

**Project:** Improving the Management of Nationwide Drug and IV Bag Shortages  
**Last Updated:** September 21<sup>st</sup>, 2018

**Executive Sponsor:** Mark Parker, MD  
**Facilitator:** Stephen Tyzik, Suneela Nayak, Ruth Hanselman and Amy Sparks



**Team Members:** Inpatient Pharmacy and Supply Chain

**Problem/Impact Statement:**

In September of 2017, Hurricane Maria struck the island of Puerto Rico where over 50 pharmaceutical factories had previously operated. The impact of this was felt not only in the drastic reduction of products that are produced on the island such as Baxter's mini-bags, but it also exacerbated supply chain issues for key drugs nationwide. As Pharmacy team's across the country raced to collect information and develop mitigation strategies for navigating these shortages, the need to streamline internal planning and communication is critical. At Maine Medical Center, the Pharmacy Department and Supply Chain did not have a consistent and reliable process for communication, planning and real-time updates. This yielded a tremendous amount of waste before, during and after the drug/IV shortage meeting.

**Scope:**

**In Scope:** The workflows that Pharmacy/Supply Chain utilize to obtain and communicate the most up to date information for drug and IV shortages at the twice-a-week Drug/IV Shortage Meeting.  
**Out of Scope:** Out of scope will be all of the other workflows that Supply Chain and Pharmacy utilize to communicate with one another in between the meetings.

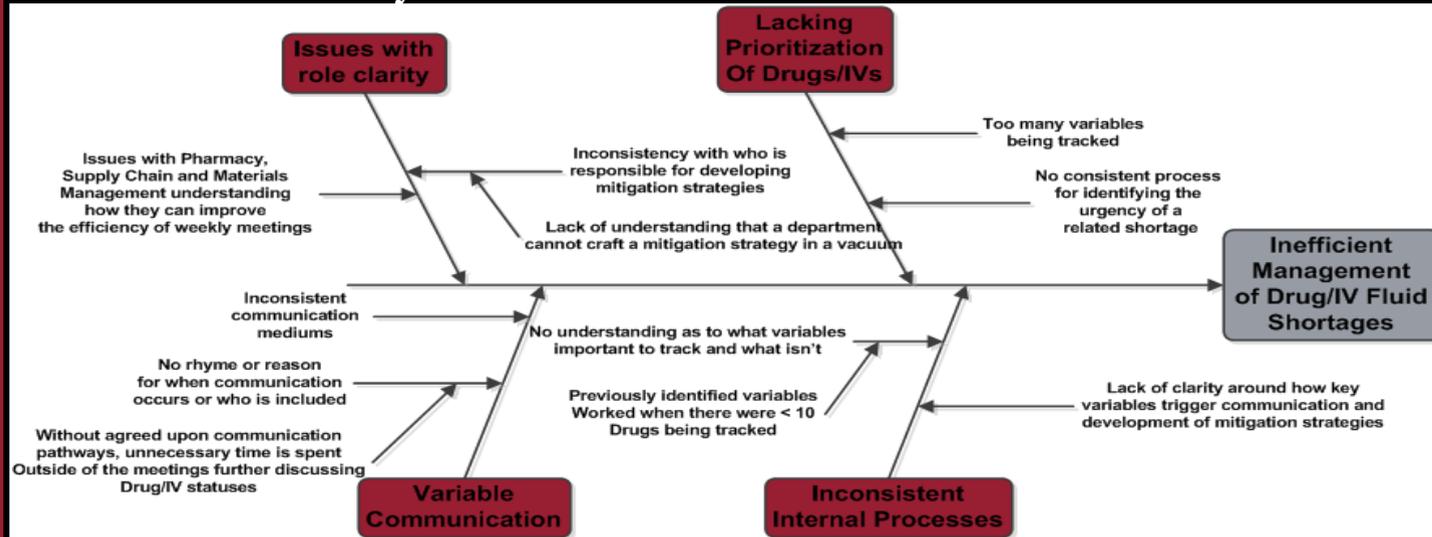
**Goal/Objective:**

- To reduce the time of the twice-a-week Drug/IV Shortage Meeting from 75 minutes to 30 minutes
- To reduce the time of the IV shortage discussion/planning from 35 minutes to < 10
- To reduce the time of the drug shortage discussion/planning from 40 minutes to < 20
- To eliminate 100% of unnecessary communication between the Pharmacy and Supply Chain outside of the Drug/IV Shortage Meeting

