

KINGDOM OF CAMBODIA
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Ministry of Health
National Maternal and Child Health Center

National Policy

**on the Control of Acute Respiratory Infection and Diarrheal
Disease among Children Under the Age of Five**

**National Acute Respiratory Infection and
Control of Diarrheal Disease Program**

Revised November 2011

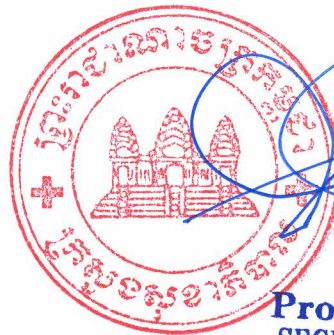
FOREWARD

The Ministry of Health continues to enhance efforts to reduce childhood morbidity and mortality due to pneumonia and diarrhea, the first- and second-leading cause of childhood illness and death among children under five in the country by improving access to quality health care and proven interventions. Paying greater attention to these two issues will be key to sustaining Cambodia's success at achieving Millennium Development Goal 4—a reduction in child mortality to 65 deaths per 1,000 live births.

This policy related to acute respiratory infections and diarrheal disease, with a focus on childhood pneumonia and diarrhea, establishes a basis for curbing the burden of these diseases and reflects Ministry of Health prioritization of these issues. This document presents case management practices, prevention activities, surveillance and reporting systems and evaluation methodologies for the two illnesses. It also serves as instruction and guidance for all health care providers, relevant departments and programs, and health development partners for the prevention and treatment of pneumonia and diarrhea in Cambodia.

The Ministry of Health asks for health staff at all levels to implement this policy, and for managers at all levels of the National Acute Respiratory Infection and Control of Diarrheal Disease Program to oversee this implementation, in order to reduce child morbidity and mortality in an effort to reach Millennium Development Goal 4 by 2015. *Eng Huot*

Phnom Penh, *1/Dec/2011*



Prof. ENG HUOT
SECRETARY OF STATE

ACKNOWLEDGEMENTS

This national policy was developed through a collaborative process that involved relevant departments of the Ministry of Health, technical committees, and non-governmental organizations. The final review of this policy was completed by the Technical Working Group for Acute Respiratory Infection and Diarrhea Prevention and Control. The Ministry of Health thanks all those who contributed to the successful development of this policy.

The contributions of the following institutions are particularly acknowledged:

- Department of Communicable Disease Control, Ministry of Health
- National Child Survival Management Committee, Ministry of Health
- National Immunization Program, Ministry of Health
- National Nutrition Program, Ministry of Health
- Technical Working Group for Acute Respiratory Infection and Diarrhea Prevention Control
- United Nations Children's Fund
- World Health Organization

The Ministry of Health also acknowledges PATH who provided technical and financial support for updating this policy and all the valuable contributions of other experts and consultants who assisted in the development and revision of this document.

ACRONYMS

ARI	Acute Respiratory Infection
CDC	Department of Communicable Disease Control
CDD	Control of Diarrheal Disease
CDHS	Cambodia Demographic and Health Survey
CSMC	Child Survival Management Committee
CMS	Central Medical Store
CPA	Complementary Package Activities
GAPP	Global Action Plan for Prevention and Control of Pneumonia
HC	Health Center
HIS	Health Information System
IEC	Information, Education and Communication
IMCI	Integrated Management of Childhood Illness
MoH	Ministry of Health
MPA	Minimum Package Activities
NIP	National Immunization Program
OD	Operational District
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PHD	Provincial Health Department
UNICEF	United Nations Children's Fund
VHSG	Village Health Support Group
WHO	World Health Organization

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1. Introduction

Childhood pneumonia and diarrheal disease are the two leading causes of morbidity and mortality among children under five throughout the world. The World Health Organization (WHO) estimates that as of 2010, pneumonia kills approximately 1.6 million children every year while diarrheal disease accounts for 15 percent of deaths among children under five years of age, which equals approximately 1.3 million deaths per year.^{1,2}

1.1 Pneumonia

In response to the high number of deaths due to pneumonia, WHO and the United Nations Children's Fund (UNICEF) have set forth prevention and treatment strategies in the Global Action Plan for Prevention and Control of Pneumonia (GAPP). This plan aims to guide effective treatment and prevention of pneumonia through promotion of the scale-up of the following:³

