



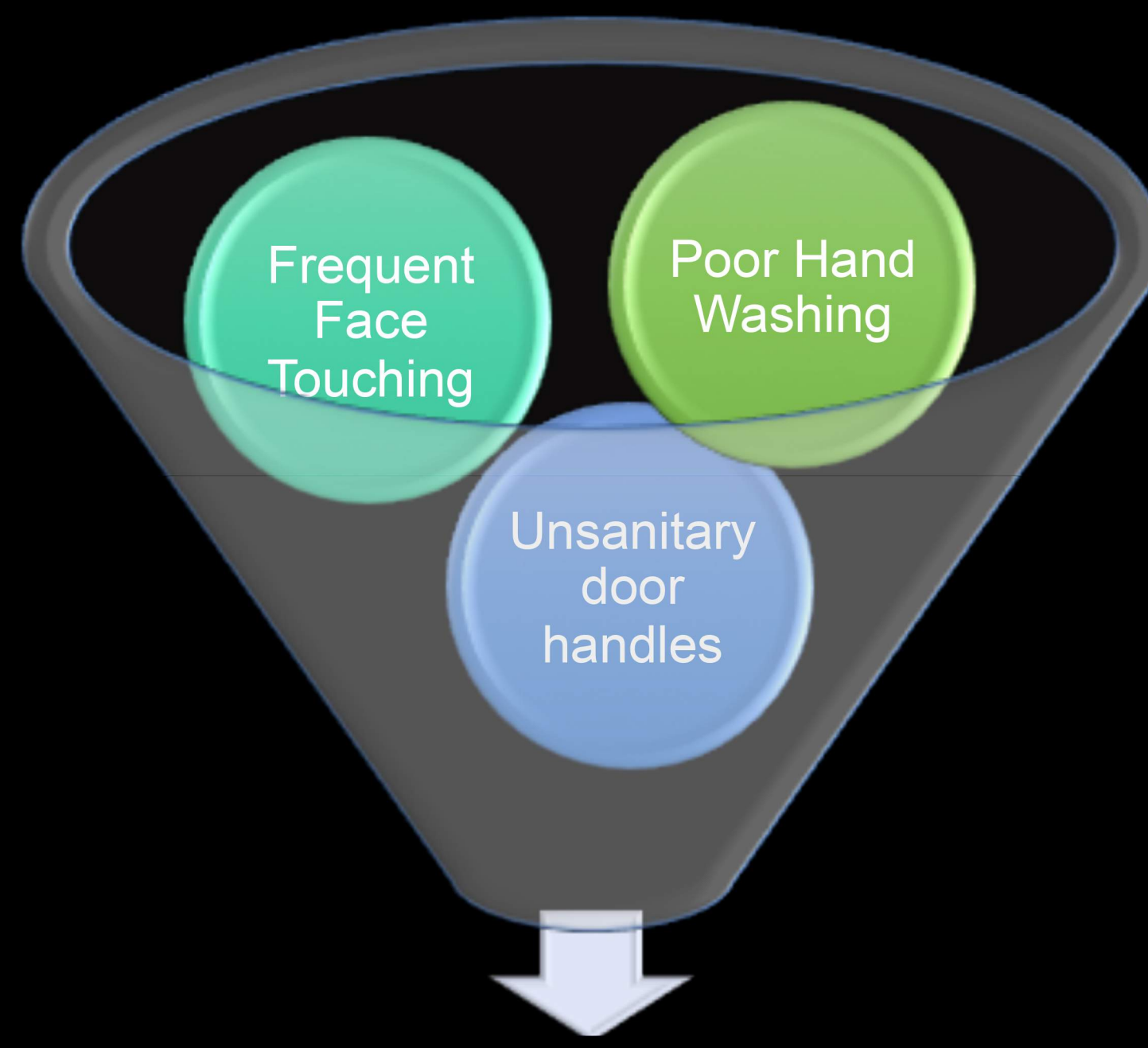
Disease On The Door Handle

Campus Infection Prevention

Nicholas Kulick (ECE), Lea Strangio (ChE), Kaitlyn Valla (BBT/PSY)
Advisor: Marja Bakermans (BBT), Beth Eddy (HUA)
PLAs: Sarah Campos (CE), Alexandra Rozen (ChE)

The Problem

College campuses, like many urban areas, promote high volumes of human traffic and contact with common surfaces. Specifically, door handles are a shared surface that is used by all in an urban area, such as Worcester Polytechnic Institute. This common surface harbors and distributes bacteria and viruses, which facilitates the spread of disease on campus.



The Spread of Antigenic Pathogens!

