Clinical Safety & Effectiveness

Team # 10 , Cohort # 25

Decreasing Medication Discrepancies During Care Transitions

University Health System

Thinking Beyond.

UT Health San Antonio

Quality & Lifelong Learning

Our Team

- **University Health System**
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  - Heather Dobie, PharmD, BCACP - CSE Participant
  - Sherra Gardner, PharmD, BCACP - CSE Participant
  - Nancy Morado, MA – Team Member
  - Monica Kapur, MD, President/CEO University Medical Associates, University Health System - Sponsor
  - Elliot Mandell, PhD, MBA, RPh, Senior Vice President, Chief Pharmacy Officer, University Health System - Sponsor

Aim Statement

To decrease the number of medication discrepancies at hospital discharge follow-up appointments from 49% to 10% at the Southwest Clinic by April 2020

An Unfortunate Example

EB is a 30 yo M with **longstanding uncontrolled diabetes**

2/2019: Admitted with **A1c 13.3 and multiple non-healing R foot wounds,** no bone involvement, required I&D, IV antibiotics

- Discharged (d/c) on oral antibiotics to follow-up (f/u) with "PCP"
- **No "PCP" ever assigned**, no f/u occurred and never any adjustments to his insulin for diabetes control

11/2019: Readmitted with **A1c 13.8 and sepsis from non-healing R foot wounds,** no bone involvement, required I&D, IV antibiotics,

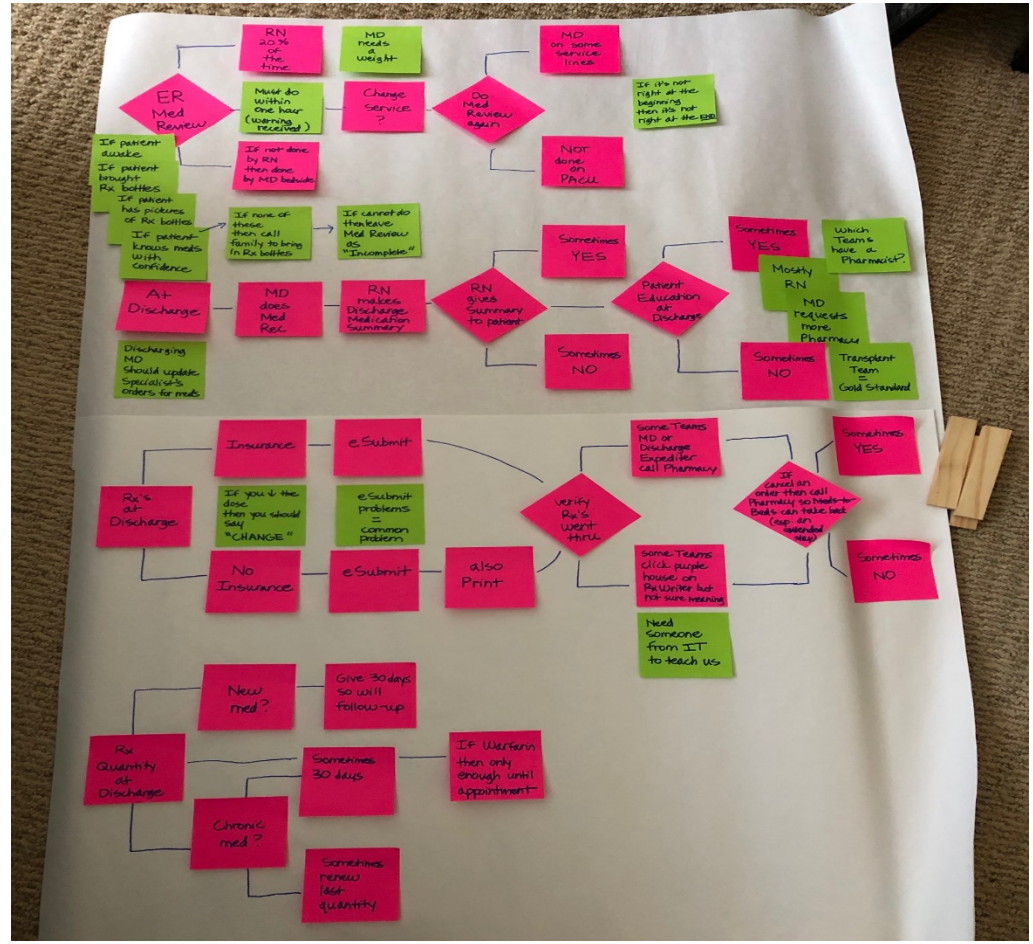
- D/c on w IV antibiotics and f/u with "PCP"
- Attended hospital f/u, given insulin Rx w "PCP" f/u 1 month
- He took all medicines, but **was never assigned a "PCP"**
- Eventually seen by primary care team 2/2020, started on new diabetes medicines to follow up in 3 months
- Insulin was never adjusted, never offered assistance from care coordination, case management, health education or transitions of care PharmD team

