

2017

# The evolution and integration of a patient-centric mapping tool (patient journey value mapping) in continuous quality improvement

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## Recommended Citation

Tothy, Alison; Sastry, Sunitha K.; Limper, Heather M.; Suett, Paul; Springman, Mary Kate; and Murphy, Susan M. (2017) "The evolution and integration of a patient-centric mapping tool (patient journey value mapping) in continuous quality improvement," *Patient Experience Journal*: Vol. 4 : Iss. 1 , Article 16.

Available at: <https://pxjournal.org/journal/vol4/iss1/16>

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# The evolution and integration of a patient-centric mapping tool (patient journey value mapping) in continuous quality improvement

## **Cover Page Footnote**

We would like to thank the following individuals for their invaluable help in developing and executing the process described: Samantha Ruokis, LaTonya Macklin RN OCN, and Dale Hershfield FACHE.

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### Abstract

The need to improve a healthcare system that too frequently fails to deliver benefits of care, even resulting in harm to patients, has been well established. The resulting era of quality improvement has aimed to improve the delivery of care by increasing quality while reducing cost. One approach to improving how healthcare is delivered is the application of Lean management strategies. Despite widespread investment in Lean approaches to improve healthcare delivery, evidence supports a deficiency of this approach to improve patient satisfaction with care. Identifiable operational tension between quality improvement efforts designed to streamline care processes and those targeting improvement of the patient care experience existed. We set out to address this deficiency by embedding the patient experience into improvement efforts through the introduction of a patient-centric value stream mapping approach.

### Keywords

Patient experience, patient engagement, value stream mapping, quality improvement

### Note

We would like to thank the following individuals for their invaluable help in developing and executing the process described: Samantha Ruokis, LaTonya Macklin RN OCN, and Dale Hershfield FACHE.

### Background

The need to improve a healthcare system that too frequently fails to deliver benefits of care, even resulting in harm to patients, has been well established.<sup>1</sup> The resulting era of quality improvement has aimed to improve the delivery of care by increasing quality while reducing cost.<sup>1</sup> One approach to improving how healthcare is delivered is the application of Lean management strategies.<sup>2</sup> Lean philosophy aims to change organizational approaches, values, and culture over time with the ultimate goal of creating maximum value for the customer through strategies such as process-driven approaches to cultural change.<sup>2,3</sup> A variety of Lean strategies have been used to generate rapid process improvement in healthcare institutions, addressing issues such as availability of supplies at the point of care and reduction of long wait times. Despite widespread investment in Lean approaches to improve healthcare delivery, evidence supports a deficiency of this approach to improve patient satisfaction with care.<sup>4</sup> While patient satisfaction with care is an important metric in its own right, a variety of clinical outcomes have been linked to the patient care experience including better use of preventative services, adherence to

medical treatment, and improved safety indicators.<sup>5</sup> Recognizing the importance of the patient experience, monetary incentives have ushered in a renewed focus on patient-centered care.<sup>6</sup> Our team identified an operational tension between quality improvement efforts designed to streamline care processes and those targeting improvement of the patient care experience. We set out to address this deficiency by embedding the patient experience into improvement efforts through the introduction of a patient-centric value stream mapping approach.

### The Problem

The University of Chicago Medicine academic medical center embarked on a journey of transformational change using Lean principles of operational improvement and has seen successful optimization of processes across a variety of service lines over a five-year period. Guided by a mission to provide the best quality care, ever mindful of each individual's dignity and individuality, this transformation aims to continuously reduce system variability to ensure delivery of consistently high quality care while allowing for enough flexibility to tailor that care to individual patient needs. Lean approaches overseen by the Operational Excellence Program had led to

streamlining processes across a variety of patient care settings leading to waste reduction and anticipated financial gain. Similarly, successful endeavors by the Patient Experience and Engagement Program were reflected in upward trending patient satisfaction scores across the institution. However, these efforts often functioned in silos, resulting in a disconnect between operational optimization efforts and those designed to improve the patient care experience from the patient perspective.

## Methods

### Context

The intervention took place at a 600-bed academic medical center that provides a broad spectrum of clinical services including primary through tertiary care in Chicago. Dedicated to continuously improving the delivery of high-quality and safe care, the Operational Excellence Program, comprised of Lean certified experts, leads frontline staff through rapid cycle improvements, called *kaizen* events, to diagnose operational problems, identify solutions, and implement strategies for achieving system-wide solutions. Aligning with national mandates to optimize performance while embracing a patient and family-centered approach to the delivery and evaluation of healthcare,<sup>6</sup> the Patient Experience and Engagement Program was established to transform the patient care experience. Experience experts lead improvement efforts, coordinate service excellence programs, manage a patient experience data analytics program, and proactively navigate patients and their families through the care experience using high touch service programs.

