



# ANNUAL MEETING

NASHVILLE, TN | MAY 10-12, 2023



# Using Technology to Drive Patient Care

# Faculty

Kristen Whelchel, PharmD, CSP, Research and Patient Care Pharmacist  
[kristen.w.whelchel@vumc.org](mailto:kristen.w.whelchel@vumc.org)

Miranda Kozlicki, PharmD, Specialty Clinical Pharmacist  
[miranda.z.kozlicki@vumc.org](mailto:miranda.z.kozlicki@vumc.org)

Monica Littlejohn, PharmD, MHA, Specialty Clinical Pharmacist  
[monica.d.littlejohn@vumc.org](mailto:monica.d.littlejohn@vumc.org)

Cori Edmonds, PharmD, BCPS, CSP, Specialty Clinical Pharmacist, Residency Program Director  
[cori.edmonds@vumc.org](mailto:cori.edmonds@vumc.org)





# Objectives

- At the completion of this program, pharmacists will be able to
  - List challenges in specialty pharmacy medication management that could lead to increased risk of poor outcomes for patients.
  - Discuss the data available to Health System Specialty Pharmacists that could help identify patients who could benefit from additional support.
  - Describe targeted support that could be provided to patients to lessen their risk for poor outcomes.

**slido**



**What are some barriers that make it hard for patients taking specialty medications to achieve optimal outcomes?**

① Start presenting to display the poll results on this slide.



# Patient Clinical Care Challenges

- Complex dosing regimens
- Monitoring requirements
- Adherence and side effects
- Disease exacerbations
- High risk factors
- Follow up care challenges
- Coordination of care between medical and pharmacy services



# IBD Laboratory Monitoring Dashboard

Sort Test

Lab Results Sorted by PA Expir...

Lab Results Sorted by Refills R...

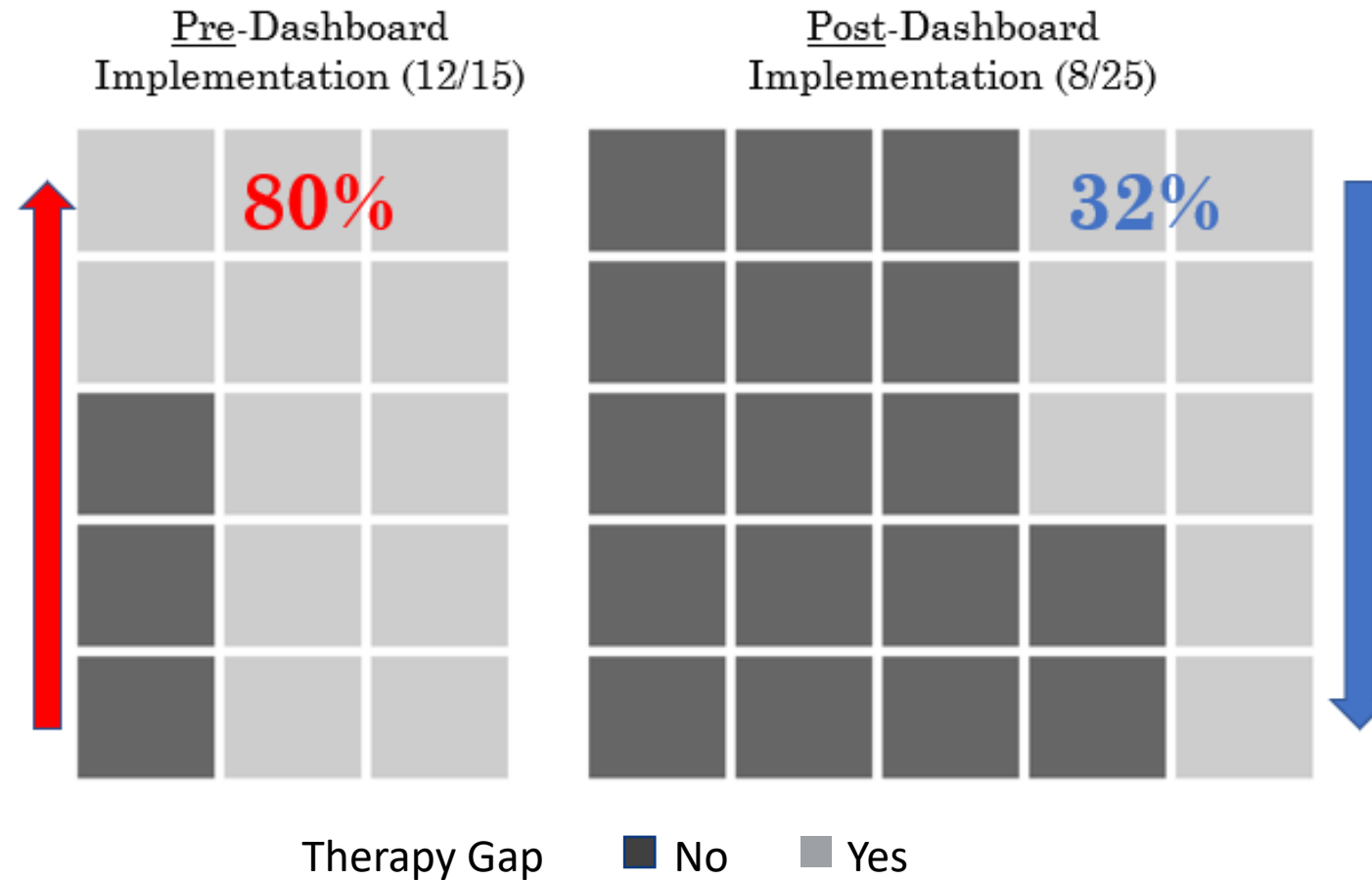
Lab Results sorted by Delivery ...