1. Managing pneumonia cases through the use of integrated management of childhood illnesses (IMCI) at all levels of the health system
2. Improving vaccination coverage
3. Improving nutritional status and reducing low birth weight
4. Controlling household air pollution
5. Preventing and managing HIV infection

1.2 Diarrheal disease

WHO and UNICEF have also set up a seven-point diarrhea plan⁴ which includes:

1. Fluid replacement to prevent dehydration
2. Zinc treatment
3. Rotavirus and measles vaccinations
4. Promotion of early and exclusive breastfeeding and vitamin A supplementation
5. Promotion of hand washing with soap
6. Improved water supply quantity and quality
7. Community-wide sanitation promotion

The Ministry of Health (MoH) acknowledges that these low-cost proven interventions have demonstrated effectiveness in reducing the burden of disease among children under five and therefore prioritizes the prevention, management, and treatment of childhood pneumonia and diarrhea to decrease the morbidity and mortality rates among children in Cambodia.

2. Context

In December 1998, the National Acute Respiratory Infection and Control of Diarrheal Disease Program (National ARI/CDD) was established by the MoH. This program created the country's first integrated policy on the control of acute respiratory infection (ARI), which included pneumonia, diarrheal disease, and cholera. In 2000, the National Program was instrumental in the introduction and implementation of the IMCI approach and provided technical support to all related activities. In 2007, the protocols for the management of diarrhea with low-osmolarity oral rehydration salts (ORS) and zinc were updated through IMCI and the National ARI/CDD Program. This updated policy aims to ensure that formal policy guidance is aligned with, and supportive of, ongoing programmatic implementation and reflects recent advances in the prevention and treatment of childhood pneumonia and diarrheal disease.

2.1 Situation analysis

According to the 2010 Cambodia Demographic and Health Survey (CDHS), substantial gains have been made in reducing childhood mortality. The infant mortality rate was 45 per 1,000 live births in 2010 compared to 66 in 2005. Similarly, amongst children under five years of age, there were 54 deaths per 1,000 live births in 2010 compared to 83 in 2005. Fewer gains have been seen with neonates, and the neonatal mortality has only seen a slight decrease from 28 to 27 per 1,000 live births between 2005 and 2010.⁵

Pneumonia and diarrhea are the two leading causes of morbidity and mortality among children under the age of five in Cambodia. Based on the National Health Statistic Report from 2008, ARI cases represent 39% of under-five inpatients and 31% of all under five inpatient deaths.⁶ Diarrheal disease represented 16% of under-five inpatients.⁶ The 2010 CDHS found that 6% of children under five has symptoms of ARI in the two weeks preceding the survey, and that 15% had diarrhea (2% with blood).⁵

Rotavirus is a leading cause of diarrhea among children in Cambodia. Sentinel surveillance conducted at the National Pediatric Hospital in Phnom Penh from March 2005 to February 2007 among children aged under the age of five found that 56% of 2,296 hospitalized cases of diarrhea had rotavirus.⁷ In regards to pneumonia, a recent hospital-based surveillance by the Pasteur Institute demonstrated that *Haemophilus influenzae* type b (Hib) and *Streptococcus pneumoniae* were among the leading causes of pneumonia detected.⁸

Although significant achievements have been made in the reduction of child mortality and morbidity, if this to be sustained and further successes achieved, efforts need to be put into maintaining successful programs as well as addressing gaps.

2.2 Prevention

Great strides have been made in Cambodia for a number of interventions, but much work remains to scale up prevention measures. Breastfeeding practices have greatly improved, with 74% of children under 6 months being exclusively breastfed according to the 2010 CDHS—an increase from the 60% reported in the 2005 CDHS.⁵ Furthermore, 71% of children between 6 months and 5 years had received a vitamin A supplement in the past 6 months. While these this indicates considerable achievement, gaps remain as full coverage has not yet been achieved.

Routine childhood vaccinations in Cambodia through the National Immunization Program (NIP) have also met with increasing success in delivery. Measles vaccination rates increased from 71% coverage in 2001 to 92% coverage in 2010.^{6,9} In 2010, the National Immunization Program rolled out the pentavalent vaccine DPT-HepB-Hib and reached over 90% coverage for all three doses.⁹ To support prevention of childhood pneumonia and diarrheal disease, NIP is considering the future introduction of pneumococcal and rotavirus vaccines. Cholera vaccinations are not effective during the epidemics and mass immunization campaigns are not recommended for epidemic control.

