A Plan for Children:

Reducing Child Mortality Rates Through Pneumonia

Abstract

An astounding number of children die everyday from preventable causes. One of these causes is pneumonia, a disease that kills over two million children a year, more than AIDS, malaria and measles combined. Alleviating the damage of pneumonia is crucial in reducing child mortality. The continent of Africa particularly suffers from childhood pneumonia, and Nigeria is the country that is most affected, making it an area in urgent need of improvement. Organizations such as UNICEF have proposed numerous methods to resist pneumonia, but the best plan may be to start immunizing children routinely and eradicate the disease itself. To make this possible in Nigeria, for example, it is necessary to raise awareness and have the Nigerian government take measures to start a new immunization program. The procedure of large-scale immunization would be effective in various other developing countries, leading to the mitigation of child mortality itself.

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In the year 2000, global leaders convened in the United Nations headquarters in New York to adopt a set of goals aimed at achieving a common objective: to tackle problems of poverty and human rights, and create a more suitable world for future generations to live in. These goals are called the Millennium Development Goals, possibly the most widely supported goals the globe has ever agreed on. The goals cover a large variety of transnational issues including hunger, primary education, and gender inequality. However, the most important theme, relating directly to six of the eight goals, is improving the lives of children. One of these goals is to reduce child mortality (The United Nations Development Group [UNDG], 2010).

Despite the considerable efforts made by countries and organizations around the world, child mortality remains a serious problem. High child mortality rates lead to greater problems such as overpopulation and less economic growth, affecting all countries regardless of their levels of development. According to UNDG (2010), “28,000 children die every day from largely preventable and known causes” (p. 12). The situation is especially dire in Africa, where in the most underdeveloped countries, as many as one in five children die

before their fifth birthdays. These deaths are not from accidents or cancer, as is normal in developed countries. They are caused by diseases that mostly do not concern the developed world: pneumonia, diarrhea, malaria, measles, and HIV/AIDS. Of these, the single largest killer of children worldwide is pneumonia, a disease that kills more than 2 million children each year, which is more than deaths caused by AIDS, malaria and measles combined (The United Nations Children's Fund [UNICEF] and World Health Organization [WHO], 2006). With global attention focusing on the HIV/AIDS pandemic, it is not well known that one in five child deaths are caused by pneumonia. Because pneumonia is responsible for so many children's deaths, it is crucial to lessen the harm done by pneumonia in developing countries in order to reduce child mortality.

Pneumonia: Symptoms and Causes

According to a paper on pneumonia and child mortality written by UNICEF and WHO (2006), pneumonia is a type of acute respiratory infection that damages the lungs, interfering with the lungs' intake of oxygen and making breathing itself laborious. The paper went on to explain that the consequences of most acute respiratory infections are moderate, such as the common cold, but in the case of children with weaker immune systems, they often lead to more life-threatening diseases including pneumonia. Common symptoms of childhood

pneumonia are labored breathing, cough, fever, chills, and wheezing. According to the paper, the leading causes of pneumonia are infections of bacteria and viruses, and in Africa over half of the cases are caused by a bacterium called Streptococcus pneumoniae.

One of the reasons children living in underdeveloped countries are especially susceptible to pneumonia is that they are often undernourished. According to the paper by UNICEF and WHO (2006), the lack of certain nutrients, especially zinc, weakens children's immature immune systems and leaves them helpless to combat the bacteria causing pneumonia. Furthermore, the children's living environments are often important factors. Babies living in unsanitary, crowded homes with exposure to pollution or parental smoking are more likely to catch pneumonia. Another obstacle in tackling pneumonia is that it is not easy to diagnose. According to PneumoACTION from the Johns Hopkins Bloomberg School of Public Health (2010), "one study showed that only about one in five caregivers recognized that difficult or fast breathing is a reason to seek medical care immediately" (para. 14). Without proper diagnosis, the patients do not have any chances of receiving treatment. PneumoACTION also stated that merely half of the children in impoverished countries are taken to suitable hospitals. The treatment for pneumonia is usually a course of antibiotics which cost less than a dollar a day, which means that as long as children are taken to medical

facilities that are properly equipped, it is likely that they would have good chances of recovering.

Taking the above points into account, it can be said that there are an overwhelming amount of obstacles that need to be overcome until childhood pneumonia can be controlled. These obstacles exist in most developing countries in general, but they are especially prevalent in certain areas of the African continent, creating an environment in which pneumonia is easily spread and not treated sufficiently. According to data from an article by O'Brien, et al. (2009), it is estimated that in a population of 100,000, the incidence rate of pneumonia in Africa is 3397 and the death rate is 362, the highest in the world by a considerable margin. Mitigating the threat of pneumonia in the African continent would conspicuously decrease the overall child mortality rate around the globe.

Example: Pneumonia Mitigation in Nigeria

Among the nations in Africa, Nigeria suffers most from the effects of childhood pneumonia, followed by Ethiopia and the Democratic Republic of Congo (O'Brien, et al., 2009). According to an article by Odeh (2009), it is estimated that every year, pneumonia affects six million children in the country, killing 200,000. This is an urgent problem in Nigeria, affecting families or communities both financially and emotionally. Focusing on

Nigeria is likely to provide an idea leading to a solution for all countries struggling with childhood pneumonia.

