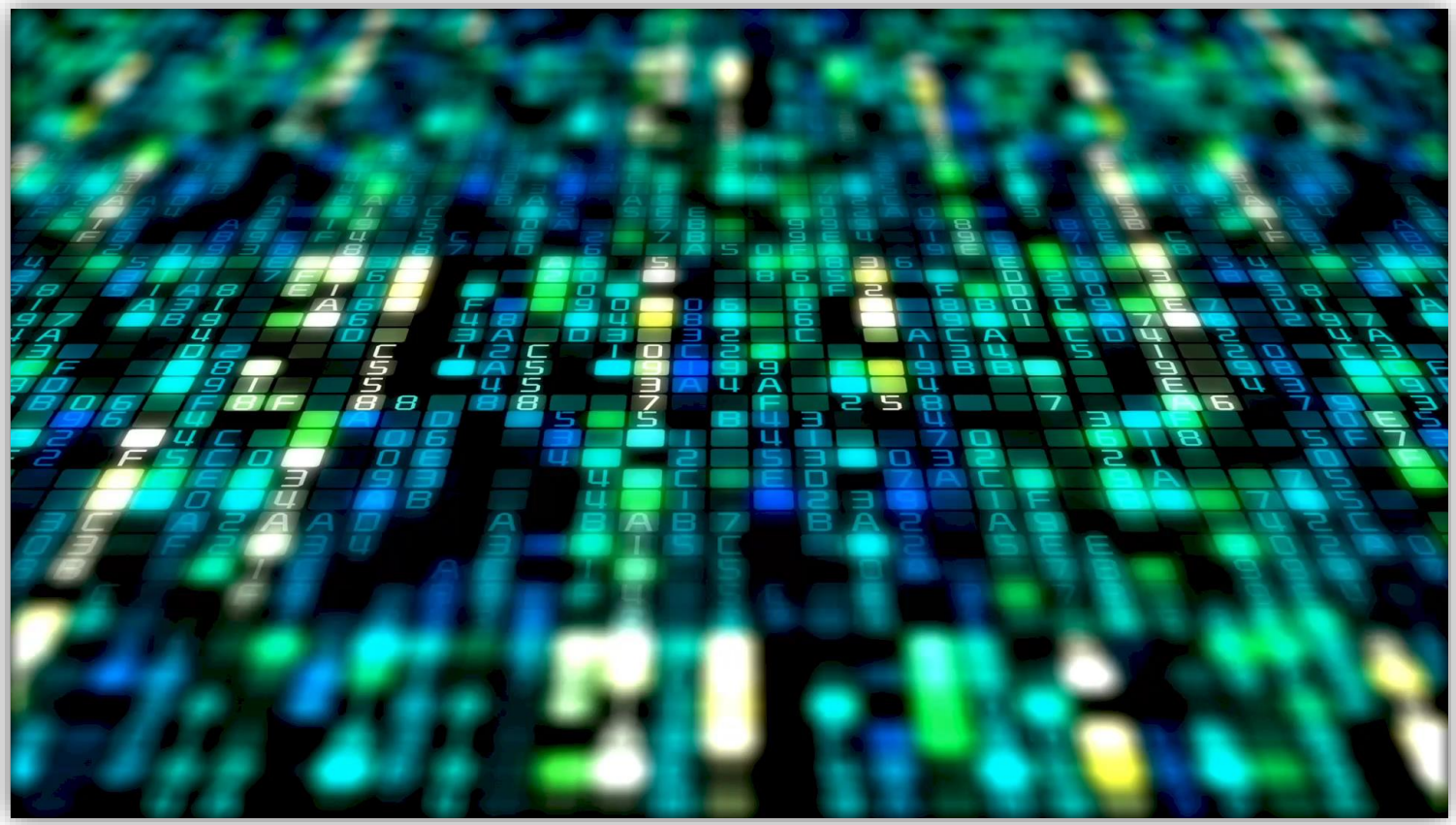
Leveraging Technology and the EMR to Improve Refill Processing

UT Southwestern Medical Center

Sylvia Ramirez, BSN,RN,
Nathaniel Smith, BS



Presentation for ANIA

Speaker Introductions

Sylvia Ramirez

Clinical Workflow Informaticist at UT Southwestern. Member of the CWI team for 5 years. I graduated from UT Arlington with a BSN in Nursing. I have 11 years of pediatric nursing experience. What I love most about nursing informatics is helping staff find ways to work smarter, faster and safer!

Nathaniel Smith

UTSW Clinical Decision Analyst with a unique blend of molecular tech expertise and technical acumen ensures that our clinical decision support tools are both user-friendly and clinically relevant, ultimately empowering our healthcare team to deliver the highest quality of care.

The following speaker(s) have no relevant financial relationships to disclose:

Sylvia Ramirez: None
Nathaniel Smith: None

UT Southwestern

2 Hospitals and 2 more coming soon
6 Nobel Laureates
Top 20 Medical School by U.S. News & World Report
875 patient rooms
34,615 Hospital Admissions
18,746 Outpatient Surgery Center Cases
100+ Ambulatory Clinics on/ off campus
2,686,850 Ambulatory Visits
58,370 ED Visits
23,000+ Employees
4,100 + Nurses

HIMSS Analytics STAGE 7

MAGNET RECOGNIZED

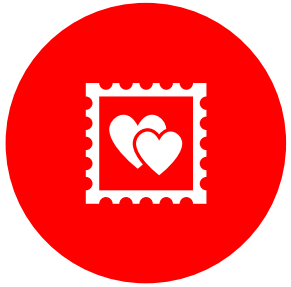
BEST HOSPITALS U.S.News & WORLD REPORT RANKED IN 11 SPECIALTIES 2024-2025

Values

Excellence: We strive for the highest standards of clinical excellence, educational distinction, research integrity, and administrative quality in all we do. We are rigorous in our commitment to ongoing improvement.

Innovation: We endeavor to develop new knowledge about diseases and treatment, enhance the lives of patients through better care and treatments, creatively approach challenges, and inspire the next generation of physicians, scientists, and health professionals.

Teamwork: We work collaboratively and with a shared purpose, drawing on our diverse backgrounds, talents, and ideas, and bringing an unwavering integrity to everything we do.



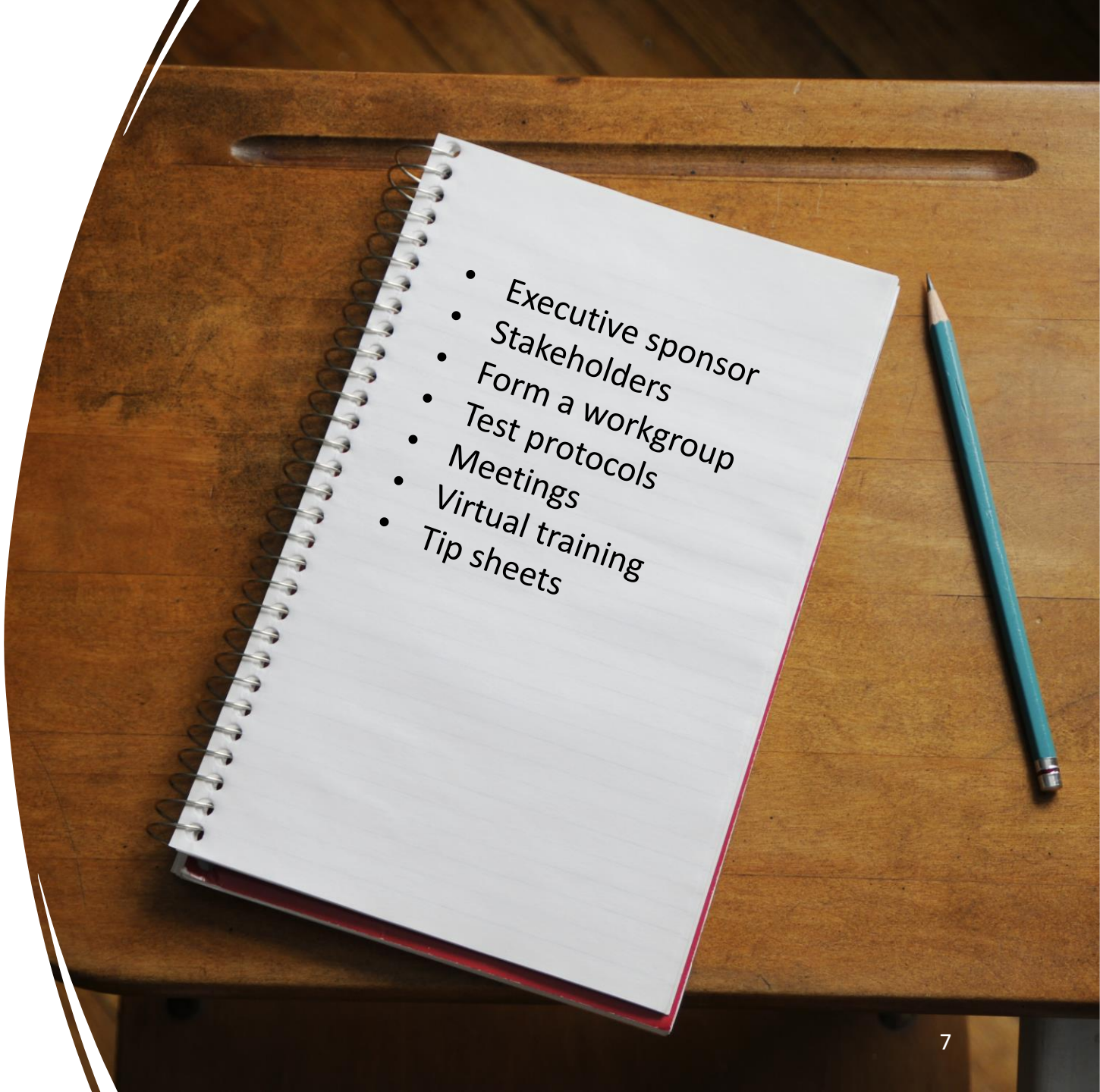
Compassion: We foster an environment in which patients, visitors, and colleagues are treated with respect, dignity, and kindness in every encounter, every day.

