



The Role of Medically Integrated Oncology Pharmacy in Improving Patient Medication Adherence

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Disclosures

- I have no current disclosures to report.
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Overview

- Understand the fundamentals of a **Medically Integrated Pharmacy**
- Discuss methods to leverage a Medically Integrated Pharmacy to increase **oral adherence and effectively manage adverse events**
- Review **best practices** for application

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Pharmacy Settings in the United States

1. Retail Pharmacy

- Large “chain” retail (i.e. CVS, Walgreens) & small community pharmacies
- Dispense regular medications (i.e. insulin, anti-hypertensives)

2. Hospital / Academic Center Pharmacy

- Dispense medications to patients admitted to the hospital

3. Specialty Pharmacy

- Dispense high-cost medications that require high-touch care (insurance, financial assistance for copays, clinical support, delivery of medications)
- Privately-owned specialty pharmacies
- PBM-owned specialty pharmacies (payor-owned)
- **Medically-integrated pharmacies** (part of a medical practice – community, hospital, or academic setting)

4. Home Infusion Pharmacy

- Provide infusions in a patient’s home (total parenteral infusion, long-term antibiotics, immunoglobulin infusions, subcutaneous infusions) and nursing services

5. Long-Term Care Pharmacy

- For elderly patients

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Medically Integrated Pharmacy (MIP)

“A dispensing pharmacy WITHIN an oncology center of excellence that promotes a patient-centered, multidisciplinary team approach. It is a collaborative and comprehensive model that involves oncology health care professionals who focus on the continuity of coordinated care for cancer patients.”

~ NCODA, Inc.

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MIP Models

Organization Type	Community Practice	Health System Outpatient	Academic Medical Center
	<ul style="list-style-type: none"> • Community oncology practice owns and operates the oral dispensing pharmacy within their practice. • Practice can set up a doctor dispensing operation where the state allows it. • Practice can set up a pharmacy hub operation where all scripts go to and shipped from. This pharmacy handles the entire processing and prescription deliveries. • IV therapies are administered in clinics 	<ul style="list-style-type: none"> • Hospitals and Academic centers have a dispensing pharmacy on site. • Patient picks up the oral medicine on site and receives a clinical counseling with the oncology trained pharmacist on site. • IV therapies administered in the ambulatory center of each institution. 	

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Characteristics of Successful MIPs

INTEGRATION

Immediate access to patients Electronic Medical Records

IT support: Pharmacy Medication Dispensing technology and Adherence Platform technology

EDUCATION

Teaching & training the members of interdisciplinary team: physicians, nurses, pharmacists, dietitians, pharmacy technicians.

Patient facing education provided by the team of experts: pharmacists, nurses, and physicians.

COMMUNICATION

Communication and collaboration across the entire multi-disciplinary team to improve patient adherence and mitigating drug toxicities.

Additional services:

Financial support for high copay.

Follow up on prescriptions filled by other pharmacies mandated by patient insurance.

Communication with practice leadership to ensure commitment and support for MIP's mission.

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Medically Integrated Team With A Patient-Centric Approach



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About Florida Cancer Specialists & Research Institute (FCS)

A large, privately owned oncology practice with over **250 oncologists/hematologists** and near **100 clinics**, many have turned into the cancer centers with diagnostic equipment on site (PET scans XRAY machine, radiology treatments, and IV infusion chairs treatments)

Florida Cancer Specialist Oral Oncology Specialty Pharmacy Rx To Go Pharmacy with >140 employees.

FCS oral oncology pharmacy has two board-certified oncology pharmacists and twelve clinical staff pharmacists

Adherence program was developed internally in 2013 and is considered the standard of care for patients on oral oncology medication

