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Intervention Aimed at Improving Delivery of New Oncology Drug Education to Nursing at Dana-Farber Cancer Institute Satellites

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Dana Farber Cancer Institute

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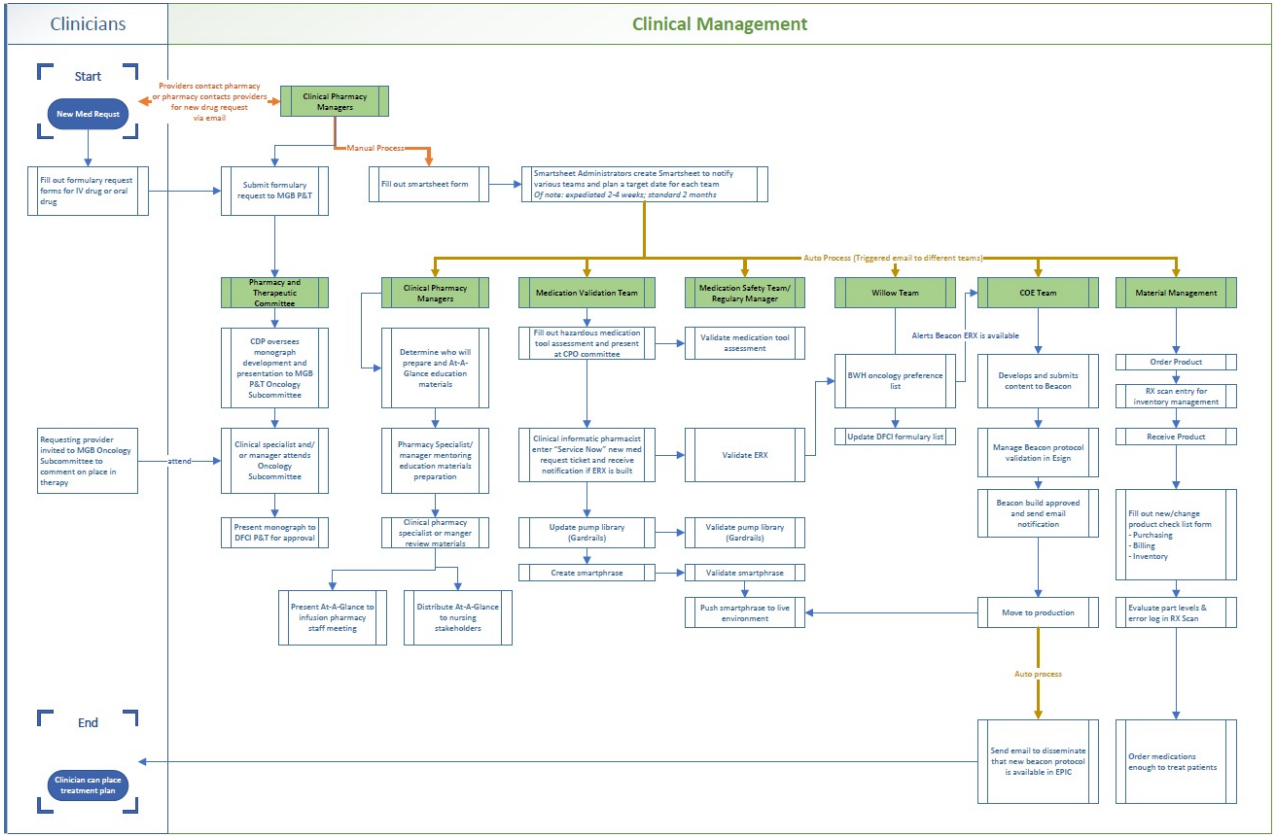
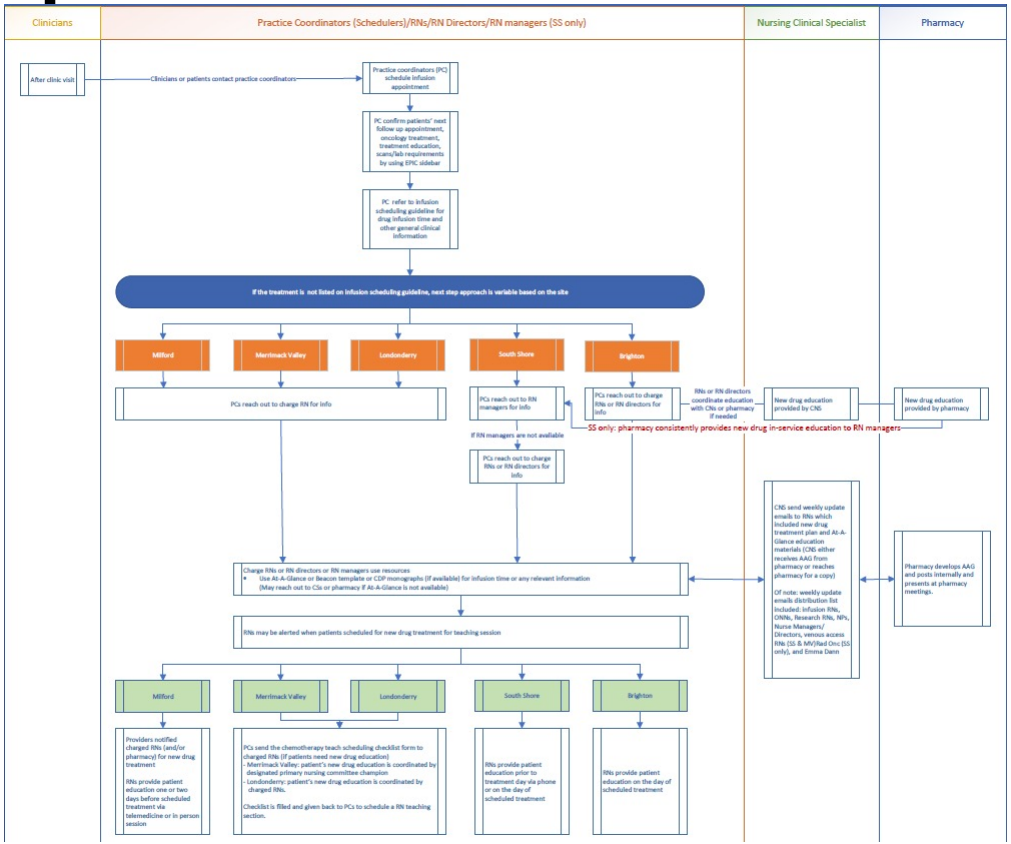
Problem Statement