Nurse Informatics Roles and Responsibilities

- Analyze information
- Find new ways to use technology in nursing
- Customize software features
- Test new or upgraded computer software
- Educate staff on customized features
- Ensure compliance to policies
- Interdepartmental collaboration

Learning Outcome

Understand the crucial steps involved in transitioning from a third party vendor to an Epic embedded feature, which requires customization to meet the end users' expectations.



Our Story

Clinic Metrics:
Our turnaround time for refills is
24 hours

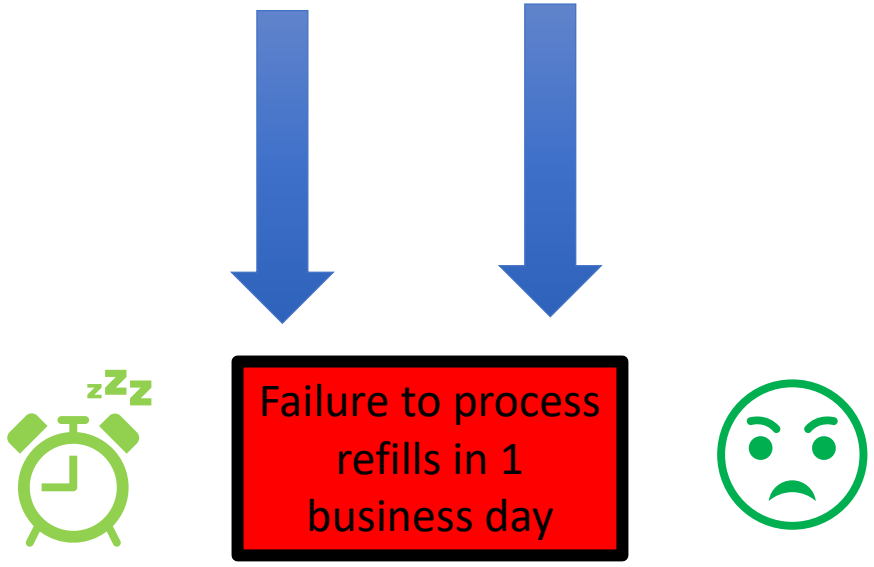
Hurdles

- Delay in processing fax request
- Duplicate requests causing re-work
- Various sources receiving request
- Not all clinics utilize vendor product

- Understaffed
- Mistrust in vendor product
- Failure to report discrepancies
- Staff must have a SMO to approve refills

- Difficulty interpreting vendor summary
- Lack of understanding vendor terminology

- Vendor server issues
- Delay in adding new providers
- Delay in implementing changes
- Providers can only be linked to one protocol



Collaboration

We were all in agreement to make this project a top priority!

Guiding Principles to the Project

Transition	Transition to a cost-effective solution that offers more features
Implement	Implement a framework that highlights both failed and passing criteria to increase patient safety when using standing medical orders to refill medications
Maintain	Maintain the SMO process that is familiar to the end user
Improve	Improve refill turnaround time to meet system established metrics.

Survey

- A survey was submitted before go-live
- Nurses and pharmacy technicians completed survey using a five-point Likert scale, the target respondents were asked 5 questions

  1=strongly disagree

  2=disagree

  3=neutral

  4=agree

  5=strongly agree

  Open ended feedback

Staff Feedback on vendor tool

I do not trust it; I still do all my checks manually.

Don't receive a lot of (refill summary)- so limited response

wouldn't give accurate dates when visit was with NP/APP etc.

UT Southwestern Medical Center

Implementation

- Goal established
- Timeline
- Workgroup development
- System approved Standing Medical Orders
- Assign members to the build team
- Assign members to the testing team
- Selected a Pharmacy representative
- Selected a Provider representative
- Plan for go-live

Transition

- **Contract ended in May of 2024**
- **Time Constraints**
- **Operational Leadership Approval**
- **User Buy-in**
- **Training**

Standing Medical orders

- (20) Standing medical orders--Orders, rules, regulations or procedures prepared by a physician or approved by a physician or the medical staff of an institution for patients which have been examined or evaluated by a physician and which are used as a guide in preparation for and carrying out medical or surgical procedures or both. These orders, rules, regulations or procedures are authority and direction for the performance for certain prescribed acts for patients by authorized persons as distinguished from specific orders written for a particular patient or delegation pursuant to a prescriptive authority agreement.

Refill Standing Medical order

- Refill SMO is a guide of certain criteria to approve a refill request
- Used to guide the custom build of Epic protocols
- Reviewed by our Standing Medical Orders Committee
- SMO Committee members: Nurses, EMR team, Pharmacy, Providers and system directors

Standing Medical Orders Committee Goals

- To ensure a system of shared decision-making
- Create a pathway towards standardizing best practices
- The members of the committee are committed to the mission and vision of UT Southwestern
- To ensure that clinics are working in alignment with nursing and the operational plan of the organization.
- The committee will promote the most effective use of resources, including top of license practice amongst clinical staff while adhering to scope of practice
- To promote high quality patient care, evidence-based best practices, a healthy work environment, and enhancing patient safety and service.

Refill Standing Medical order

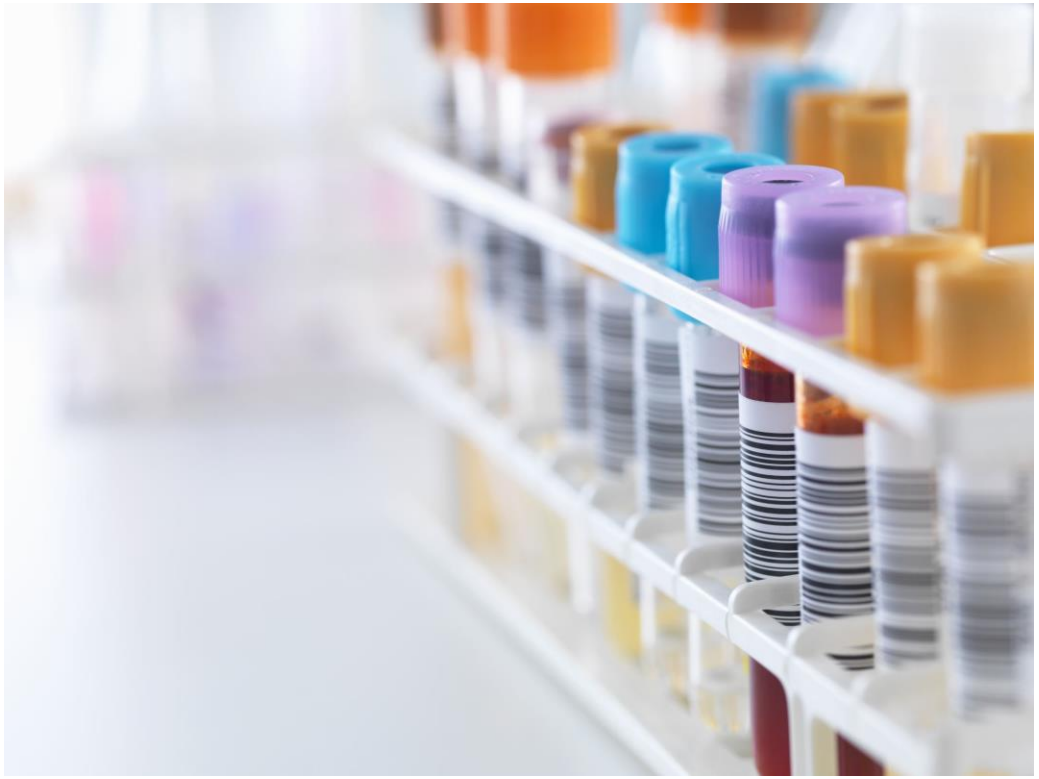
- Organized in an Excel format
- Primary Care's refill list has approximately 800 medications
- Signed by Medical Director annually
- Specialty clinics have their own Refill SMO that includes specialty drugs
- **All Refill SMOs must contain all of the information needed for build and must be in the correct template!**

