

Project Title: Adverse Drug Reaction (ADR) Communication

Presenter's Name: Vidya Kollu, MD

Institution: Gundersen Health System

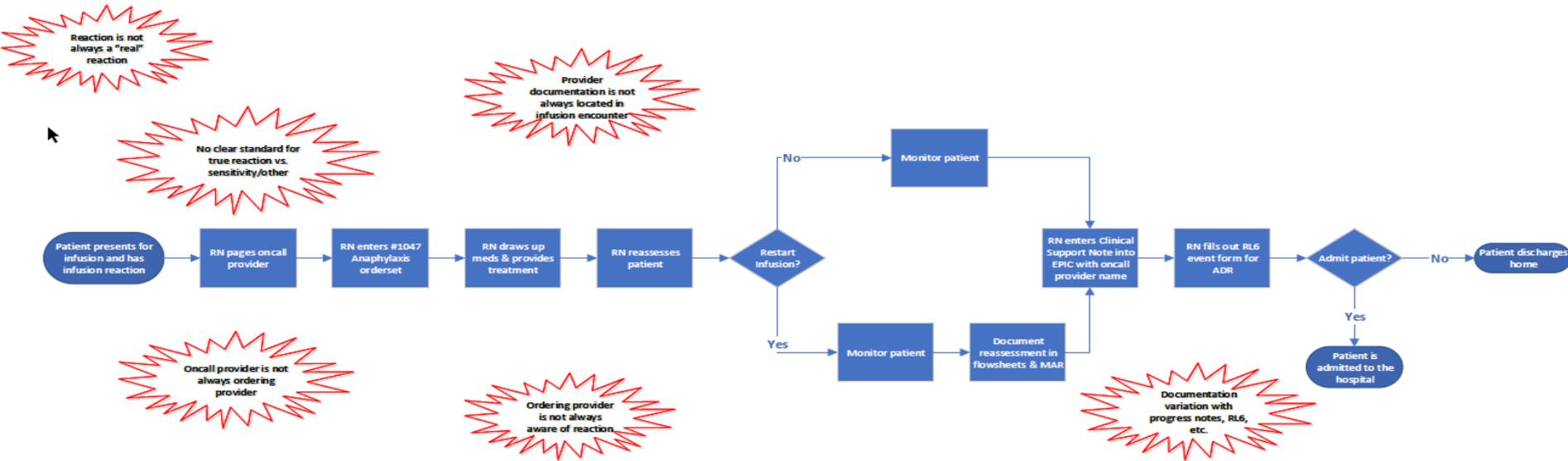
Date: June 18, 2021

Problem Statement

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.

Process map

Current State: Process for Adverse Drug Reactions (ADR) in Infusion Services



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.



Love + Medicine is who we are

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 :

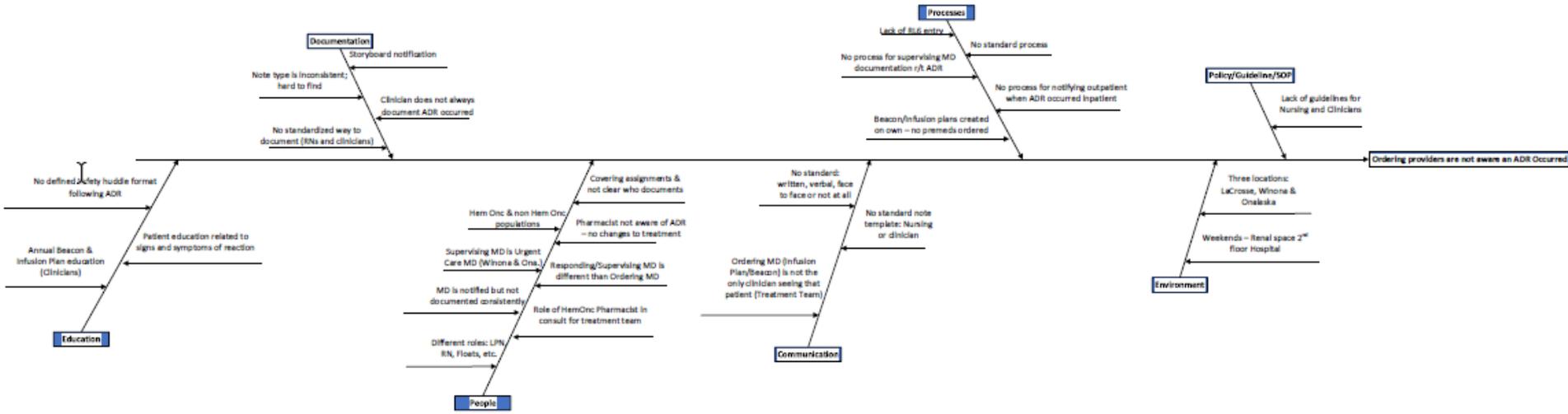
- An American College of Radiology accredited radiation oncology unit.
- Accredited by the Commission on Cancer
- A member of WiNCORP

