**KEY FACTS**

- **Pneumonia is an acute respiratory infection** affecting the lungs that can be caused by viruses, bacteria, or fungi.
- Although pneumonia can often be treated and cured, **1.1 million children under the age of five die** due to pneumonia every year (18% of all deaths of children under five years old worldwide).
- **Pneumonia is treatable and preventable.** However, delays in recognizing pneumonia and accessing appropriate care, as well as missed opportunities for immunization, contribute to pneumonia mortality.

**EPIDEMIOLOGY AND BURDEN OF PNEUMONIA**

- Pneumonia affects children and adults everywhere, however most child deaths occur in the world’s poorest regions with **highest incidence** in sub-Saharan Africa and South Asia.
- **Streptococcus pneumonia, Haemophilus influenzae type b (Hib) and respiratory syncytial virus** are the most common causes of pneumonia in healthy people. **Pneumocystis jiroveci** is one of the most common causes of pneumonia in immunocompromised infant and it is responsible for one quarter of all pneumonia deaths in HIV-infected infants.
- **Pertussis** and **measles** have also a respiratory tract component and can complicate with pneumonia.
- **The Philippines** is one of the 15 countries that together account for 75% of childhood pneumonia cases worldwide. **In children aged under 5 years, pneumonia is the leading cause of mortality** with a mortality rate of 23.4 x 100,000 population recorded in 2009.
- **In Regions VI, VII and VIII of the Philippines**, the total number of children under five years of age with pneumonia that have been seen and given treatment from January to December 2012 were 89,221 and 85,923, respectively.
- **Major risk factors** for developing pneumonia are:
  - A weakened immune system due to malnutrition or undernourishment (especially in infants not exclusively breastfed), HIV and other pre-existing illnesses such as measles.
  - Environmental factors including indoor air pollution (cooking/heating with wood, dung, or other biomass fuels), living in crowded houses and parental smoking.

**TRANSMISSION**

- Pneumonia can be spread by:
  - Inhalation of viruses and bacteria that are commonly found in a child’s nose or throat.
  - Inhalation of contaminated airborne droplets from someone else’s cough or sneeze.
  - Bloodstream infections.
  - In newborns, contact with organisms in the birth canal or contaminated substances contacted during delivery.
- Most organisms that cause pneumonia are commonly encountered during day-to-day activities. Hence, it is not recommended that otherwise healthy people wear masks to protect themselves from pneumonia.

**SIGNS AND SYMPTOMS**

- Pneumonia may have a range of symptoms depending on the age and the cause of the infection.
- Viral and bacterial pneumonia have similar symptoms, although there may be more symptoms with viral pneumonia.
- **Cough and difficult and painful breathing** are key symptoms of pneumonia; **fever** is also common.
- In children **under five years of age**, difficult breathing manifests as:
  - Rapid breathing (>50 bpm for 2-12 months old; >40 bpm for >12 months - 5 years old).
  - Lower chest indrawing, where chest moves in or retracts during inhalation, also called “retraction” (Figure 1).
  - Flaring of the nostrils with every breath.
  - Grunting with every exhalation.
  - Wheezing, more commonly with viral infections.
- Severely ill infants may be unable to feed or drink and may experience unconsciousness, hypothermia, and convulsions.

**DIAGNOSIS AND TREATMENT**

- **Chest x-rays** and laboratory tests can be used to confirm the presence of pneumonia and to identify the causative pathogen.
- In resource-poor environments, pneumonia diagnosis is based on **clinical signs and symptoms**.
- **Treatment** of pneumonia is with antibiotics. Treatment regimens need to be chosen based on their efficacy in local settings (e.g., level of drug resistance) and accordingly to the patient risk factors (e.g., undernourished or HIV-positive children).

- **Children under two months are at highest risk for severe illness/death and they should be immediately referred to a hospital or clinic for treatment.**

**PREVENTION AND CONTROL**

- Public health interventions to prevent pneumonia include:
  - Immunization against pathogens that directly cause pneumonia (*S. pneumonia* and *H. influenza* type b) and pathogens that lead to pneumonia as complication of the infection (e.g., measles and pertussis)
  - The most important available vaccines to prevent pneumonia are pneumococcal conjugate vaccine, Hib vaccine, measles and pertussis vaccine
  - Adequate nutrition to improve natural defense and strength of respiratory muscles (which aid in clearance of secretions)
  - Exclusive breastfeeding for the first six months of life
  - Zinc supplementation

- In children infected with HIV, the antibiotic cotrimoxazole is given daily to decrease the risk of contracting pneumonia

**ACUTE RESPIRATORY INFECTIONS REPORTED SINCE TYPHOON YOLANDA**

- Acute respiratory infections (ARI) are range of respiratory disease that can affect the upper respiratory tract or lower respiratory tract. The clinical manifestation of ARI (cough, colds and/or sore throat with or without fever) is common for several diseases such as the common cold, influenza or pneumonia.

- Since the typhoon there have been over 101,417 consultations for ARI in the affected areas

- The following charts and tables show information from SPEED consultations for ARI in select typhoon-affected areas (Regions VI and VIII) from 10 Nov 2013 - 22 Feb 2014. Results shown are dependent upon facility reporting that varied over time

**REGION VI**

In Region VI, since 10 November 2013, there have been 22,477 consultations for acute respiratory infections reported through SPEED, mostly from the Capiz province. The number of consultations for ARI peaked in the first week of December. ARI consultations have represented between 30% and 60% of all consultations since 10 November 2013.

**REGION VIII**

In Region VIII, since 10 November 2013, there have been 78,940 consultations for ARI reported through SPEED, mostly from Leyte province. A steady decrease in the proportion of ARI consultations has been reported in Leyte since the typhoon with some oscillations and a slight increase in the last week. In Eastern Samar the proportion of ARI consultations has been relatively constant since the typhoon.
EWARN weekly summary | 16th to 22nd February 2014

**EPIDEMIC MEASURES**

- **Addressing environmental factors** such as indoor air pollution by providing affordable clean indoor stoves and encouraging good hygiene in crowded homes can reduce the number of children who fall ill with pneumonia.
- **Immunization** against *S. pneumoniae, H. influenzae* type b, pertussis and measles are the most effective way to prevent pneumonia when the cause of pneumonia has been identified.
- In 2013, WHO and UNICEF launched the integrated Global action plan for pneumonia and diarrhoea (GAPPD). The aim is to accelerate pneumonia control with a combination of interventions to protect, prevent and treat pneumonia in children with actions to:
  - **protect** children from pneumonia include promoting exclusive breastfeeding and adequate complementary feeding.
  - **prevent pneumonia** with vaccinations, hand washing with soap, reducing household air pollution, HIV prevention and cotrimoxazole prophylaxis for HIV-infected and exposed children.
  - **treat** pneumonia which are focused on making sure that every sick child has access to the right kind of care -- either from a community-based health worker, or in a health facility if the disease is severe -- and can get the antibiotics and oxygen they need to get well.