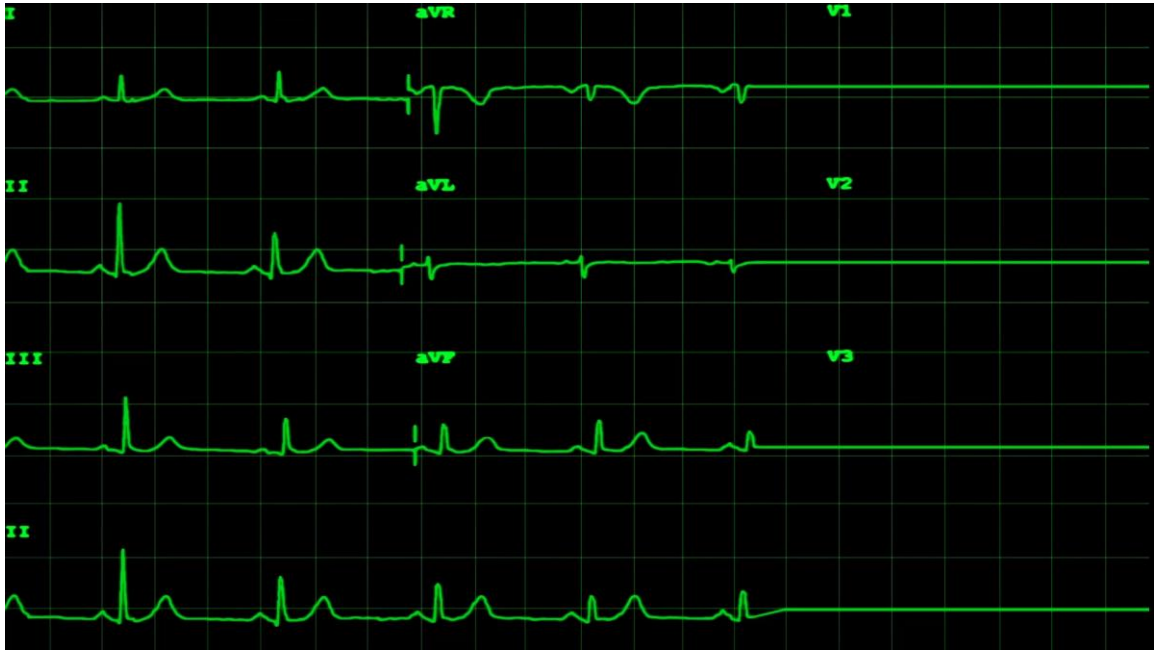
Medication Refill SMO Requirements

- Protocol name
- Medication name
- Medication route

Medication Refill SMO Requirements

- Blood work
- Diagnostic monitoring
- Manual review information

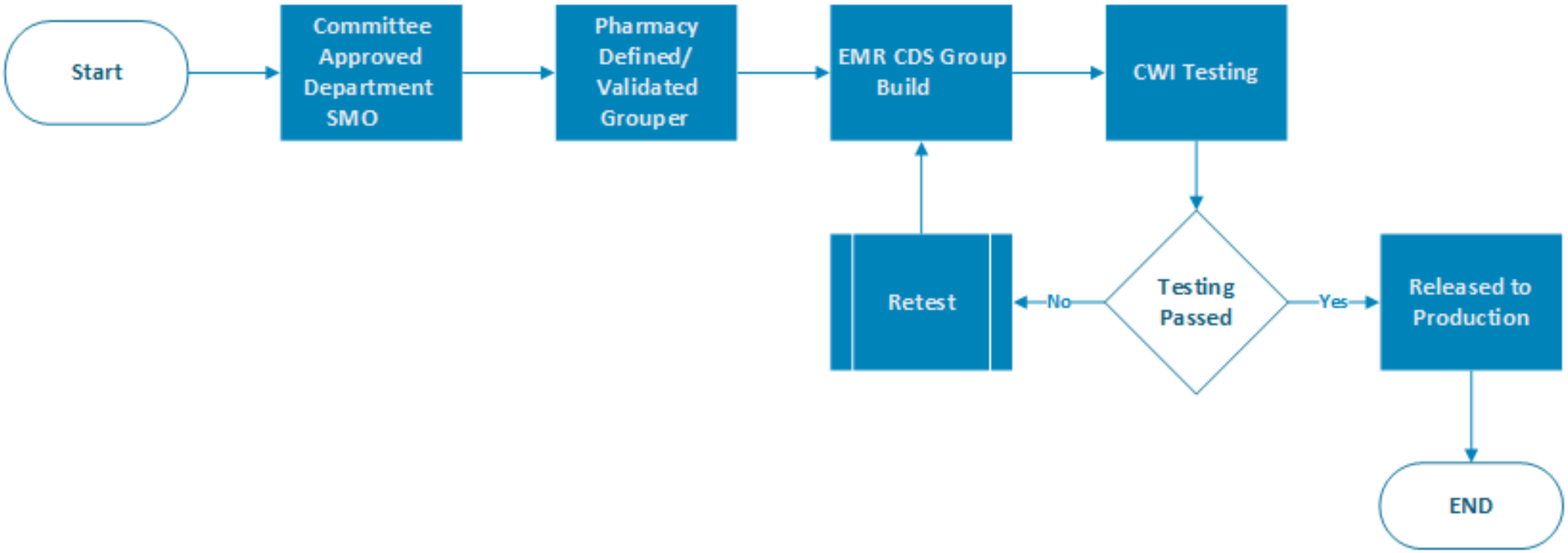




Medication Refill SMO Requirements

- Delegable status
- Can a nurse or pharmacy tech refill this med?
- All controlled substances and scheduled medications are to refill by the provider
- Examples: Muscle Relaxants, opioids, androgens such as testosterone, corticosteroids, and typical antipsychotics