Team members

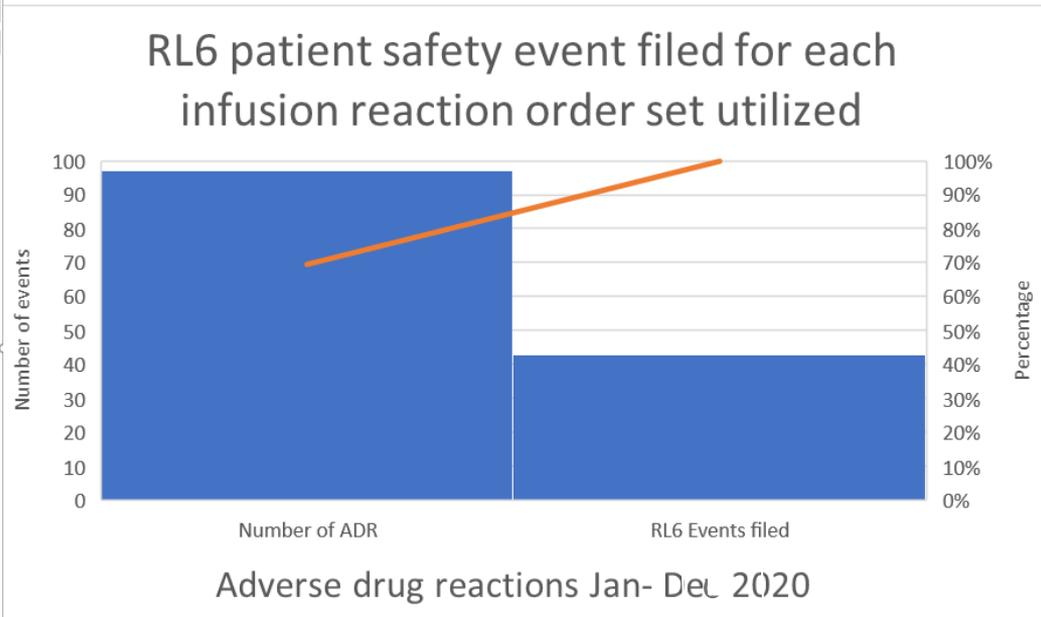
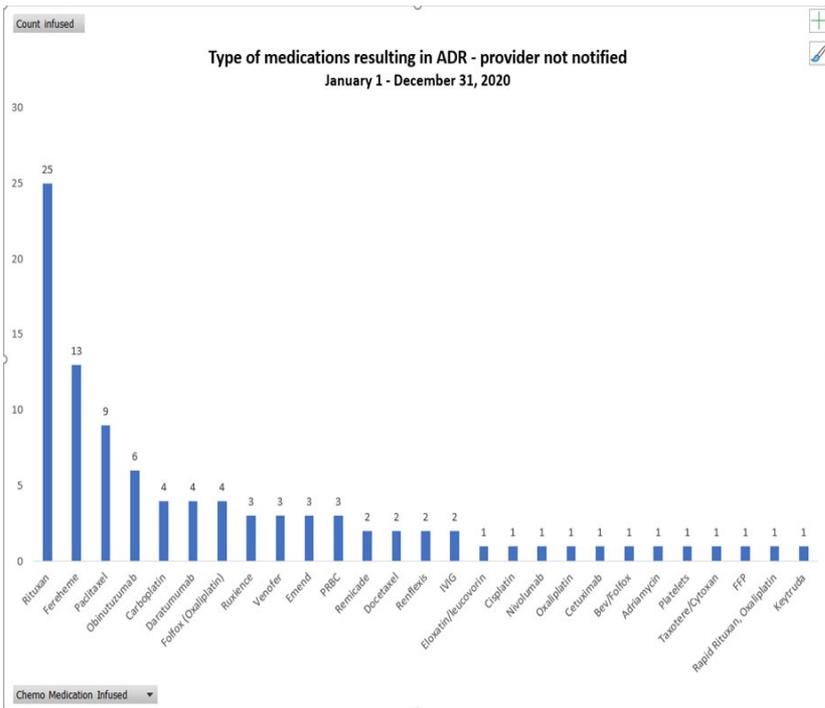
- Nina Conard, PA Hem Onc PA
- Jen Grasse, Clinical Nurse Leader
- Vidya Kollu, MD Hem Onc Fellow
- Lee Her Lee, RN Professional Development Nurse
- Paul Letandre, MD Hem Onc faculty
- Leanne Markos, RN Clinical Manager
- Kurt Oettel, MD Hem Onc faculty
- Sara Pingree, Infusion RN
- Megan Pinter, RPH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