3/2020: Readmitted with **A1c 11, worsening R foot infection now with osteomyelitis requiring 4th metatarsal amputation**

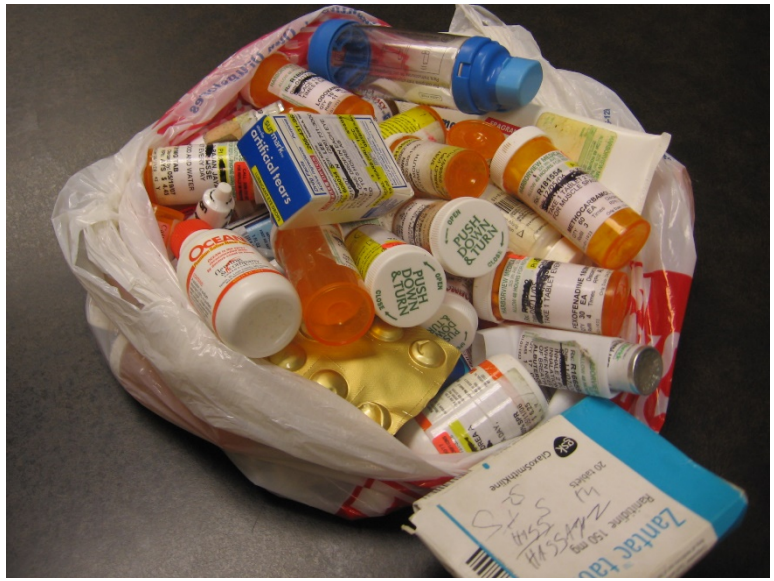
- Discharged on oral antibiotics, scheduled with "PCP" , however their appointment was cancelled that day as provider could not have clinic that day
- Patient has still not been seen and care coordinator has been unable to reach him as of yet.
- **Still no PCP assigned**...

Flow Chart of UHS Care Transition at Discharge to Follow-up Appointment

- Impossible to chart clear process due to there being no standardization of a care transition process among service lines
- Little to no pharmacist involvement in medication reconciliation or education during care transitions