Lab Results Sorted by Delivery Date

MRN	Last Delivery Date	Medication	PA Expiration Date	refillsleft	Lab Name	Result_Val..	Month, Day, Year of Labs_Results
112233445AB	10/08/2020	Stelara 90 MG/ML SOSY x1...	12/31/2021	0	QUANT TB1(-)NIL	0.00	November 01, 2019
116677889XY	10/07/2020	Humira Pen 40 MG/0.4ML PNKT x1.000 EA	06/30/2021	0	SEDIMENTATION RATE	4	February 28, 2020
					WHITE BLOOD CELLS	5.8	February 28, 2020
					C-REACTIVE PROTEIN	3.1	February 28, 2020
					QUANT TB1(-)NIL	0.00	August 08, 2019

- Identifies patients 4-weeks in advance of next Rx fill date with:
  - 0 refills remaining on Rx
  - TB test  $\geq$  11 months ago
  - Labs (CBC, CMP, ESR, CRP)  $\geq$  5 months ago

# Decreased Treatment Gaps Observed







# Complex Dosing Regimens

- Infusion (IV) to Injection (SQ) medications
- Goal: create a simple tracking method to coordinate and monitor IV to SQ medications within the EHR

Medication	
Provider	
Referral date	
Medication counseling date	
<b>Infusion information</b>	
Infusion Status Update	
Infusion counseling date	
Therapy plan entered date	
Infusion approval date	
Number of infusions	
Infusion center 1	
Infusion 1 scheduled date	
Infusion 1 administered date	
Infusion center 2	
Infusion 2 scheduled date	
Infusion 2 administered date	
Infusion center 3	
Infusion 3 scheduled date	
Infusion 3 administered date	
<b>Injection information</b>	
Specialty pharmacy for injection	
Injection PA approval date	
Injection PA expiration date	
Injection RX sent date	
Due date of first injection	
Injection RX fill date	
Injection RX copay card obtained	
Medication samples	
Medication discontinued	



