

DEVELOPMENT AND IMPLEMENTATION OF A LABORATORY MONITORING DASHBOARD TO REDUCE THERAPY GAPS IN INFLAMMATORY BOWEL DISEASE

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BACKGROUND

- Biologic medications, used in moderate-to-severe inflammatory bowel disease (IBD), require safety laboratory monitoring.¹
- Virtual dashboards facilitate quality improvement initiatives and are an effective way to share data with stakeholders.²

OBJECTIVE

Evaluate the implementation of a dashboard to prevent therapy gaps by prospectively identifying patients on biologic therapy needing a new prescription with outdated labs

METHODS

INCLUSION CRITERIA

- Patients with IBD, prescribed a biologic by a Vanderbilt University Medical Center (VUMC) provider, utilizing Vanderbilt Specialty Pharmacy (VSP) for medication fulfillment
- Tuberculosis (TB) screen \geq 11 months ago or one or more of the following labs \geq 5 months ago: C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), white blood cell count (WBC), or comprehensive metabolic panel (CMP)
- Zero refills remaining on last biologic prescription

STUDY PHASE ENROLLMENT

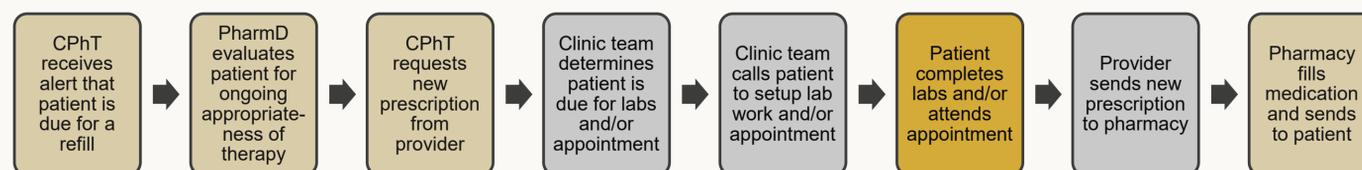
- Pre-Implementation: September 1, 2020 – September 30, 2020
- Post-Implementation: October 1, 2020 – October 29, 2020

OUTCOMES

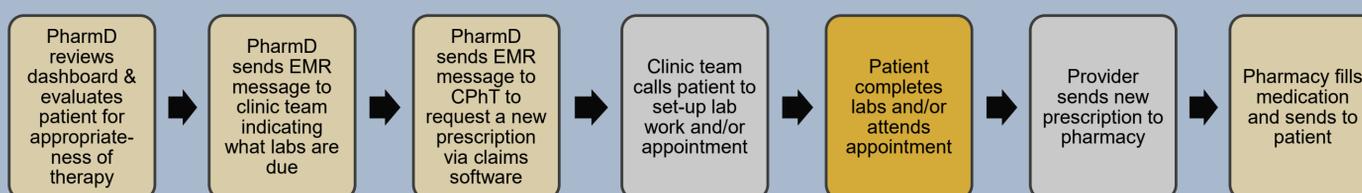
- Days to receipt of prescription renewal when lab work is needed
- Number of patients with a therapy gap
- Median therapy gap days while awaiting lab work
- Specialty pharmacist and nurse satisfaction with dashboard

FIGURE 1. REFILL REQUEST AND LAB MONITORING PROCESS

PRE-IMPLEMENTATION PROCEDURE



POST-IMPLEMENTATION PROCEDURE



CPHT= pharmacy technician; PharmD= specialty pharmacist; EMR = electronic medical record

Specialty Pharmacy

Clinic Team

Patient

TABLE 1. DEMOGRAPHICS

	Pre-Implementation (n=15) n (%)	Post-Implementation (n=25) n (%)
Age, yrs (mean-SD)	42±13	43±15
Gender		
Female	5 (53)	13 (52)
Male	7 (47)	12 (48)
Diagnosis		
Crohn's disease	11 (73)	22 (88)
Ulcerative colitis	3 (20)	3 (12)
Ileal pouchitis	1 (7)	0 (0)
Biologic therapy		
Ustekinumab	9 (60)	11 (44)
Adalimumab	4 (27)	11 (44)
Certolizumab pegol	1 (7)	2 (8)
Golimumab	1 (7)	1 (4)
Lab completion location		
Local	8 (53)	13 (52)
Outside	7 (47)	12 (48)
Labs needed		
CRP	11 (73)	17 (68)
ESR	11 (73)	17 (68)
WBC	11 (73)	15 (60)
CMP	11 (73)	15 (60)
TB screen	6 (40)	15 (60)
Appointment needed	5 (33)	7 (28)