Now, there are many possible solutions to mitigating the threat of pneumonia in developing countries, from prevention to treatment. WHO and UNICEF (2009) proposed several, one of which is to improve the treatment equipment in hospitals. According to a research paper by Duke et al. (2008), the installment of better oxygen systems in hospitals in Papua New Guinea led to the reduction in mortality rates for pneumonia, lowering the risk of death by 35%. However, although highly effective for treating pneumonia patients, the high cost of supplying the equipment makes it difficult to achieve. The paper reported that this oxygen system cost as much as 51 US dollars per patient, and 1673 dollars for each life saved. Like many other developing countries, Nigeria spends only 5% of its GDP on health, making it impractical to spend large amounts of money on one patient (WHO, 2006). Another proposed solution is to prevent pneumonia infection using zinc supplementation. As mentioned earlier, the lack of nutrients, especially zinc, is said to weaken children's immune systems, thus making them susceptible to pneumonia. This method is cost-effective since zinc supplements only cost "US$0.02 per tablet as purchased from Nutriset" (Harvey, 2005, para. 3). However, an experiment done on children in Nepal, giving one group of children

daily zinc supplementation and another group placebos to investigate the effects, produced the result that zinc supplementation is not enough to mitigate pneumonia deaths (Tielsch et al., 2007). Now, what is a solution that is cost-effective, easy to start, and capable of producing good results? The answer may lie in vaccines.

Vaccines are safe, effective ways to prevent pneumonia infections. As explained earlier, many factors in children's lifestyles and environments contribute to the spreading of pneumonia, and it may be difficult to achieve tangible improvement in such broad fields. However, it should be far simpler to wipe out the bacterium itself. Disappointingly, the Nigerian government does not include pneumonia vaccines in its routine immunization. With the introduction of vaccines, the number of children who develop the disease in the first place would decrease dramatically.

Using vaccines is an ideal solution in many ways. One obvious advantage is its effectiveness. There have been numerous cases in which introduction of the pneumonia vaccine produced remarkable results in countries with low income. For example, in a study conducted in eastern Gambia on infants aged 6 to 51 weeks, the efficacy of the vaccine was 77% against pneumococcal diseases caused by bacterium targeted by the vaccine, and 16% reduction in all deaths (Cutts et al, 2005). This is more effective than measures including the

installment of oxygen systems that was mentioned earlier. Furthermore, according to the Global Alliance for Vaccines and Immunisation [GAVI] (2010a), vaccines also often bring about a phenomenon called “herd immunity”, meaning that even when a fraction of the population is immunized, the protection spreads over to others in the area as well. GAVI introduced a case in the United States, in which the introduction of a pneumonia vaccine eventually led to a 70% decrease in the disease occurrence among children who had not been vaccinated. The strategy of vaccination would not only effectively prevent pneumonia in individuals, but would also help eradicate the disease in surrounding areas.

However, critics may claim that procuring enough vaccines is impossible due to its costs. It is true that the pneumonia vaccine is a complicated vaccine that takes one whole year to produce, making it relatively expensive (Walsh, 2011). Nevertheless, although the initial expenditure may be large, the cost-effectiveness of vaccines will overcome the high costs. GAVI (2010a) stated that “at a price of US$ 5 per dose, pneumococcal vaccines are a very cost-effective intervention in 68 of the poorest countries” (p. 14). Keeping this in mind, according to Walsh (2011), there is a new pneumonia vaccine that will be sold in Africa for $3.50 a dose, almost 35 dollars cheaper than the cost in Europe. When used correctly, the vaccines will be a good investment in the long run, reducing the amount of money needed

later for treating pneumonia patients.

In order to put this plan into motion, the Nigerian government needs to make pneumonia a higher priority. When low-income African countries start new immunization programs, they generally rely on organizations such as GAVI to fund them. For example, in 2009 Rwanda started a historic vaccination program with the help of GAVI, and was able to vaccinate almost every child younger than one year of age (GAVI, 2010b). However, Nigeria cannot be supported by GAVI due to its low routine immunization rate (Leo, 2010). To gain support, Nigeria needs to improve its health system and pave the way for a new and much-needed immunization program. It is possible, because in the past the Nigerian government put considerable effort in eradicating polio, and succeeded in raising the immunization rate to 61% in the year 2008 (UNICEF, 2010). If the country puts the same degree of effort into starting pneumonia vaccination, it should not be an impossible feat.

Conclusion

Large-scale vaccination is a method that would be effective in reducing childhood pneumonia cases not only in Nigeria, but in other developing countries as well. There are a great number of countries that have yet to include pneumonia vaccines in their immunization programs, including Uganda and Angola, both among the top ten nations in the world in terms

of pneumonia-caused death rates (O'Brien, et al., 2009). Furthermore, the action would bring more attention to the situation worldwide, stimulating more people and governments to make donations for pneumonia immunization. The important theme is to take action, raise awareness, and speed up the process of saving children from the threat of pneumonia. For an improved future in which more children around the world can grow up to become healthy, productive adults, we need to start by preventing pneumonia in each and every country. (1858 words)

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