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Background

Saint Luke's East Hospital is a 201-bed facility that was founded in 2006 and is located in Lee's Summit, Missouri. As part of Saint Luke's Health System, it has continued to grow over the past 10-plus years to meet the needs of the community.

Over the past several years, Saint Luke's East has been stretched for inpatient and emergency department capacity. Acute occupancy hovered around 95% each month, and intensive care unit occupancy around 80%. Emergency department (ED) statistics showed significant increases in diversion hours, patients left without being seen, and percentage of patients boarded in the ED — and that was before capacity was additionally impacted by COVID-19 patient volumes.

Though the need to add capacity to accommodate existing demand and enable continued growth was clear, there was hesitancy to add traditional inpatient beds to the health system as we enter into a new world of health care — marked by widespread population health management and the migration of services into non-hospital locations.

Approach

In order to open capacity in the most effective and efficient manner possible, **a collaborative team of clinical leaders, architects and technology vendors came together to develop a new Short-Stay Unit model, heavily supported by virtual nursing care.**

The new 33-bed unit offers short-stay patient rooms that can “flex” to accommodate emergency department overflow. The innovative unit is designed to prioritize patient outcomes and experience while utilizing resources as efficiently as possible through digital tools. After the business plan for the unit

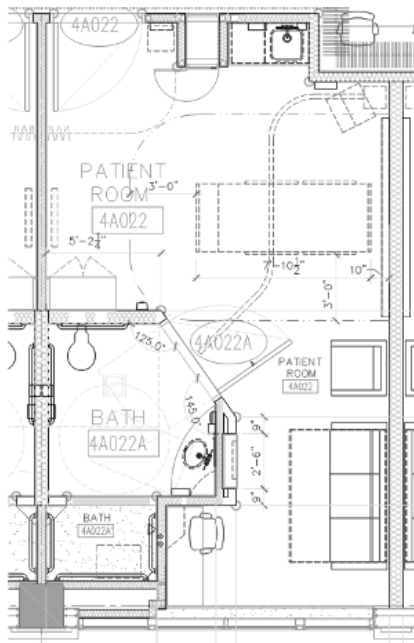
was approved, operationalization included obtaining regulatory approvals, construction, capital purchases for supplies and equipment, digital vendor selection and integration, recruitment of staff, and ongoing monitoring of operations and quality metrics post go-live.

Outcomes

A primary goal of the Flex Unit expansion was to **enhance throughput in the hospital.** Decreased ED wait times, time

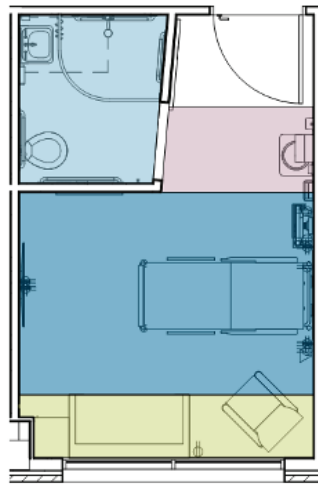
from ED arrival to admission (if applicable), and length of stay were all focuses of the initiative.

Another goal of the unit was to **optimize staffing and space** — resources that are traditionally expensive and scarce for acute expansions. The unit operates on a more efficient in-person patient-to-nurse ratio (about one in-person nurse to 10-12 patients, compared to one in-person nurse to 4-5 patients on a typical unit) and scales shared nursing resources from a “virtual hub” for additional support. The rooms were designed with utmost efficiency in mind —



Typical Saint Luke's East Patient Room
1/4"=1'-0"
400 GSF

Figure 1: Traditional Inpatient Room (left) vs. "Flex Capacity Room" (right)



Flex Capacity Expansion
1/4"=1'-0"
265 GSF

each one is about 150 square feet smaller than a typical inpatient room (see [Figure 1](#)), while still meeting inpatient room regulatory requirements. Additionally, virtual encounters are prioritized for consults, case management, pharmacy and other services to more efficiently utilize acute care resources across the health system.

Saint Luke's East also sought to provide an **innovative and exceptional patient experience — with excellent quality and clinical outcomes** in this new unit. Utilization of technology on the unit helps deliver rapid response times to patient needs and enhances the role of the patient in guiding their hospital experience. Key success metrics include performance on all quality metrics as tracked in traditional inpatient units and patient satisfaction scores.

The first 23 beds on the unit were opened in January 2021, with the additional 10 opening later in 2021.

Lessons Learned



Pandemic Impact

The true impact of adding these additional 33 beds and digital supports will need to be evaluated in a "post-COVID-19 Crisis" scenario. Through the pandemic, Saint Luke's East has experienced capacity constraints beyond those considered when the "Short-Stay Unit" was proposed and approved.



The Importance of Patient Selection for the New Unit

Standard criteria was established prior to Go-Live to determine which patients would be appropriate for admission onto the short-stay unit. The criteria focused specifically on disease process rather than simple Inpatient or Observation status and limited patients with complex medical care needs — for example, patients diagnosed with sepsis.

Some post-procedure patients are eligible to stay on this unit as well. Ongoing education is occurring to ensure clinicians and patients understand the capabilities of this new model.



The Role of Digital Health Capabilities in the Model

The most novel piece of this model is the reliance on technologies to meet patients needs traditionally met by in-person staff. The unit uses multiple virtual supports in care delivery, including a virtual "nurse call" platform and telehealth/virtual visit software. Future technology implementations in scope for the unit include a digital food service software system, a voice platform virtual health assistant, and MyChart Bedside (through Epic). Phasing of the digital tools to be deployed on the unit shifted throughout implementation as design and integration timelines evolved, which allowed us to get the unit operational more quickly and continue to optimize our digital capabilities post-Go-Live.

Next Steps

Digital tools that can enhance the care and experience on the unit will continue to be evaluated. Success on the initial goals of the unit (e.g., throughput, staffing, quality, patient outcomes) will continue to be evaluated over time. Efficiencies and best practices from the model will be assessed for opportunities to scale at other hospitals across our health system.