Delays in Admissions for Scheduled Chemotherapy

Joseph Mock & Kathlene DeGregory

September 2020
Institutional Overview

**University of Virginia Health**
- 605 bed tertiary academic medical center
- NCI-designated cancer center
- 37 bed inpatient oncology unit
- 56 chair infusion center
- 3 community oncology sites
Team members

Joey Mock, MD - Team Lead
Kathy DeGregory, PharmD – core member
Jenna VanHoose, RN – member
Caroline Jones, PharmD - member
Cory Perry, PharmD – member
Jenna Ally, NP – stakeholder
Amelia Hodson, RN – stakeholder
Mary Sauder RN – stakeholder
Holly Mellott, RN – stakeholder
Mike Keng, MD - stakeholder
Between January 1 and August 16, 2020, 35% of University of Virginia patients, with planned admissions to 8 West for scheduled chemotherapy were rescheduled. This led to delays in chemotherapy, a decrease in patient satisfaction, and increased administrative burden on clinic staff.
# Outcome Measure

## Baseline data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Patients that had a scheduled chemotherapy admission that were rescheduled (per authorization flowsheet in Epic).</td>
</tr>
<tr>
<td><strong>Patient population:</strong></td>
<td>Only 8W admissions for planned chemotherapy. Excluding stem cell transplant admissions.</td>
</tr>
<tr>
<td><strong>Calculation methodology:</strong></td>
<td><strong>Numerator</strong> is planned chemotherapy admissions that require reschedule. <strong>Denominator</strong> is total planned chemotherapy admissions to 8W.</td>
</tr>
<tr>
<td><strong>Data source:</strong></td>
<td>Epic flowsheets, Admissions Calendar</td>
</tr>
<tr>
<td><strong>Data collection frequency:</strong></td>
<td>Weekly</td>
</tr>
<tr>
<td><strong>Data limitations:</strong></td>
<td>We cannot always tell the reason for delay. If patient never gets admitted, we do not “see” that delay.</td>
</tr>
</tbody>
</table>
Outcome Measure
Baseline data

University of Virginia - 8 West
% of patient chemo admits rescheduled
(Jan - Aug 2020)

Percentage

Dates

12/30 - 1/5  1/6 - 1/12  1/13 - 1/19  1/20 - 1/26  1/27 - 2/2  2/3 - 2/9  2/10 - 2/16  6/29 - 7/5  7/6 - 7/12  7/13 - 7/19  7/20 - 7/26  7/27 - 8/2  8/3 - 8/9  8/10 - 8/16

35%
Aim Statement

Reduce the rate of rescheduled planned admissions for chemotherapy to **less than 25%** by 9/30/20.

This will:

- Provide timely cancer therapy
- Minimize disruptions to patients, providers, and staff
Very complex process with overlapping roles, redundant steps, and numerous hand offs. Physician not very involved in the process.
Process is very complicated and inefficient. The default assumption was that bed availability was most important, but the process directly impacts which beds are available.
# Process Measure

## Diagnostic Data summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Reasons for rescheduling</td>
</tr>
<tr>
<td><strong>Patient population:</strong></td>
<td>All planned admissions to malignant heme service for chemotherapy (not SCT patients)</td>
</tr>
<tr>
<td><strong>Calculation methodology:</strong></td>
<td>Counted reasons that patients had to be rescheduled</td>
</tr>
<tr>
<td><strong>Data source:</strong></td>
<td>EMR Authorization Flow sheet</td>
</tr>
<tr>
<td><strong>Data collection frequency:</strong></td>
<td>On going (Feb – August)</td>
</tr>
<tr>
<td><strong>Data limitations:</strong></td>
<td>Insufficient charting</td>
</tr>
</tbody>
</table>
Process Measure

Reasons for Re-scheduled Admissions

- **Bed availability**: 25
- **Unknown**: 7
- **Patient Request/Admin**: 6
- **Clinical Status**: 5
- **Chemotherapy Schedule**: 2
- **Insurance**: 1

Cumulative %

- 0%
- 5%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

**Count**

- 0
- 5
- 10
- 15
- 20
- 25
- 30

**Reasons**

- Bed availability
- Unknown
- Patient Request/Admin
- Clinical Status
- Chemotherapy Schedule
- Insurance

ASCO Quality Training Program
Priority / Pay-off Matrix

Countermeasures

BED AVAILABILITY

High Impact

- Are the rule still relevant? Reevaluate rules and update
- Strict adherence to the admission reservation rules
- Uncouple admission days from clinic appointment days

Low Impact

- Computer program like iQueue or other software
- Improve the discharge process
- Modify bed center bed block rules

Ease of Implementation

- Easy
- Difficult
### Process Measure

#### Diagnostic Data summary

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<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong></td>
<td>Adherence to the admission reservation calendar rules</td>
</tr>
<tr>
<td><strong>Patient population:</strong> (Exclusions, if any)</td>
<td>All planned admissions for chemotherapy (not SCT patients)</td>
</tr>
<tr>
<td><strong>Calculation methodology:</strong> (i.e. numerator &amp; denominator)</td>
<td><strong>Numerator:</strong> Number of days the admission scheduling rules were violated per week</td>
</tr>
<tr>
<td></td>
<td><strong>Denominator:</strong> Total number of days with planned chemotherapy admissions per week</td>
</tr>
<tr>
<td><strong>Data source:</strong></td>
<td>Epic admission flow sheet and admissions calendar</td>
</tr>
<tr>
<td><strong>Data collection frequency:</strong></td>
<td>On going</td>
</tr>
<tr>
<td><strong>Data limitations:</strong> (if applicable)</td>
<td>Data may not have been updated on the flow sheet.</td>
</tr>
</tbody>
</table>
Admission Rules

- 2 Neuro-Oncology admits per day
- 4 SCT admits per week
- 4 Chemo scheduled admits per day
University of Virginia - 8 West
% of days with admit rules broken
(Jan - Sept 2020)

Test of Change
PDSA #1
## Test of Change

### PDSA Plan

<table>
<thead>
<tr>
<th>Date</th>
<th>PDSA Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 8/17 – 9/11</td>
<td>Ensure strict adherence to the existing reservation rules – no overbooking</td>
<td>Work arounds still exist</td>
</tr>
<tr>
<td>9/22</td>
<td>Transition Reservations Calendar to Standardized Epic Admission Request</td>
<td>In process</td>
</tr>
</tbody>
</table>

[ASCO Quality Training Program]
Outcome Measure

Post Countermeasure

University of Virginia - 8 West
% of patient chemo admits reschedule
P-chart (3 sigma)

Test of Change
PDSA #1
### Next steps

## Sustainability Plan

<table>
<thead>
<tr>
<th>Item</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>An epic calendar is in development with PFA schedulers enforcing</td>
<td>Laura Gastrell</td>
</tr>
<tr>
<td>rules – eliminates all work arounds – go live 9/22/20</td>
<td></td>
</tr>
</tbody>
</table>

ASCO Quality Training Program
Conclusion

- Bed availability is the biggest challenge
- Standard work for reserving beds is not being followed
- *Number of chemotherapy admits per day* was the rule broken most frequently
- The manual process for bed reservations allows for development of work arounds
- Data collection will continue for PDSA cycle #1
Special Thanks!

Duncan Phillips

Michael Keng

The ASCO staff