Refill Build Process



The Build team

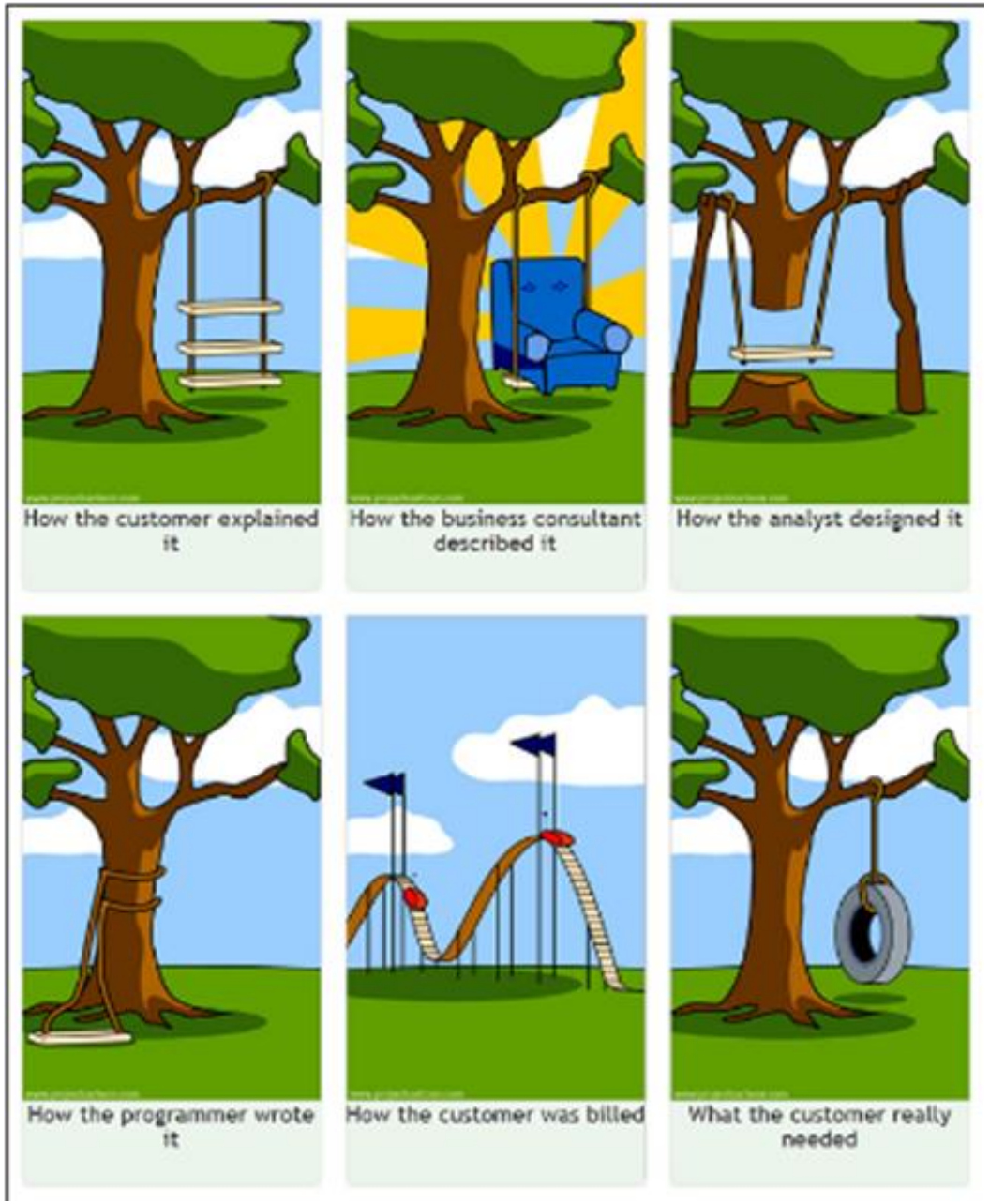
Health Care Ecosystem Actors

All members of the Health care Ecosystem have a role to play to achieve increased patient responsiveness initiatives

Success requires engagement and alignment of people, processes, and technology standards

Challenges faced in creating Clinical Decision Tools

- Different understanding of intended solution among stakeholders
- Complexity:
  - Of clinical environment into which the build is being released
  - Of solution elements →difficulty keeping track of all components
- Evolving requirements:
  - Release to production EHR yields new understanding of desired Clinical Decision Support tool behavior



Medication refills are one of the most common repetitive processes that require clinician oversight

Refill Protocol Overview

The refill protocol framework is designed to handle medication refill requests, ensuring they align with the requirements outlined in the Standard Medical Orders (SMO).

Each refill protocol is made up of specific criteria records, which define the conditions that must be met for the refill to be approved.

When a refill is requested, the protocol checks the patient's record against these criteria, which includes factors like medical history, department, and medication.

Based on this evaluation, the protocol will either pass or fail the refill request.

Definitions	
Selection Criteria	The criteria that determine what triggers a certain refill protocol. These criteria typically consist of a medication or group of medications and a patient age range. For example, the selection criteria for ace inhibitors specify that the system should only check the ace inhibitors protocol if a patient who is at least 18 years old requests a medication listed in GENERAL ANGIOTENSIN CONVERTING ENZYME INHIBITORS grouper.
Protocol Criteria	The criteria evaluated to determine if the refill request passes or fails the protocol. The protocol criteria are evaluated against the associated patient to determine whether the medication should be refilled. For example, the protocol criteria for atypical antidepressants specify that the clinician should only refill the requested medication if the patient is not pregnant, has not had a positive pregnancy test in the last year, and has an appointment with the clinician on record in the past nine months or next 90 days.

This development applies to Rx Request In Basket messages incoming from a refill encounter, external pharmacy interface (for example, Surescripts), or Willow Ambulatory.

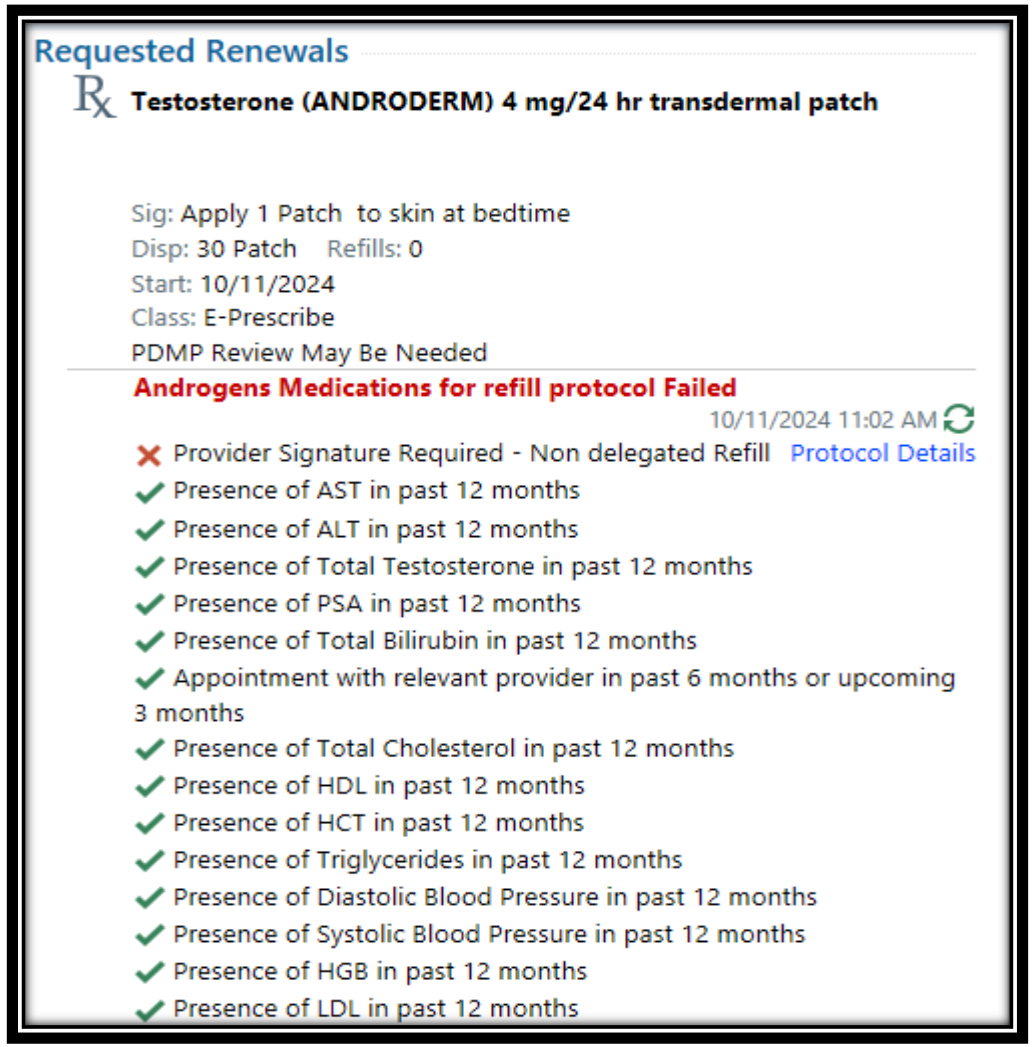
Benefits of the Refill Protocol

- Streamlined and standardized refill request workflows
- Quick and simple clinical decision support for common criteria that must be met before approval
- Reduced time searching charts when refilling common medications
- Clear follow-ups for patients who are missing necessary criteria for approval
- Average 10-25 refill requests daily that take 30 minutes
- UT Southwestern has multiple Primary Care & Specialty practices will benefit from the highly scalable and sustainable work

