



Abstract

Infectious diseases are common among college students and their spread is exacerbated by widespread use of Morgan Dining Hall. Two methods that were examined as potential solutions were: the application of Microban, and the hiring of additional workers. Microban was found to be the more cost-effective option. There is the potential to drastically reduce the spread of infectious diseases through Microban's ability to stop and prevent bacterial multiplication.



Introduction

College campuses are a hot spot for rapid disease transmission. Common diseases that run rampant are influenza (or flu-like illnesses) and noroviruses. These diseases are rarely deadly but they are capable of upsetting the daily life of a college student, causing missed classes, decreased social involvement, and poor performance on tests or assignments.

The Dining Hall located in Morgan Residence Hall is the primary location for eating at WPI. Students that visit Morgan Dining Hall bring with them germs from many places on and off campus. This exposes weakness in the current self-serve dining system.

The goal of this project is to examine current policies in Morgan Dining Hall and to find ways to improve upon these policies. Our hope is to reduce the spread of disease facilitated through the widespread use of the dining hall. We have two potential solutions for solving this problem:

- Hiring more staff to serve food
- Implementation of Microban



Need & Approach

Need:

-To understand how policies and conditions in Morgan Dining Hall facilitate the spread of infectious diseases among WPI students.

Approach:

-Investigate current Morgan Dining Hall policy.
-Improve cleanliness practices in Morgan Dining Hall through research and possible implementation of new methods of sanitation

Methods/Procedure

Option 1

One of the options considered was to hire **extra staff members**. However, we sought other solutions due to the **minimum \$12,000 - \$18,000** annual salary per worker.

Option 2

Microban only requires **one application** and will last the lifetime of the product. However, annual or bi-annual application may still be considered as an option. The procedure would be as follows:

- Estimate amount of Microban needed
- Purchase appropriate amount of Microban
- Close Morgan Dining Hall to allow for cleaning
- Apply Microban to selected surfaces.
- Let dry and re-open Morgan Dining Hall.



Microban Application



Wipe on with
cloth/sponge

Spray

Immersion

Either wipe dry after 10 minutes
Or let air dry for 24 hours



Pictured from left to right:
salad bar, chicken tenders, dressings bar, milk dispensing machine

Conclusions/Recommendations

After investigation, Morgan Dining Hall food preparation and handling procedure was **found to be upheld to high standards**. However, there is **concern whenever students serve themselves or directly handle food**, including but not limited to stations where tongs are used and drink/cereal dispensing machines. We determined that **Microban was the most viable option** to best satisfy the aforementioned concerns. Further applications could include the widespread use of Microban in restrooms, the gymnasium and on door handles, shower knobs, and faucets.

Results

Cost of hiring additional Morgan Dining Hall worker:
\$12,000-\$18,000
Cost of Microban: \$90 for three gallons

- Microban would cost between **.005 and .0075%** of the price of an additional Morgan Dining Hall worker
- \$90 worth of Microban **would cover every applicable surface** in Morgan Dining Hall (tongs, machines/ dispensers, chairs, and tables)
- Microban only requires a single application
- Microban would only incur a **one time cost**



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