CSSI Element: Cyberinfrastructure for Pedestrian Dynamics-Based Analysis of Infection Propagation Through Air Travel

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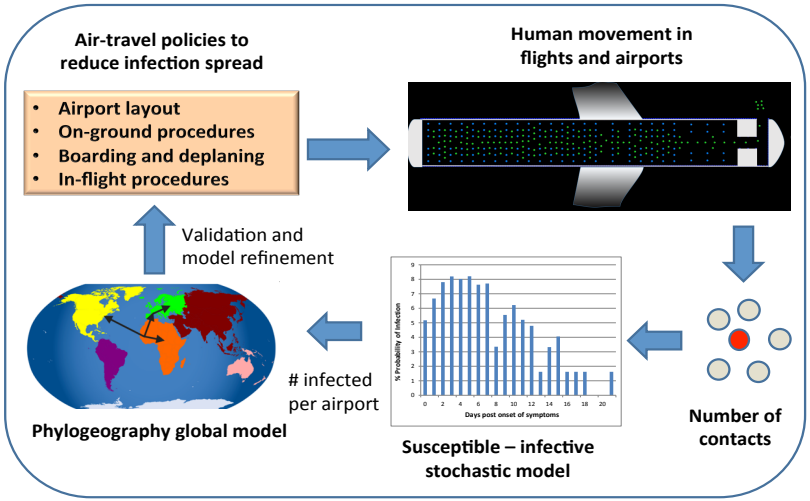
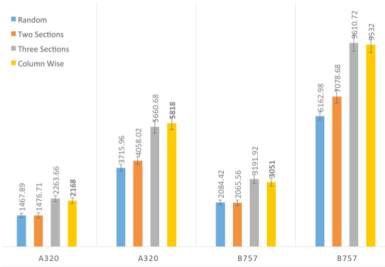
Motivation

- Air travel is an important factor in infection spread
- Air travel restrictions have economic and human impacts
  - We can reduce infection without limiting air travel by manipulating fine-scale human interaction patterns
  - Pedestrian dynamics can simulate such interactions

Project Goals

- Develop a community software for pedestrian dynamics
  - Simulate movement of individuals in a crowd
  - Applications to infection spread, evacuation, etc
- Provide a workflow to integrate models for pedestrian dynamics, infection spread, and phylogeography
  - Analyze impact of boarding procedures, airport layout, etc., and global impact of local procedures





Use of better procedures and smaller planes could have reduced Ebola risk by 87% without travel restrictions

The Economist
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FOX NEWS
The way we board planes could actually be spreading diseases