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NEW FCS PHARMACY FACILITY (23 SQ. METER SPACE) SEPTEMBER 2021



Best Practices for Application of an MIP



MIP Model Case Study	The Technologies We Use
<p>Who:</p> <ul style="list-style-type: none"> Florida Cancer Specialists <p>How:</p> <ul style="list-style-type: none"> Integrated team of doctors, nurses, pharmacists, and technicians² Pharmacists engaged at the practice level with a support team & an integrated EMR system to <i>facilitate dispensing, pharmacy care plans, & engagement</i> throughout the clinic staff³ Opened oral oncology pharmacy, Rx To Go, in 2008¹ Designed ORCA (Oncology Resource Compliance Application) to help <i>increase oral adherence</i>³ <p>What:</p> <ul style="list-style-type: none"> <i>Reduces the time to fill for patients</i>² Improves <i>patient adherence & outcomes</i> and decreases drug waste² 	

References: 1. Wimbush A. 2019. Oncolytics Today. "Steering Beyond The First Pill" (ebook) NCODA, pp.23-30. Available at: <https://www.ncoda.org/wp-content/uploads/2019/04/ONCOLYTICS-TODAY-WEB-VERSION-compressed.pdf>. Accessed 16 March 2020.
 2. Jagan S. Pharmacists Employ New Strategies for Oral Adherence. Targeted Oncology. <https://www.targetedonc.com/conference/abstract/2017/pharmacists-employ-new-strategies-for-oral-adherence>. Published April 26, 2017. Accessed March 17, 2020.
 3. Additional insights and information provided by Ray Bailey, Florida Cancer Specialists Pharmacy Director.

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Focusing on Adherence to Therapy

Tools and Methods	Stakeholder
Patient is enrolled in pharmacy adherence program	Oncology trained clinical pharmacist
Patient is counseled on the medication and side effect management	
Schedule pharmacist clinical follow up	Oncology trained pharmacist weekly or biweekly x 2-3 month until stable, then monthly
Pharmacy care plans or PQI (Positive Quality Intervention) plan of care developed by NCODA	Pharmacist-developed with the focus on drug specific characteristics and AE management
Adverse event management toolkit	Provided by manufacture or designed by pharmacy (patient education and supportive care medications over the counter); NCODA Treatment Support Kits (TSK)
Oral Chemotherapy Education (OCE) sheets for patients	Designed by NCODA organization and available to pharmacies members for free
Patient Education on management of adverse events	Dietitian developed diet recommendations specific to the drug side effects

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Initial Assessment	
PMP Date (Start of Care)	PMP Date (Start of Care)
How long has the patient been on therapy (this medication)?	<input type="radio"/> New to therapy <input type="radio"/> Not new to therapy
Patient Management Program- Checkpoint.	
Does Patient opt in to the PMP?	<input type="radio"/> Yes <input type="radio"/> No
<p>The Welcome Packet was explained and discussed with the patient and all questions were addressed.</p> <p>The Welcome packet includes the Notice of Privacy Practices, Patient Management program, and Notice of Non-discrimination was received with the patient's first fill of medication.</p> <p>Patient rights and responsibilities have been reviewed with and patient verbalized acceptance and understanding.</p> <p>Financial obligations for the medication and available financial assistance was discussed with patient and Financial Assistance was obtained if requested by patient.</p> <p>Explanation and benefits of the PMP were explained to the patient.</p> <p>Enrollment in the PMP was offered. If the pt. chooses to opt out, they are informed that Rx To Go Pharmacy shall continue to assess their care throughout their course of therapy and will be offered re-enrollment at a later date.</p>	

Drug Characteristics	
<div> <div>ZeJin</div> <div>Overview</div> <div>Booking / Directions</div> <div>Administration</div> <div>Drug Interactions</div> <div>Adverse Effects</div> <div>Contraindications</div> <div>Storage and Handling</div> <div>Additional Information</div> <div>Side Effects Mapping</div> <div>Monitoring Parameters</div> <div>Supportive Care Kit</div> <div>Patient Management Protocol</div> </div>	<div> <div>Received</div> <div>ZeJin Package Insert</div> <div>Clinical Key</div> <div>Drug Interactions Lexicomp</div> <div>DOSING:</div> <div>First-Line Maintenance Treatment of Advanced Ovarian Cancer:</div> <div> • For patients weighing <77 kg (<170 lbs) OR, with a platelet count of <150,000/μL, the recommended dosage is 200 mg (two 100-mg capsules) taken orally once daily. </div> </div>

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Methods to Improve Medication Adherence