Cause and Effect diagram

Infusion Services Adverse Drug Reactions (ADR) Cause and Effect Diagram 2020



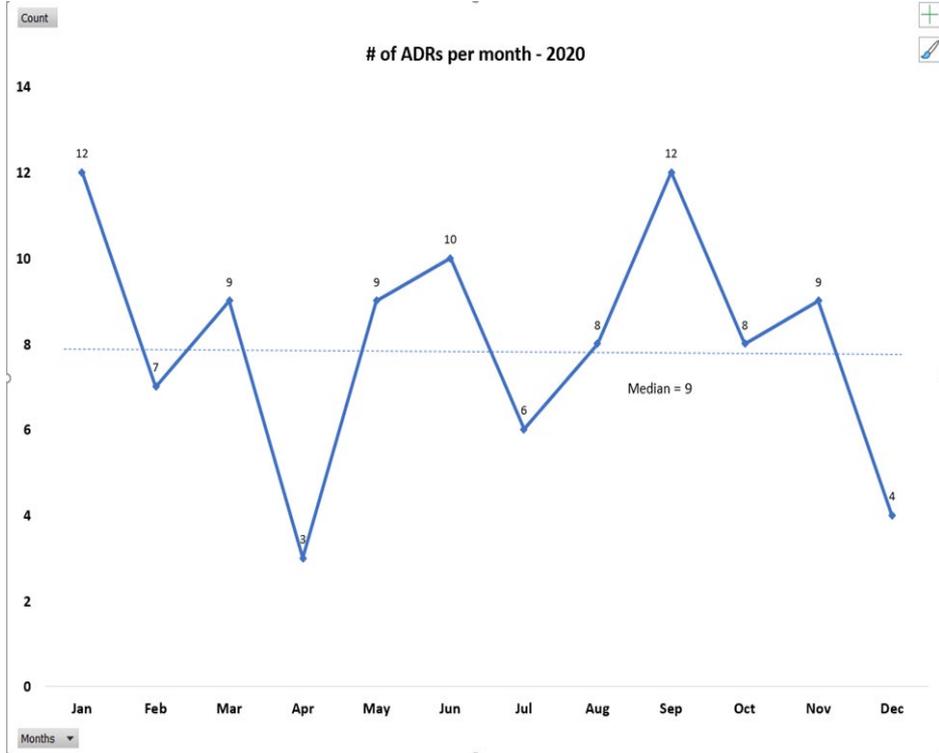
Process Measure Diagnostic Data



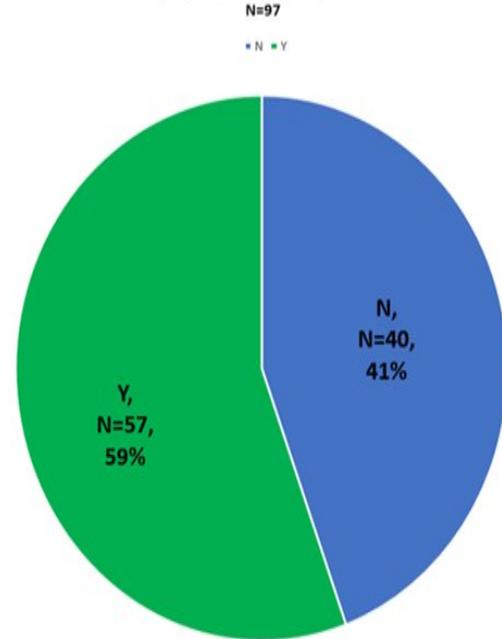
Aim Statement

We aim to increase communication of a prior infusion reaction to ordering provider to 75% between April-June 2021.

Outcome Measure Baseline data



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



Prioritized List of Changes (Priority/Pay –Off Matrix)

Impact	High	<ul style="list-style-type: none">• Infusion nursing flowsheet development in EPIC• Standardized location for ADR information in Snapshot• Nursing and Clinician education	<ul style="list-style-type: none">• Provider acknowledgement within Beacon Plan• Care Team implementation
	Low	<ul style="list-style-type: none">• Creating smart phrase for standardized template	<ul style="list-style-type: none">• ADR Epic Inbasket notification routing to Hem Onc nursing team
		Easy	Difficult
Ease of Implementation			

PDSA Plan (Test of Change)

Date of PDSA Cycle	Description of Intervention	Results	Action Steps
May 18, 2021	Nursing flowsheet documentation with information flowing to templated note & visible in Snapshot under header "Adverse Infusion Reaction"	Flowsheet used 59% (10/17) of time. Ordering Clinician notified of ADR 71% (12/17) of time. Smartphrase used 6% (1/17).	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.
