Project Title: Adverse Drug Reaction (ADR) Communication

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Institution: Gundersen Health System

Date: June 18, 2021
Between January-December of 2020, patients receiving outpatient infusion therapy at Gundersen Infusion centers (Lacrosse, Onalaska, Winona) had 97 adverse drug reactions (ADR) while receiving the intravenous drugs. Of these ADRs, 41% were not clearly communicated to the ordering provider which could lend to repeat infusions. Ultimately, this can compromise patient safety, reduce quality of care and influence care experience.
Institutional Overview

• Physician-led, not-for-profit healthcare system
• Integrated 22 county service area throughout western Wisconsin, northeastern Iowa and southeastern Minnesota serving urban and rural population
• Regional referral center with 6 affiliate hospitals
• Teaching hospital with 325 beds and Level II Trauma Center
• No. 1 employer in La Crosse County, WI
• Respecting Choices - An internationally recognized, evidence-based model for advance care planning (ACP) consisting of a staged approach to planning.
Cancer Center Overview

Comprehensive cancer center offering medical, radiation and surgical oncology services

Offers a wide range of infusion services at three outpatient locations in La Crosse & Onalaska WI and Winona, MN

We are:

• An American College of Radiology accredited radiation oncology unit.
• Accredited by the Commission on Cancer
• A member of WiNCORP
Team members

- Nina Conard, PA Hem Onc PA
- Jen Grasse, Clinical Nurse Leader
- Vidya Kollu, MD Hem Onc Fellow
- Lee Her Lee, RN Professional Development Nurse
- Paul Letandre, MD Hem Onc faculty
- Leanne Markos, RN Clinical Manager
- Kurt Oettel, MD Hem Onc faculty
- Sara Pingree, Infusion RN
- Megan Pinter, RPH Clinical Manager, Pharmacy
- Kendra Reynolds, Quality Improvement RN
- Cheyenne Stadtler, Hem Onc Clinic RN
- Kristin Campbell, Information Services

Love + Medicine is who we are
Cause and Effect diagram
Process Measure
Diagnostic Data

Type of medications resulting in ADR - provider not notified
January 1 - December 31, 2020

RL6 patient safety event filed for each infusion reaction order set utilized

Adverse drug reactions Jan- Dec 2020
We aim to increase communication of a prior infusion reaction to ordering provider to 75% between April-June 2021.
Outcome Measure
Baseline data

# of ADRs per month - 2020

% of time Ordering Provider was notified of ADR
1/1/2020 - 12/31/2020
N=97

N, N=40, 41%
Y, N=57, 59%

Love + Medicine is who we are
## Prioritized List of Changes (Priority/Pay – Off Matrix)

<table>
<thead>
<tr>
<th>Ease of Implementation</th>
<th>High Impact</th>
<th>Low Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Infusion nursing flowsheet development in EPIC</td>
<td>Creating smart phrase for standardized template</td>
</tr>
<tr>
<td></td>
<td>Standardized location for ADR information in Snapshot</td>
<td>ADR Epic Inbasket notification routing to Hem Onc nursing team</td>
</tr>
<tr>
<td></td>
<td>Nursing and Clinician education</td>
<td>Provider acknowledgement within Beacon Plan</td>
</tr>
<tr>
<td></td>
<td>Care Team implementation</td>
<td></td>
</tr>
</tbody>
</table>

*Note: ASCO Quality Training Program and American Society of Clinical Oncology (ASCO) Knowledge Conquers Cancer logo are present.*
## PDSA Plan (Test of Change)

<table>
<thead>
<tr>
<th>Date of PDSA Cycle</th>
<th>Description of Intervention</th>
<th>Results</th>
<th>Action Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 18, 2021</td>
<td>Nursing flowsheet documentation with information flowing to templated note &amp; visible in Snapshot under header “Adverse Infusion Reaction”</td>
<td>Flowsheet used 59% (10/17) of time. Ordering Clinician notified of ADR 71% (12/17) of time. Smartphrase used 6% (1/17).</td>
<td>Explore use of Care Teams for method of communication of ADR and functionality within Beacon Plans. This will aid in acknowledgment by clinician of ADR.</td>
</tr>
<tr>
<td>June 22, 2021</td>
<td>Use of Care Teams to drive Inbasket message; Hard stop acknowledgment order in Beacon plan</td>
<td>Pending</td>
<td>Pending</td>
</tr>
</tbody>
</table>
PDSA Cycle 1 - Materials Developed

<table>
<thead>
<tr>
<th>Vitals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse</td>
<td></td>
</tr>
<tr>
<td>Heart Rate (monitor)</td>
<td></td>
</tr>
<tr>
<td>Pulse source</td>
<td></td>
</tr>
<tr>
<td>Temp</td>
<td></td>
</tr>
<tr>
<td>Temp source</td>
<td></td>
</tr>
<tr>
<td>O2 Sat (%)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td></td>
</tr>
</tbody>
</table>