Traditional Tools & Methods	Function
Pill diaries	Patient's medication-taking behavior
Pill counts	
Paper calendars	Reminder for patients
Pharmacy care plans	Individualized for drugs
Fulfillment tracking	Tracks & ensures if every written script is filled

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Possible Methods to Improve Medication Adherence

Non-Traditional Tools & Methods	Function	Advantages	Disadvantages
Mobile medical apps	Alerts patients when to take medications & records when taken	Reminds patients when to take medications	<ul style="list-style-type: none"> Inexpensive but unreliable data
Smart pill bottles/dispensers	Sensor caps indicate when a bottle is opened & pill is removed		<ul style="list-style-type: none"> Costly and unreliable data
Smart package systems	High-tech blister/strip packaging; reminds patients to take their medication & tracks dispensed doses		<ul style="list-style-type: none"> Costly and unreliable data
Bio-ingestible sensors	Embedded into oral drug; once dissolved, alerts a patient's smart phone & physician	Tracks adherence	<ul style="list-style-type: none"> Timely to encapsulate drugs in pharmacy Increased cost of medications Needs more data if improves adherence

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PASSION FOR PATIENTS
NCODA.ORG

- Established in **2015**
- International non-profit **501(c)(3)**
- **5,000+** Members (50 US States & 14 Countries)
- Our Mission is to **empower the Medically-Integrated Oncology team** to deliver positive, patient-centered outcomes by providing leadership, expertise, quality standards and best practices.
- Advocate for **Medically Integrated Oncology Pharmacy**



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NCODA Resources for MIPs

- Oral Chemotherapy Education (OCE) sheets
- Intravenous Cancer Treatment Education (IVE) sheets
- Positive Quality Intervention (PQI) documents
- Treatment Support Kits (TSKs)
- Many more!

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SHARING BEST PRACTICES THROUGH PQI

HOW NCODA'S POSITIVE
QUALITY INTERVENTION
INITIATIVE HELPS OPTIMIZE
PATIENT CARE AND SAFETY



ORAL CHEMOTHERAPY EDUCATION



FORUM FOR PRACTICE
ADVANCEMENT



AFATINIB

Name of your medication

Generic name — afatinib (ay-FA-tih-nib)
Brand name — Gilotrif® (JEE-loh-trif)

Approved uses

Afatinib is used to treat people with non-small cell lung cancer (NSCLC) with an epidermal growth factor receptor (EGFR) genetic mutation or a squamous cell type of NSCLC.

Dose and schedule

Taking afatinib as instructed is important to allow your treatment to be as effective as possible, so here are some key points to remember.

- ☐ Your dose may vary, but the usual dose of afatinib is 40 milligrams (40 mg) to be taken by mouth once daily. The dose may be adjusted by your care provider based on your individual needs.
- ☐ Afatinib must be taken without food (at least one hour before or two hours after a meal or snack) at the same time each day.
- ☐ Afatinib should be taken whole and not crushed, cut, or dissolved. If you are unable to swallow afatinib, talk to your care provider or pharmacist for possible options.

ORAL CHEMOTHERAPY EDUCATION



Helping the Patients
Advance Care



AFATINIB

Possible Side Effect	Management
Diarrhea (loose and/or urgent bowel movements)	<p>Monitor how many bowel movements you have each day.</p> <ul style="list-style-type: none"> • Drink 8–10 glasses of water or fluid each day unless your care provider has instructed you to limit your fluid intake related to some other health problem. • Eat small, frequent meals throughout the day rather than a few large meals. • Eat bland, low-fiber foods (e.g., bananas, applesauce, potatoes, chicken, rice, toast). • Avoid high-fiber foods, such as raw vegetables, raw fruits, and whole grains. • Avoid foods that cause gas, such as broccoli and beans. • Avoid lactose-containing foods, such as yogurt and milk. • Avoid spicy, fried, and greasy foods. <p>Contact your provider if any of the following occur:</p> <ul style="list-style-type: none"> • The number of bowel movements you have in a day increases by four or more. • You feel dizzy or lightheaded. <p>Your care provider may recommend an over-the-counter medication called loperamide (Imodium®) to help with your diarrhea, but talk to your care provider before starting this medication.</p>
Nail changes	<p>Usually changes start at the cuticle and may affect the skin around the nail.</p> <ul style="list-style-type: none"> • Biting, chewing, or picking at your nails can increase the risk for infection. • Talk to your care provider if you notice any changes in your nails.