June 22, 2021	Use of Care Teams to drive Inbasket message; Hard stop acknowledgment order in Beacon plan	Pending	Pending

PDSA Cycle 1 - Materials Developed

Vitals	
Pulse	
Heart Rate (monitor)	
Pulse source	
BP	
MAP (mmHg)	
Patient Position	
BP Location	
BP Method	
Resp Rate	
Temp	
Temp source	
O2 Sat (%)	
Observations	
Adverse Drug Reaction	
Adverse Drug Reaction	

New Adverse Drug Reaction on AIC flowsheet

Observations	
Adverse Drug Reaction	
Adverse Drug Reaction	Yes
Type of Plan	Chemotherapy Plan
Pre-meds	Loratadine
Chemo/Infusion Drug	Rituximab
Symptoms	Change in voice quality
Supervising Clinician	Dr. Parsons
Intervention Medication Given	Diphenhydramine
Outcome	Notified clinician. Infusio...
Did patient complete treatment after the	No
Ordering Clinician notified of ADR	Dr. Parsons

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

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

[View Complete Flowsheet](#)

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

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

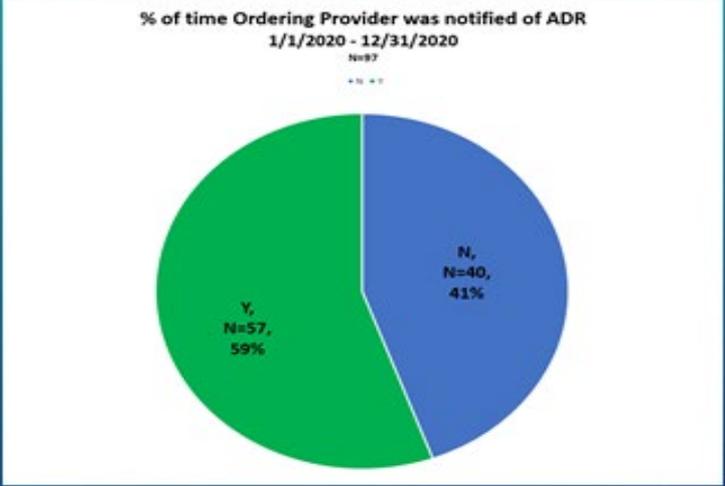
Patient educated to seek emergency medical care should signs and symptoms of infusion reactions develop after discharge.

