Auton Lab

Carnegie Mellon University

Enhanced Detection System for Healthcare-Associated Transmission of Infection

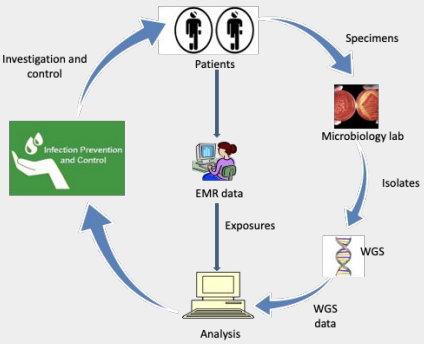
Need

Hospital acquired infections are a significant yet preventable detractor of patient care. According to the CDC 1 in 31 hospital patients [1] suffers from a hospital acquired infection.

Tasks / Objectives

1. Given an known outbreak based on WGS, find the contaminated routes
2. Without WGS, detect the potential outbreak clusters, routes and suggested patients for WGS
3. Objective 3

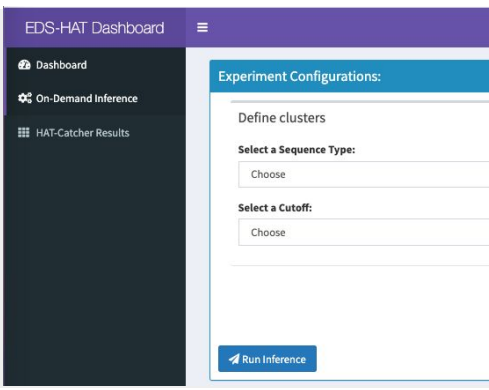
Approach



The Auton lab develops statistical models for joining disparate sources of information such as genetic tests, patient histories, geography, and other epidemiological information for detecting systematic outbreaks and identifying root cause.

Benefit / Results

Leveraging multiple data sources, our algorithms establish corroborating evidence to support or dismiss hypothetical outbreak scenarios, both increasing detectability and speed of analysis while maintaining low false alert rates.



Academic Impact

1. AAAI Paper
2. AAAI Poster
3. NeurIPS Talk
4. Student Abstract
5. arXiv Paper

Collaborators / Sponsors

1. Microbial Genomics Epidemiology Laboratory (MiGEL)
2. University of Pittsburgh
3. Sponsor 1
4. Sponsor 2

Key Contributors

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