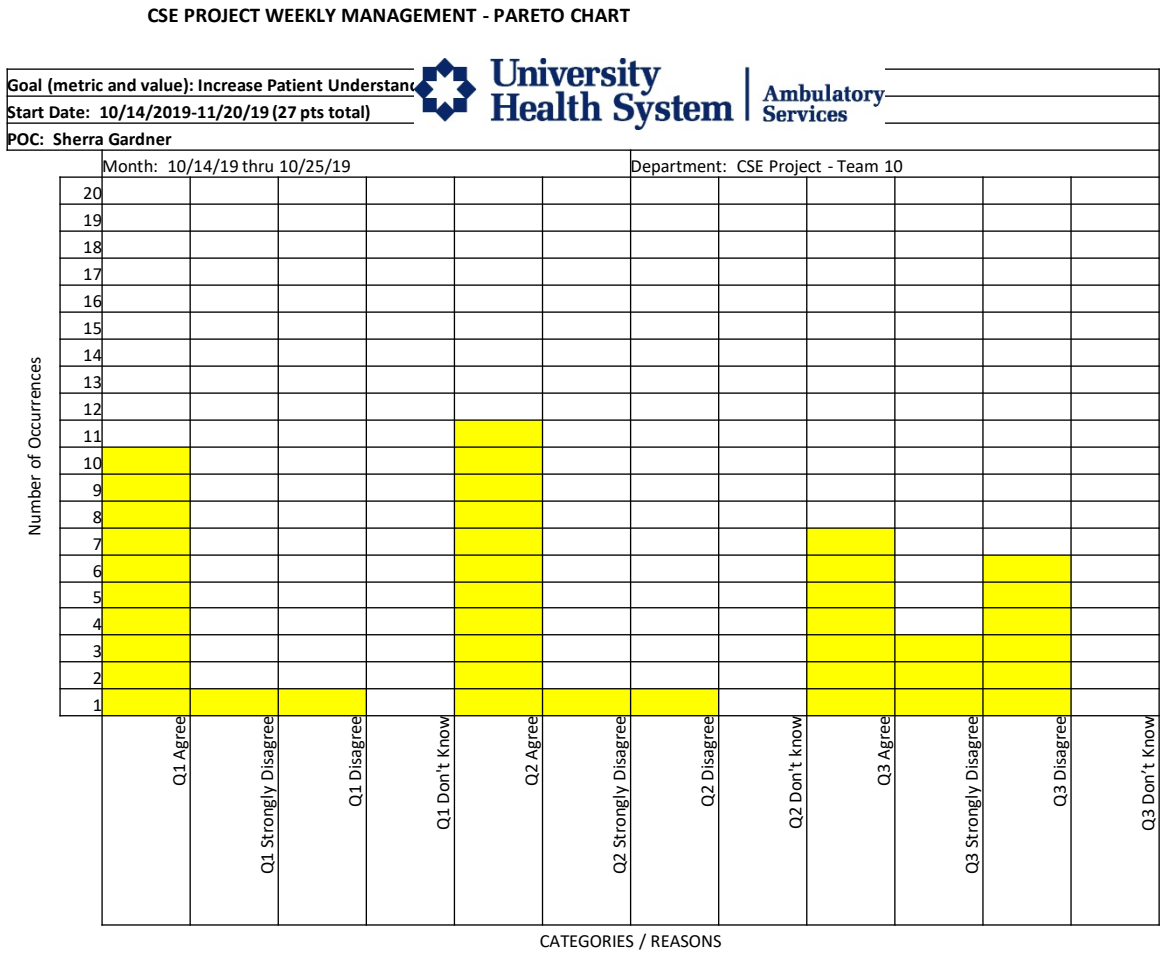


Background



- Both patients and PCPs often obtain incomplete or inaccurate information and instructions at discharge (3)
- Approximately 50% of about 3 million adults per year transitioning from hospital to home experience a medication discrepancy (1)
- Patients with medication discrepancies have significantly higher rates of hospital readmission compared to those without medication discrepancies (2)