Recommendations

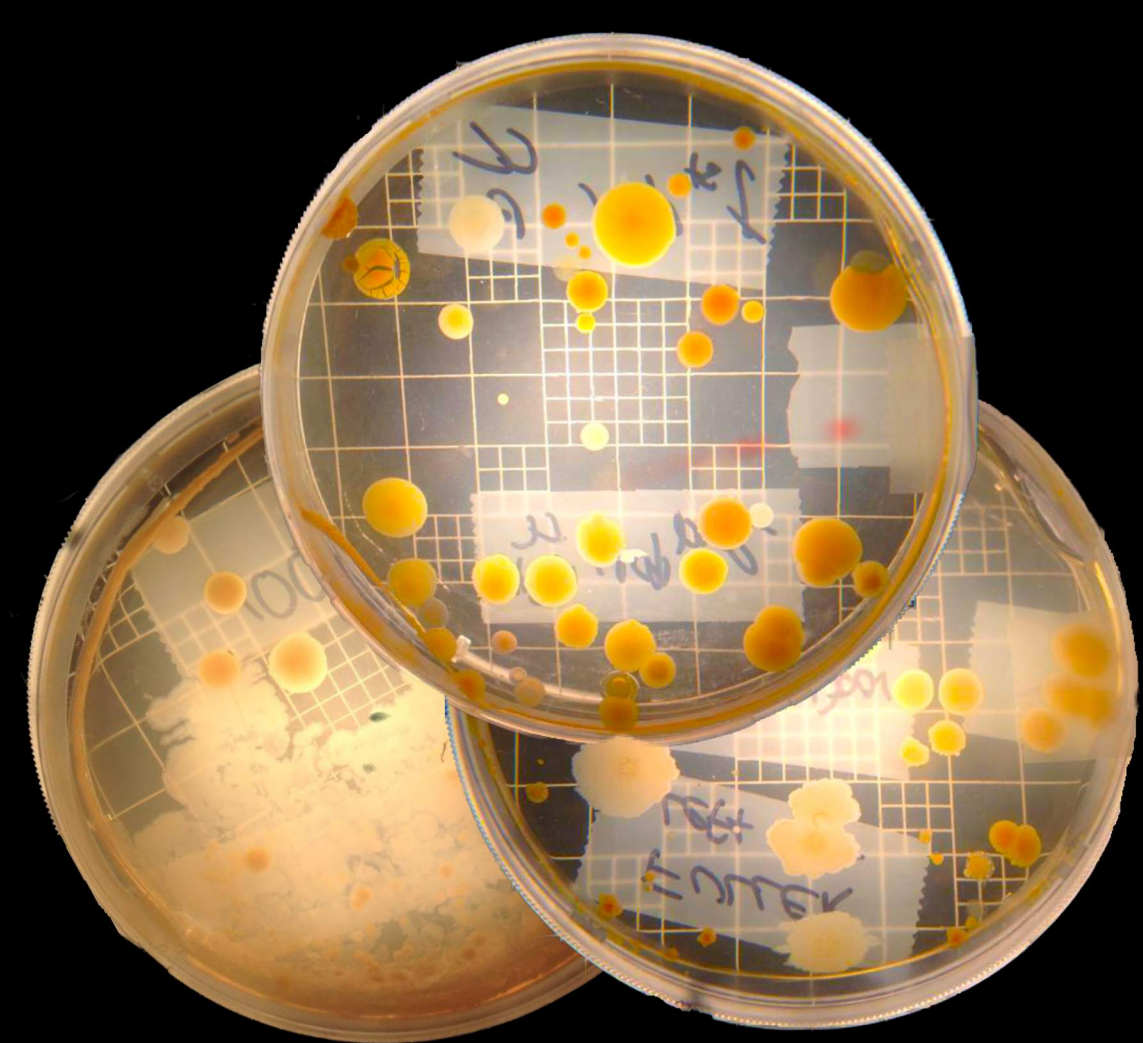
- Avoid touching door handles when possible
- Avoid unnecessary face-touching
- Better hand-washing

