

Modernizing and Providing the Toilet: Achieving Global Health One Flush at a Time

The average person takes two or three trips to the toilet per day. Its purposes may range from allowing us to relieve ourselves, providing the family goldfish's final resting place, or simply giving us a nice little spot to sit and contemplate life's greater questions for a half hour or so. Using a toilet has become commonplace, and is cemented in our daily routines, but the importance of a standard toilet is very much underrated. By ridding waste, toilets are essential for sanitation and the prevention of disease. However, there are 2.4 billion people globally who do not have access to a toilet. That is one third of the entire world's population. Without toilets, people are vulnerable to water-borne diseases like cholera and dysentery. Five thousand children die each day due to the lack of toilets. Having a toilet is not a luxury. Toilets are absolutely necessary to maintain a sanitary environment and prevent the spread of life-threatening diseases. Because of that, the grant money provided by the Gates Foundation will be used to supply toilets and education to cultures unfamiliar with the importance of sanitation.

Toilet usage has become a prominent aspect in our daily life. On average, a person will spend about three years of their life sitting on a toilet. However, this important appliance uses the most water out of any household item, consuming up to 30% of a household's water usage and averaging about six flushes per day, each flush draining about a gallon and a half of water. By reducing the amount of water used in the flush of a toilet, we can conserve millions of gallons of clean water per day in the U.S. alone. Still, the modern toilet can be improved upon. There are two general types of toilets that exist: gravity assisted toilets that use only gravity to drain water and waste, and pressure assisted toilets that use a combination of gravity and air pressure to flush. In recent times, pressure assisted toilets were very expensive and only used in high-end public settings such as fancy restaurants or sports stadiums. However, these pressure assisted

toilets have become much cheaper in the past decade, and should be found in homes more frequently due to their efficiency and ability to conserve more water than their outdated gravity assisted brethren. For these reasons, the shift from gravity assisted toilets to pressure assisted toilets is needed. The modernization of the toilet is crucial to the conservation of clean water and the move to a healthier, safer world.

Though toilets are necessary in today's society, they have only existed for a few hundred years. It has taken thousands of years to develop the bathroom facilities we have today. In ancient times, people simply dug holes under trees or went to the river to relieve their waste. Before modern plumbing, chamber pots were used indoors to hold urine and feces, which were emptied outside in a hole or a river. By putting a seat over a hole dug in the ground, and building walls around the seat, the first outhouses were made. Actual toilet paper itself was not invented until 1877 when people learned how to cheaply make paper. All of these means of cleaning should not be overlooked either, because a single gram of feces can contain thousands of parasites and millions of bacteria and viruses. The development and modernization of toilet facilities is a significant step we need to take to insure safety for everyone.

Living without toilets is not something new in our world. So if people have been digging holes in the ground or going to the local river for thousands of years, why is it in issue if one-third of the world still does so today? The main difference in today's world regarding the need for toilets is the massive growth in population. In the past, washing waste down the river was clean and acceptable, but now with more people on the earth than ever before, these older methods of waste disposal are extremely unhealthy and dangerous. Crowded villages are being infected with disease because the waste produced by the villagers contaminates the nearby sources of water. There is less and less room in these civilizations to keep digging holes, and the

rivers are becoming poisoned by the increasing load of waste going into them. The amount of unflushed waste being produced in the world provides an overwhelming opportunity for infection, especially among children. Toilets would provide proper sanitation and a method of ridding waste and harmful bacteria in our more heavily populated world.

The grant money provided by the Gates Foundation should be used primarily to provide toilets to those in need and also to create environmentally friendly toilets that cut down on the usage of water per flush. We would decide which villages in Global South countries have the densest population as well as the most contaminated and underdeveloped water system. These villages that are most in need would receive toilets and proper plumbing along with education about bathroom cleanliness and the importance of sanitation in the fight against disease. We can fund the toilets going to villages in need by using some of the proceeds earned selling pressure assisted toilets in developed countries. This way, we can provide toilets to those in need and give incentive for people who already have toilets to switch to a more efficient kind. Toilets provide a much needed sanitary environment as well as a means to remove harmful bacteria and waste from communities. The infection of Cholera, diarrhea, dysentery, and many other water-borne illnesses can be prevented if toilet access is given to those in need. Millions of lives can be saved with the provision of toilets in global south countries. It is time for humans to stop digging holes in the ground to dispose of waste, and create a safe, clean, and bright future with sanitary toilet access for all.

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