Background Data



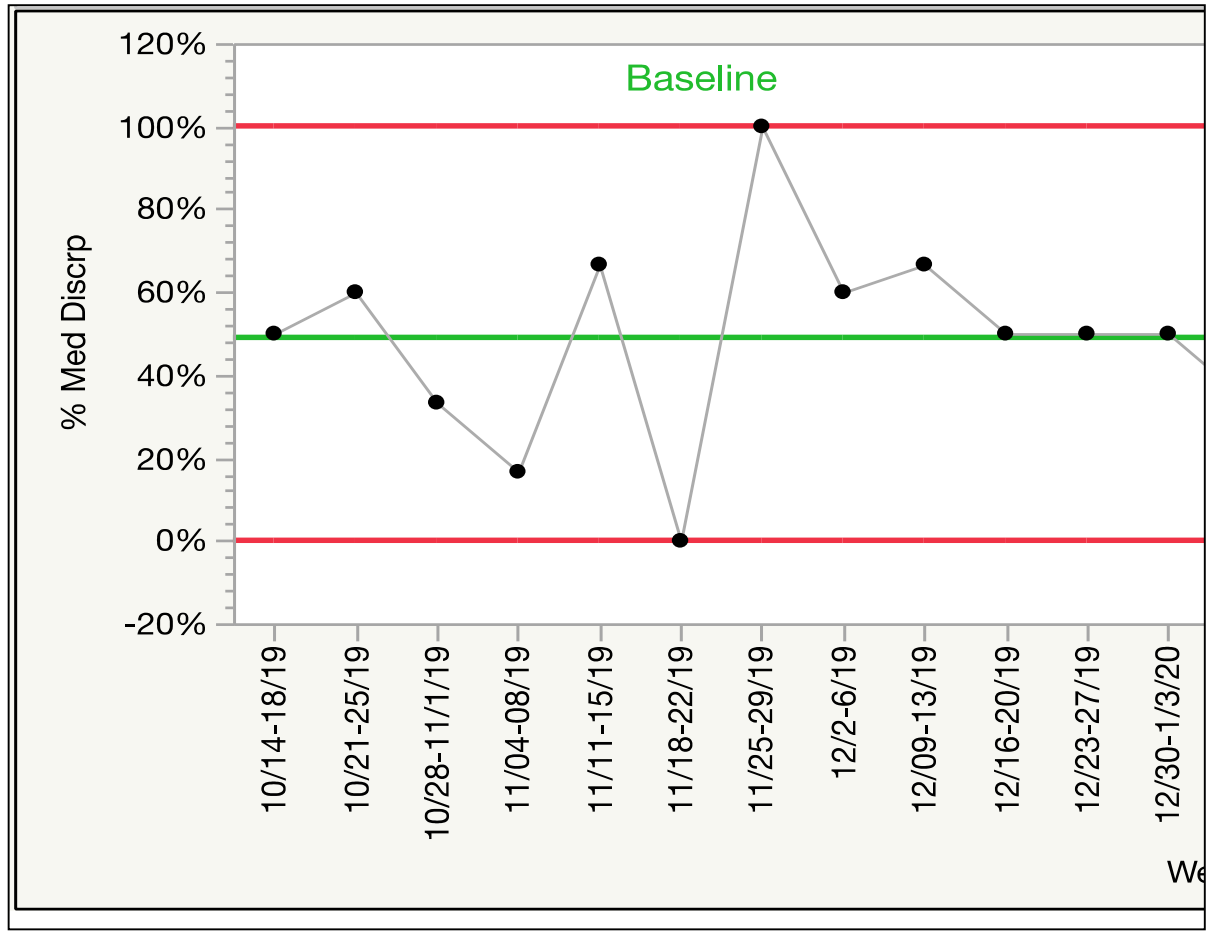
According to the Hospital Compare website; **University Hospital has an HCAHPS Summary Star Rating of 2 (out of 5) in the category of Care Transitions**, with only 47% of UHS patients that "strongly agree" to understanding their care when they left the hospital

44% of SW patients did not "strongly agree" to understanding their medication changes when they left the hospital

48% of SW patients did not "strongly agree" to understanding how to take their medications

60% of SW patients did not "strongly agree" to understanding possible side effects from their medications