INTRAVENOUS CANCER TREATMENT EDUCATION



Helping the Patients
Advance Care



CARBOPLATIN

Name of the regimen and cancer drugs

- Carboplatin (KAR boh pla tin): Paraplatin®

Common uses

- Carboplatin is used to treat advanced ovarian cancer but may be used for other treatments.


Treatment schedule

Your treatment will be given into your vein through an intravenous (IV) line. This may be into a short, flexible temporary catheter in your arm, or through a central venous catheter. A central venous catheter, or central line is a long, flexible IV tube that empties into a very large vein next to the heart. Talk with your care team to see which will be best for you and your treatment.

Each carboplatin treatment is repeated every 21 days (3 weeks). This is known as one cycle. Your treatment may be given for a set number of cycles, or it will keep going until the drug stops working or you have side effects which stop you from continuing treatment.

- ☐ Carboplatin IV is given on Day 1.

Drug	DAY	1	2	3	4	5	6	7	8	...	21	Cycle 2 Day 1
Carboplatin		X										X


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Alopecia/Hair Loss

Hair loss, or alopecia, is often thought of with chemotherapy, but not all anti-cancer drugs cause this side effect.

Published: 12 September 2021
Last Updated: 21 March 2022

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How to Categorize Cancer Therapy

There are more than 200 different medications for cancer. Many people call all of these "chemo," but there are actually many different types.

Published: 12 September 2021
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Edema Management

Edema, also called swelling, can be caused by different types of cancer treatments and other non-cancer conditions.

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Managing Constipation

Managing constipation is when your bowel movements happen less often than normal or if your bowel movements are hard or painful to pass.

Published: 12 September 2021
Last Updated: 13 September 2021

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Managing Diarrhea

Managing diarrhea is when your bowel movements become more frequent and are watery, softer, or looser than normal.

Published: 12 September 2021
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Managing EGFR Skin Rash

Managing EGFR stands for "epidermal growth factor receptor," which can be targeted by certain cancer therapies. A common side effect of EGFR cancer treatment is

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Managing Hand-Foot Reaction

Hand-foot reaction (sometimes referred to as hand-foot syndrome) describes a common side effect of certain oral anticancer therapies...

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Managing Heartburn

Heartburn is often described as a burning sensation in the stomach or lower chest that rises toward the neck and occasionally to the back.

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Written By: Lauren Trisler, PharmD, BCOP
Carle Cancer Center

Positive Quality Intervention: Daratumumab (Darzalex®) for Multiple Myeloma

Description: Daratumumab injection is an anti-CD38 monoclonal antibody (mAb) FDA approved for use in a range of multiple myeloma patients including first line, transplant ineligible and relapsed/refractory.¹ The subcutaneous formulation (DARZALEX FASPRO®) is not indicated for first-line transplant eligible patients but is indicated for various multiple myeloma indications (review supplemental information for reference).² This PQI will provide guidance for optimal administration and management of both daratumumab infusions and subcutaneous formulation.

Background: Daratumumab is administered as single agent or in combination with other multiple myeloma treatment options including proteasome inhibitors and immunomodulating agents and is dosed at 16 mg/kg.¹ One of the most common adverse reactions of daratumumab is infusion reactions of any grade. The occurrence rate is observed at 37% with the first (16 mg/kg, week 1) infusion¹ and one study observed occurrence rate rising to 58% in patients did not receive morphine prior to their first infusion.³ The median time to onset of an infusion reaction is 1-5 hours (range 0-73 hours).¹ Infusion related reactions often present with symptoms similar to allergic rhinitis such as cough, wheezing and rhinorrhea due to CD-38 expression on airway smooth muscle cells.⁴ In the CASSIOPEIA trial, when daratumumab was initiated post ASCT (at the rate/dilution volume used for the last dose), infusion reaction rates and severity were reported at rates consistent with week 2 (all 11%, Grade 3 or 4 <1%).⁵ An option to manage infusion reactions is to split the first dose over 2 days. Daratumumab is administered at a dose of 16 mg/kg on days 1 and 2.¹ DARZALEX FASPRO® utilizes flat dosing for subcutaneous injection at (1,800 mg daratumumab and 30,000 units hyaluronidase) administered subcutaneously into the abdomen over approximately 1 to 5 minutes according to recommended schedule.¹ Additional adverse events reported with daratumumab infusions include neutropenia and thrombocytopenia. These can be managed by dose delays. Supportive care with growth factors and transfusions can be considered.