Water and sanitation issues remain in Cambodia—particularly in remote communities and crowded slums in urban areas—leading to increased risk of diarrheal disease transmission. The 2010 CDHS indicates that only 53.1% of rural households have access to improved sources of drinking water in the dry season and fewer than 25% have an improved latrine facility.⁵ Communities lacking access to clean water and sanitation will require renewed, concerted efforts, planning, coordination, and cooperation among various ministries—including Ministries of Rural Development—for future, targeted interventions.

Household air pollution can have significant negative impact on children's health, particularly related to ARI and pneumonia. Although cooking takes place outside in many communities in Cambodia, the most recent CDHS indicates that 70% of rural households

cook indoors and that over 90% are using wood for cooking. This is likely to be exposing a significant number of young children to dangerous air pollution.

2.3 Treatment

Given the prevalence of Hib and *Streptococcus pneumoniae*, current WHO recommendations for empiric antibiotic treatment of childhood pneumonia, as codified in Cambodia's IMCI ARI treatment protocols, are appropriate for Cambodia.

Continued feeding and increased fluid intake are important interventions for the management of mild diarrhea. However, the 2010 CDHS indicates that only approximately one-third of children under five with diarrhea are being given increased fluids. To complement increased fluid intake, the MoH encourages the use of low-osmolarity ORS and zinc, in line with treatment recommendations from WHO/UNICEF⁴ and outlined in Cambodia's IMCI guidelines. According to data from the CDHS 2010 report, however, only 34.1% children with diarrhea were given ORS and less than 3% received zinc.⁵ Access to these treatment options remains an issue, particularly at the community level and within the private sector. Knowledge of their importance, particularly of zinc, is also limited both within the community and among health care providers.

3. Policy goal

This policy aims to support and facilitate acceleration of achievements towards the reduction of under-five morbidity and mortality due to pneumonia and diarrheal disease.

4. Policy strategies

Strategies recommended by WHO and UNICEF to prevent, manage, and treat childhood pneumonia and diarrhea will be integrated to maximize impact and the effective and efficient use of resources. Specific interventions to be sustained and further scaled-up in Cambodia include:

- Promotion of early and exclusive breastfeeding
- Improvement of childhood nutrition
- Increasing vaccine coverage rates for childhood immunizations and introducing the rotavirus vaccine
- Promotion of hand-washing
- Reduction of household air pollution
- Increasing access to sanitation and safe drinking water
- Community education on appropriate home care and referral practices
- Rational use of antibiotics
- Increasing access to ORS and zinc

To achieve the goal of this policy, the cross-cutting strategies employed shall include:

- Strengthen program management for childhood pneumonia and diarrheal disease prevention and treatment at all levels
- Ensure quality case management for childhood pneumonia and diarrheal disease through capacity building of health workers at all levels
- Improve access to childhood diarrheal disease and pneumonia treatment options by strengthening drug supply and logistics
- Enhance community health promotion for the prevention and treatment of childhood pneumonia and diarrheal disease
- Improve the quality of reporting and surveillance of pneumonia and diarrhea

4.1 Strengthening program management at all levels

The National ARI/CDD Program falls under the National Maternal and Child Health Center and all activities related to childhood pneumonia and diarrheal disease are managed by this program. The National Child Survival Management Committee (CSMC) provides technical advice to the National ARI/CDD Program. Implementation assistance is also provided to the program by the ARI/CDD Technical Working Group for Acute Respiratory Infection and Diarrhea Prevention and Control. To ensure efficiency and effective management, the National ARI/CDD Program will liaise closely with the Department of Communicable Disease Control of MoH (CDC) and other partners.

At the provincial level, the provincial ARI/CDD program falls under the provincial maternal and child health unit and is advised by the provincial CSMC. Implementation of childhood pneumonia and diarrhea related activities will be managed by the provincial ARI/CDD program manager, in close collaboration with the provincial IMCI focal point.

At the operational district (OD) level, childhood pneumonia and diarrhea related activities will be fully integrated into existing health services and systems which fall under the responsibility of the deputy OD manager who manages the health centers, in coordination with IMCI focal points.

At the health center level, the ARI/CDD program activities will be the responsibility of the health center chief and the implementation of these activities will be integrated into the Minimum Package of Activities. Other activities implemented outside of the health center level will fully integrate within existing outreach package activities.

