Shape or Reduce Demand

Decrease Artificial Variation in Surgical Scheduling

Lloyd Provost
Decrease overutilization of hospital services
Optimize patient placement to insure the right care, in the right place, at the right time
Increase clinician and staff satisfaction
Demonstrate a ROI for the systems moving to bundled payment arrangements

Driver Diagram: Ideas to Improve Hospital Flow

Outcomes

Primary Drivers

Shape or Reduce Demand

Match Capacity and Demand

Redesign the System

Secondary Drivers

Specific Change Ideas

- Decrease demand for hospital beds by reducing hospital acquired conditions
- Decrease demand for Med/Surg beds by preventing avoidable readmissions
- Relocate low-acuity care in EDs to community-based care settings
- Decrease artificial variation in surgical scheduling
- Decrease demand for hospital beds by reducing hospital acquired conditions
- Reduce ED visits & hospital admissions through delivering appropriate care
- Oversight system for hospital-wide operations to optimize patient flow
- Real-time demand and capacity management processes
- Flex capacity to meet hourly, daily and seasonal variations in demand
- Early recognition for high census and surge planning
- Improve efficiencies and throughput in the OR, ED, ICUs and Med/Surg Units
- Improve efficiencies & coordination of discharge processes
- Service Line Optimization (frail elders, SNF residents, stroke patients, etc.)
- Reducing unnecessary variations in care and managing LOS “outliers”
- Relocate care in ICUs in accordance with patients EOL wishes
- Decrease demand for Med/Surg beds by preventing avoidable readmissions
- Relocate low-acuity care in EDs to community-based care settings
- Decrease artificial variation in surgical scheduling
- Decrease demand for hospital beds by reducing hospital acquired conditions
- Reduce ED visits & hospital admissions through delivering appropriate care
- Relocate low-acuity care in EDs to community-based care settings
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C1 Reliably identify EOL wishes and proactively create and execute advanced illness plans
C1 Development of palliative care programs (hospital-based and community-based)
C2 Reduce readmissions for high risk populations
C3 Extended hours in primary care practices
C3 Develop partnerships with Urgent Care and Retail Clinics
C3 Enroll patients in community-based mental health services
C3 Paramedics & EMTs triaging & treating patients at home
C4 Separate scheduled and unscheduled flows in the OR
C4 Redesign surgical schedules to create an predictable flow of patients to downstream ICUs and inpatient units
C5 Decrease complications/harm (HAPU, CAUTI, SSI, falls with harm) and subsequent LOS
C6 Reliably use of clinical pathways and evidence-based medicine
C7 Assess seasonal variations and changes in demand patterns and proactively plan for variations
C8 Daily flow planning huddles (improve predictions to synchronize admissions, discharges and discharges)
C8 Real-time demand and capacity problem-solving (managing constraints and bottlenecks)
C9 Planning capacity to meet predicted demand patterns
C10 High census protocols to expedite admissions from the ED and manage surgical schedules.
C11 Increase OR throughput through efficiency changes
C11 ED efficiency changes to decrease LOS
C11 Decrease LOS in ICUs (timely consults, tests and procedures)
C11 Decrease LOS on Med/Surg Units (case management for patients with complex medical and social needs)
C12 Initiate final discharge preparations when the patient is clinically ready for discharge
C12 Cascade planning for transfers to community-based care settings
C13 Care management for vulnerable/high risk patient populations
C14 Cooperative agreements with rehab facilities, SNFs and nursing homes
## Shape or Reduce Demand

1. S1 Relocate care in ICUs and Medical and Surgical Units in accordance with patients EOL wishes
2. S2 Decrease demand for Med/Surg beds by preventing avoidable readmissions
3. S3 Relocate low-acuity care in EDs to community-based care settings
4. S4 Decrease artificial variation in surgical scheduling
5. S5 Decrease demand for hospital beds by reducing harm and hospital acquired conditions
6. S6 Reduce demand for ED visits and hospital admissions through delivering appropriate care

Eugene Litvak, Fred Ryckman
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Yes Responses</th>
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<td>Separate flows for scheduled and emergency OR cases - Current Activity</td>
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Adoption of Effective Interventions

Eugene: Phases of Work

Phase I
Separation of Scheduled v. Unscheduled OR Flow

Phases II and IIb
OR and Cath Lab Smoothing

Phase III
Determination of Bed And Staffing needs
Managing and Reducing Variability in Surgical Scheduling

**Natural Variability** (Clinical Variability, Flow Variability, Professional Variability)

- Random
- Can not be eliminated (or even reduced)
- Must be optimally managed’

**Artificial Variability**

- Non-random
- Non-predictable (driven by unknown individual priorities)
- Should not be managed, must be identified and eliminated
A key root cause of hospital bottlenecks and inefficiency

Daily Weekday Emergency and Elective Surgical Admissions June - August 2008

Artificial Variability

Elective Surgery

Emergency Room

Source: Slide provided by Sandeep Green, Institute for Healthcare Optimization © Institute for Healthcare Optimization 2016
From Fred

- **Leadership sets the course** – Goal for flow is to improve patient care.
  - Name the Failures – measure flow “failures” across the system
- **Analytics** tells us what to do (queueing theory and simulation)

- Execution to make it happen – *(moving to prediction vs reaction)*
Match Capacity and Demand

- S7 Oversight system for hospital-wide operations to optimize patient flow
- S8 Flex capacity to meet hourly, daily and seasonal variations in demand
- S9 Real-time demand and capacity management processes
- S10 Early recognition for high census and surge planning