# Preventing Gaps in Care

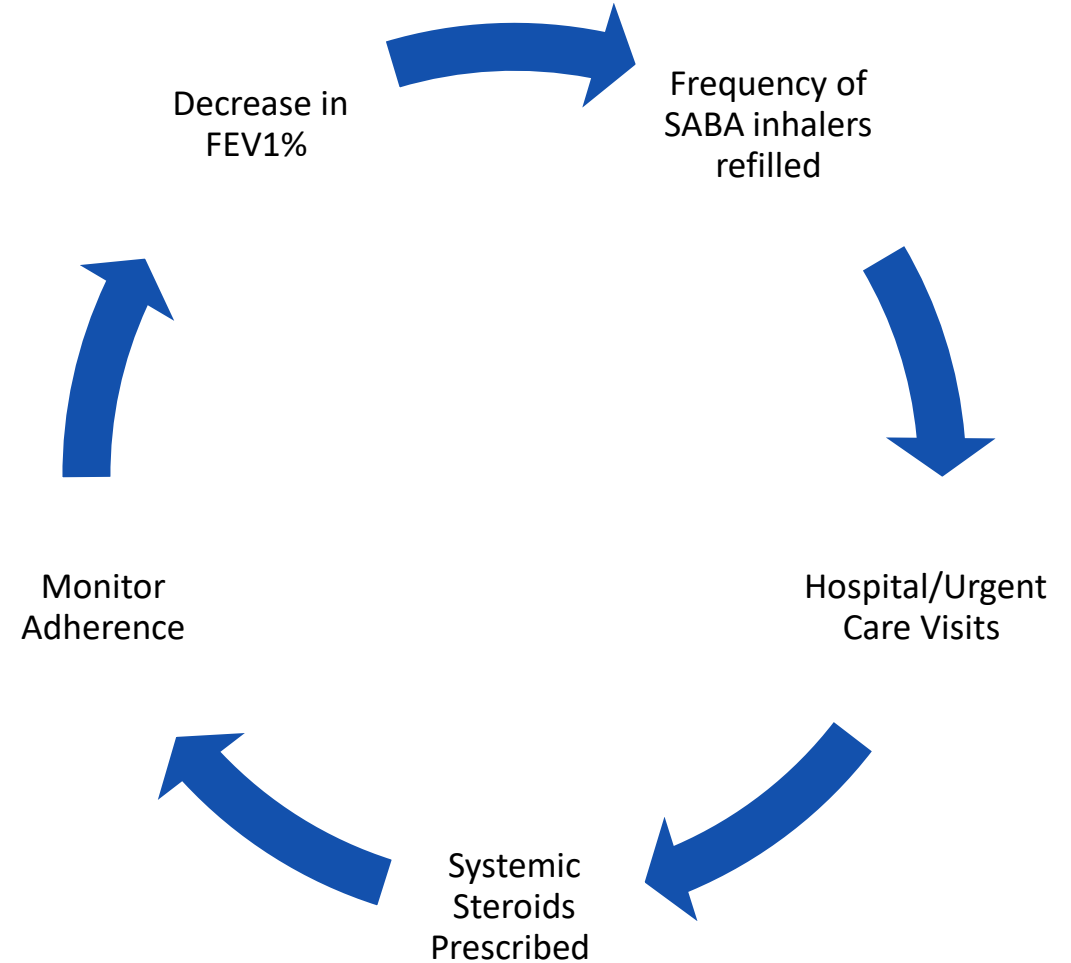
BestPractice

- Best Practice Alerts triggered when:
  - IV is administered --> start SQ authorization
  - IV is administered --> send SQ Rx
  - No SQ Rx sent 2 weeks prior to injection due date
- These alerts rely on the advance capabilities of the EHR and flowsheet system:
  - Help coordinate between the different teams handling medical and pharmacy authorizations
  - Getting medication doses on time

✓  
Complete BPA

# Asthma Clinical Monitoring Dashboard

Goal: Proactively identify patients at risk for uncontrolled disease by monitoring various factors associated with poor outcomes



