Community Case Management (CCM) of Pneumonia in children by health extension workers in rural communities following a policy change in Ethiopia

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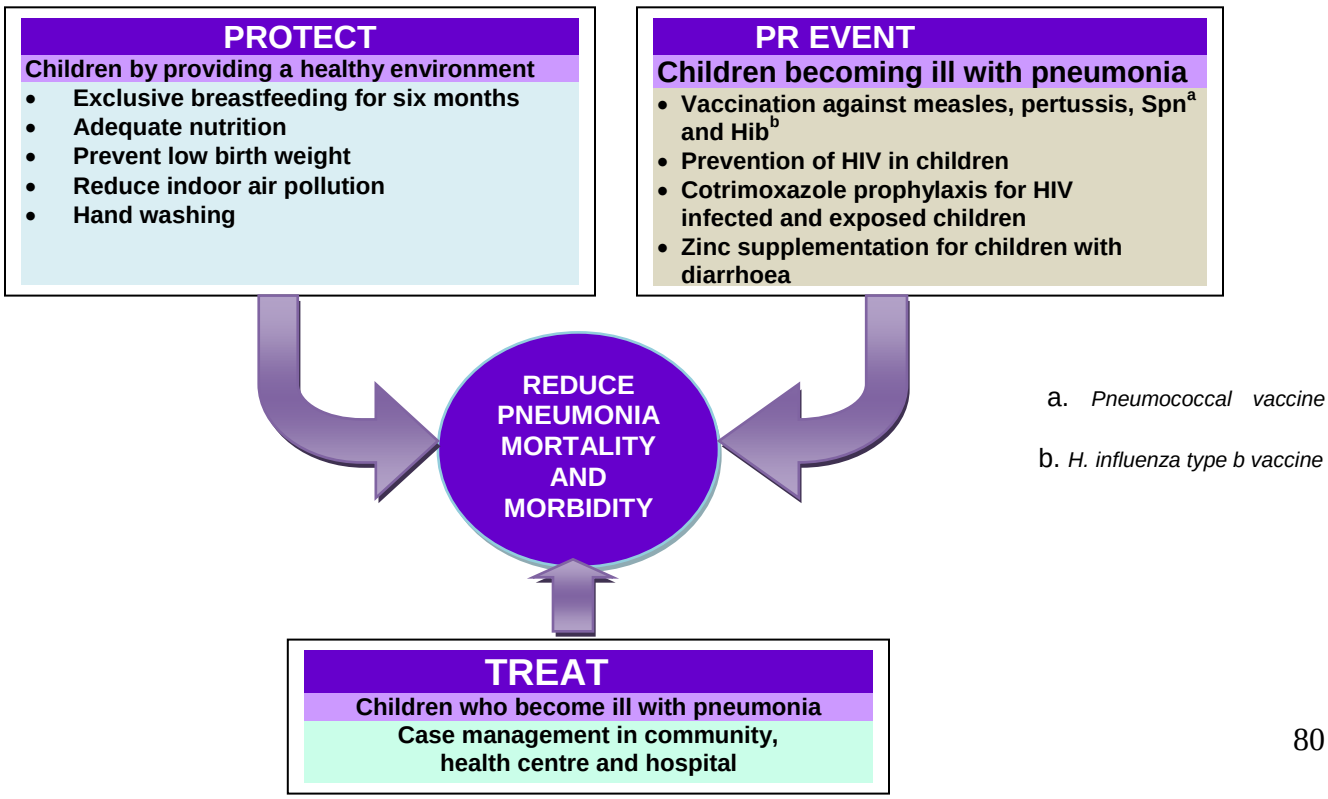
Introduction

Over the past two decades, Ethiopia has witnessed a steady more than 40 percent reduction in child mortality across the country.ii However, despite this remarkable achievement, it is estimated that more than 360,000 children under the age of five still die each year from preventable or treatable conditions such as acute respiratory infection primarily pneumonia, neonatal problems, malaria, diarrhea and malnutrition as underlying causeiii.

Pneumonia kills more children under five years of age than any other illness across the world. In Ethiopia it is responsible for about 28% of all deaths in children aged less than 5 years, with an absolute number of more than 100,000 under five children dying from Pneumonias each year. The most important interventions recommended to control pneumonia in children are categorized as followsiv (see figure 1):

- ***Protect*** children by providing them with an environment where children are at low risk of pneumonia
- ***Prevent*** children from becoming ill with pneumonia;
- ***Treat*** children who become ill with pneumonia.

