Waterborne Diseases: Eradicating the Guinea Worm

By Daphne Guy

Reprinted 2015

By ***Aquosus Potentia***

www.aquopotent.net

More than two-thirds of the body is made up of water. Without it, we would die in days. Water is a nutrient needed for the human body, which is why doctors tell their patients to drink eight eight-ounce glasses of water a day to get the proper nutrients and the water the body needs to survive. No doubt you have heard this before and you are drinking your recommended daily supply of water. However, have you ever stopped to think about waterborne diseases while you are turning up your bottle of Fiji water? Although this is not common in the U.S., waterborne diseases are widespread in countries such as Ghana. There are many types of waterborne diseases; however, guinea worm disease (GWD), also known as dracunculaisis, is very common in Ghana, where rural people drink from unprotected water sources. This waterborne disease has caused many health issues for the people in Ghana, which is why former President Jimmy Carter sought to eradicate this disease by educating the people of Ghana; because of the Carter Center, statistics show that the number affected by guinea worm has dropped drastically (Bates & Ciment, 2013). However, more work is needed to continue the safety of the children and people of Ghana. Supporters such as the Center of Disease Control (CDC), as well as other campaigns, have fought in the prevention of eradicating this disease in Ghana, yet there are other countries that still have cases of guinea worm, countries such as Sudan, Mali and Ethiopia. Much more work is needed in this fight to eradicate this disease that is taking the lives of children and adults in these countries. Rivers and dams must be given more attention since this is the water supply of the people in Ghana. Perhaps, more wells should be built so that Ghana can drink fresh water; this will definitely control the outbreaks of guinea worm. First, however, what exactly is guinea worm disease? How do people come into contact with the painful disease? How is it treated?

In order to understand this disease, guinea worm, it is important to understand exactly the meaning of the disease, how the disease is transmitted, as well as the symptoms and treatment. Waterborne diseases such as guinea worm infect human beings through ingestion of contaminated water. When people swallow the water they are drinking, which is contaminated with pathogenic organisms such as cyclopoids, these cyclopoids are infected with the guinea worm larvae; these organisms are very small and cannot be seen by the human eye. After about a year of drinking this contaminated water with guinea worm larvae, the worms then develop in the body; this worm forces itself through the skin of the person infected, namely below the knee or on the hand. These worms can grow up to three feet long, and are as wide a paper clip (Bates & Ciment, 2013). Sites where the guinea worm disease are transmitted are ponds, dams, and rivers; sites such as these are where rural people in Ghana collect their water to cook and drink. The signs and symptoms are as follows: low-grade fever, swelling, diarrhea, nausea and vomiting, as well as skin rash. Sadly, people who live in the rural areas of Ghana do not have access to medical care; what is even sadder is that there are no drugs to help with treatment or vaccine to help prevent the infections of guinea worm. Treatments suggested for the guinea worm disease are simply aspirin to help reduce the swelling and antibiotic ointment to help prevent bacterial infection. Those who are infected can be confined to their bed and any physical activities for up to three months (Bates & Ciment, 2013).

Guinea worm disease has been around for years now and has had a very large impact in the world, especially Ghana. Guinea worm disease is caused by socioeconomic conditions, such as poverty. Poverty-stricken countries, such as Ghana, have very poor sanitation and water supply systems, which forces the people to use contaminated water (Bates & Ciment, 2013).

Their water comes from unclean areas that are infested with fleas and bacteria, such as E. coli and cycloids, which are parasites. According to Bates and Ciment, "About 40 percent of people worldwide live in households unconnected to proper sanitation systems, while one and six, or about 1.2 billion people, do not have access to safe water" (Bates & Ciment, 2013). Furthermore, this causes concern for more outbreaks of the guinea worm disease for people in Ghana and other poverty (Bates & Ciment, 2013).

As a matter of fact, statistics show that in 1989, about 180,000 people in Ghana were reported to be infected with guinea worm (Bierlich, 1995). Although today this number has dropped drastically, there are those who are still drinking from contaminated sources. Statistics also show when countries, cities, and towns have a clean reliable water system, such waterborne diseases as guinea worm are eradicated, and the health of the people in these cities is relatively stable (Troesken, 2004). It is clear to see that people who live in countries torn by poverty need to be educated on how to prevent this painful yet deadly disease. This is where the government as well as non-government help comes into play.