## Oral Steroids

### Oral Steroids in past 30 Days

PAT_MRN_ID	dispense_date	GENERIC_NAME
119122xxx	1/20/2023	predniSONE 20 mg tablet
119710xxx	10/26/2022	predniSONE 20 mg tablet
129455xxx	12/27/2022	predniSONE 10 mg tablet
	1/5/2023	predniSONE 10 mg tablet
		predniSONE 10 mg tablet
139597xxx	12/14/2022	predniSONE 20 mg tablet
118932xxx	11/16/2022	predniSONE 20 mg tablet
119444xxx	12/4/2022	methyIPREDNISolone 4 mg tablets in a dose pack
	2/25/2023	methyIPREDNISolone 4 mg tablets in a dose pack
179944xxx	9/13/2022	predniSONE 10 mg tablet
	11/15/2022	predniSONE 10 mg tablet
110135xxx	1/16/2023	predniSONE 50 mg tablet
110372xxx	11/22/2022	predniSONE 10 mg tablet
121411xxx	10/2/2022	predniSONE 20 mg tablet
	10/14/2022	predniSONE 20 mg tablet
	1/27/2023	predniSONE 20 mg tablet
	2/23/2023	predniSONE 10 mg tablet
112406xxx	9/20/2022	methyIPREDNISolone 4 mg tablets in a dose pack

## Identify Patients at risk for Poor Clinical Outcomes

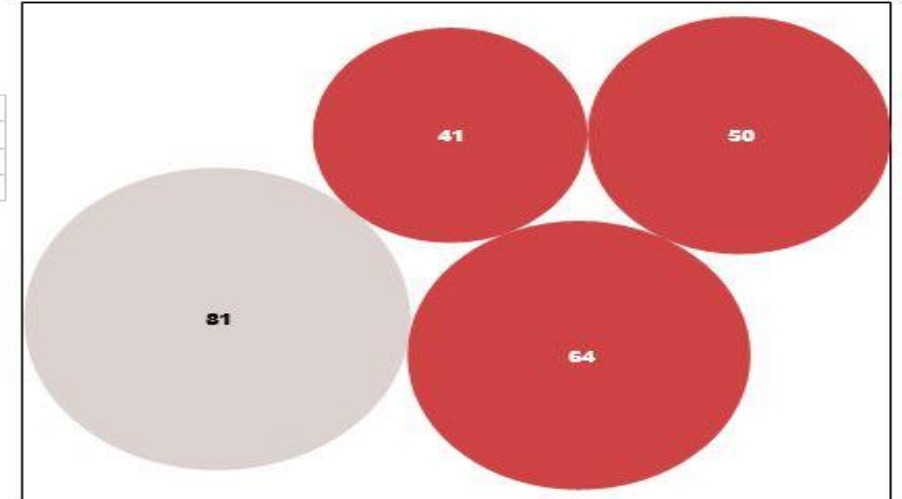
Dashboard will email clinical alerts for patients that fall into metrics identified as potential risk factors

# Utilization of Dashboard to Monitor Response to Therapy

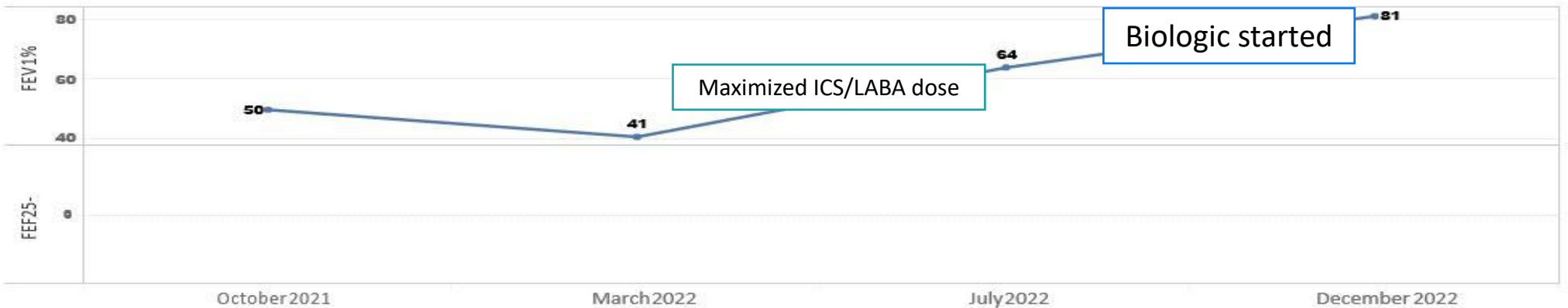
## FEV1 Trends

FEV 1% < 70

MRN	RecentLab order_id	result_date	FEV 1%
112740xxx	1	13xxx0540 12/29/2022	81
	2	127xxx027 7/1/2022	64
	3	186xxx340 3/2/2022	41
	4	156xxx060 10/12/2021	50



