

# Using big data for understanding errors at DFCI

Eitan Naveh, Ryan Leib, Zhi Li, Renato Umeton, Bob Savage, Partha Das, Jessica Cleveland, Adem Albayrak, Craig A. Bunnell, Sara J. Singer

This work was supported by the European Union's Horizon 2020 Research and Innovation Program under the Marie Skłodowska-Curie Grant Agreement 702285

Use of statistical analyses and machine learning methods to explore the antecedents of errors and adverse events.

DFCI RTLS Network: 1000+ sensors, 250 Staff, 1000 Patients per day, 7 clinical floors, 20 exam rooms per floor, 28 infusion chairs per floor, 500,000,000 data points

Location of sensors on one floor



To explain adverse events, we transform medical staff and patient location data to:

- Measures of workload and wait time
- Within and between team members' communication patterns
- After adverse events activities

Preliminary results

Patient and staff locations by day of the week and hour

