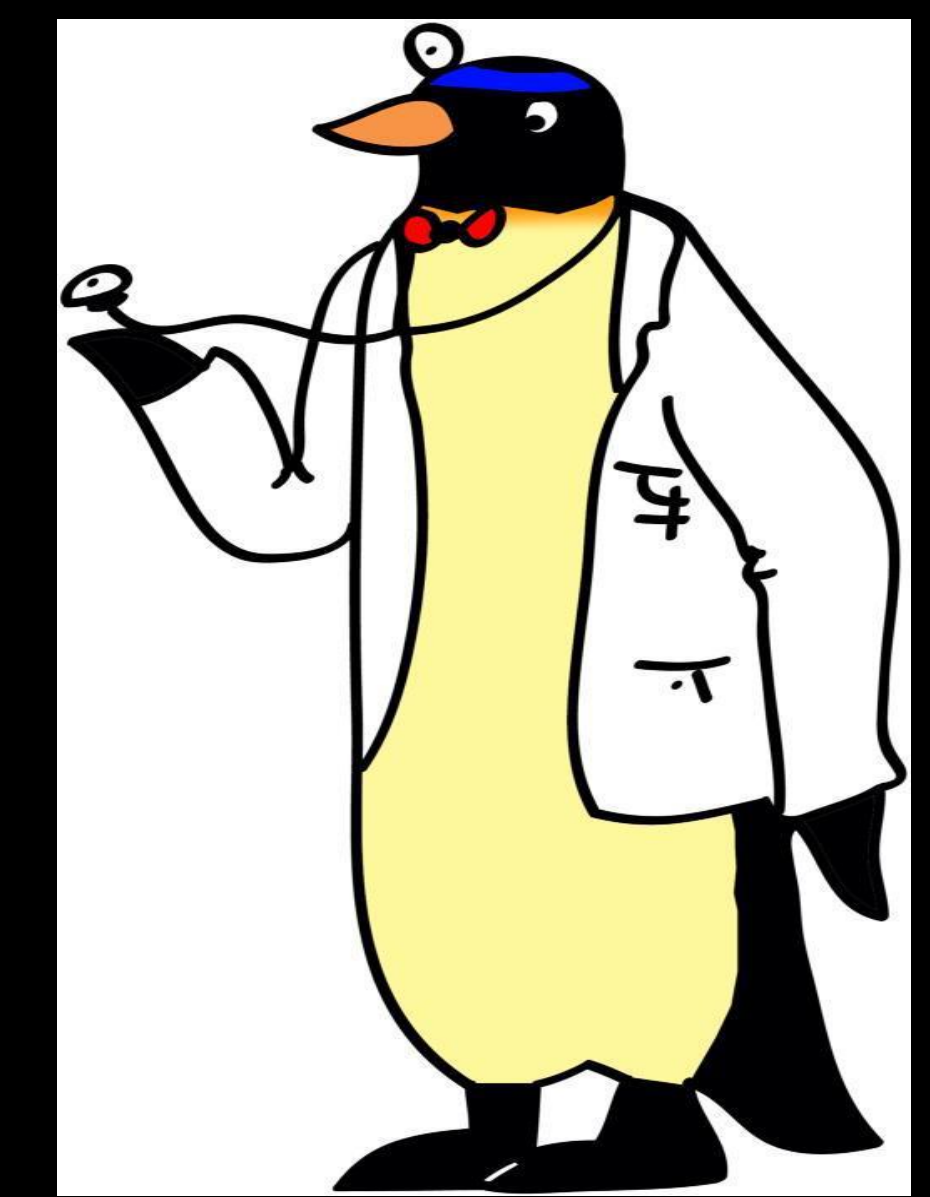




# WPI

## Medical Waste Contamination

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### Abstract

With the medical field advancing, prescriptions and other medicines are becoming more common and are increasing biomedical waste. These drugs are leaching into our water resources through improper disposal such as rinsing them down a sink, throwing them into household trash, or directly depositing them into the environment. At Worcester Polytechnic Institute this is a problem because students do not have access to proper disposal methods. They are adding to the wastewater problem instead of helping it. Our methods to change WPI's effect on the problem were conducted through research and a survey of students' pharmaceutical waste habits. We learned the best solution is to install drop-boxes on campus. In order to solve this problem, we need to start small.