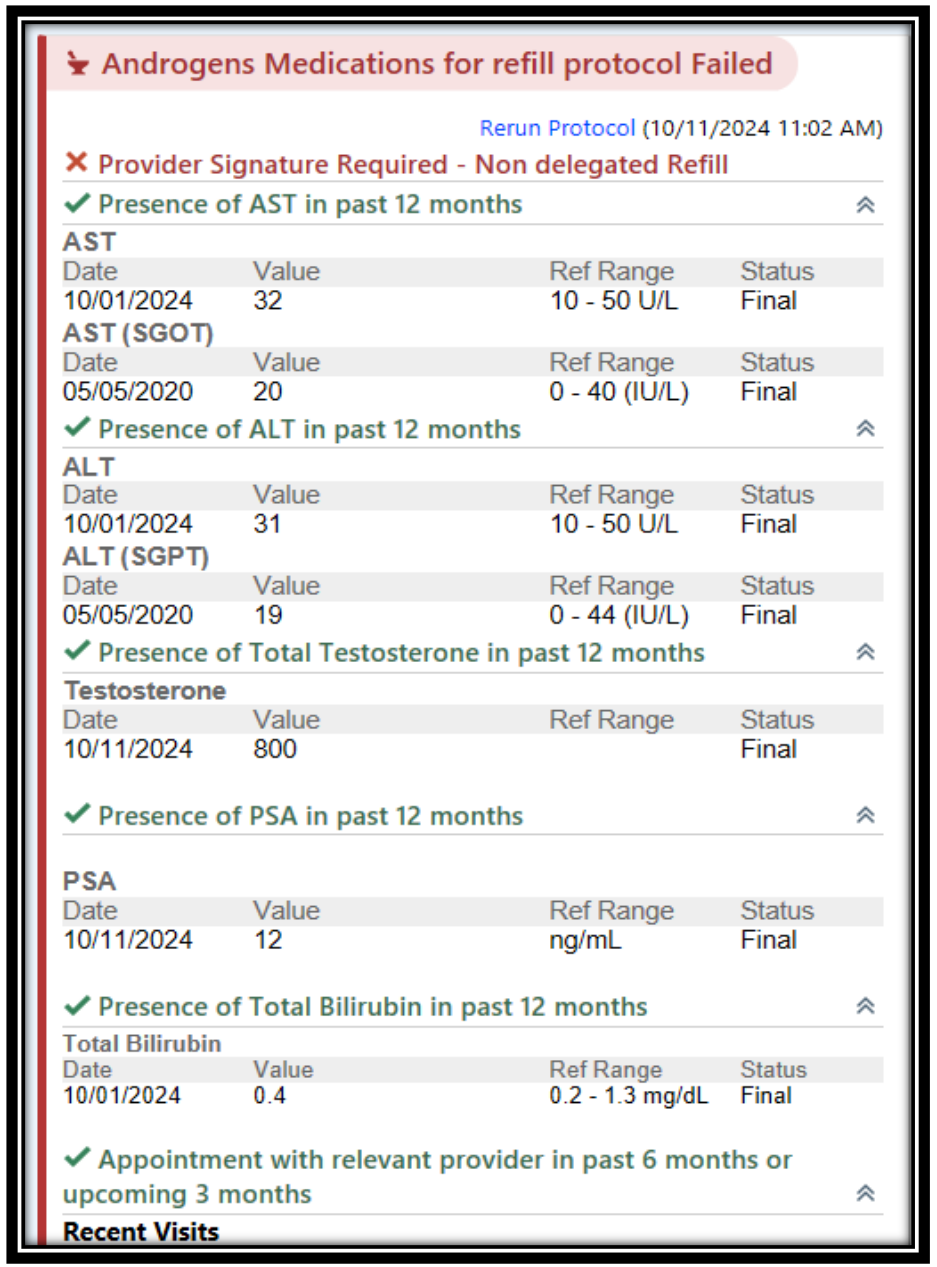
UTSW Stats:

- 216 base Advisories (Epic has 84 base Advisories)
- 1063 Criteria Advisories
- 122 Departments live with protocols

Clinician View of Protocol



Clinician View of Protocol Details



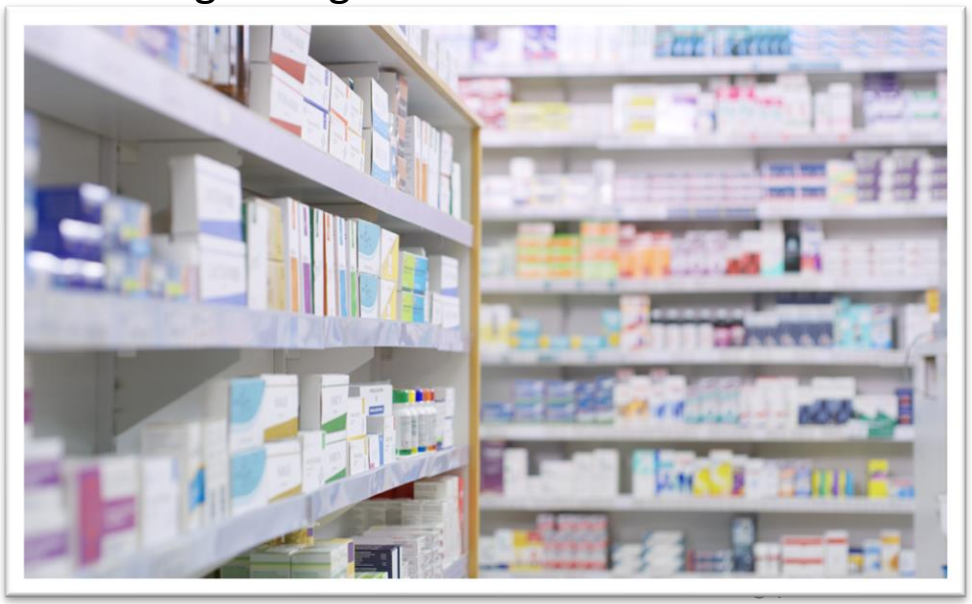
RX Beta-Blocker and Diuretic combination Medications (UTSW)	Cardiovascular: Beta Blocker + Diuretic Combos	atenolol / chlorthalidone - undefined
RX Beta-Blocker and Diuretic combination Medications (UTSW)	Cardiovascular: Beta Blocker + Diuretic Combos	bendroflumethiazide / nadolol - undefined
RX Beta-Blocker and Diuretic combination Medications (UTSW)	Cardiovascular: Beta Blocker + Diuretic Combos	bisoprolol / hydrochlorothiazide - undefined
RX Beta-Blocker and Diuretic combination Medications (UTSW)	Cardiovascular: Beta Blocker + Diuretic Combos	captopril / hydrochlorothiazide - undefined

ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	meclofenamate - undefined
ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	mefenamic acid - undefined
ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	meloxicam - oral
ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	nabumetone - undefined
ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	naproxen - undefined
ORAL NONSTEROIDAL ANTI-INFLAMMATORY AGENTS (NSAIDS)	Analgesics: NSAIDS & COX2 Inhibitors	naproxen sodium - undefined

RX Loop diuretics Medication Protocols (UTSW)	Cardiovascular: Diuretics - bumetanide, furosemide, and torsemide	bumetanide - undefined
RX Loop diuretics Medication Protocols (UTSW)	Cardiovascular: Diuretics - bumetanide, furosemide, and torsemide	ethacrynate sodium - undefined
RX Loop diuretics Medication Protocols (UTSW)	Cardiovascular: Diuretics - bumetanide, furosemide, and torsemide	furosemide - undefined
RX Loop diuretics Medication Protocols (UTSW)	Cardiovascular: Diuretics - bumetanide, furosemide, and torsemide	torsemide - undefined

Grouping the Medications

- Epic provided 84 groupers in Turbo Charger that we did not use
- Pharmacy compared existing vendor groupers to EPIC protocols due to our unique clinical practices determined it necessary to develop our own groupers to close care gaps
- As of July, UTSW has over 205 groupers and growing