- Only 57% of nurses at DFCI satellites indicated on a survey delivered on 9/10/21 they are either “somewhat comfortable or “very comfortable” administering newer oncology drugs
- This is concerning for patient safety and staff satisfaction; the survey revealed nursing would like more drug education

Process Map


Clinicians
Clinical Management
Start
New Med Requst
Providers contact pharmacy or pharmacy contacts providers for new drug request via email
Clinical Pharmacy Managers
Manual Process
Fill out formulary request forms for IV drug or oral drug
Submit formulary request to MGB P&T
Fill out smartsheet form
Smartsheet Administrators create Smartsheet to notify various teams and plan a target date for each team
Of note: expediated 2-4 weeks; standard 2 months
Auto Process (Triggered email to different teams)
Pharmacy and Therapeutic Committee
Clinical Pharmacy Managers
Medication Validation Team
Medication Safety Team/ Regulary Manager
Willow Team
COE Team
Material Management
CDP oversees monograph development and presentation to MGB P&T Oncology Subcommittee
Determine who will prepare and At-A-Glance education materials
Fill out hazardous medication tool assessment and present at CPO committee
Validate medication tool assessment
Alerts Beacon ERX is available
BWH oncology preference list
Update DFCI formulary list
Develops and submits content to Beacon
Order Product
RX scan entry for inventory management
Receive Product
Requesting provider invited to MGB Oncology Subcommittee to comment on place in therapy
attend
Clinical specialist and/ or manager attends Oncology Subcommittee
Pharmacy Specialist/ manager mentoring education materials preparation
Clinical informatic pharmacist enter "Service Now" new med request ticket and receive notification if ERX is built
Validate ERX
Manage Beacon protocol validation in Esign
Present monograph to DFCI P&T for approval
Clinical pharmacy specialist or manger review materials
Update pump library (Gandrails)
Validate pump library (Gandrails)
Beacon build approved and send email notification
Fill out new/change product check list form
- Purchasing
- Billing
- Inventory
Create smartphrase
Validate smartphrase
Present At-A-Glance to infusion pharmacy staff meeting
Distribute At-A-Glance to nursing stakeholders
Push smartphrase to live environment
Move to production
Evaluate part levels & error log in RX Scan
Auto process
End
Clinician can place treatment plan
Send email to disseminate that new beacon protocol is available in EPIC
Order medications enough to treat patients

Process Map – Satellite Communication



Institutional Overview

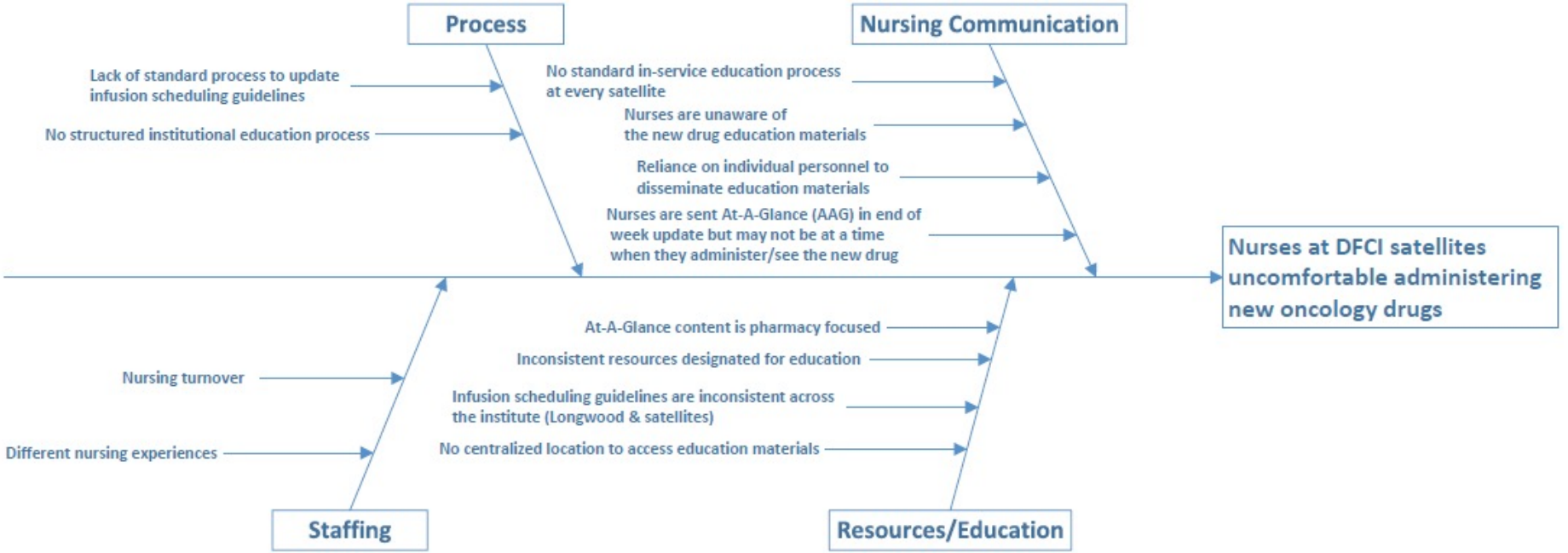
- Dana-Farber Cancer Institute is a large, NCI-designated Cancer Center and teaching affiliate of Harvard Medical School located in Boston, Massachusetts
- The main campus encompasses subspecialties in all forms of cancer (Genitourinary, Bone Marrow Transplant, Gastrointestinal, Thoracic, Leukemia) all of which have their own disease centers and divisions
- In fiscal year 2019, there were 187,664 infusion visits, 359,519 outpatient MD visits, 25,118 new patients, 74,084 unique patients and more than 1,100 clinical trials
- There are 5 main community-based satellite cancer centers in the Boston Metropolitan area which deliver general hematology/oncology care in all subspecialties
- A “shared care” model where patients are seen or transferred between the Boston hub and satellites is common