Using the .adversedrugreaction smartphrase will also pull the information from the flowsheet section into a note.

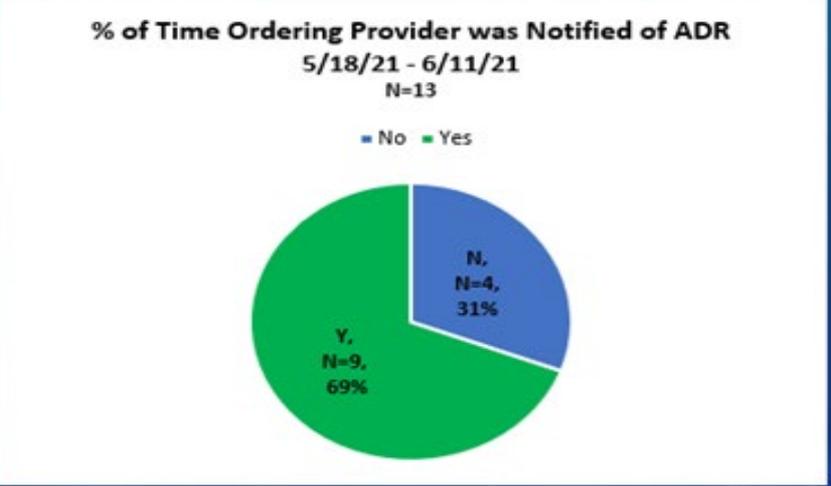
Change Data

PERCENT OF TIME ORDERING PROVIDER WAS NOTIFIED OF ADVERSE DRUG REACTIONS

Pre- EPIC Changes



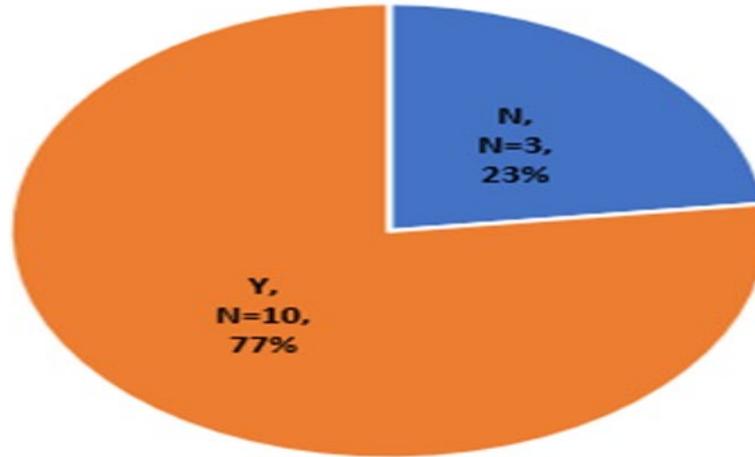
Post Changes (after 5/18/21)