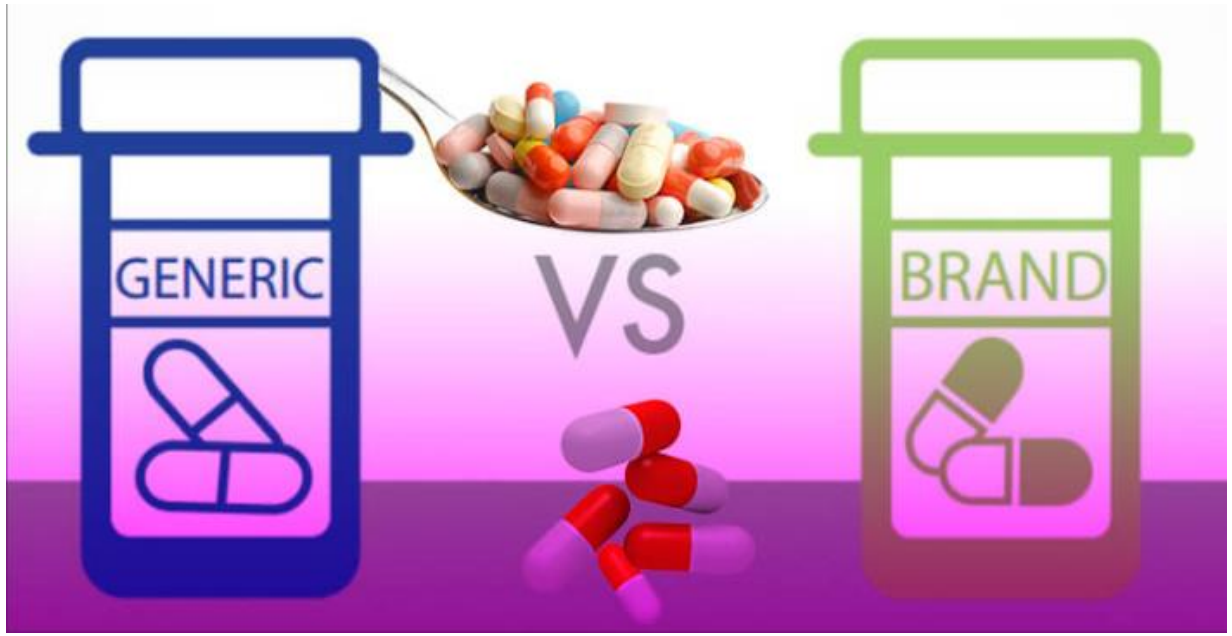
Analyzing the SMO Medication Groupers

Refill Protocol Name	Medication and Route	Office Visit Interval	Lab Monitoring and Interval	Lab Completion or Specific Parameters	Manual Review Message	Can delegate to clinical staff?
Medication Type and Class *(example - Antidepressant: SSRI)*	**Generic Medication Name and Routes of Administration** *(example - fluoxetine - oral)*	**Required Time Frame of Last Office Visit** *(report in days) 12 months = 360*	**Individual Lab Components and Time Frame** *(example - RBC, AST, K - 180)*	**Check for Completion of Lab Test or use a Specified Parameter** *(Completion or K < 5.0)*	**Message to be displayed for every refill request in this class** *(for items that require more in depth review of chart)*	**Can this medication be approved without routing to a provider?** *(Yes or No)*
Analgesics: NSAIDS - diclofenac	diclofenac potassium - undefined	360	ALT - 360, AST - 360, HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS - diclofenac	diclofenac sodium - oral	360	ALT - 360, AST - 360, HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS & COX2 Inhibitors	bromfenac - undefined	360	HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS & COX2 Inhibitors	celecoxib - undefined	360	HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS & COX2 Inhibitors	diflunisal - undefined	360	HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS & COX2 Inhibitors	etodolac - undefined	360	HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes
Analgesics: NSAIDS & COX2 Inhibitors	famotidine / ibuprofen - undefined	360	HGB - 360, eGFR - 360	Completion	Review patients chart for pregnancy.	yes

- Assign each medication to a grouper / refill protocol

- Examine office visits, lab-specific parameters and delegable status
  - Labs and other diagnostics can be completion status, numeric ranges, abnormal/high/low flags, or positive results

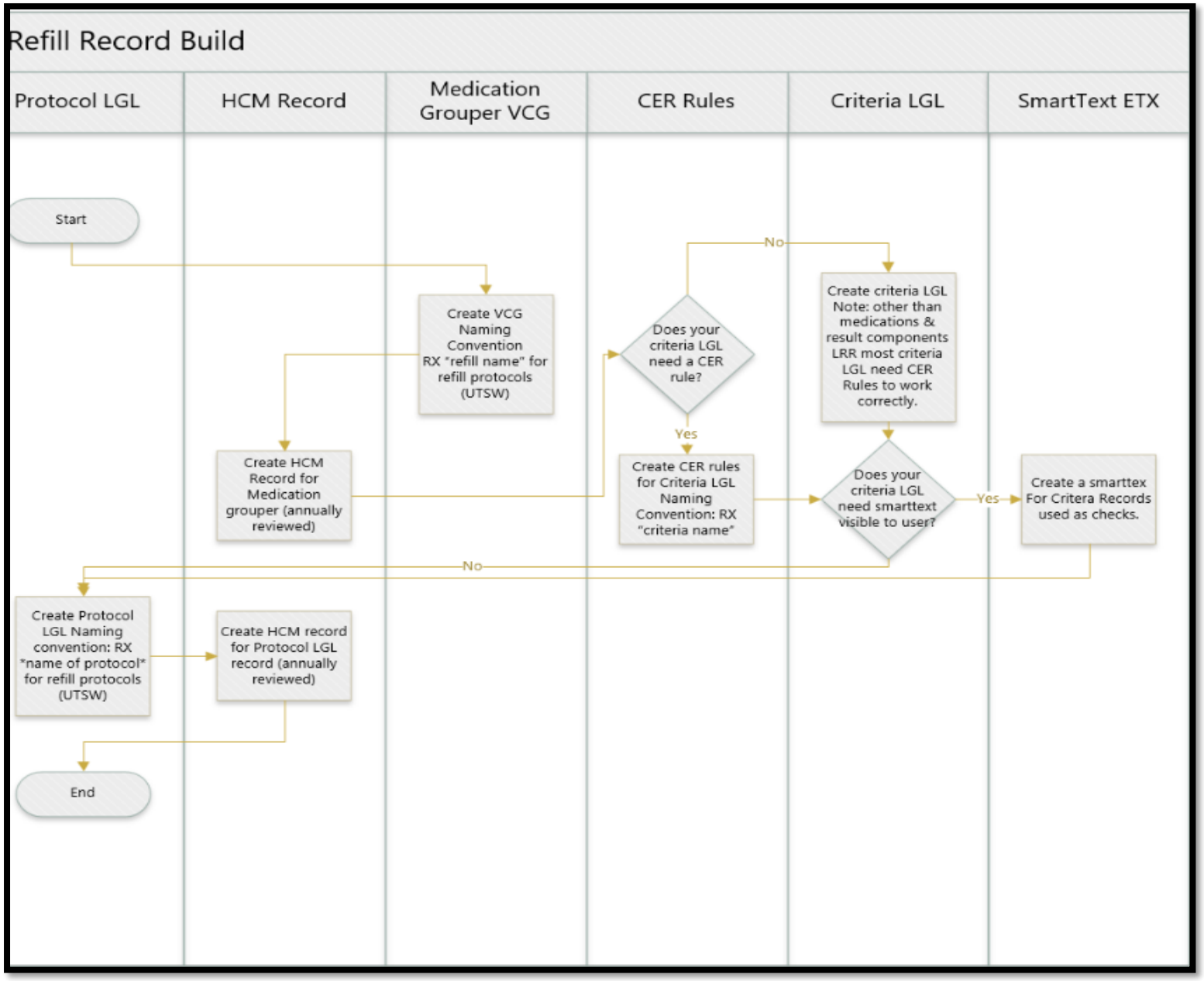
- Determine if data previously collected through manual review can be automated
  - Discrete data can be evaluated
  - Non-discrete data can be made available for review



- Epic Analysts built the medication groupers that were validated by pharmacy
  - We used simple generic medications versus brand names
  - A combination medication must be added to a special grouper identifying combination medications as well as the generic medication grouper
    - all routes (Altoprev), Simvastatin - all routes (Zocor), Atorvastatin - all routes (Lipitor), Fluvastatin - all routes (Lescol), Ezetimibe / Simvastatin - all routes (Vytorin),
    - If a medication is defined as a mixture in the Epic medication records, it can't be part of the Epic Protocols currently. This is to prevent possibly misleading information from appearing to the clinicians.