### Background

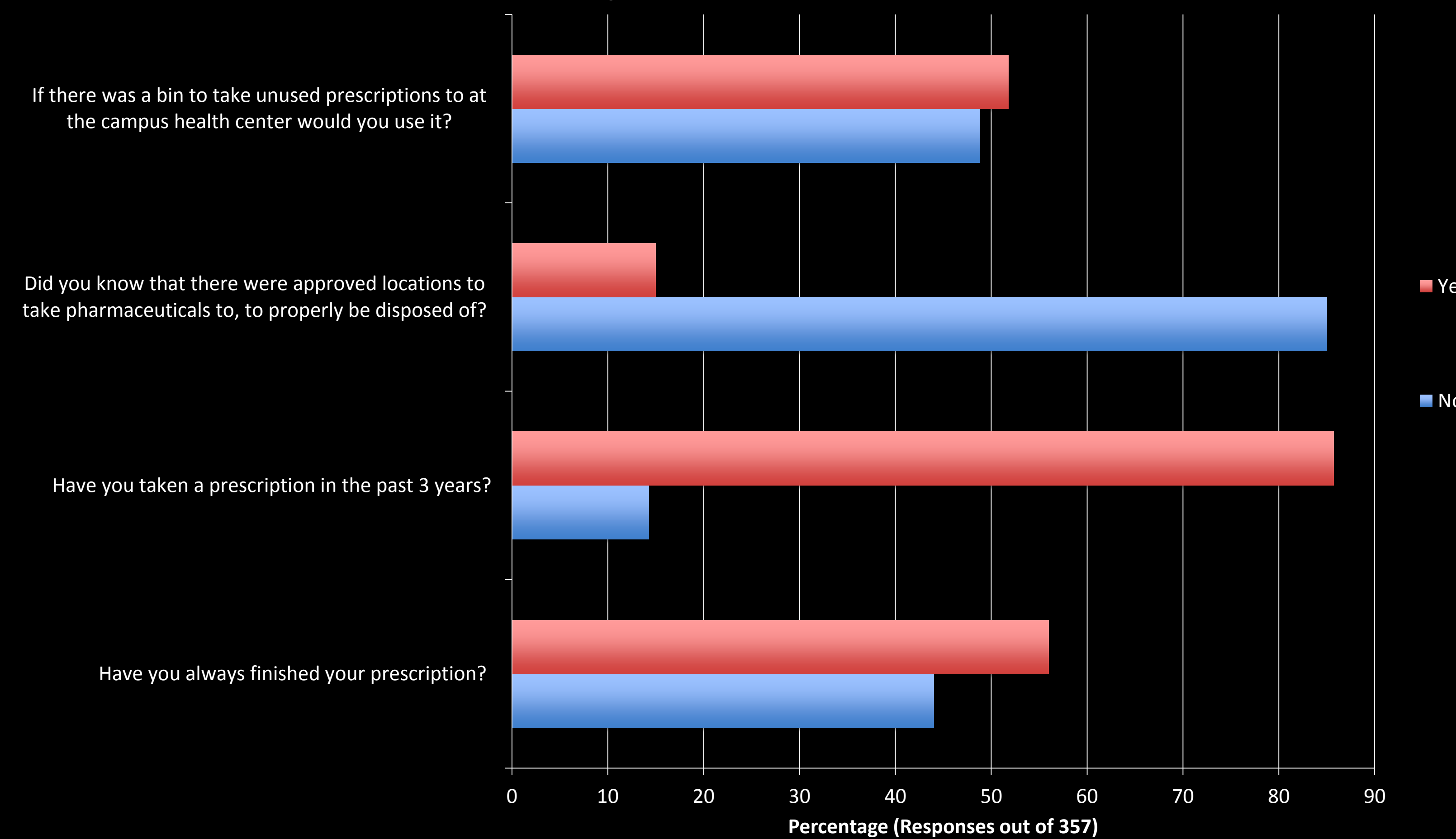
The world's water crisis is expanding and is the result of a range of factors; the rise in demand for water, dwindling per capita resources, poverty, global warming, pollution, and water related diseases. As the population of sick people increase, the parts per million of these chemicals in the environment also increase. These chemicals end up in the water supply which we consume. The drugs take a direct root to the water supply when some institutions dump unwanted or unused drugs down the sink, toilet, or even into landfills. A solution to this is a drop box where people may properly dispose of their unused and unwanted medications. With further research, education, and implemented technology the biomedical waste in the environment can be reduced.