RESULTS

FIGURE 2. DASHBOARD IMAGE*

MRN	Last Delivery Date	Medication	PA Expiration Date	refillsleft	Lab Name	Result_Val..	Month, Day, Year of Labs_Results
112233445	10/08/2020	Stelara 90 MG/ML SOSY x1...	12/31/2021	0	QUANT TBI(-)NIL	0.00	November 01, 2019
116677889	10/07/2020	Humira Pen 40 MG/0.4ML PNKT x1.000 EA (00074055402)	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 TBI(-)NIL	0.00	August 08, 2019

*Dates and numbers do not illustrate true data

FIGURE 3. PATIENTS WITH A THERAPY GAP

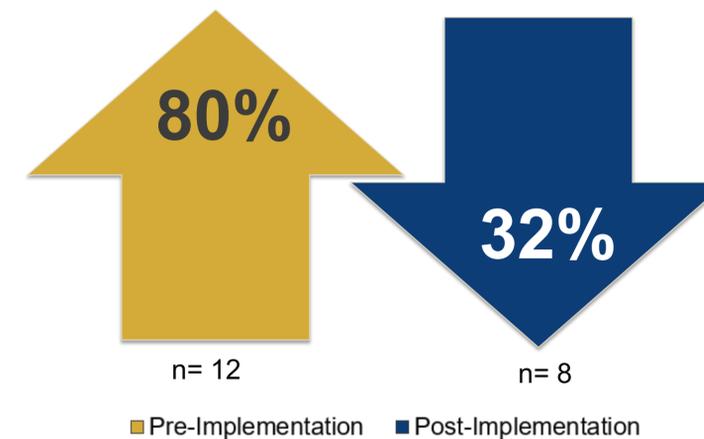


FIGURE 4. PRESCRIPTION OUTCOMES

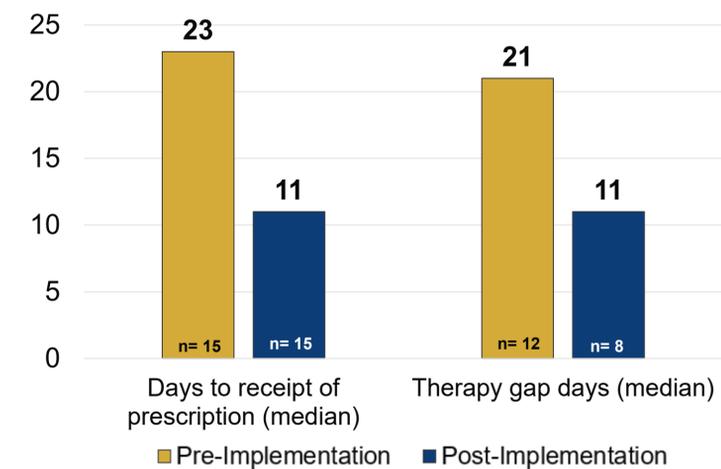


FIGURE 5. PRE-IMPLEMENTATION SURVEY (n=4)[#]

Challenges in current state

- Patients dosing late
- Disease flare
- Increased steroid use
- Time consuming and inefficient process to obtain labs

How the process could be improved

- Identify patients in advance who need labs
- Determine a better way to communicate with patients and obtain labs from outside sources

Estimated turnaround time when a patient needs updated labs and a new prescription

- 7 days if labs up to date with refill criteria
- If patient needs labs and lives local, 3-5 days and if they live out of town, 7-14 days

[#] = 3 IBD clinic nurses and 1 specialty pharmacist

FIGURE 6. POST-IMPLEMENTATION SURVEY

IBD Clinic Nurses (n=5)

- Agree that the pharmacist message regarding outdated labs and needed new prescription **helps ensure appropriate lab monitoring is being completed**
- "Implementation of the dashboard has been **incredibly beneficial** to our clinical practice."
- "It **saves me time** not having to check lab status so I can address other patient issues."
- "It **reduces chances of patients missing medication doses** which could lead to further complications/flares."

IBD Specialty Pharmacists (n=2)

- **Satisfaction with the dashboard = 8**
- (0=strongly dissatisfied, 10= strongly satisfied)
- Agree that the dashboard is **appealing** and provides a way to view patient outliers in quality measures like timing of lab work

CONCLUSIONS

- Utilization of a quality measures dashboard decreased time to prescription generation, number of patients experiencing therapy gaps, and duration of therapy gaps.
- Specialty pharmacists were satisfied with utilizing the dashboard in daily workflow and found it an appealing way to monitor patients for outdated labs.