PQI Process: Prior to the first infusion:

- Verify concomitant medications to be given with daratumumab and determine the dosing frequency
 - Review infusion rates, duration and dilution volumes (see Supplemental Information).^{1,4}
- Ensure orders are placed for premedications - administer 1-3 hours before start of infusion¹
 - Corticosteroid-intermediate or long acting such as methylprednisolone 100mg IV
 - Acetaminophen 650 -1000 mg PO
 - Diphenhydramine 25-50 mg IV or PO
- Consider adding an H2RA and LRA for the first 2-3 infusions¹
 - Ex. Montelukast (Singulair®) 10 mg PO x 1
 - Ex. Famotidine 20 mg IV
- Determine duration and dose of post-infusion corticosteroids
- Consider prescribing short- and long-acting bronchodilators and inhaled corticosteroids for patients with chronic obstructive pulmonary disease
 - Discontinue after 4 infusions if the patient does not experience any major infusion reactions
- To prevent medication errors, it is important to check the vial label to ensure that the drug being prepared and administered is correct between either DARZALEX FASPRO® for subcutaneous injection or DARZALEX® for intravenous infusion

Medication-Specific PQIs

Management of Abemaciclib (Verzenio®) Associated Diarrhea

Written by: Derek Gyori, PharmD and Julianne Orr, PharmD

Advanced Breast Cancer: Appropriate Patient Identification with Abemaciclib (Verzenio®)

Written by: Jan Montgomery, PharmD, South Carolina Oncology Associates and Jacob Dygert, South University School of Pharmacy

Acalabrutinib (Calquence®) in Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma

Written by: Trey McNiel, PharmD, Georgia Cancer Specialists

Afatinib (Gilotrif®) Management for Non-Small Cell Lung Cancer

Written by: Chris Sellers, RPh, Texas Oncology

Management of Alpelisib (Piqray®) Induced Hyperglycemia

Written by: Natasha Khrystofubova, RPh, BCOP, Florida Cancer Specialists and Jody Akena, PharmD, Virginia Cancer Specialists

Supportive Care PQIs

Chemotherapy, Oncolytic, Antiemetic Induced Constipation

Written by: Brady Quinn and Britny Rogala, PharmD - University of Rhode Island College of Pharmacy

DPYD Testing Prior to Fluoropyrimidine Treatment

Written by: Dan Hertz, PharmD, PhD - University of Michigan College of Pharmacy

Managing EGFR Inhibitor Induced Rash

Written by: Sara Moran Smith, PharmD, BCOP, M Health Fairview

FGFR Inhibitor Side Effect Management

Written by: Julia Stevens, PharmD, BCOP and Emmeline Academia, PharmD, BCOP - Beth Israel Deaconess Medical Center

Opioid Induced Constipation

Written by: Neal Dave, PharmD and Julianne Orr, PharmD - Texas Oncology and Indiana University



Why Choose NCODA Treatment Support Kits?

-  Provide patients and caregivers with resources that make sense for adverse event management during treatment with oral anti-cancer medications
-  Equip patients with unique education and supportive care products
-  Increase utilization of support kits (avoid manufacturer branding hurdles)
-  Generic kit options are available



NCODA's Guiding Values



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Ways to Collaborate with ESOP

- Translate resources to multiple languages
- Share material across the globe
- Share experience / expertise across the globe
- ***“Oncology Pharmacists Without Borders”***

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Thank You!

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