The Goals

1. Investigate the infectiousness of door handles and the habits of people who use them.
2. Promote sanitary changes



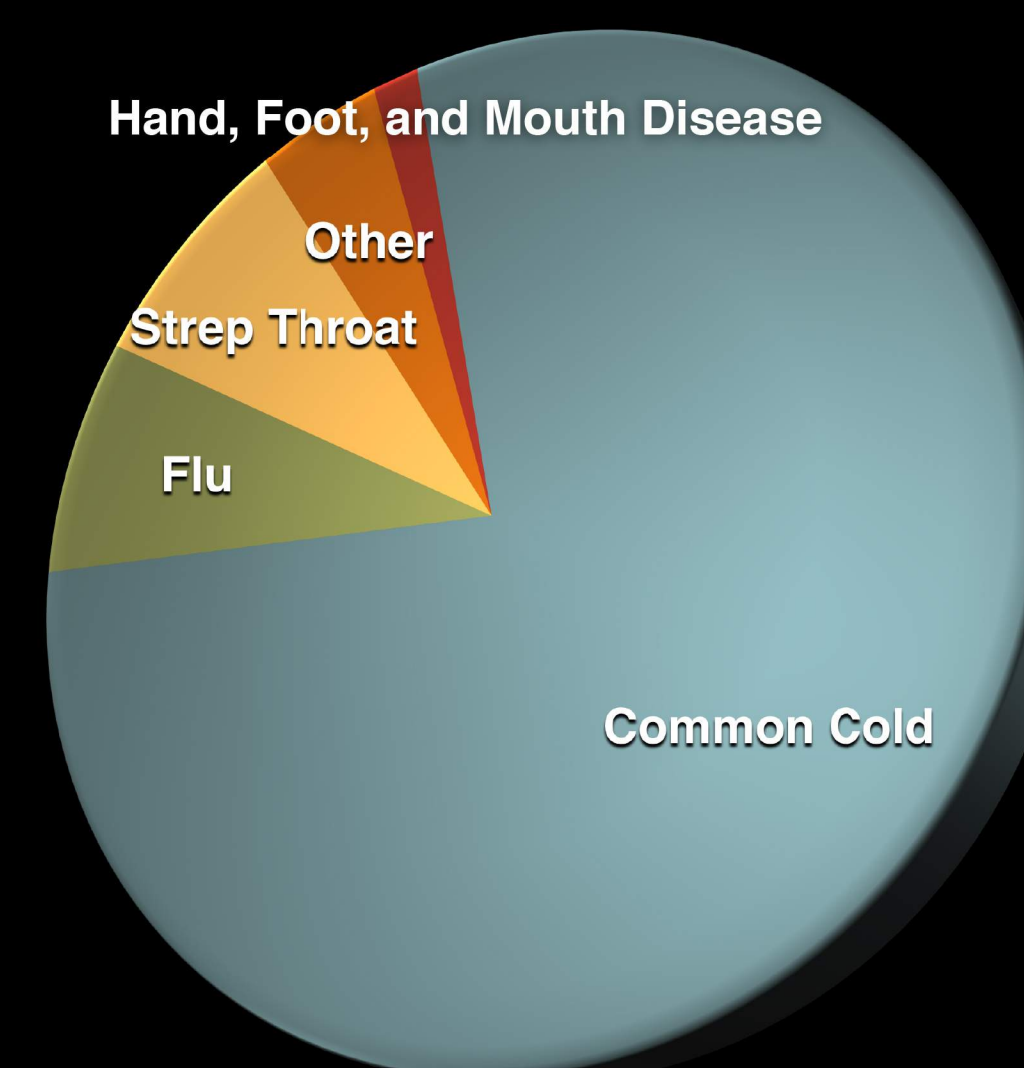
Three Phase Investigation



Colonies vary in surface area. Mold and fungus were also present in samples.

27 Handles Harbor 1,323 Colonies

Bacterial samples were collected from the door handles of buildings on campus using sterile supplies.



"Other" illnesses include, but are not limited to: Norovirus, Ear Infections, Mono, Staph infections, and Conjunctivitis.

35% of respondents said they actively avoid touching doorhandles.

A survey was distributed among students at WPI asking questions regarding health habits and past/present illnesses.



The above numbers are estimates based on information obtained from the GoPro.

1,060

561

86

People Observed Touched Door Handles Touched Faces

A GoPro was used to record five thirty minute clips of human behavior, each in a different shared area of WPI.

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References: 1. Door Handles Infection Still Not Taken Seriously Enough in the UK. (2013). M2 Presswire. Retrieved November 10, 2014, from General OneFile. 2. ExitCare. (2009) Hand, Foot, and Mouth Disease. ExitCare: Hand, Foot and Mouth Disease from UMass Memorial Hospital, Worcester, Ma. 3. Kohli, Rajiv Mittal, K.L. (2008). Developments in Surface Contamination and Cleaning - Fundamentals and Applied Aspects - 21.1 Introduction. William Andrew Publishing. Online version available at: <http://app.knovel.com/hotlink/pdf/id/k005HJ251/developments-in-surface-2/coatings-prevention-introduction>. 4. Maniatis, Tom & Sambrook, Joseph & Fritsch, E. F. (Edward F.) & Cold Spring Harbor Laboratory (1982). Molecular cloning : a laboratory manual. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y. 5. Mahov, David. "Global Infectious Diseases and Urbanization: Urban Health Global Perspectives." 1st ed. San Francisco: Jossey-Bass, 2010. 111-112. Print. 6. Wilkinson, T. R. (1986). Survival of Bacteria on Metal Surfaces. Applied Microbiology, 14(3), 303-307. Retrieved November 10, 2014, from National Center for Biotechnology Information. 7. (image) Retrieved from http://commons.wikimedia.org/wiki/File:GoPro_Hero_3_Black_Edition.jpg under licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.

