Hopara Use Case

Explaining the unexpected.

Massachusetts General Hospital (Mass General or MGH) is the original and largest teaching hospital of Harvard Medical School located in the West End neighborhood of Boston, Massachusetts. It is the third oldest general hospital in the United States and has a capacity of 999 beds. With Brigham and Women's Hospital, it is one of the two founding members of Mass General Brigham (formerly known as Partners HealthCare), the largest healthcare provider in Massachusetts. Massachusetts General Hospital conducts the largest hospital-based research program in the world, with an annual research budget of more than $1 billion in 2019. It is currently ranked as the #5 best hospital in the United States by *U.S. News & World Report*.

Industry: Healthcare

Business Problem: Infectious disease contracted during a hospital stay can be extremely dangerous and very costly for the care provider. Mass General Hospital wanted to improve the speed and accuracy of identifying specific patients and location of infectious disease incidents on an ongoing basis to reduce spread and identify possible underlying causes. (Note, project started Pre-Covid)

Solution: Deploy a visualization that incorporates daily data of infection, by room and by patient, on custom floor plan across multiple floors, with heat map based on infection rate by room.

As shown in the image on the right, Hopara used custom floor plans from the hospital's 17 floors, integrating daily data of infectious disease rates by room with a heat map by room for fast identification of hot spots.

In the left side navigation bar users could navigate to a visualization of each floor, no special skills or training required by the already overburdened hospital staff:

- Sort/search using data from only one or any number of disease types to find hidden patterns
- Drill in to one floor/region/room to see detail on each patient and incident
- Share via email, Slack, or add a note to the facility file to communicate findings with care providers, facility staff, or research partners

Detail on demand allowed users to view incidents by room and by patient to better understand whether or not transmissibility was high among certain patients, in a certain room or floor, or other factor.

Results: Each morning, MGH was able to quickly identify infectious disease 'hot spots' in a more timely manner, and share that information with various members of the care team from doctors and nursing staff to facilities & maintenance.

Aha Moment!

After only a short analysis it was found that hotspots tended to center around one type of area common among all floors: the floor central nursing station. Sharing the results and with further investigation with the nursing staff it was found that nurses were placing the sickest patients closer to the nursing station so they could respond faster; i.e. the room and/or patient was in fact less of a factor in terms of locating hot spots that the professional response of the nursing team.

Bonus Value:

The facilities team viewing the application from a bird's eye view could quickly identify areas that required a level 3 or more comprehensive cleaning using specialized chemicals and processes.

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