Figure **1: Framework for pneumonia control**



a. *Pneumococcal vaccine*

b. *H. influenza type b vaccine*

Ethiopia is doing relatively well in improving the coverage of the high impact preventive child survival interventions that addresses pneumonia, such as improved coverage of immunization for Hib and measles and there is also a plan to introduce pneumococcal vaccine in 2010.

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The number of new clinical cases of pneumonia per year in Ethiopia is estimated to be 35% putting the country among the 15 highest mortality countries in the world (see table 1 below)

Regardless of improved coverage of preventive interventions, approximately 4 million childhood pneumonia cases are occurring in Ethiopia annually and majority of these children have limited access to quality facility based clinical care

Table 1 **The 15 countries with the highest estimated absolute number of new cases of clinical pneumonia**

Country	Predicted no. of new cases (millions)	Estimated incidence (e/cy)
India	43.0	0.37
China	21.1	0.22
Pakistan	9.8	0.41
Bangladesh	6.4	0.41
Nigeria	6.1	0.34
Indonesia	6.0	0.28
Ethiopia	3.9	0.35
Democratic Republic of the Congo	3.9	0.39
Viet Nam	2.9	0.35
Philippines	2.7	0.27
Sudan	2.0	0.48
Afghanistan	2.0	0.45
United Republic of Tanzania	1.9	0.33
Myanmar	1.8	0.43
Brazil	1.8	0.11

e/cy, episodes per child-year.

Early intervention studies conducted both locally and globally show that case management of pneumonia by community health workers has a significant impact on the overall and pneumonia specific under five mortality. A recent meta-analysis of community based pneumonia case management studies estimated a 20 percent reduction in all cause of under one mortality and a 24 percent reduction in all causes of under five mortalityv.

In addition, observations of the feasibility of introducing community based pneumonia management by HEWs were made during the field visits of both the Mid Term Review of HSDP III and the 2009 Joint Review Mission teams. Both group strongly recommended that pneumonia management by HEWs should be included in the HEP.

Community case management: the evolution in Ethiopia

Ethiopia has many years of experience in Community Case Management (CCM) of common childhood illnesses in different regions across the country. According to a personal communication from Addis Ababa University personal communication, the first experience dates in the late1980's when community workers were trained to treat childhood pneumonia using oral antibiotics in Butajira, SNNP region.

In Tigray region, a study on community based malaria treatment was conducted in 2000. The study modified an ongoing community-based malaria control program in order to serve more women and young children. In this study, community health workers (CHWs) – known as 'mother coordinators' – educated other mothers to recognize malaria symptoms in their children, give appropriate doses of chloroquine and identify adverse reactions to chloroquine. The study demonstrated a forty percent all cause under five mortality reductionvi.

The other CCM research available in Ethiopia includes the Liben study, conducted by Save the Children USA (SC) in a remote district of Oromia region. In Liben, between 2001 and 2006, CHW were trained and supervised on how to assess, classify and treat children with diarrhea, pneumonia and malaria. The result was certainly encouraging since the CHW were able to properly assess, classify and treat the three major killers of the under five children safely without any serious problem if they were appropriately trained and supervisedvii.

A wider scale of CCM was introduced after the deployment of the HEWs for malaria and diarrhea in children at the national level.

The operational feasibility of including pneumonia in the treatment package for HEWs was tested in Boloso Sore, in SNNP region from 2006 to 2008. In this study, the HEWs maintained high rate of compliance with the WHO/UNICEF, IMNCI case management standard for the three major killers studied. The percentage of under five children correctly assessed, classified and managed for diarrhea, malaria and pneumonia ranged from 88% to 90%viii.

The outpatient management of severe acute malnutrition by the HEWs at health post level was successfully piloted in 100 woredas in 2008ix and now being integrated in the health extension package. As of March 2010,HEWs in over 5,000 health posts in 280 woredas are identifying severe acute malnutrition, referring the complicated cases to the nearest inpatient therapeutic feeding unit (at hospital or health centre level) and treating the uncomplicated cases of severe acute malnutrition on outpatient basis (home-based treatment).

Community case Management of Childhood Illnesses approach is the most feasible way of scaling up the implementation of the high impact child survival curative intervention in the foreseeable futurex.

