Sanitation in the Residence Hall Bathrooms

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Abstract

- A common problem on college campuses is the rampant spread of infectious diseases, and illness in the communal residence hall bathrooms.
- Products such as hand sanitizer and anti-bacterial metal finish for bathroom doors, will lower the rate of illness and improve student health.

Introduction

- Students health suffers nationally at college. The heart of this problem is in residence hall bathrooms.
- The failure to wash one’s hands leads to the harboring of illness in high traffic areas such as bathroom doors.
- Bathroom doors require your hands to exit. This allows transfer of bacteria to those who do wash their hands.
- A secondary source of sanitation, such as Purell or Microban, would improve the health of students.
- Attendance rates, and therefore grades, suffer from poor student health.

Need and Approach

- **Need**: To address the problems with current sanitary conditions in the residence hall bathrooms that may be contributing to student illness.
- **Approach**: Investigate current bathroom cleaning policy, implement a survey to find student need, and research an effective and cost efficient way to improve sanitation.

Methods

**Survey**: To assess student need, we surveyed 439 people, from every grade, and every residence hall.

**Bacteria Cultures**: We swabbed the doors of each residence hall bathrooms to check for bacteria.

**Interview**: We contacted Tom Moreau to learn about current cleaning policy.

**Research**: Looked into possible solutions.

1. **Solution**: Purell
   - Kills 99.99% of most common germs.
   - Uses 100% naturally renewable, plant-derived ethanol (Green Product).

2. **Solution**: Microban
   - After day of application, most bacteria eliminated.
   - Better for preservation, not human health.

Results

**Survey Results**: 
- 20% of students report that they **DON’T ALWAYS** wash their hands.
- 76% of the bathrooms require you to touch the handle as you exit.
- 52% of students report that the feel they have gotten sicker while living in residence halls.

**Get hand sanitizer?**

![Pie chart showing 67% yes, 33% no](image)

Cost Results

<table>
<thead>
<tr>
<th>Purell</th>
<th>Microban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost: $18,580 per year</td>
<td>Total Cost: $3.99 per gallon</td>
</tr>
<tr>
<td>Additional $3.21 to tuition</td>
<td>Covers all important surfaces</td>
</tr>
<tr>
<td>Bi-weekly refills</td>
<td>One-time application</td>
</tr>
</tbody>
</table>

Bacteria Cultures

- **Left Side**: Doors before cleaning
- **Right Side**: Door after cleaning

<table>
<thead>
<tr>
<th>Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniels</td>
</tr>
<tr>
<td>Institute</td>
</tr>
<tr>
<td>Morgan</td>
</tr>
<tr>
<td>Sanford Riley</td>
</tr>
<tr>
<td>Stoddard Complex</td>
</tr>
</tbody>
</table>

Conclusions/Recommendations

- There is currently no problem in the school’s sanitation methods.
- The problem lies in the lack of student hand-washing.
- As a solution, we recommend the use of Purell.
  - More effective than Microban.
  - High return on investment.
  - Future action.
  - Availability in more than just residence halls.

Acknowledgments

- Thank you Professor Rulfs for providing us with the materials to culture bacteria.
- Thank you to Tom Moreau for partaking in an interview informing us on current sanitation policy in residence hall bathrooms.

References

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- Riley AIello, Betsy Bailey, Natasha Lipara, Mike Dinan, Yoryal Al, Majee Chut, “The effect of hand hygiene on illness rate among students in university residence halls”. American Journal of Infectious Control, Volume 34, Issue 6, October 2006, Pages 474–478, ISSN 1529-257X, 10.1016/j.ajic.2006.08.004.1