

When pneumonia strikes, treatment is key

Case management

- Case management involves correctly diagnosing and treating pneumonia and is a critical part of efforts to reduce pneumonia deaths.
- Effective case management requires trained and skilled health workers, strong referral, and communication systems; and health facilities equipped with antibiotics, oxygen and guidelines for pneumonia management.¹

Community health workers

- Many families, particularly those living in poor and rural communities, lack access to basic medical care for their children.
- Community health workers can save children's lives by diagnosing and treating pneumonia and by referring to a health facility, if needed.

Techniques for diagnosis

- In developed countries, health workers use tools, like chest x-rays and lab tests, to diagnose pneumonia.
- In developing countries, health workers often lack these tools and must instead rely on symptoms and signs of illness to make a diagnosis.
- By counting a child's breaths during 1 minute and checking for other important pneumonia symptoms, health workers can make a diagnosis of pneumonia so that children can receive appropriate treatment quickly.²

Antibiotics

- The treatment for severe pneumonia is a prompt, full course of antibiotics.
- Antibiotics are very inexpensive, costing less than a dollar per dose.
- Tragically, only an estimated 1 of every 5 children with signs of pneumonia receives life-saving antibiotics.³
- If pneumonia worsens, a child may have to undergo painful and risky surgery to survive.

Oxygen therapy

- Children who are very sick with pneumonia often have difficulty breathing in the oxygen their bodies need. A low level of oxygen is a common and potentially deadly complication of pneumonia.
- With existing technology, health workers can place a simple, safe device on a child's finger to measure their oxygen levels.^{4,5}
- Many hospitals in developing countries are not equipped with the tools needed to check oxygen levels in sick children, and may not have oxygen to provide as treatment.⁶
- There are now machines that purify regular air into oxygen. These can then be used to treat patients with low oxygen levels, and are cheaper in the long run than other sources of oxygen.⁷



- Access to these simple, cost-effective tools in hospitals and health centers in developing countries can reduce the rate of pneumonia deaths by as much as 35%.⁸

¹ World Health Organization and UNICEF. Integrated management of childhood illness handbook. Geneva: World Health Organization, 2005.

² World Health Organization and UNICEF. Integrated management of childhood illness handbook. Geneva: World Health Organization, 2005.

³ Figure based on multiple Demographic and Health Surveys (DHS), cited in: Wardlaw T, Johansson EW, Hodge M. Pneumonia: the forgotten killer of children. New York: UNICEF, The World Bank;2006.

⁴ Duke T, Subhi R, Peel D, Frey B. *Ann Trop Paediatr*. 2009 Sep; 29(3): 165-75. Pulse oximetry: technology to reduce child mortality in developing countries.

⁵ Matai S, Peel D, Wandi F, Jonathan M, Subhi R, Duke T. Implementing an oxygen programme in hospitals in Papua New Guinea. *Ann Trop Paediatr*. 2008;28(1):71-78.

⁶ Matai S, Peel D, Wandi F, Jonathan M, Subhi R, Duke T. Implementing an oxygen programme in hospitals in Papua New Guinea. *Ann Trop Paediatr*. 2008;28(1):71-78.

⁷ Enarson P, La Vincente S, Gie R, Maganga E, Chokani C. Implementation of an oxygen concentrator system in district hospital paediatric wards throughout Malawi. *Bull World Health Organ*. 2008 May;86(5):344-8.

⁸ Duke T, Wandi F, Jonathan M, Matai S, Subhi R, Peel D. Impact of improved oxygen systems on child deaths from pneumonia: a multi-hospital effectiveness study in Papua New Guinea. *Lancet*. 2008; 372:1328-1333.