Problem and Clinical Need

- Consumption of unclean water is a direct threat to public health in areas with poor infrastructure.
- Can cause dehydration, fever, and muscle aches, and death.
- Approximately 3.4 million people die each year from a water-related disease, and 780 million people worldwide lack access to clean water.[1]
- Need a solution that provides safe, accessible drinking water for disaster relief and low-resource areas.
- We intend to provide short-term clean water at a lower cost than current industrial products and offer a large-scale deployable solution.

Innovation behind D.E.W.

- New filter paper called p[Ag]
- Embedded with silver nanoparticles
- Novel in its ease of use and low-cost production
- Eliminates both suspended particles and harmful microorganisms from contaminated water
- Easier to transport, distribute, and use in comparison to other current water purification techniques.

Description of Design

Our design is a uniquely shaped plastic bag with an incorporated filter and drinking straw. The device is used when the only sources of drinking water are biologically or physically contaminated.

Usability

Extensive usability studies were conducted during initial prototyping stages and for the final prototype.

How to Use DEW

Retrieve device and bring to source of contaminated water.

Fill device with up to 3L of water while keeping opening of straw away from water source.

Keep device vertical during filtration by hanging it using the provided strings.

Remove the blue wrapper from the straw and drink the filtered water through the straw.

Dispose of device after 3L of water have been filtered and consumed.

Current Options

- PUR Packets by Proctor & Gamble
  - In use in low-resource environments.
  - Each packet can purify up to 10 liters of water.
  - Requires multiple steps, specified waiting times, and equipment.

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References