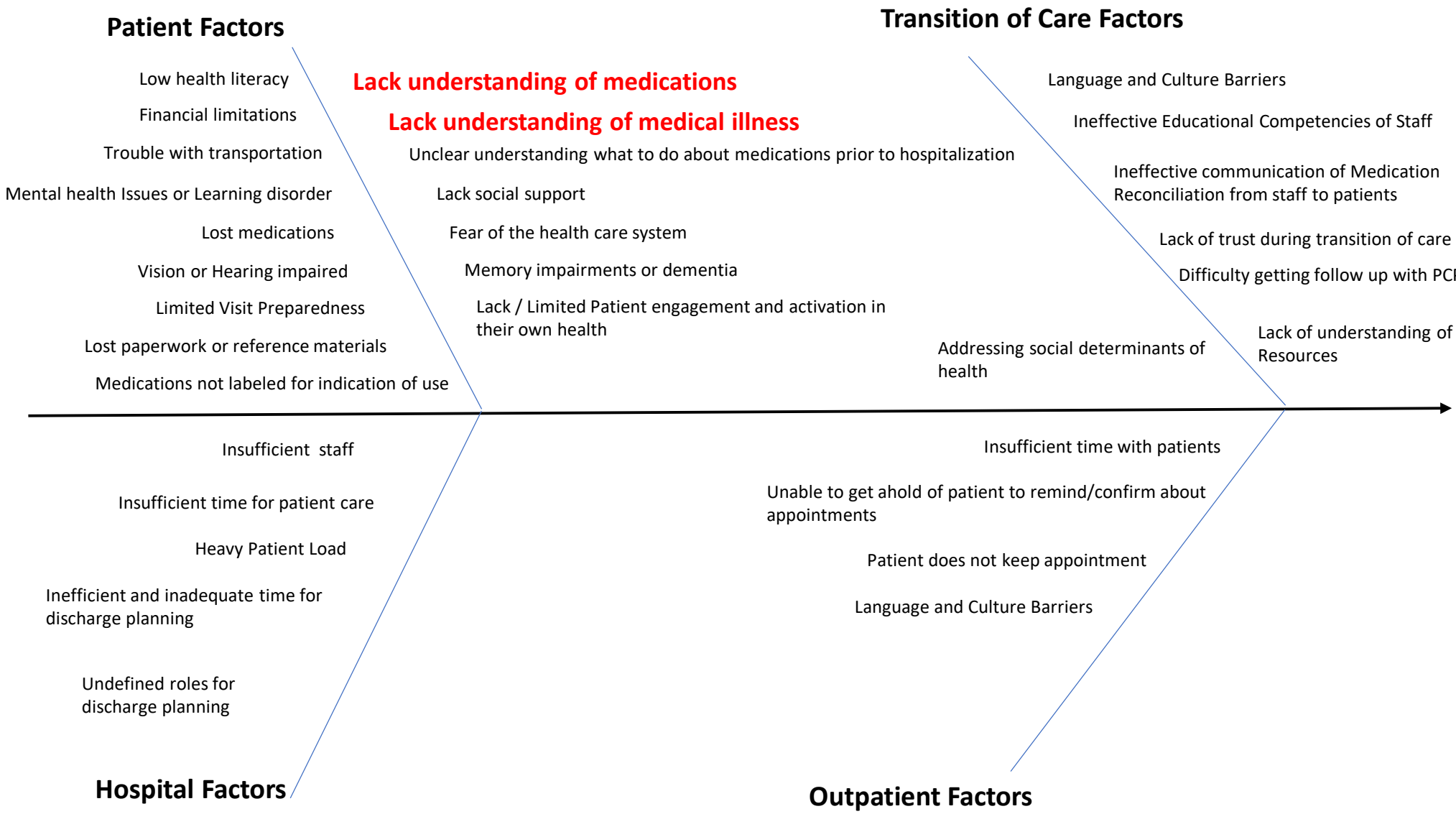
Background Data: Pre-Intervention



SPC Chart was created based on Chart Reviews of all SW patients hospital follow-up visits

The Baseline data shows 49% medication discrepancies at visit

Cause & Effect Fish Bone Diagram:
Medication discrepancies at post hospital follow up



Data Collection Plan

Type of Measure	Measure	Data Element	Data Category (New or existing)	Data Category (Automated or manual)	Data Source (EMR workflow?)	Data Frequency If new, how often captured?	Data Standard (Who will track the data?)
Outcome Measure	Medication discrepancy	FU Visit notes Noted discrepancies Communication Note for medications Med. Recs don't match Pharmacy records	New	Manual	Providers SW PharmD	After every hospital f/u appt. Weekly collection of data	Providers SW PharmD
Process Measure	Phone calls made	Patient has/taking all correct discharge medications #complete calls #interventions # No Show rate	New	Manual	SW PharmD	Once prior to hospital f/u appt. Weekly collection of data	SW PharmD
Balance Measure	SW PharmD Time spent on making calls	Total weekly minutes spent making TOC calls (60min/pt.)	New	Manual	SW PharmD	Once prior to hospital f/u appt. Weekly collection of data	SW PharmD

Driver Diagram

Goal Write your project goal here.	Primary Drivers List the main drivers identified in your diagnostic journey that influenced your goal. Use a verb to describe the driver.	Interventions List the actions, processes, or interventions that, when performed correctly, will lead to a positive effect on the associated driver.	Measure Where appropriate, list a measure.	Responsible Who is responsible for this intervention and by when?
Decrease % of medication discrepancies at post-d/c follow-up visit	Increase patient learning	Tailored patient counseling of medication treatment plan via telemedicine 3-4 days prior to appointment	# counsels	SW PharmD 12/16/19
	Increase visit preparedness	Phone call 3-4 days prior to visit includes educating patient on what to do prior to / what to bring to appointment	#compete calls	SW PharmD 12/16/19
	Access to medications/care	Identify and address barriers to care (i.e.; no transportation, financial, insurance issues, pharmacy issues)	# of interventions	SW PharmD Social Worker Nurse Case Manager 12/16/19
	Decrease no show rate	Phone call 1 day prior to visit to verify appt. date/time	%show rate	RAS 12/16/19