At the community level, the village health support groups (VHSG) will serve as the main point of contact between health center staff and the community. They will act as health promoters in the community, provide minor basic health care consultations, refer more difficult cases to health centers and referral hospitals, and report important health events to the health centers.

4.2 Ensuring quality of case management and capacity building

The key to ensuring quality delivery of care will be to strengthen supportive supervision efforts at all levels of the health system. The national level will lead these efforts by training of supervisors at the provincial health department (PHD) and OD levels to conduct planned, regular supportive supervision visits to health care facilities at lower levels. Furthermore, supportive supervision of VHSG by OD and health center staff will be developed, introduced, and strengthened to monitor progress at the community level.

4.3 Improving access to treatment options

4.3.1 Childhood pneumonia treatment:

Correctly diagnosing pneumonia is important to ensure correct treatment. In order to ensure for better diagnosis on childhood pneumonia, all relevant health staff working at health center in the outpatient department and referral hospitals within the outpatient departments and pediatric wards will be the trained accordingly the IMCI treatment guideline. Empiric treatment for pneumonia with a full course of appropriate antibiotic is outlined in the IMCI treatment protocols. Appropriate antibiotic use stipulates that antibiotics are not to be prescribed for general coughs and colds. Antibiotics and other supplies will be made available at all health facilities through the Central Medical Store (CMS) as a part of Minimum Package Activities (MPA) and the Complementary Package Activities (CPA).

4.3.2 Diarrhea treatment:

The mainstay of treatment to correct dehydration is low-osmolarity ORS plus zinc, in alignment with WHO recommendations, and promoted through Cambodia's IMCI treatment protocols. Low-osmolarity ORS and zinc tablets are part of the essential drug list and are, therefore, available at all public health facilities.

Generally, antibiotics do not add any benefit in the treatment of most cases of diarrhea. The standard treatment recommended by WHO and National program is ORS plus zinc, to complement increase fluid intake. According to updated IMCI guidelines, children with bloody diarrhea (dysentery) may be prescribed an appropriate antibiotic.

Patients with suspected cholera must be given ORS and zinc before being referred to appropriate treatment sites, where CDC and WHO treatment guidelines should be followed.¹⁰ Further guidance on the treatment of suspected cholera cases is available from the MoH.

4.3.3 Increase availability of ORS and zinc at the community level:

At the end of routine outreach activities, it is recommended that outreach teams from health centers leave all remaining ORS sachets, zinc tablets, and information, education, and communication (IEC) materials with VHSG, particularly in the most remote villages, in an effort to increase availability of pre-referral treatment of severe cases of diarrhea. Private pharmacies will also be encouraged to sell low-osmolarity ORS and zinc at a reasonable profit for home use.

4.3.4 Supplies and logistics:

The logistics management system must be strengthened to ensure availability and sustain supplies of ARI and diarrhea treatment products (antibiotics, ORS, and zinc) in the catchment area of health facilities.

Management of the supply chain of drugs and other equipment will remain the responsibility of CMS through its regular distribution mechanisms. In order to avoid stock outs or shortages, the PHD and OD supervisors must conduct inventory checks accordingly to CMS policy, before the quarterly logistic report and request are submitted at all levels.

An ORS and zinc distribution plan will be developed to secure a stable supply of both ORS and zinc at all public health facilities.

4.4 Enhanced community health promotion

Health promotion activities at the community level will leverage existing interventions for strengthening prevention of childhood pneumonia and diarrheal disease by improving awareness of mothers. VHSG networks will be leveraged and regular education efforts by health staff during outpatient and inpatient visits will continue.

Prevention messaging will include:

- Early warning signs of ill health requiring timely health seeking behavior: difficulty or rapid breathing (with chest in-drawing); convulsions; not feeding at all, or serious difficulty feeding;
- Promotion of early and exclusive breastfeeding, particularly in the first six months of life, complementary feeding for the children older than six months of life and during sickness during and after pneumonia and diarrhea as appropriate.
- Increased fluid intake in order to prevent dehydration when diarrhea starts and by providing ORS and zinc tablets as recommended to all children under 5 with diarrhea;

- Vitamin A supplementation, deworming and the importance of childhood nutrition;
- Reminders of the importance of childhood immunizations regarding routine vaccination schedule of NIP;
- Promotion of hand washing with soap and other aspects of hygiene (e.g., vigilance in crowded housing, preventing open-defecation);
- Options to reduce household air pollution; and
- Importance of safe drinking water and improved sanitation facilities.