Considerations

- Naming Convention
- Provider-friendly name
- Descriptions of use
- Metadata: provides more information like owner, review dates, reviewer to contact for Groupers & Our Practice Advisories
- Use of other Epic features to enhance the SmartText
- Peer review of Our Practice Advisories and Grouper records



Putting the Pieces Together for the Build

Base Records control core properties of the OPA	Criteria Records control the patients' conditions to be present for the advisory to trigger
Message text that appears	Encounter diagnoses and problem lists
Departments where the OPA is active	Active medications
Encounter types and provider types that the advisory is active	Lab result values
Available follow-up actions	Patient history; clinical data
Patient gender and age that the advisory applies	Rule editor and SmartData based conditions

Epic Refill Protocol Summary

Refill Protocol Advisory

Selection criteria for an Advisory is for who should see the measure by med grouper, patient data, and/or Department or Clinician
Contains: Criteria Logic for Advisory

Protocol Criteria is a checklist for the clinician with display text and filters

We can control who see the Advisory by modifying the selection criteria. If a department doesn't want to participate, we can add a selection criteria to limit viewing of the protocol.
We can control variations by adding a protocol criteria with a filter rule. For example, Urology wants to see last visit within 12 months, but Internal Medicine wants a 6 months filter based on department or specialty with criteria records.

Build Complexity

Patient History/Status

- Does the patient have a normal CBC in the past year?
- Is the patient pregnant?
- Does the patient have a history of diabetes?

Lab Criteria

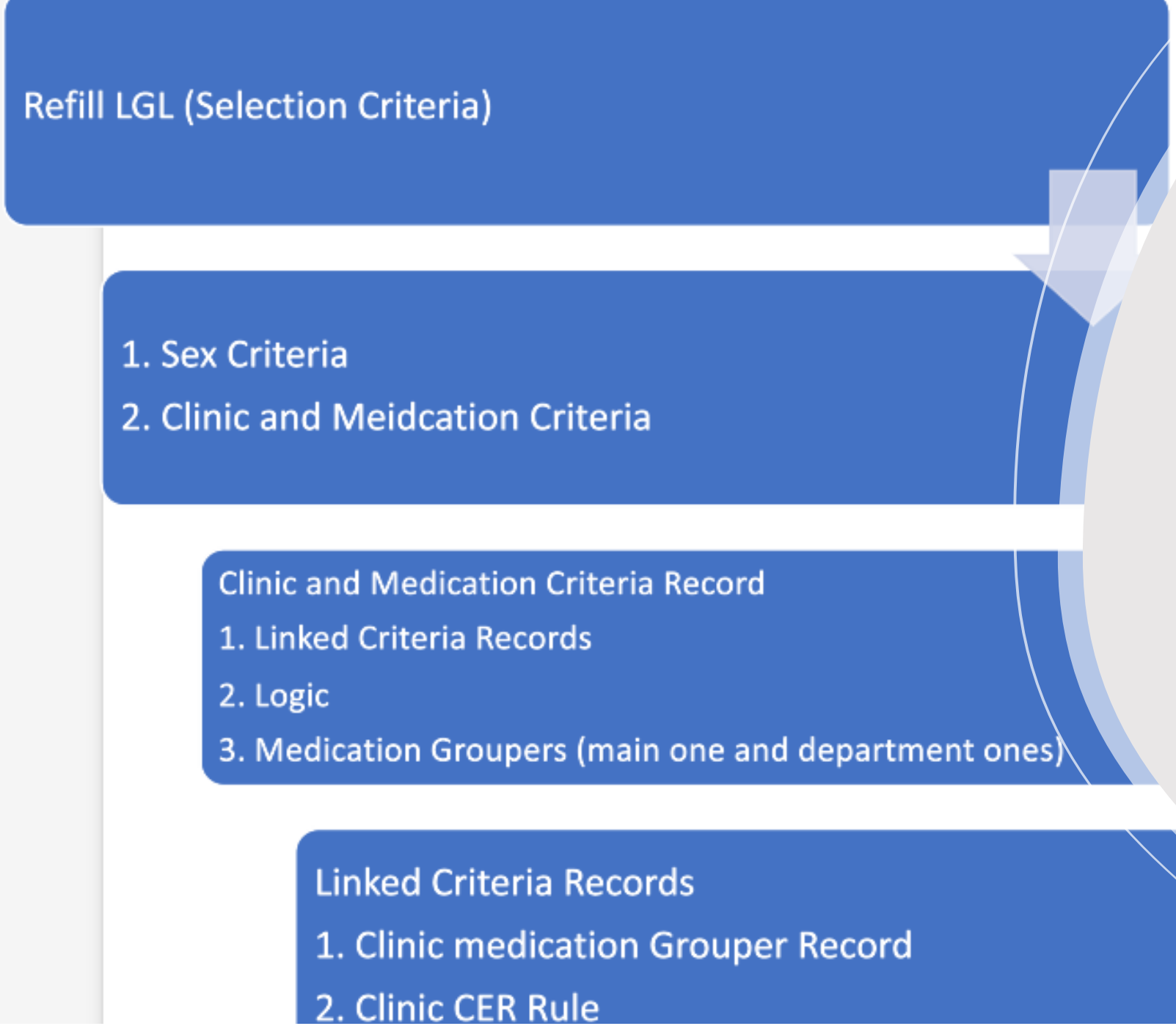
- What is included in a CBC?
- What is normal test?
- Do we look for numerical values, abnormal or high flags, positive or negative values?
- Do similar tests use the same reference range?

SmartText

- Contain SmartLinks
- Can also contain static information
- Rules can be setup to display information when necessary

SmartLink

- Tools used to pull information from patient chart.
- Data returned by a SmartText should be the same data evaluated by the criteria.



Lessons Learned: Complicated Medication and Department Configuration for Epic Medication Refills

- This configuration will streamline the build and reduce the failure to fire issues we experience with our other configurations.
- Main grouper recorded still have the ERX General naming convention, however, the sub groupers keep a CL Medication Department Protocol name to make things more consistent and easier to follow for troubleshooting.
- You no longer need to exclude medications only include them in the grouper. If a medication is missing/added/deleted, you just go to that clinic's grouper and make the changes.
- The Department and Medication Criteria record end up in one record, so the logic is much easier.
- This build resulted in consistent firing of the protocols.
- Start Small

How does Epic know if a patient is pregnant?

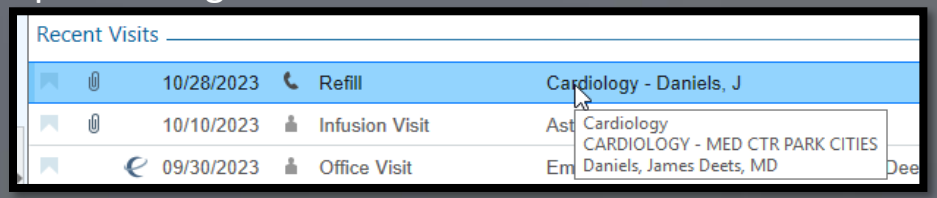
- OB/GYN Status
  - Several possibilities including Pregnant, Hysterectomy, Postmenopausal or it could be blank
- Diagnosis on Problem List
  - Present or Absent
  - Absence ≠ not pregnant
- HCG Test
  - HCG can have other uses, need to determine if it's for pregnancy or something else (cancer)
  - Absence of a positive test could be misleading
  - Presence of a negative test is used for refill protocols.

Epic is only as good as the documentation available.

Departments can still elect to use manual review for certain scenarios.

Troubleshooting a Protocol with 47 Medications and 20 Specialties

- Report runs
  - Run reports to see how the Our Practice Advisory is firing
  - Review Encounter refills with last office visit date
  - Ensure Encounter was created after protocol was released
- Manual review
  - Ensure the encounter is created was created in another department
    - Even though the refill encounter shows Cardiology, when you hover you see it is a Med Ctr Park Cities and not the department 2020
    - The provider record for the clinician may have a different primary department or they may not be prescribing clinician