Team Members

Name	Role
Gayle Blouin, PharmD	Team Leader
Daniel Roberts, MD	Core Team Member
Yun Man, PharmD	Core Team Member
Crystal Derosier, MSN, RN	Core Team Member
Sylvia Bartel, RPh, MHP	Project Sponsor
Amy Morris, PharmD	Coach

Name	Role
Bridget Scullion, PharmD	Team Member
Emma Dann, DNP, RN	Team Member
David Daugherty, MD, MBA	Team Member
Megan Corbett, MSN, RN	Team Member
Cindy Arcieri, MS, APRN	Team Member
Susan Minsaas, MSN, RN	Team Member
Fran Leonard, MSN, RN	Team Member
Jane Worrell, MSN, RN	Team Member
Carole DeAngelis, BSN, RN	Team Member
Katie Magni, MSN, RN	Team Member
Benjamin West	Team Member

Cause & Effect Diagram



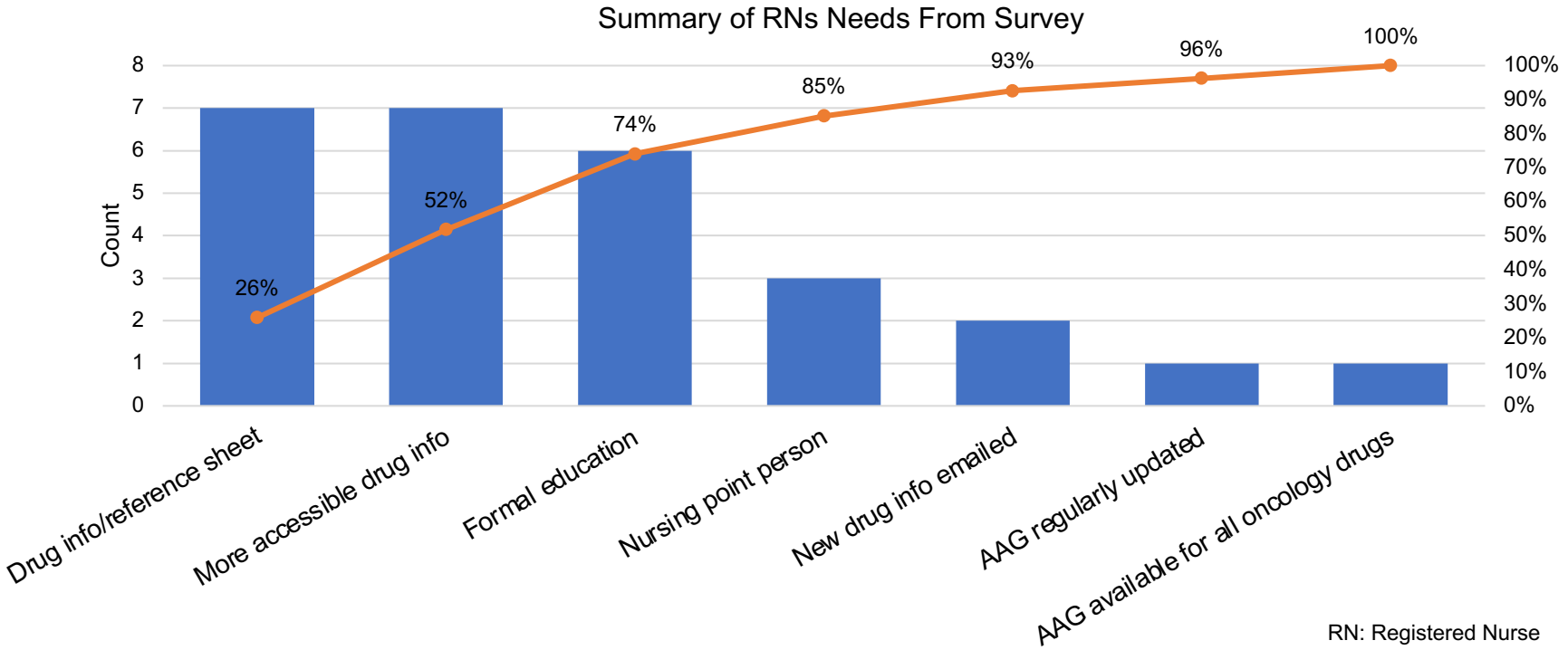
Aim Statement

- Increase percentage of nurses indicating they are “extremely comfortable or “somewhat comfortable” administering new drugs to ≥75% from baseline 57% by December 2021

Outcome Measure
Baseline data summary

Item	Description
Measure:	Percentage of nurses comfortable with infusing newer oncology drugs at the satellite cancer centers
Nursing population: *(Exclusions, if any)*	Outpatient infusion nurses at the DFCI satellite cancer centers
Calculation methodology: *(i.e. numerator & denominator)*	% of nurses who feel “extremely comfortable” or “somewhat comfortable” with newer drug infusion /total number of nurses surveyed
Data source:	Survey of nurses, pharmacy data on new drug infusions (pre-selected newly FDA approved drugs)
Data collection frequency:	Monthly
Data limitations: *(if applicable)*	Recall/selection bias

Pareto Chart



RN: Registered Nurse
CNS: Clinical Nurse Specialist

Process Measure
Diagnostic Data summary

Item	Description
Measure:	Percentage of new drug nursing infusion encounters where educational material was available for review prior to or at the time of infusion