In 1980, a campaign was launched to target guinea worm disease. There were supporters from numerous foundations, institutes and governments who wanted to join the fight of preventing guinea worm disease. One such agency that has been deeply involved in the eradication of this disease is the "Carter Center." Our former President Jimmy Carter led a campaign to help fight the disease (McNeil, 2011). This campaign was able to educate people in Ghana about the disease and give them instructions on how to detect the taste in the water: for example, bitter versus sweet water. The Carter Center has gone to more than 26,000 villages to help organize programs, show people how to filter water for drinking and bathing as

well as dig wells to catch clean water (Simon, 2015). It has been over 25 years since former President Jimmy Carter formed the "Carter Center" to fight this disease; today the former President and his associates are still fighting this disease that took many lives and has caused a lot of illnesses. Although there have been and still are campaigns to help rid the guinea worm, there are still countries where there are cases of guinea worm disease; therefore, the fight continues. The Center for Disease Control and Prevention (CDC) is also helping in the eradication of guinea worm. Statistics for the CDC show that in 2013, there were only 148 cases of guinea worm disease worldwide, and the numbers continue to drop. In 2014, there were 126 cases, even fewer. Organizations such as CDC and the Carter Center are definitely making a huge difference, and eradication seems to be getting closer ("Parasites: Dracunculiaisis," 2015).

So, what should be done about this widespread disease that is taking many lives and causing painful illnesses for people in Ghana and other countries? One might say more campaigns to help educate in the prevention of guinea disease, or getting the government involved more, by sending bottles of fresh water to distribute freely to the people for drinking. These are all great suggestions and will surely help in eradicating this disease. Another suggestion would be to help build more wells, so that the people can catch fresh water, even better, a vaccine to help with the treatment of guinea disease worm so that people will not have to suffer from the painful illness caused by this disease. Surely, this will be of great help in the eradication of guinea disease worldwide. A testimony of Nils Daulaire, who is the Senior Health Advisor of U.S. Agency for the U.S. Agency for International Development (USAID), addressed the Court in May of 1998, acknowledging that "the world has a new tools and the

know-how in improving the health of billions of people living in poverty in the developing world that live with such disease as the guinea worm. [He] expressed how global health is entering a time of win-win opportunities in preventing such diseases as guinea worm" ("Eradication and Elimination of Infectious Diseases," 1998).

Guinea worm disease is well known worldwide; this is not a new disease that has just surfaced, but rather a disease that has been around for years. There is still a need to eradicate it, however. Although progress is being made in the eradication of the guinea disease, it is imperative that the campaigns continue in the impoverished countries to help educate people on prevention. Statistics show that the number of people suffering from guinea worm disease is steadily dropping, which prove that the campaigns and education are helping in prevention ("Parasites: Dracunculiaisis," 2015). The government, as well as other known entities campaigning in helping with the eradication of guinea worm disease, should continue in the fight. Knowing that prevention of such diseases as guinea worm is being addressed helps communities and people of other parts of the world feel safe, knowing that such agencies as World Health Organization (WHO), Center of Disease Control (CDC), Carter Center, and U.S. Agency for International Development (USAID) are helping to eradicate this disease. So the next time you are drinking a bottle of fresh waterthat is not contaminated, think of how fortunate you are and then think of those in countries such as Ghana, who are not as fortunate; they have to boil, filter and be very cautious about the water they drink. Join in on the fight of helping to eradicate guinea worm disease.

References

Bates, C., & Ciment, J. (2013). Waterborne diseases. *Global social issues: An encyclopedia*. Retrieved from http://literal.credoreference.com/content/entry/sharpesi/waterborne_disease

Bierlich, B. (1995). Notions and treatment of guinea worm in northern Ghana. *Social Science & Medicine, 41*(4), 501-509.

Eradication and elimination of infectious diseases: Nils M. P. Daulaire. (1998, May). Congressional Testimony.

McNeil, D. (2011). Parasitic disease: Guinea worm takes a step closer to eradication, Jimmy Carter says: Science desk. *New York Times.*

Parasites: Dracunculiaisis (also known as Guinea Worm Disease). (2015) *Centers for Disease and Control Prevention.* Retrieved from http://www.cdc.gov/parasites/guineaworm/

Simon, S. (2015, August 22). Jimmy Carter remains stalwart in vow to eradicate guinea worm. [Transcript] National Public Radio.

Troesken, W. (2004). *Water, race, and disease* (1st ed.). The MIT Press.