Change Data

% of Time Adverse Reaction Flowsheet Was Used
5/18/21 - 6/11/21
N=13

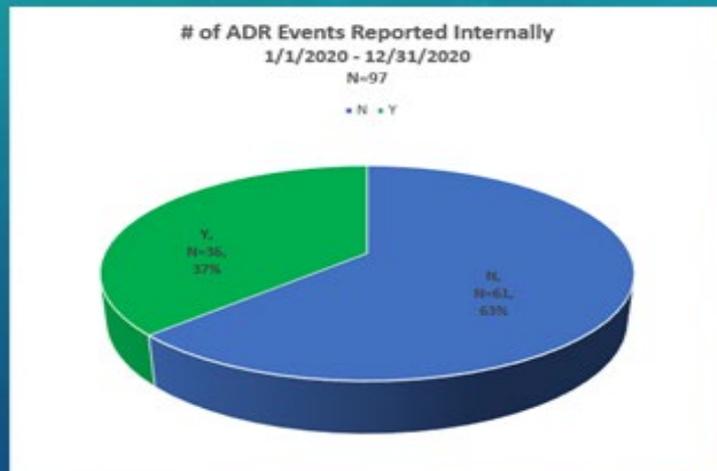
■ NO ■ YES



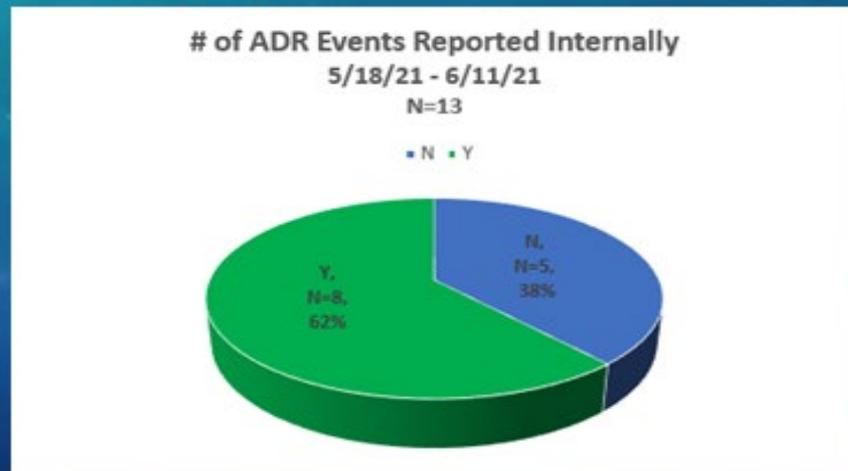
Change Data

IMPROVEMENT IN REPORTING ADR'S THROUGH OUR INTERNAL TRACKING SYSTEM

Prior to 5/18/21



After 5/18/21



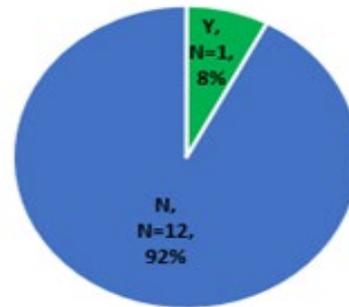
CONTINUED FOCUSED AREAS

- Relay 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).

% of Time Smartphrase Was Used

N=13

■ Yes ■ No



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.

The screenshot displays the 'Treatment Plan Manager' interface for a patient on a regimen of DOXORUBICIN / CYCLOPHOSPHAMIDE. The plan is set for every 14 days, with the current cycle (Cycle 2) planned from 6/30/2021 to 7/13/2021. The patient's weight is 52 kg and BSA is 2 m2. The interface shows a list of tasks for Day 1 of Cycle 2, including 'Nursing Communication' and 'Provider Alerts'. A specific 'Adverse Drug Reaction' order is highlighted, with the provider acknowledgement: '(GL AMB BCN ADVERSE REACTION:37488)'. A callout box on the right explains that the nurse will add this adverse drug reaction order to the treatment plan.

Treatment Plan Manager - AC - DOXORUBICIN / CYCLOPHOSPHAMIDE - EVERY 14 DAYS VER: 10/2019

Save | Restore | Add Future Plan | Advance to Next Plan | Discontinue Plan | Put Plan On Hold | Send Plan | Add/Remove Views | Lifetime Dose Tracking

TP Height: None | TP Weight: 52 kg Δ +0.0 % | 16 minutes ago | TP BSA: 2 m2 Δ +0.0 % | Pharmacy

+ Add | Modify Dose | Print Labels | Show

Cycle 2 - 6/30/2021 through 7/13/2021 (14 days), Planned

Day 1, Cycle 2 - Planned for 6/30/2021

Nursing Communication

MONITOR/ASSESS

Nurse to enter smarphrase adversedrugreaction to pull information forward from AIC flowsheet.

Provider Alerts

PROVIDER COMMUNICATION

Adverse Drug Reaction

Provider acknowledgement: (GL AMB BCN ADVERSE REACTION:37488)

Nurse will ad Adverse Drug Reaction orders group to the treatment plan.