Nursing population: *(Exclusions, if any)*	Outpatient infusion nurses at the DFCI satellite cancer centers
Calculation methodology: *(i.e. numerator & denominator)*	# of encounters where drug education was available at time of nursing administration _____ Total # of nursing administration episodes with newly available drug
Data source:	Survey
Data collection frequency:	Send new survey monthly, or frequency defined when a new drug is available
Data limitations: *(if applicable)*	Recall bias, selection bias (which nurses tend to respond)

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

Impact	Easy	Difficult
High	• Make AAG readily accessible/post on pharmacy intranet page • Develop AAG for new oncology drugs	• Provide formal education/in-services • Embed education in Beacon plans • Update older AAGs/update regularly • Incorporate nursing consideration section on AAG • Scheduling process improvement • Interdisciplinary communication improvement
Low		• Scheduling process improvement

Ease of Implementation

PDSA Plan

Date of PDSA Cycle	Description of Intervention	Results	Action Steps
10/8/21-12/1/21	• AAG posted on New Drug Information page • Weekly nursing education on how to access AAG • Survey to be resent every 4 weeks to assess accessibility of AAG and comfort level		• Develop New Drug Info folder on DFCI intranet • Ensure AAGs are posted correctly • Ensure nursing education is conducted by checking in with CNSs during intervention period • Send survey 4 weeks after nursing education is completed • Added RN to team to provide feedback on survey questions

Materials Developed

Home

New Drug Information

Pharmacy

Formulary Monographs can be accessed **here** under Hematology/Oncology Guidelines.