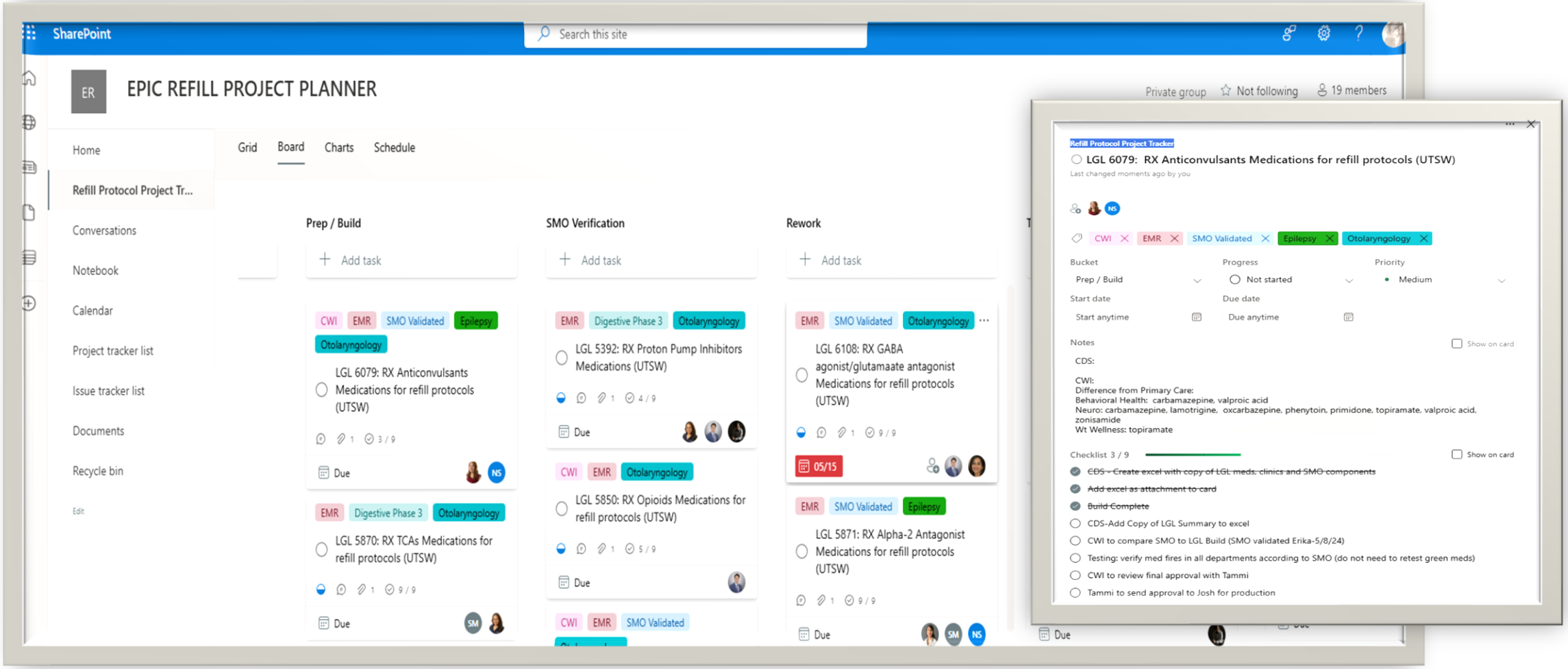


- Teaching
  - If the encounter is not in department 2020, share with the end-user how to change the department in the encounter

Protocol didn't fire and encounter is in the correct department ....troubleshooting next steps

- Reviewing timing issues by recreating the workflow in a test environment
- See if the sidebar with protocol details offer clues
- Investigate the medication and its grouper record
- Review the clinician's provider record for acceptable settings

Tracker through Planner



Maintenance

- Adding new and additional protocol
- Discussion of changes, hurdles and testing
- Service now tickets to report errors

Needs for the Future

- Comprehensive reporting capabilities to analyze protocols by medications, criteria, departmental rules, dosing, as well as properties for more advance rules.

- Transition to the adoption of standardized protocols to streamline processes and ensure consistency in practice.

Training and Support

- Open lab sessions
- Tip sheet
- Smart Phrases
- Ongoing chat on Teams
- Live trouble shooting
- Process provided to submit service ticket

Refill Protocol Tune-Up 2024-04-13 to 2024-07-12

Refill Protocol Build	
Number of Live Refill Protocols	Number of Protocols Live in Foundation
205	84
Refill Protocol Usage	
Orders Addressed With Refill Protocol	Orders Addressed Without Refill Protocol
66,867	53,506
Total Orders	% Of Orders Addressed With Refill protocol
120,373	56

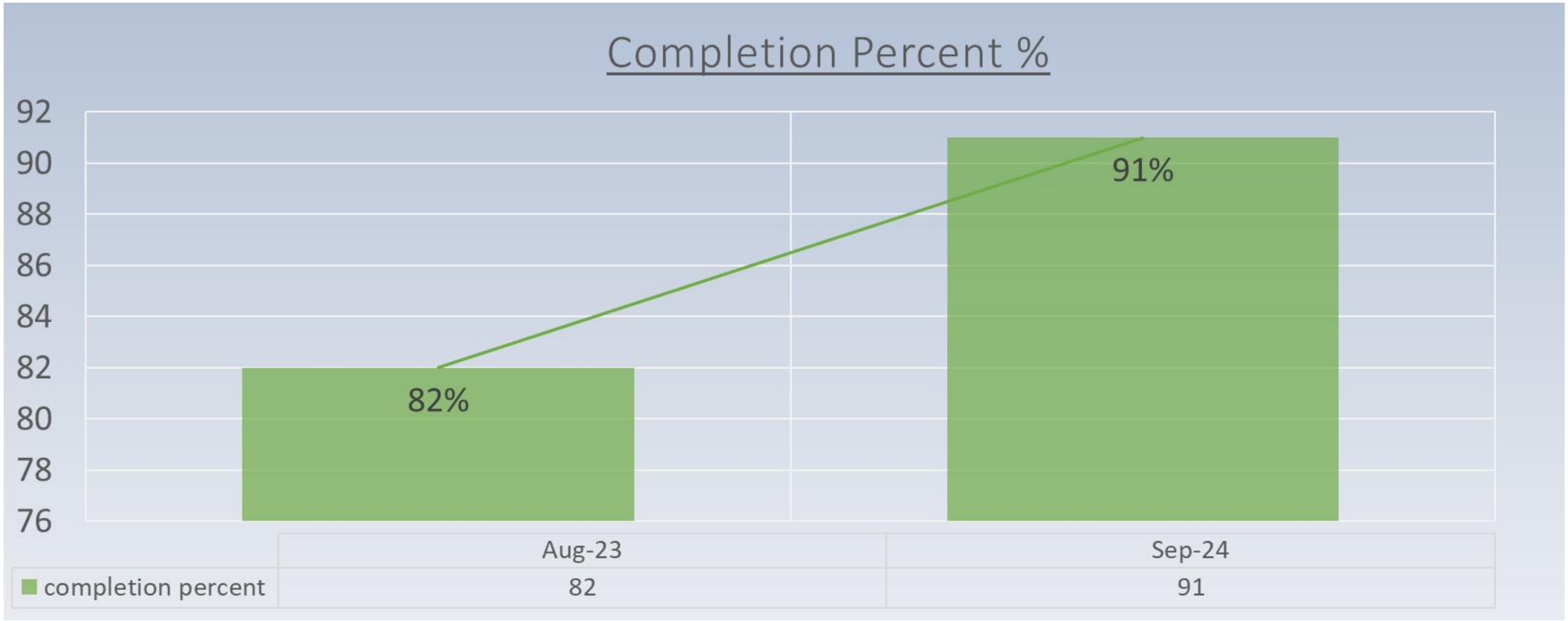
Refill Protocol Tune-Up 2024-07-06 to 2024-10-04

Refill Protocol Build	
Number of Live Refill Protocols	Number of Protocols Live in Foundation
216	84

Refill Protocol Usage	
Orders Addressed With Refill Protocol	Orders Addressed Without Refill Protocol
113,009	65,016
Total Orders	% Of Orders Addressed With Refill protocol
178,025	63

New Protocol Build	
Jump to Refill Protocol Suggestions	
Current % of Orders Addressed with RX Protocols	% Of Orders Addressed with RX Protocol After Building Top 3
63	80

Improving the Clinic Metric



Post Implementation Survey

- Survey was sent to the impacted staff members, namely nurses and pharmacy technicians post implementation.
- Five-point Likert scale, the target respondents were asked 5 questions with answers corresponding to
  - 1=strongly disagree
  - 2=disagree
  - 3=neutral
  - 4=agree
  - 5=strongly agree

Staff Feedback on Epic tool

I really like it. It's a huge improvement from the previous tool.

I also like the green for pass and red for fail, which also it easier for the provider to see why it failed when routed.

Accuracy is mostly on point as far as office visit requirements.

UT Southwestern Medical Center

Winning!

Fast and safer care is the biggest WIN!

Conclusions

Standardization of documentation using the Refill Protocol Tool allowed clinical staff to work within their scope.

The **workgroup continues to solicit feedback for optimization of the tool.**

Using the tool created a more **efficient** and **safe** way to practice.

UT Southwestern Medical Center

Acknowledgment

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