## Lab Trends





# Hepatitis C Patient Monitoring Dashboard

## Patient Care Challenges

1. Multiple patient types and practice settings with differing workflows and needs
  - Adults
  - Children
  - Advanced/complex disease and mild disease
2. One Size Fits All Approach
  - Overstretching available healthcare resource personnel
  - Under and/or over-serving certain patient populations

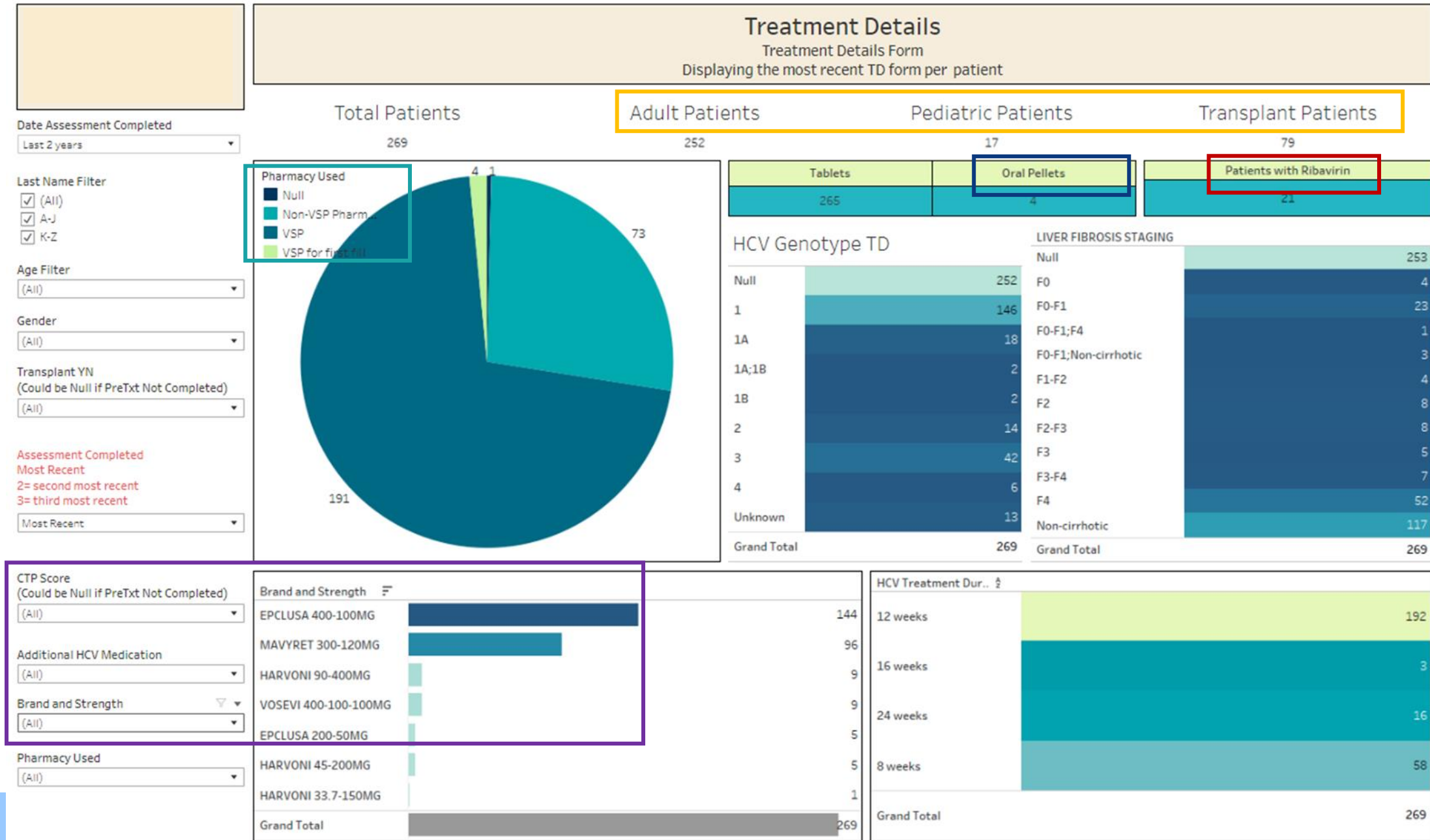


# Hepatitis C Patient Monitoring Dashboard

## Targeted Solutions

1. Complex care needs
  - The few amongst the many
  - Individualized Care balanced with available resources and patient costs
  