At-a-Glances

2021

Chemical Name	*Updated*
Amivantamab	June 2021
Bamlanivimab	February 2021
Loncastuximab tesirine	July 2021
Margetuximab	June 2021
Melphalan flufenamide	May 2021

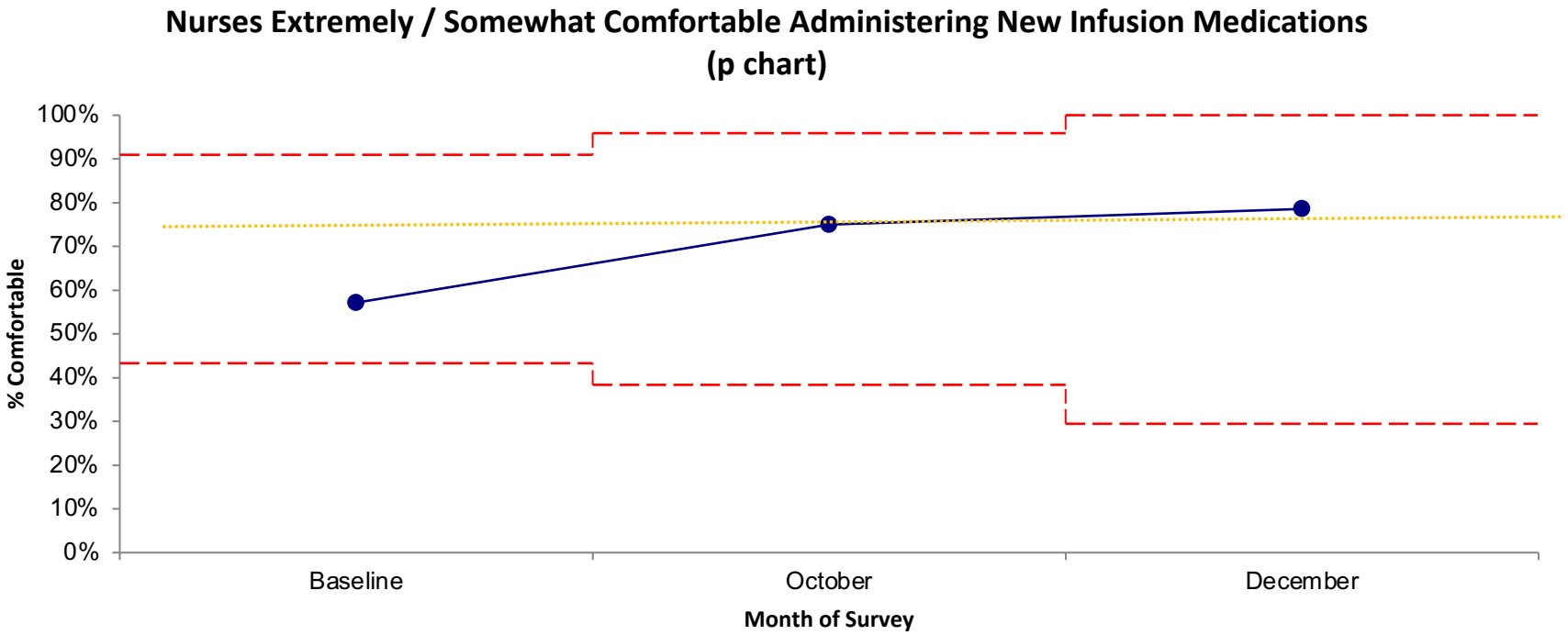
At-a-Glance

Amivantamab-vmjw (Rybrevant™)

Consult complete prescribing information and/or P&T drug monograph before prescribing, preparation, or administration. This document is created at the time of drug approval and is based on the prescribing information at that time. It is intended to provide a brief overview of the drug as initial education upon approval by P&T. It is not routinely reviewed or revised.