PDSA Cycle 2 – Materials Developed

The screenshot displays the Epic EMR interface. On the left, the 'My Messages' sidebar shows 'Adverse Drug Reaction' selected. The main window shows a message titled 'Adverse Drug Reaction' with a table of details:

Status	Next Planned Date	Msg Date	Patient	Reason
Read	06/14/21	06/15/21	Zzztest, Layla	Send Plan
Read	06/15/21	06/16/21	Zzztest, Layla	Send Plan
Read	06/16/21	06/16/21	Zzztest, Layla	Send Plan

Below the table, patient information for Layla Zzztest is visible, including her date of birth (8/1/1986) and phone number (608-386-9505). The right pane shows the 'Weight and BSA History' and 'Related Oncology Reports' sections. A 'Nursing Communication' section titled 'MONITOR/ASSESS' contains the following text:

Adverse Drug Reaction
Adverse Drug Reaction 6/16/2021 6/15/2021 6/14/2021 6/14/2021
Type of Plan Chemotherapy Plan - - -
Pre-Meds Ranitidine - - -
Chemo/Infusion Drug Iron Dextran Ferumoxystol Iron Dextran Oxaliplatin
Symptoms Bradycardia - - -
Supervising Clinician Notified Dr. Parsons - - -
Intervention Medication Given None - - -
Outcome Notified clinician but no intervention - - -
Did patient complete treatment after the reaction? Yes - - -
Ordering clinician notified of Adverse Drug Reaction Dr. Kollu - - -

Below this, there is a 'PROVIDER COMMUNICATION' section with 'Adverse Drug Reaction' and 'Provider acknowledgement: (GL AMB BCN ADVERSE REACTION:37488)'. An 'Appointment Requests' section includes an 'Infusion Appointment Request' with details: 'Expected: S, Expires: S+365, 180 minutes (calculated), Schedule appointment at most 3 days before or at most 14 days after'.

Two yellow boxes highlight key information: one around the 'Adverse Drug Reaction' message in the sidebar, and another around the 'MONITOR/ASSESS' nursing communication text.

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

The screenshot displays the 'Treatment Plan Manager' interface for a patient with a plan for DOXORUBICIN / CYCLOPHOSPHAMIDE. The plan is scheduled for Day 1, Cycle 2, starting on 6/30/2021. The patient's vital signs and weight are shown as stable. The interface is divided into several sections:

- Nursing Communication:** A section titled 'MONITOR/ASSESS' containing a list of clinical observations and interventions, such as 'Adverse Drug Reaction' and 'Patient educated to seek emergency medical care...'. It includes 'Sign', 'Release', and 'Actions' buttons.
- Provider Alerts:** A section containing a 'PROVIDER COMMUNICATION' alert for an 'Adverse Drug Reaction'. The alert text includes 'Provider acknowledgement: (GL AMB BCN ADVERSE REACTION:37488)'. A text entry field is open, showing the same text as the alert. It also has 'Sign', 'Release', and 'Actions' buttons.

An orange callout box highlights the text: "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

The screenshot displays a software window titled "Provider Alerts". At the top right, there are buttons for "Sign", "Release", "Actions", and a close button. Below this is a blue header bar labeled "PROVIDER COMMUNICATION" with a close button. The main content area shows an "Adverse Drug Reaction" alert with the text "Provider acknowledgement: {GL AMB BCN ADVERSE REACTION:37488}". Below the alert is a text editor with a toolbar containing icons for undo, redo, bold, italic, link, unlink, and insert smart text. The text in the editor reads "Adverse Drug Reaction" and "Provider acknowledgement: {GL AMB BCN ADVERSE REACTION:37488}". A yellow callout box is positioned over the text editor, containing the text: "Reviewed; proceed with no modifications", "Reviewed with modifications ***", and "***". At the bottom right of the window, there are "Accept" and "Cancel" buttons.

PROVIDER COMMUNICATION

Adverse Drug Reaction
Provider acknowledgement: {GL AMB BCN ADVERSE REACTION:37488}

Category: Provider Alerts

Comments:

Adverse Drug Reaction
Provider acknowledgement: {GL AMB BCN ADVERSE REACTION:37488}

Reviewed; proceed with no modifications
Reviewed with modifications ***

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

Accept Cancel

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