CCM of pneumonia by HEWs; a policy breakthrough for child health in Ethiopia

Health Extension Program (HEP) has radically changed the landscape of the community health service delivery system in Ethiopia. Many families and communities are now, after the introduction of HEP, empowered to take care of their own health through the model family training approach, which can be seen in the improved health care seeking behavior and increased demand for quality care among the rural communities.
HEWs have been trained to assess and classify the four major killers: Pneumonia, malaria, diarrhea and severe acute malnutrition in under five children. However, until recently, the provision of treatment by HEWs has been limited to the three killers: malaria, diarrhea and severe

acute malnutrition. For the number one killer- pneumonia, HEWs were only able to asses and classify children with cough or difficult breathing and if they found them having pneumonia, they have been referring them to health facilities for treatment. The HEWs could not treat these children themselves up until the recently

Based on the growing demand of the communities for curative interventions for the common childhood illnesses including pneumonia at the village level and improving coverage for some of the promotional and preventive interventions, evidences from the local studies on the operational feasibility of pneumonia management by HEWs, the HSDP III midterm review and the joint review mission /JRM/ recommendation, the FMOH, has decided to introduce community based pneumonia treatment (CCM pneumonia) by HEWsxi in January 2010. Coincidentally, this decision came immediately after the week of global pneumonia day celebration and it will certainly bring a huge opportunity for Ethiopia to quickly scale up this high impact child survival curative intervention and achieve the Millennium Development Goal 4. The introduction of CCM pneumonia will be started in the rural areas of the four bigger regions- Amhara, Oromia, SNNPR and Tigray where the HEP has shown good progress with regard to promotional and preventive components of the package.

Post policy change activities and the response from the child survival partners

Following the policy change the FMoH and child survival partners - UNICEF, WHO, USAID, Ethiopian Pediatric Society, Save the Children USA and UK, the Last 10 Kilometers (JSI/L10K), Integrated Family Health Program (IFHP) and others are working together to rolling out of CCM- pneumonia. Achievements so far are: national implementation guide for Integrated Community Case Management of Common Childhood Illnesses (ICCM) has been developed; National ICCM implementation launched; training guides, tools and job aids prepared and being printed; essential drugs and supplies are under procurement; implementing partners for training and mentoring of HEW; documentation of outcomes, and best practices identified through UNICEF e FMoH, the four implementing regional health bureaus and UNICEF.

Ethiopia has also secured support and commitment of the global child survival partners; the Catalytic Initiative for CCM pneumonia funded by CIDA Canada has mobilized a financial support for ICCM implementation in Ethiopia through UNCEF. The support will include a component of independent impact monitoring and evaluation by the Institute for International Programs (IIP), John Hopkins University (JHU)

ICCM implementation, the goal, what it will take, and the way for success

The goal: Through Community-based Case Management of Common Childhood Illnesses, ensure the greatest possible reduction of mortality in children less than five years of age in order to achieve the Millennium Developed Goal 4 by 2015.

To achieve this goal the intervention will follow an integrated case management approach rather than a single disease based and vertical approach to address common childhood killers by strengthening the case management of diarrhea, malaria and Severe Acute Malnutrition which has been already included to the HEP while adding the treatment pneumonia. At the same time the promotional and preventive

interventions should be strengthened as a comprehensive approach for disease control / protect, prevent and treat/ will bring maximum reduction of mortality and morbidity in the under-five Children

According to the National ICCM implementation guide, 2010, the estimated cost to implement only pneumonia treatment at community level will be USD 2,433,714 which is Birr 0.15 or USD 0.01 per capita per year for the four big regions in the coming three years. The total additional cost to implement ICCM of the common childhood illnesses; Pneumonia, diarrhea, malaria, and sever acute malnutrition will be US$ 16,496,735 for the same regions and duration which comes to an implementation cost of Birr 1, or us 0.08/ per capita per year for the four regions

Effective ICCM will hence require mobilization of adequate resources, knowledge of the community, adequate training of HEWs at scale, post training follow up and supportive supervision; strong links with functional health facilities that have skilled health professionals and adequate drug supply. Supervision structures, health information system, referral mechanisms and drug supply chains require strong relationship between health systems and HEP. The program activities must also include procedures for monitoring the coverage and quality of services provided by HEWs.

The policy change on CCM pneumonia followed by the National ICCM initiative has created good momentum and brought huge opportunity for child survival and attainment of MDG4 in Ethiopia. At the same time it will have many challenges; success will depend on the commitment and real engagement of all stakeholders- Leaders, health managers, donors, child survival partners, health workers at all levels and the community.

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