2. Lost to Follow-Up
  - May not be a one size fits all problem or solution
  - Find and narrow contributing factors of affected patients to develop solutions to improve this outcome

# Complex Care Needs in Diverse Populations/Settings





# Therapy Outcomes/Follow Up

Date Assessment Completed  
Last 2 years

Last Name Filter  
☒ (All)  
☒ A-J

Age Filter  
(All)

Gender  
(All)

Transplant YN  
(Could be Null if Initial PreTreatment Not Completed)  
(All)

HBV monitoring required  
(All)

Assessment Completed  
Most Recent  
2= second most recent  
3= third most recent  
Most Recent

HCV Treatment Status  
(All)

Treatment Status  
(All)

Week On Treatment  
(All)

Additional HCV Medication  
(Null if Treatment Details Not Completed)  
(All)

Brand and Strength  
(Null if Treatment Details Not Completed)  
(All)

Pharmacy ...  
(Null if Ten  
(All)

HCV Treatment Monitoring  
Treatment Monitoring Form  
Displaying the most recent TM form per patient

Total Patients  
248

Adult Patients  
231

Pediatric Patients  
17

Transplant Patients  
76

Treatment Status  
Null  
deceased  
lost to follow-up  
on treatment  
SVR achieved  
SVR not achieved  
treatment completed

HCV Treatment Status

Status	Percentage
on treatment	56.05%
SVR achieved	19.76%
SVR not achieved	17.74%
treatment completed	4.03%
deceased	1.21%
lost to follow-up	0.03%

Treatment Status SubGroup  
Null  
labs overdue  
labs pending  
relapse

SubGroup	Count
labs overdue	6
labs pending	4
relapse	3
Null	3

Next Follow up Date  
(Distinct Count of Patients per Month)

Year	Month	Count	
2023	October	1	
	August	1	
	July	3	
	June	2	
	May	6	
	April	11	
	March	16	
	February	3	
	January	7	
	2022	December	4
		November	3
		October	3
September		1	
August		2	
July		2	
June	2		

Patient List

PAT_MRN_ID	Pat Last Name	Next Follow Up Date	Next follow up reason	Assessment Type	Date Assessment Completed	Week On Treatment	HCV Treatment Status
		4/5/2023	on treatment monitor..	On Treatment	3/15/2023	5	on treatment with undetectable HCV RNA
		4/5/2023	labs;SVR	End of Treatment	1/25/2023	Null	treatment completed, awaiting SVR
		4/5/2023	labs;SVR	End of Treatment	3/15/2023	Null	treatment completed, awaiting SVR

PQA23  
ANNUAL MEETING

**slido**

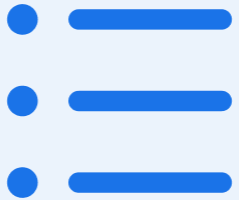


**How likely are you to explore similar technology-driven solutions in your own practice?**

ⓘ Start presenting to display the poll results on this slide.

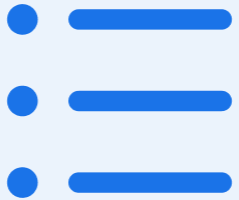
# Learning Assessment with Feedback

# slido



**Which of the following is not a challenge that may make it difficult for patients taking specialty medications to obtain optimal outcomes?**

ⓘ Start presenting to display the poll results on this slide.



**What type of data can be used to identify patients at risk for poor outcomes?**

slido



**What services can be offered to patients to help improve outcomes?**

ⓘ Start presenting to display the poll results on this slide.