### Adverse Drug Reaction

New Adverse Drug Reaction on AIC flowsheet

Once you select “Yes” there was an Adverse Drug Reaction, the flowsheet group cascades open with additional rows to complete.
PDSA Cycle 1 - Materials Developed

An adverse Drug Reaction section will appear on the Beacon Snapshot and Springboard All reports which will pull the Adverse Drug Reaction information from the flowsheet.
### PDSA Cycle 1 - Materials Developed

<table>
<thead>
<tr>
<th>Adverse Drug Reaction</th>
<th>4/29/2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Plan</td>
<td>Chemotherapy Plan</td>
</tr>
<tr>
<td>Pre-Meds</td>
<td>Loratadine</td>
</tr>
<tr>
<td>Chemo/Infusion Drug</td>
<td>Rituximab</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Change in voice quality</td>
</tr>
<tr>
<td>Supervising Clinician Notified</td>
<td>Dr. Parsons</td>
</tr>
<tr>
<td>Intervention Medication Given</td>
<td>Diphenhydramine</td>
</tr>
<tr>
<td>Outcome</td>
<td>Notified clinician. Infusion stopped. Adverse drug reaction medications given. Treatment NOT restarted</td>
</tr>
<tr>
<td>Did patient complete treatment after the reaction?</td>
<td>No</td>
</tr>
</tbody>
</table>

Patient educated to seek emergency medical care should signs and symptoms of infusion reactions develop after discharge.

Using the `.adversedrugreaction` smartphrase will also pull the information from the flowsheet section into a note.
PERCENT OF TIME ORDERING PROVIDER WAS NOTIFIED OF ADVERSE DRUG REACTIONS

Pre- EPIC Changes

% of time Ordering Provider was notified of ADR
1/1/2020 - 12/31/2020
N=97
Y, N=57, 59%
N, N=40, 41%

Post Changes (after 5/18/21)

% of Time Ordering Provider was Notified of ADR
5/18/21 - 6/11/21
N=13
Y, N=9, 69%
N, N=4, 31%
% of Time Adverse Reaction Flowsheet Was Used
5/18/21 - 6/11/21
N=13

- NO
- YES

Y, N=10, 77%
N, N=3, 23%
Improvement in reporting ADR’s through our internal tracking system.

Prior to 5/18/21:
- # of ADR Events Reported Internally
  - 1/1/2020 - 12/31/2020
  - N=97
  - Yes: N=56, 37%
  - No: N=61, 63%

After 5/18/21:
- # of ADR Events Reported Internally
  - 5/18/21 - 6/11/21
  - N=13
  - Yes: N=8, 62%
  - No: N=5, 38%
CONTINUED FOCUSED AREAS

- Relayer with nursing staff the benefits of utilizing the smartphrase to ensure consistent information is shared with the ordering provider and documented in the patient’s chart (communication within the care team).
PDSA Cycle 2 – Materials Developed

• All previous steps related to the flowsheet documentation and smartphrase will continue to occur.
• Once RN documents the chemo/infusion drug administered, automated message is sent to the ADR event folder within Epic Inbasket to all care team members.
• RN will add ADR orders group to treatment plan for clinician review
• Hard stop clinician acknowledgement within Beacon plan which will also let nursing know what changes were made (if any)
PDSA Cycle 2 – Materials Developed

- All previous steps related to the flowsheet documentation and smart phrase will continue to occur.
PDSA Cycle 2 – Materials Developed

As a member of the patient’s Care Team you will receive an Inbasket message in the “Adverse Drug Reaction” folder. From this message you will be able to view the information that the nurse entered into the treatment plan regarding the reaction.
PDSA Cycle 2 – Materials Developed

By opening the plan from the inbasket message you are able to go into the treatment plan and review as well as acknowledge review was done via the Provider Communication below.
PDSA Cycle 2 – Materials Developed

You can make modifications to the plan as well as let the nurse know what changes were made (if any).
Conclusions

- Improved communication to the ordering provider to notify them an ADR occurred.
- Standardized process/workflow for nursing staff to follow when an ADR occurs.
- 22% increase in reporting ADR’s within our internal tracking system to better allow us to trend issues and tackle them in real-time.
  - Prior to the EPIC changes that occurred on 5/18/21, we only had 43% of those events submitted into our internal reporting system to assist us with looking at trends.
  - After the changes on 5/18/21, we saw 65% of all ADR events reported internally
Next Steps/Plan for Sustainability

- Continue to monitor data including:
  - Patient Safety Events
  - Use of ADR order set
  - RN processes
  - Clinician acknowledgement of ADRs

- Hardwire and continue to refine processes
- Implement in Inpatient setting for chemotherapy plans
- Consider implementation to Infusion Plans and other partnering departments for non-chemotherapy reactions
- Utilizing project as a CoC goal