IF I COULD INVENT SOMETHING NEW.

In the rural village of Gombe, Nigeria, Halima woke to the distant sounds of her neighbors’ cries. She rushed outside to find chaos unfolding as families gathered around makeshift beds, their loved ones writhing in pain. Cholera had swept through the village overnight, leaving a trail of devastation in its wake. Among the distraught faces, Halima spotted her friend, Aisha, clutching her youngest son, Musa. Just days ago, Musa had been full of laughter and mischief, chasing after goats in the fields. Now, his skin pale and clammy from dehydration. Aisha's desperate pleas for help echoed through the air, but the local clinic, already strained beyond capacity, could not offer little more than ORS (Oral Rehydration Salts) and a fleeting hope. Too many lives had been lost to preventable diseases like cholera. This is clear that the community needs a solution. I have an invention, which could be of help, in putting an end to the transmission of cholera; the **Cholera detector.**

Cholera remains a significant global health challenge, affecting communities where they lack access to clean water and sanitation. Cholera is caused by the vibrio cholerae bacterium, it’s known for its rapid spread through contaminated water sources. According to the World Health Organization (WHO), cholera infects between 1.3 to 4 million people annually, causing an estimated 21,000 to 143,000 deaths worldwide. In Nigeria, cholera outbreaks are recurrent, exacerbated by overcrowded urban settlements and inadequate waste disposal systems. It spreads swiftly through contaminated water sources leading to severe dehydration and, if untreated, death within hours. Early detection is crucial to implementing timely interventions.

A **cholera detector** is a portable device equipped with advanced sensors capable of detecting specific biomarkers or genetic material associated with cholera bacteria in environmental samples, such as water sources or human waste. Unlike traditional methods that rely on laboratory testing which can be time consuming and require specialized facilities, the **cholera detector** will provide rapid on-site results, enabling immediate intervention. This cholera detector of mine will integrate several components such as sensor technology (which uses biosensors that react specifically to cholera bacteria), data analysis software (which processes sensor data to identify presence and concentration of cholera pathogens), compact and battery powered for field use, suitable for deployment in underserved areas.

Manufacturing the **cholera detector** will involve assembling and calibrating the sensors, integrating data analysis software, and ensuring durability and reliability in various environmental conditions. To use the **cholera detector**, field personnel have to collect samples from potentially contaminated sources such as water bodies. The samples will then be analyzed using the detector, which provides rapid feedback on the presence and severity of cholera contamination.

My invention has numerous benefits**.** These are early detection and prevention, timely treatment, reduction in mortality rate, public health improvement, maintain economic stability by reducing cholera impact on the workforce, and finally, raising the awareness on the importance of sanitation and hygiene.

In my conscience, Cholera detector will be a game changer in public health management.