# References

1. Kozlicki M, Lynch B, Donoho T, Nichols P, Zuckerman AD. Development and implementation of a laboratory monitoring dashboard to reduce treatment gaps in inflammatory bowel disease. *Am J Health Syst Pharm*. 2022 Nov 26;zxac354. doi: 10.1093/ajhp/zxac354. Epub ahead of print. PMID: 36434785.
2. Terdiman JP, Gruss CB, Heidelbaugh JJ, Sultan S, Falck-Ytter YT, Committee AICPaQM. American Gastroenterological Association Institute guideline on the use of thiopurines, methotrexate, and anti-TNF- $\alpha$  biologic drugs for the induction and maintenance of remission in inflammatory Crohn's disease. *Gastroenterology*. 2013;145:1459-1463.
3. McLean LP, Cross RK. Adverse events in IBD: to stop or continue immune suppressant and biologic treatment. *Expert Rev Gastroenterol Hepatol*. 2014;8:223-240.
4. Pabla BS, Schwartz DA. Assessing Severity of Disease in Patients with Ulcerative Colitis. *Gastroenterol Clin North Am*. 2020;49:671-688.
5. Cappello M, Morreale GC. The Role of Laboratory Tests in Crohn's Disease. *Clin Med Insights Gastroenterol*. 2016;9:51-62.
6. Ince MN, Elliott DE. Effective Use of the Laboratory in the Management of Patients with Inflammatory Bowel Diseases. *Gastroenterol Clin North Am*. 2019;48:237-258.
7. Bacon SL, Bouchard A, Loucks EB, Lavoie KL. Individual-level socioeconomic status is associated with worse asthma morbidity in patients with asthma. *Respir Res*. 2009 Dec 17;10(1):125. doi: 10.1186/1465-9921-10-125. PMID: 20017907; PMCID: PMC2806364
8. Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention. Updated 2021. Accessed December 8, 2021. <https://ginasthma.org/wp-content/uploads/2021/05/GINA-Main-Report-2021-V2-WMS.pdf>
9. Centers for Disease Control and Prevention. (2020). 2019 National Health Interview Survey data. U.S. Department of Health & Human Services. Retrieved from: <https://www.cdc.gov/asthma/nhis/2019/data.htm>
10. Edmonds C, Whelchel K. Harnessing the Electronic Health Record to Improve Workflow and Reporting in a Hepatitis C Clinic. Presented at National Association of Specialty Pharmacy (NASP) Annual Meeting and Expo; Orlando, FL. September, 2022

# Thank You







## Learning Assessment with Feedback

Which of the following is not a challenge that may make it difficult for patients taking specialty medications to obtain optimal outcomes?

- A. Frequent laboratory monitoring requirements to maintain access to medications
- B. Complicated dosing schedules
- C. Having medications delivered to their home
- D. Medications that require coordination between medical and pharmacy services (i.e., infusion prior to self-administered injection)



## Learning Assessment with Feedback

Which of the following is not a challenge that may make it difficult for patients taking specialty medications to obtain optimal outcomes?

- A. Frequent laboratory monitoring requirements to maintain access to medications
- B. Complicated dosing schedules
- C. Having medications delivered to their home**
- D. Medications that require coordination between medical and pharmacy services (i.e., infusion prior to self-administered injection)



## Learning Assessment with Feedback

What type of data can be used to identify patients at risk for poor outcomes?

- A. Laboratory results
- B. Patient-reported outcomes
- C. Prescription fill history
- D. All the above



## Learning Assessment with Feedback

What type of data can be used to identify patients at risk for poor outcomes?

- A. Laboratory results
- B. Patient-reported outcomes
- C. Prescription fill history
- D. All the above**



## Learning Assessment with Feedback

What services can be offered to patients to help improve outcomes?

- A. Specialty pharmacy coordination of care for laboratory monitoring
- B. Specialty pharmacy tracking of first self-administered dose due date following an infusion to ensure patient has timely access to medication
- C. Providing a medication take back and disposal program
- D. A and B



## Learning Assessment with Feedback

What services can be offered to patients to help improve outcomes?

- A. Specialty pharmacy coordination of care for laboratory monitoring
- B. Specialty pharmacy tracking of first self-administered dose due date following an infusion to ensure patient has timely access to medication
- C. Providing a medication take back and disposal program
- D. A and B**