Interventions- PLAN

Transitions of Care Medication Reconciliation/Education Phone Call
Made by SW PharmD 3 to 4 days prior to hospital discharge follow-up visit:

1. **Review** all medications/changes with patients, verify they understand their medications, and update medical record accordingly
2. **Verify** patient has follow-up visit information and provide instructions for visit
3. **Address** any barriers that patient has regarding their medications or attending their follow-up visit
4. **Document** encounter with completed reconciliation

Implementing the Change

12/16/19

Created documentation template and check list for Transitions of Care Medication Reconciliation/Education Phone Call

12/17/19

Contacted UHS Call center, collaborated to receive weekly list of UHS Hospital Discharge patients scheduled at SW Clinic

1/6/20

SW Clinic PharmD starts calling patients scheduled for SW Clinic Visit

FIRST LESSON LEARNED

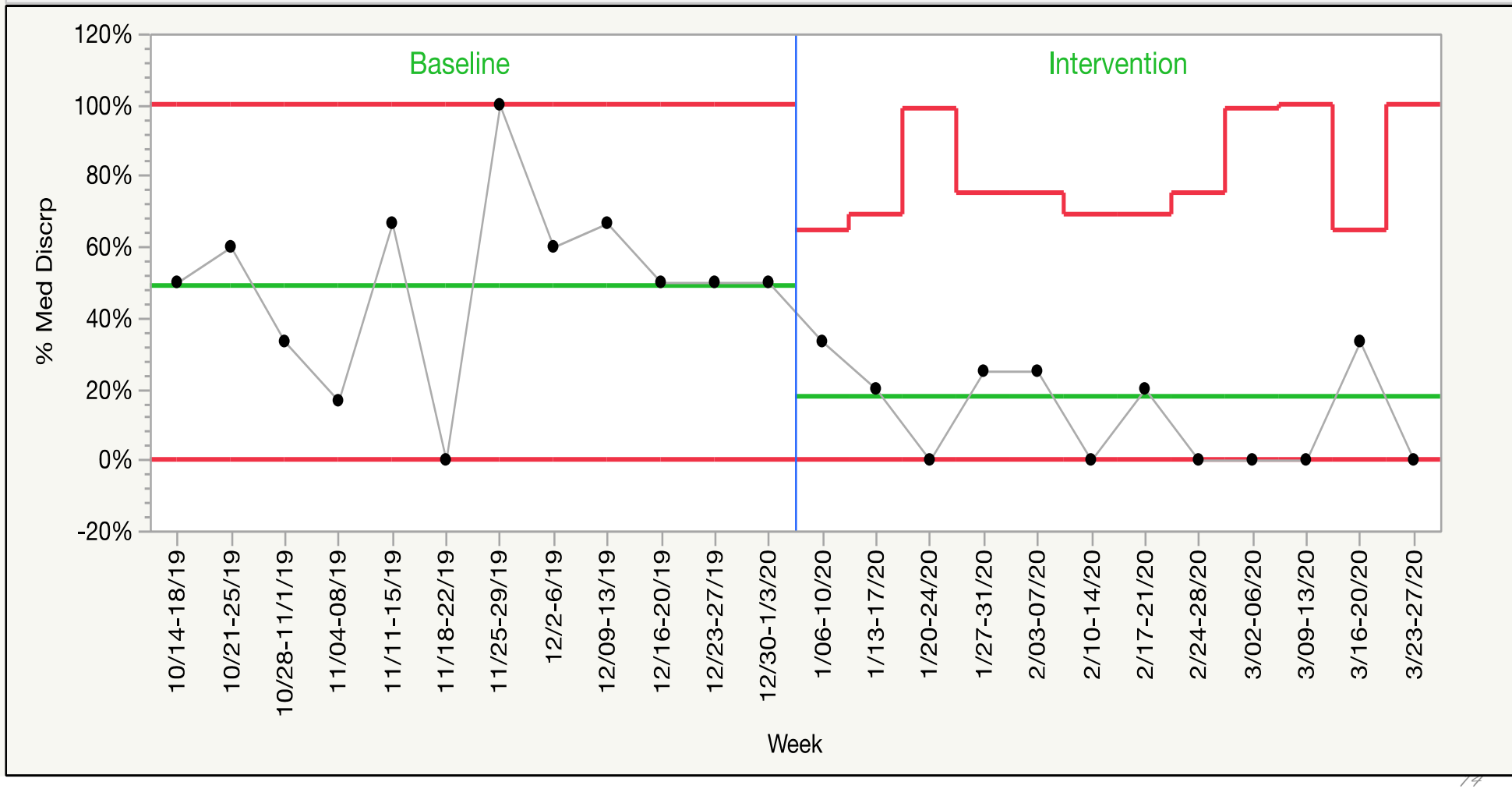
High percentage of Hospital Follow up were no show, cancelled, bumped, or rescheduled appointments