Additionally, the outpatient departments of all health centers will implement a modified oral rehydration therapy (ORT) corner, providing caregivers with health messages on a range of child health issues during their visit, including diarrhea and pneumonia. Information provided at these child health advice corners will include all of those listed above, as well as specific information, as relevant, on how to properly prepare and administer ORS and zinc to young children and how to correctly administer prescribed antibiotics for pneumonia.

4.5 Improving the quality of reporting and surveillance

4.5.1 Reporting system

Reporting of pneumonia and diarrhea cases will be integrated into the MoH's health information system (HIS) and CDC's existing communicable disease surveillance system¹¹. The National ARI/CDD Program at all levels will ensure that data from the existing surveillance and HIS systems is received in a timely manner and used to inform program planning and implementation.

The collection of this data will additionally provide the opportunity to monitor rotavirus and *Streptococcus pneumoniae* cases. This information will be used to inform the future introduction of rotavirus and pneumococcal vaccines.

4.5.2 Monitoring and evaluation

The national program will identify a set of monitoring and evaluation indicators in collaboration with the CSMC and other core partners. Implementation, technical support, and monitoring of childhood pneumonia and diarrhea control activities will be conducted at the national, provincial, and OD levels as part of a package of maternal and child health interventions.

4.5.3 Suspected cholera outbreak reporting

In the event of a suspected cholera outbreak, health center staff will report to higher levels through CDC's existing Communicable Disease Surveillance System and the HIS system. Specimens will be collected from suspected cases and tested according to CDC's Practical Guide for Field Investigation.¹¹ In response to outbreak reports, the CDC department will support the rapid response team at PHD and OD levels to conduct timely outbreak response.

References

1. Black RE, Cousens S, Johnson HL, et al. Global regional, and national causes of child mortality in 2008: a systematic analysis. *The Lancet*. 2010; 375(9730): 1969-1987.
2. World Health Organization, Pneumonia [factsheet N°331]. Geneva: WHO; 2011. Available at: <http://www.who.int/mediacentre/factsheets/fs331/en/index.html>.
3. World Health Organization, United Nations Children's Fund. *Global Action Plan for Prevention and Control of Pneumonia (GAPP)*. Geneva: WHO; 2009. Available at: http://whqlibdoc.who.int/hq/2009/WHO_FCH_CAH_NCH_09.04_eng.pdf.
4. United Nations Children's Fund, World Health Organization. *Why Children are Still Dying and What Can Be Done*. UNICEF: New York; 2009. Available at: http://www.who.int/child_adolescent_health/documents/9789241598415/en/index.html.
5. National Institute of Statistics, Directorate General for Health, IFC Macro. *Cambodia Demographic and Health Survey 2010*. Calverton, Maryland, USA: National Institute of Statistics, Directorate General for Health, and IFC Macro; 2011. Available at: <http://www.measuredhs.com/what-we-do/survey/survey-display-310.cfm>.
6. Department of Planning and Health Information, Ministry of Health (MOH). *National Health Statistics 2008*. Phnom Penh: MOH; 2008.
7. Nyambat B, Meng CY, Vansith K, et al. Hospital-based surveillance for rotavirus diarrhea in Phnom Penh, Cambodia, March 2005 through February 2007. *Vaccine*. 2009; 27 Suppl 5:F81-84.
8. Sopheak H. Aetiologies of bacterial pneumonia in Takeo and Kamong Cham hospitals. Powerpoint presentation presented at: Pneumonia Control Symposium; December 2009; Phnom Penh, Cambodia.
9. Thiep, CT. The immunization coverage report in 2010. Powerpoint presentation presented at: The Annual Workshop on Immunization; September 2010; Siem Reap, Cambodia.
10. Communicable Disease Control Department, Ministry of Health (MOH). *Rapid Response Teams Guide to Communicable Disease Surveillance and Outbreak Investigations Part I, II, & III*. Phnom Penh: MOH; 2008.
11. Communicable Disease Control Department, Ministry of Health (MOH). *Annex B-9, Practical guide for specimen collection*. Phnom Penh: MOH; 2008.