Using Lean Methodology to Manage Length of Stay and Quality of Care for Substance Use Disorder Patients
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Introduction
- Substance abuse is a national health problem.
- Our acute care hospital identified many challenges in caring for these patients, particularly those addicted to alcohol, opiates and benzodiazepines.
- We examined current processes, gaps and developed strategies for improvement in the care of non critical care substance use disorder patients.

Purpose
Goals for the project included:
- Manage clinical and financial resources and provide safe compassionate care.
- Create a continuum of care from the emergency department (ED) to the noncritical care inpatient unit through utilization of evidence based protocols.
- Decrease observation length of stay and convert to full admission if appropriate.
- Actively engage patients and families in care.

Approach
A multidisciplinary team coordinated by Operations Improvement included nursing, care management, and physicians from the hospitalist, emergency room and addictions service used the A3 methodology to systematically approach solving the problem.

A3 thinking:
- 9 steps or boxes that makes problem solving visual
- A fast effective way for consensus building
- A way to unify culture around a simple systematic methodology

A3 Approach
Box 1 and 2 Reason for Action and Initial State
- Detox observation patient’s length of stay 60 hours (goal: 23 hours)
- 20% of pts on detox unit not meet observation criteria
- Only 20% of long observation stays converted to inpatient status - missed revenue opportunities
- Outpatient* detox patients managed on an inpatient model
- Over 90 managing physicians - not always using protocols
- Inconsistent use of criteria to support conversion of 9 steps or boxes that makes problem solving
- A way to unify culture around a simple systematic
- Only 20% of long observation stays converted to detox unit
- Additonl revenue opportunities
- Hospitalist Role
- Direct physician responsibility for inpatient and observation, readmissions and transfers to higher level of care.

Discussion
- Developing and implementing standards of care from emergency department presentation through the inpatient stay was integral to ensuring consistent patient management.
- Administrative support to assign patients only to hospitalists allowed frequent adjustment of protocols and assessment of discharge readiness.
- Oversight of the physician care management advisor was key to ensuring appropriate inpatient or observation status.
- Daily data collection during implementation focused on compliance with protocols, physician assignment, length of stay for inpatient and observation, readmissions and transfers to higher level of care.
- Nursing staff was supported by daily APN, care manager, and substance abuse counselor rounding and mentoring. This support provided back up for escalating patients and resolution of discharge barriers.

- Financial outcomes included 50% reduction of observation and overall length of stay and an increase in discharges that were classified as inpatients (Increased reimbursement).
- Limitations and challenges included a fluctuating census and during overflow, staff on non detox units.

A3 Approach
Box 6 Rapid Experiments
- Manage using new criteria: Alcohol, Benz, Opiates (likely)
- “Non medical” challenges add to length of stay
- Scheduled medication dosing may mask symptoms
- CNS: “Inpatient” (goal 72 hours) vs “Outpatient” (goal 24 hours)
- Disposition criteria: PI: most severe/likely to retreat to substance use
- Very clear guidance in all areas for further discussion include strategies for engaging patients to link with available resources, assessment of decisional capacity for patients wanting to leave AMA and appropriate use of petition and certificate.

A3 Approach
Box 7 Completion Plan
- Findings/Implications for Practice
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A3 Approach
Box 8 Confirmed State
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