Results

Phase Limits

Phase	LCL	Avg	UCL
Baseline	0.0%	49.0%	100.0%
Intervention	0.0%	17.8%	.

SPC p-Chart: Percent Medication Discrepancies [14Oct2019 - 27Mar2020]



Results

Reduced medication discrepancy from 49% to 17. 8%

- **Patient most common diagnosis at discharge**
  - 44% of patients pre and post intervention were admitted for CHF, sepsis, and DM related conditions
- **Patient that never had follow-up**
  - 25% pre-intervention
  - 20% post-intervention
- **Patient involvement in change**
  - 37 % of post-intervention patients spoke w/ RPh
  - 53% of those patients had a medication discrepancy resolved by RPh

Return on Investment

Our ROI is based on **cost avoidance** or savings from the intervention occurring

Savings:
Readmission cost due to medication discrepancy of non-compliance w/ medication treatment plan

Cases:
Chose 2 pre-intervention cases where **readmissions occurred due to a medication discrepancy** and could have been prevented by intervention with a Care Transitions phone call from a PharmD

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Return on Investment-DM/sepsis

- Case #1:

  EB had total of 3 admissions totaling: $81, 626

  Admission #1. Cost $15,267

  Admission #2. Cost $28,484

  Admission #3. Cost $37, 875

Savings of $66, 359 if there were no readmissions due to avoidable medication discrepancy

Return on Investment-CHF

- AM admitted for CHF 4 times for cost $7,138 per admission for total cost= $28, 552

AM never received his medications after first admission

Admission #1 $7,138

Admission #2 $7,138

Admission #3 $7,138

Admission #4 $7,138

Savings of $21, 414 if there were no readmissions due to avoidable medication discrepancy

Return on Investment

21.6% readmissions rate w/ CHF --------→ $462,542

16.8% readmissions rate w/ DM/sepsis---→ $1,098,031

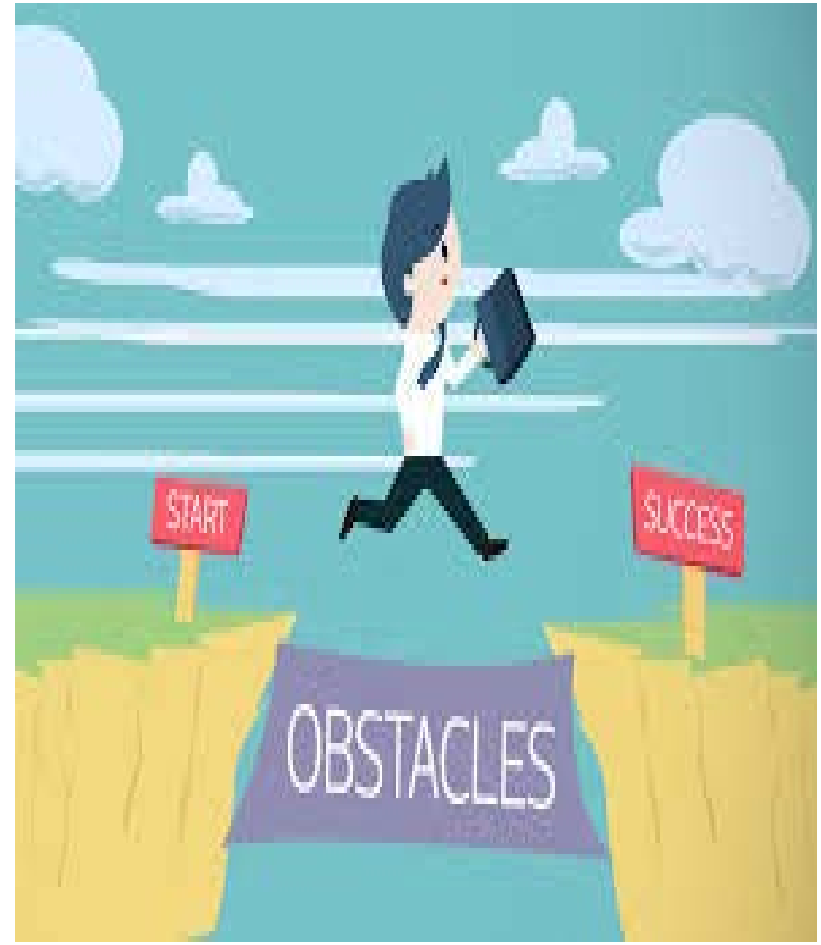
Potential savings of $1,560,573/ 3 months

