Julia Toma, Jacob Grinberg, Jasper Seabold, Teryn Mitchell, Arya Bhargava – Morning Team 13
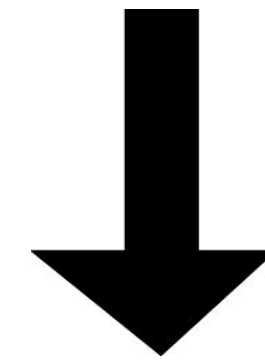
BedSpread™

How might we **gather and display data** on the status of hospital beds (e.g. occupied/unoccupied, staffed/unstaffed) to allow for **better allocation of patients within and across hospitals?**

What's the Problem?

Hospital capacity issues have been exacerbated due to Covid-19 as wait times increase and staff shortages persist. Even though neighboring hospitals may have available capacity, **lack of awareness makes it difficult to coordinate transfers,** leading to **loss of revenue and delayed patient care.**

Key Insights

Phone calls to initiate transfers have a **lower success rate** when neighboring hospital **status is unknown.**

Advanced capacity systems have created **improvements patient turnaround, cost reduction, and available beds per day.**

'Smart' hospitals are primarily available in top academic centers, which puts a **larger gap in the standards of healthcare across the country.**

For every **600** failed patient transfers per month, there is a $**40 million** loss in annual revenue.

The NCI expects to see **10,000 preventable deaths** occur over the next decade due to delayed procedures.

Solution Direction

"Smart" bed
- ■ Keeps track of patient status using button input and weight sensors
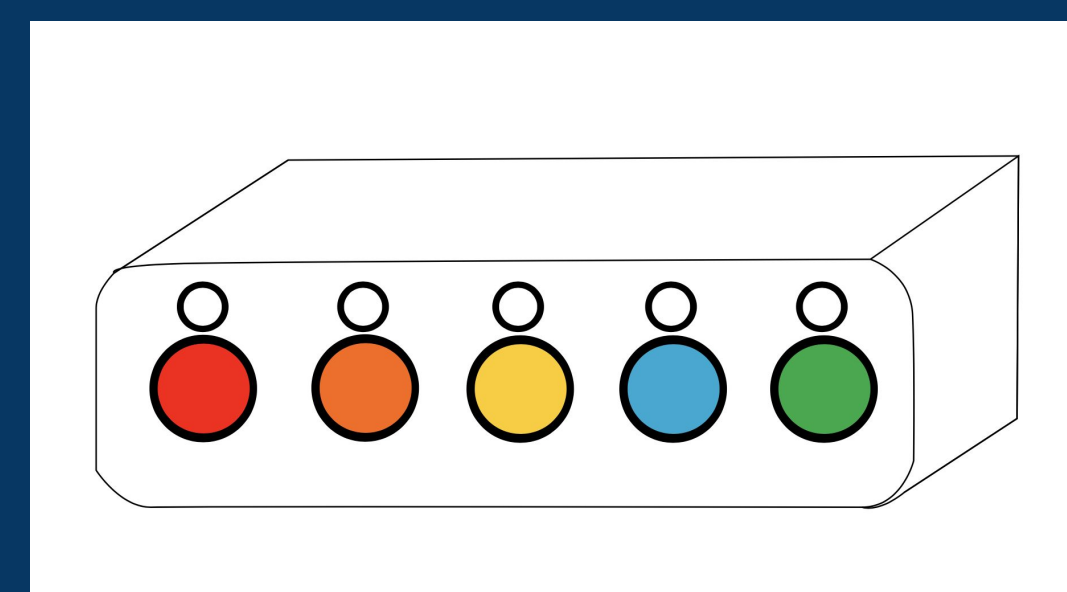- ■ Occupied/Unoccupied, Clean/Unclean, Available

Dashboard
- ■ Consolidates information from beds and control box
- ■ Displays the data organized by bed type and availability

Switchbox
- ■ Displays status of the room with different colored LED lights
- ■ Prevents confusion as the room moves through states

St. Joseph's Hospital Capacity Unit	Total Beds	Occupied	Empty; Uncleaned	Empty; Cleaned	Unstaffed	Available	Capacity Status
Adult MT/MS	100	54	10	10	16	5	Nearing Capacity
Peds MT/MS	100	20	0	0	70	10	Nearing Capacity
Rehab	100	20	15	0	0	65	Not at Capacity
Adult ICU	150	89	5	31	25	0	Full
Adult PCU	150	95	10	7	0	38	Not at Capacity
Peds ICU	150	100	50	0	0	0	Full
Peds PCU	150	75	25	10	10	30	Nearing Capacity
ER	250	150	0	0	0	100	Not at Capacity
OB	50	25	0	10	10	5	Full
NICU	50	25	10	0	10	5	Full
Psych	50	35	0	0	0	15	Nearing Capacity
Hospital Data	1300	688	125	68	141	273	Nearing Capacity

Each button corresponds to a state in an individual hospital bed so staff can monitor changes in overall status as the day progresses.

Our Plan

Early Adopters
Hospital administration in areas with the lowest beds per capita the struggle with patient influx. Connections with hospitals in Rural North Carolina.
Revenue Stream - Installation Fee, Software Licensing, Data Hosting
Expansion - Begin by partnering with rural hospitals and possibly expand to Urban Hospitals where patient transfers occur often
- Can apply to additional needs where patient tracking needed (nursing homes, psychiatric institutes, long-term care facilities)