### The Solution

Leaders from both operational and patient experience areas set out to collaboratively establish an institutional approach to ingrain the voice of the patient into standardized approaches to process assessment and improvement, creating a more comprehensive approach to improving the delivery of care while meeting patient needs. Lean methodology uses a number of tactical approaches and tools designed to explore, understand, and identify a process. One such tool is the Value Stream Map - a visualization approach to “identify waste, reduce process cycle times, and implement process improvement” that involves documentation of every process step in great detail.<sup>7</sup> In the healthcare setting, this tool facilitates visualization of the flow of patients, supplies, and information throughout a process in order to assess current state and optimize a future state process.<sup>8</sup> A similar tool has been adapted for visually assessing the entire patient journey, highlight main ‘touch points,’ in a tool called Experience Mapping and Design Process.<sup>9</sup> In addition to overlaying the patient experience into an operational process’s current state, which reveals opportunities for improvement, Patient Experience

Mapping identifies the ideal state defined by four dimensions of care: 1) patient quality of care perceptions, 2) communication, 3) physical environment, and 4) emotional support.<sup>9</sup>

Team leaders in the Operational Excellence and Patient Experience and Engagement programs collaborated to blend these tools into a method referred to as Patient Journey Value Mapping (PJVM). This tool incorporates components of both Value Stream Mapping and Patient Experience Mapping in order to assess and improve operational processes through the lens of the patient experience. A key component of this approach is active engagement of patients and families in the mapping of current and future processes. Similarly, this approach was executed through the lens of “appreciative inquiry” - a concept that blends inquiry and appreciation to shift focus from problem analysis to ideals and productive possibilities.<sup>10</sup> In other words, this exercise must focus on visualizing the most accurate current state while avoiding individual blame, appreciating that each individual that touches a process brings a unique skill set and perspective to identifying an ideal future state. After a pilot phase, PJVM was deployed as a weeklong session designed to evaluate and understand the current and future states of care delivery processes, structured similarly to traditional *kaizen* events in Lean methodology. The PJVM approach includes integration of data from patient satisfaction surveys, discharge care calls, and care rounding that is visualized alongside operational metrics (Table 1).

## Results

During course of one year, over 40 participants from areas across the medical center participated in four PJVM exercises leading to collaborative process improvement by staff and patients. One example of the PJVM showcases the possibilities of addressing a complex process with this approach – discharging from pediatric inpatient services. With the input of hospitalists, specialty service lines, and former pediatric patients who had experienced the discharge process first hand, the current state visualization identified several bottlenecks in communication that resulted in both delayed operations and patient dissatisfaction. The web of communication not only revealed redundant work among clinicians to share information but a lack of ownership for informing the patient, resulting in uninformed patient families regarding the discharge planning process. This exercise launched a hospital-wide effort to outline a future state that guided standardization of the pediatric discharge process while actively engaging the patient family in discharge preparations and communication (Figure 1). Operational metrics of the discharge process were incorporated into routine quality scorecards, promoting ongoing assessment and visibility of improvement efforts, alongside patient satisfaction scores. Other PJVM applications focused on

the creation of standard work for patient service representatives, medical assistants, nursing staff, and physicians in order to streamline rooming procedures and clinic expectations. These efforts lead to a formalized approach to engaging patients and families in the admissions process and standardized measurement of impact through routinely collected patient satisfaction survey data.

While metric definition and tracking allowed for assessment of improvement efforts targeting individual projects, qualitative data during PJVM proved equally valuable to evaluating this approach. Participant feedback noted the importance of continually reassessing the patient and family experience at each process step as well as the value direct insight from patients and their families can have on operational improvement. While intuitive, participants felt the integration of the patient voice into traditionally operational processes, even those that may not seem to directly impact the patient, was a needed reminder

## Discussion

Patient Journey Value Mapping integrated the flow of the patient and the patient's voice into a traditionally operational process and exercise. Alignment of Patient Experience Mapping and Value Stream Mapping concepts addressed the needs shared by staff, patients and their families, while fostering appreciative inquiry to improve care delivery.<sup>10</sup> The PJVM approach shined a focus on operational, behavioral, communication, and patient expectation management while improving delivery processes across service lines. Additionally, PJVM revealed process components that were working well along key touch points in the patient journey, often highlighted by patients themselves. This approach shows promise for quickly identifying best practices to disseminate across the care experience.

Partnership of the Operational Excellence and Patient Experience and Engagement teams encouraged further collaboration with process leaders and performance improvement teams. This partnership was vital to establishing a systematic approach to operational, performance, and behavioral improvement across the medical center. Two key components were felt to contribute to the implementation of this approach: 1) Integration of a patient/family representative into the team and 2) continued focus on an ideal state rather than short-term problem solving or fixation on current issues. Patient representatives assessed organizational deficits

**Table 1. Activities of Visualization Approaches**

	Value Stream Mapping	Patient Experience Mapping	Patient Journey Value Mapping
Improvement Champions	X	X	X
Multidisciplinary Participants	X	X	X
Patient/Family Participants		X	X
Operational Metrics	X		X
Detailed Mapping of Process Steps	X		X
Visit Gemba	X		X
Frontline Staff Interviews	X		X
Patient Interviews		X	X
Family Interviews		X	X
Patient Survey Responses Integration		X	X
Discharge Care Call Data Integration		X	X
Care Rounding Data Integration		X	X
Identify Waste	X		X
Identify Process Deficiency Gaps	X		X
Identify Quality of Care Perception		X	X
Physical Environment Assessment	X	X	X
Emotional Support Assessment		X	X
Action Planning & Roadmap Development	X	X	X

alongside care providers and operational teams, truly integrating the patient voice into critical assessment of current processes and the development of a future process. Most importantly, the integration of the patient perspective into operational design provided focus on the ultimate outcome- improving the patient experience.

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Figure 1. Patient Journey Value Map Example with Key Changes