Therapeutic Use	Treatment of locally advanced or metastatic non–small cell lung cancer in adults with epidermal growth factor receptor (EGFR) exon 20 insertion mutations (as detected by an approved test) with disease progression on or after platinum-based chemotherapy.
Mechanism of Action	Amivantamab is a bispecific antibody that targets both EGFR and mesenchymal-epithelial transition (MET). Amivantamab binds to the EGFR and MET extracellular domains and disrupts EGFR and MET signaling by blocking ligand binding and, in exon 20 insertion mutation models, degrading EGFR and MET. The presence of EGFR and MET on tumor cell surfaces also allows for targeted cell destruction by immune effector cells, such as natural killer cells and macrophages, via antibody-dependent cellular cytotoxicity and trogocytosis mechanisms, respectively.
Dose	Dose is based on baseline body weight (dose adjustments are not required for subsequent changes in body weight). Administered IV. **Patients <80 kg:** • Week 1: 1,050 mg split over days 1 and 2 (350 mg on day 1 and 700 mg on day 2). • Weeks 2 to 4: 1,050 mg once weekly. • Subsequent infusions: 1,050 mg once every 2 weeks until disease progression or unacceptable toxicity. **Patients ≥80 kg:** • Week 1: 1,400 mg split over days 1 and 2 (350 mg on day 1 and 1,050 mg on day 2). • Weeks 2 to 4: 1,400 mg once weekly. • Subsequent infusions: 1,400 mg once every 2 weeks until disease progression or unacceptable toxicity.
Pre-Medications	• Diphenhydramine (25 to 50 mg) or equivalent (administer prior to all amivantamab doses) • Acetaminophen 650 to 1,000 mg (administer prior to all amivantamab doses) • Dexamethasone (10 mg) or methylprednisolone (40 mg) or equivalent (administer prior to week 1, days 1 and 2 doses; PRN for subsequent doses)
Preparation	• For preparation of amivantamab you need: ○ 250 ml bag of 0.9% Sodium Chloride Injection USP ○ Drug: 350 mg/7 mL (50 mg/mL) solution in a single-dose vial. Determine the dose required and number of vials needed. ○ Tubing: Primary drug tubing (2R8403) plus 0.2 micron filter extension set (1C8363). Tubing must be primed with NS (approximate tubing plus filter volume = 10 ml). ○ Final volume in the infusion bag must be 250 mL, therefore we must remove a certain volume of NS less the 10 ml tubing + filter volume prior to adding drug. The amount of NS removed will vary based on dose. ○ V1 pharmacist will choose appropriate dose from smart list in preparation instructions
Administration	• In week 1 and week 2, administer via a peripheral line (due to the high incidence of infusion-related reactions [IRR] during initial treatment). Subsequent infusions (after week 2) may be administered via central line • Administration rates differ by **DOSE AND TREATMENT DAY** (see table below) • Infusion bag should be administered within 10 hours of preparation (including infusion time)

Change Data


Nurses Extremely / Somewhat Comfortable Administering New Infusion Medications
(p chart)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Comfortable
Baseline
October
December
Month of Survey

Conclusions

- Making At-A-Glance (AAG) teaching resource accessible to RNs resulted in greater comfort level of administering new drugs
- 100% of RNs reported AAG is helpful
- There were challenges to data collection with nursing staff survey, despite updating survey questions based on nursing feedback

Next Steps/Plan for Sustainability

- Ensure all At-A-Glance (AAG) are posted on the DFCI intranet
- Communicate new AAG availability to clinical specialists (e.g post P&T meeting huddle)
- Continue weekly clinical specialists email communication for AAG status
- Update RN competency during orientation to include how to access AAG
- Consider other data collection strategies other than survey
- Explore additional education opportunities such as formal in-service education for new drugs
- Discuss AAG request portal for older drugs that would be helpful to nurses
- Access to AAG requires several “clicks” to access; consider alternate location

Thank You!

- Many thanks to our sponsor Sylvia Bartel, our coach Amy Morris, and the rest of our extended team.

- Big thank you to the ASCO QTP program!