### Project Goals

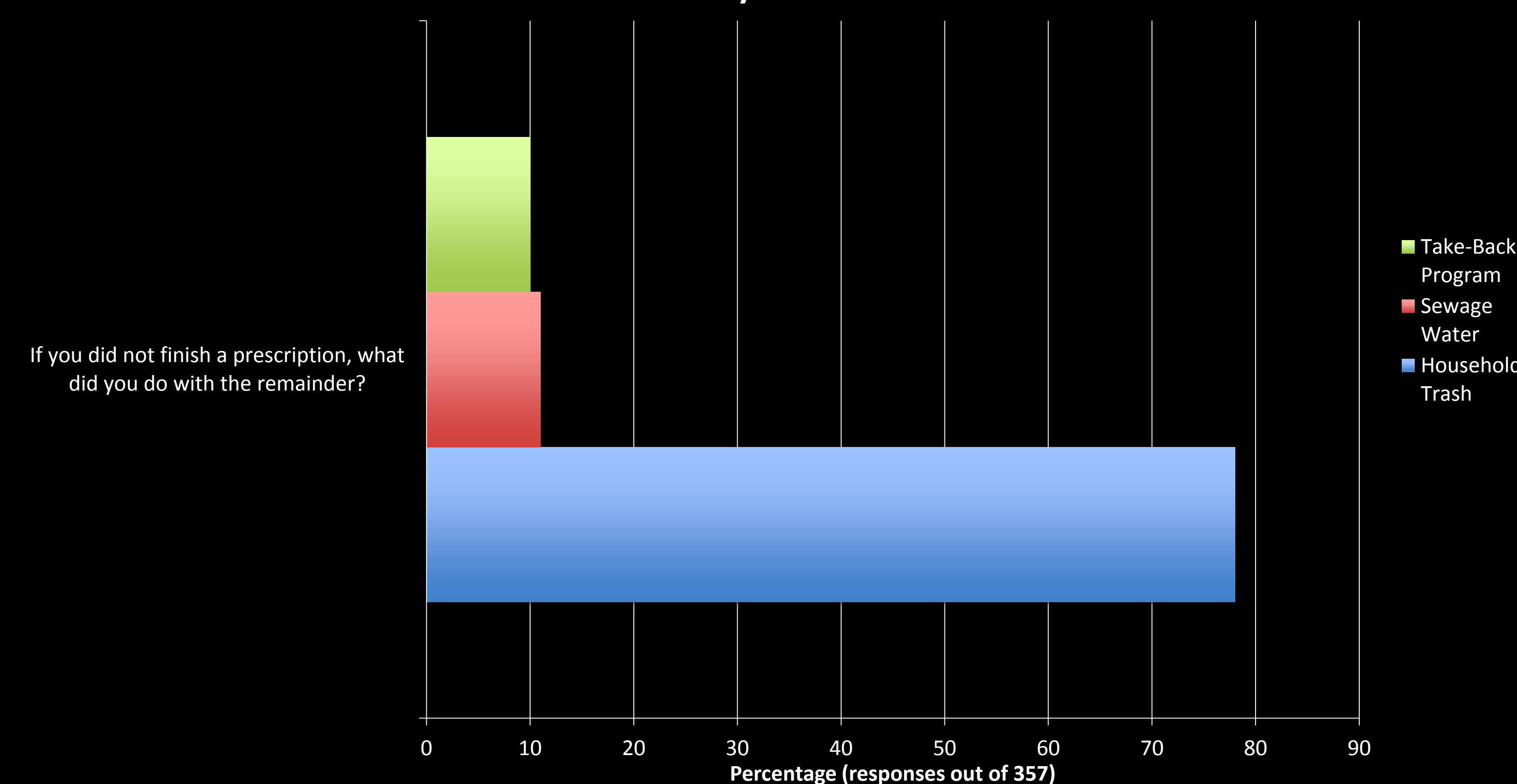
- Find out campus's knowledge on medical waste disposal
- Educate campus on proper medical waste disposal methods
- Implement a safe disposal method on campus to reduce amount of waste improperly disposed

### Survey

Student Experience with Pharmaceutical Waste



Pathway to Environment



### Results

#### Results were Favorable!

- This problem impacts the United States more and more every year
- WPI campus community is negatively affecting the water resources in the surrounding area, which in turn reflects poorly on its attempt to be more sustainable
- 357 undergraduates took our 9 question survey
- About **86%** of the participants have had to take a prescription in the past three years and only **44%** of them did not finish it
- When the participants were asked if they knew about locations to bring unused medications to, a majority said they did not (**85%**)
- If a take-back program were implemented on campus more than half of our participants (**52%**) would use it to dispose of their unused medications properly

### Future Actions

- Setup drop-box at health services
- Green Team
  - Work with organization to promote and educate campus
- Examine and assess system through
  - Follow-up survey
  - Usage of drop-box
- Implementation on a larger scale

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