**Baseline Metrics/Current State:**

Previously, the inpatient Pharmacy team at Maine Medical Center did not have a robust process for efficiently managing the day to day information for all drugs considered to be on a "shortage". Due to the number of people that needed to be at the meetings to assess severity and properly develop mitigation strategies, each meeting came at a cost of approximately \$429.95. When multiplied by the number of meetings that occurred prior to the interventions, the resulting overall cost was between \$20,637.60 and \$23,733.24.

**Root Cause Analysis:**



**Countermeasures**

Action	Owner	Completion Date	Status
Observe Pharmacy /Supply Chain drug and IV shortage meeting to determine current gaps in drug/IV shortage management process	Stephen Tyzik	11/16/17	Completed
Develop a drug shortage prioritization matrix that the Pharmacy can use to assess criticality and feed into a priority based communication pathway	Stephen Tyzik	January 2018	Completed
Facilitate a meeting between Supply Chain and Pharmacy to outline gaps in current process, triage the root causes and develop agreed upon action plans/timelines/needed support to implement improvement strategies	Jason Tremblay and Stephen Tyzik	January 2018	Completed
Work with Supply Chain to develop an IV Fluid shortage prioritization matrix that Supply Chain and Materials Management can use to assess criticality and feed into a priority based communication pathway	Jason Tremblay, Rita Renaud, Jody Batsford, Katherine Anderson and Stephen Tyzik	February 2018	Completed

**Outcomes**

FDA Strategies to Effectively Manage Drug Shortages	MMC Improvement Strategies (Implemented)
Develop and/or Streamline Internal Processes	1. On a daily basis Supply Chain reviews items that drop below the re-order point and < 7 days supply on hand (SOH) which triggers communication to the Pharmacy and development of an internal and external mitigation strategy. Those > 7 days SOH are triaged for discussion at the twice a week Pharmacy/Supply Chain Drug Shortage Meeting. 2. On a daily basis Pharmacy utilizes a prioritization matrix (discussed below), any drugs that change to a red priority score with < 7 days SOH trigger a mitigation strategy. Those > 7 day SOH get triaged to the Drug Shortage Meeting.
Improve Data and Response Tracking	On a daily basis, the Pharmacy updates their drug shortage spreadsheet which automatically updates a prioritization matrix so that key variables (SOH, re-supply ETA, daily usage) trigger the development of an appropriate mitigation strategy
Clarify Roles/Responsibility	In conjunction with the streamlined processes above, a swimlane diagram was developed to articulate the roles of Supply Chain, Materials Management, Pharmacy and Risk and Patient Safety within the daily management of Drug/IV shortages.
Enhance Public Communications about Drug Shortages	In alignment with the development of the above mitigation strategies, each of the color codes on the prioritization matrix (Red, Orange, Yellow, Green) correspond to an associated communication plan.
Develop Methods to Incentivize and Prioritize Quality	The Pharmacy/Supply Chain Drug Shortage Meeting experienced a > 250% reduction in minutes (35 → < 10) which was dedicated to discussion/planning to manage IV fluid shortages and a 100% reduction in minutes (40 → 20) which was dedicated to discussion/planning to manage drug shortages.
Develop risk-based approaches to identify early warning to prevent supply disruptions.	For Supply Chain and Pharmacy, both of them have transformed their IV Fluid/Drug shortage management spreadsheets with prioritization driven visual management. In real time, the updating of multiple variables give them real time feedback to the urgency of a situation surrounding an IV fluid and/or drug.

Implementation of these strategies led to a meeting time of 24 minutes, which meets the target and reduces the salary cost of the meeting from \$429.95 to \$171.98

**Next Steps**

Continue to utilize prioritization matrix as Drug/IV Fluid shortages evolve and utilize similar process improvement strategies for challenges moving forward.

Plan

Do

Study

Act