$6,242,293 potential savings per year

With intervention involving PharmD for avoidable medication discrepancies during care transitions

Challenges

- Team assembled and project created at “last minute”
  - Original provider and project had to back out of participation
- Project scope too large (should be system-wide project)
  - Core team of 3 members too small to cover care transitions from initial admission to follow-up, had to work “downstream” instead of from the beginning
- Conversion to new EMR
  - Limited data available, large amount of personal time used to manually collect data- not sustainable
- There is no “Care Transitions Team” at UHS to reference for assistance or standard transition of care process in place



Lessons Learned

Transitions-of-Care (TOC)

- Current care transitions process is not patient-centered, but time-centered
- There is too much variability and no standardization of care transitions
- Involves both Inpatient & Ambulatory operations (system-level)
- Requires timely follow-up to avoid readmission
- More than just clinical plan. Also need to address Social Determinants of Health
- Pharmacist intervention needed in care transitions

Lessons Learned

Social Determinants of Health (SDOH)

SDOH	Predicted Outcome
No transportation	-> Cannot come to follow-up appointment
Family stressors	-> No focus on health / diet / exercise / medications
No insurance	-> “Skip” doses of meds -> Do not come to follow-up appointment
Food insecurity	-> Eat the wrong foods -> Poor clinical outcomes -> Increased readmissions
No support system / No Back-Up Buddy	-> Higher risk of non-adherence to therapy -> Poor clinical outcomes -> Increased readmissions

Next Steps

- Encourage Sponsors to continue project by building a Care Transitions TEAM, with the RIGHT people, from the RIGHT places to standardize a patient centered approach
- Devise Standard Operating Procedures for Care Transitions from admission to discharge and at hospital follow-up visits to ensure all patients receive needed care
- Incorporate pharmacist intervention into care transitions process to decrease avoidable medication discrepancies
- Develop a policy that providers consistently put on Rx indication for medication, and that pharmacy puts indication on Rx label
- Counterbalance Social Determinants of Health

Proposed TEAM Makeup

CSE TEAM

- Operations & Chief Revenue Officer
- Executive Vice President Strategic Planning Business Development Associate
- Chief Nursing Officer
  Clinical Excellence and Ancillary Services
- MD (ER, Inpatient, Ambulatory)
- MLP (Inpatient/Ambulatory)
- PharmD (Inpatient/ Ambulatory)
- RN (Inpatient /Ambulatory)
- Social work
- RCPhT
- MA
- IT

SUPPORT TEAM

- Care Coordination
- Communications
- Patient Education
- Spiritual Care
- Social Work
- Inpatient Pharmacy
- Discharge Pharmacy
- Ambulatory Pharmacy
- MAP
- Transportation
- Registration

Thank you!

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SW Clinic UMA Providers

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References

1. Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med. 2003;138(3):161–167.

2. Coleman EA, Smith JD, Raha D, Min SJ. Posthospital medication discrepancies—prevalence and contributing factors. Arch Intern Med. 2005;165(16):1842–1847.

3. Anderson GF, Steinberg EP. Hospital readmissions in the Medicare population. N Engl J Med. 1984;311(21):1349–1353.

4. Ziaeian B, Araujo KLB, Van Ness PH, et al. Medication reconciliation accuracy and patient understanding of intended medication changes on hospital discharge. J Gen Intern Med 2012;27:1513–20