprasternal spaces
  - flaring of alae nasi
  - difficulty in breathing, stridor or wheeze.

(iv) Support while the child is being referred:

It is important that either the primary health worker or someone from the community group ensures that the referred child gets the necessary help in reaching the health centre. This may mean that the community has to decide who will spare time and accompany the parents to the health centre, arrange for transportation and, if necessary, look after other young children in the family while the parents are in the health centre or hospital.

Scope and limitations of community involvement in ARI

While the idea of community involvement has gained widespread acceptance, its practice has revealed limitations and impediments as well as producing successes. There are internal groups and divisions in a community based on social class, religion, caste or political affiliation, and local decision-making and implementation of programmes are influenced by these groups[4]. Careful consideration is required to achieve effective balance between respect for community structures and ensuring that all community groups receive a fair share of the benefit of the programme.

People can only participate in programme activities within their means and abilities. To be successful, the community involvement approach must incorporate what is possible under different situations.

The relationship between health personnel from the health centre, local health agents like primary health workers and community leaders pre-determines the outcome of the joint endeavour on ARI. The support system to the field workers from the health centre is equally important. Availability of drugs and vaccines at the health centre, of some essential drugs in community stores or shops at the most peripheral level, and adequate supplies of tools to the primary health worker are important components of the support system; as is the well organized logistical support for timely supplies and transportation. Weakness in the support system slows down the enthusiasm of community members and many well thought out programmes meet a tragic end.

Development of education material to promote community involvement

Education material should be developed on the basis of knowledge of families and communities regarding current child care practices in the programme area. Unfortunately, there are very few studies on this subject. To develop the base on which such a programme is to be built, determination of the knowledge and practices of the community regarding the following aspects of ARI is essential:

(a) Capability of the mothers to recognise acute lower respiratory infections (ALRI) as distinct from ARI (and the extent of familiarity with signs and symptoms of ALRI)
(b) Understanding of potential dangers from ARI
(c) Practices in vogue regarding management of ARI
(d) Pattern of utilisation of health care: are there any differences in utilisation, if the disease is mild versus if it is severe? Whose help does the community seek and why? How much expenditure is incurred?
(e) Reasons for delay in utilising referral services if the illness is severe
(f) Knowledge about available immunizations and attitudes towards utilising immunization services
(g) Feeding practices during ARI and following recovery. Rationale behind the restrictions imposed, if any
(h) Breast-feeding practices
(i) Extent of appreciation of such factors as hazards of passive smoking, poor ventilation, overcrowding, in causation of ARI.

Surveys and group discussions can be used to obtain this crucial information. Besides considering the key elements for inclusion in the education material based on scientific knowledge and the locally prevalent practices, considerable thought must be given to the level of literacy of the population, the simplicity of the language to be used, the cultural relevance and the acceptability of the education material. It is prudent to entrust this task to carefully selected centres where expertise exists. For countries where literacy is poor, the educational material should incorporate as little language as possible.

The form in which education material is developed depends on the choice of the community and the communication strategies to be adopted. In most primary health care settings, the PHC workers are expected to establish frequent contacts with the community and education material that can be used for individual families or small groups in the clinic setting is very useful. Suitable material can also be developed for use in the folk media, for example, religious congregations, village schools, at the time of fairs and festivals, etc. If the mass media have not developed any inroads into the community, material suitable for mass communication may be assigned a lower priority.

After the education material has been developed, it should be field tested in the live situations (in the communities) where it is proposed to use it. Primary health care workers and others who will be responsible for education of families and the community must also be fully involved while modifying the education material.

The primary health care workers and others who are responsible for education of families and the community regarding child care practices must, as a pre-requisite, be educated in this respect. They should be given proper orientation and training regarding the communication strategies it is proposed to adopt. The PHC workers should not only be thoroughly familiar with the material but they must also be fully convinced about the value of the approach that is being used.

For a widespread impact of the educational programme, every opportunity must be utilised for increasing the involvement of the families and the community. A few approaches suggested are:

1. Discussion with families where cases of ARI are detected
2. Demonstration to families of critical signs and symptoms and use of illustrations from educational aids to increase familiarity with these manifestations
3. Demonstration to the family members about correct symptomatic treatment. The teaching of symptomatic treatment for ARI in the clinical setting can be done with the help of educational aids
4. Distribution of educational material to literate and influential people in the community so that they can influence peer groups
5. Education in village schools, youth clubs, women's organization meetings, religious gatherings and use of other folk media to involve mothers, families and communities. In folk communication, the use of folk tales, role playing and puppetry should be introduced. In such situations, discussions on messages displayed on bold posters can also prove quite useful.

The extent of success of the educational programme will be determined by the following:

(a) The PHC worker's understanding of the community's felt needs; his rapport with the community, interest and motivation, involvement in the programme and credibility
(b) The simplicity and clarity of the material, its relevance to local cultural practices, its acceptability, the format in which the educational material is produced and the extent of its distribution
(c) The mood and attitude of the families and communities, their existing cultural practices on ALRI, their faith in the existing primary health care, in village practitioners and in hospital facilities.

Evaluation of the educational material

An integral component of the education programme should be evaluation of impact of the programme. Evaluation of the educational programme can include an assessment of the following:

(a) The outreach of educational material and of the programme in the community
(b) The extent of change following the institution of the programme amongst mothers and change agents
(c) The impact of the educational material on change in morbidity and mortality.

The outreach of the educational material and the implementation of the programme can be measured by estimating the number of mothers and families who have the educational material against the number it is proposed to reach. Mere possession of the material is not likely to serve any meaningful purpose. Determination of the use that this material has been put to will be even more helpful, because this will tell of the actions that the family takes when confronted with the problem of ARI which in turn influences the outcome. Special attention should be paid to the outreach of educational material to the weaker sections of th society which are frequently not contacted and whose needs are often ignored. This is the group in which the maximum devastation is experienced.

An assessment of the attitudes and practices of the families, opinion leaders and PHC workers can form the base line data for evaluating the impact of the education programme. As mentioned earlier, this can also serve as the base for preparing educational material. When the programme has reached a steady state, evaluation can be repeated to assess the impact on

the attitudes and practices. The methodology that can be used depends on the setting in which the research is conducted and the overall objectives of the educational programme, whether taboos have been removed and whether the change from harmful to useful practices has been accomplished.

Evaluation of community involvement in ARI

There is a need to carry out and carefully analyse different approaches to involve community groups in the control of ARI in children and to identify promising ways of achieving the objectives. Evaluation of the community involvement approach should include:

- Ability of mothers to recognize severe ARI (ALRI)
- Appropriate changes in the behaviour of mothers in bringing children for treatment (such as early or late referral in the course of disease)
- Compliance by mothers with supportive care and specific treatment prescribed for the sick child
- Management and referral by primary health workers.

The community involvement approach in diagnosis and management of ARI has a profound implication for all aspects of ARI control programme planning and management. In order to harness the potential of the approach, the programme planners need to adapt management structures and administrative procedures, as well as to develop training and information systems appropriate to the tasks described.

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