Medication Assisted Treatment (MAT) Urine Toxicology Screening

CCHCS LEAN SIX SIGMA PROGRAM

GREEN BELT | [redacted] OT, Centinela State Prison

QUALITY MANAGEMENT
LEAN SIX SIGMA

Lean Six Sigma Methodology

The Lean Six Sigma DMAIC methodology is a proven improvement approach used to address problems in existing processes where the root causes of those problems are unknown. The approach focuses on understanding the process, analyzing factors that contribute to the problems, identifying root causes, designing and implementing interventions, and establishing a structure to sustain high performance.

Define Phase

Define and scope the problem, identify the key metric and the team that will work the project, and create the project charter.

Project Background

- The **M**edicated **A**ssisted **T**reatment (MAT) program is part of the **I**ntegrated **S**ubstance **U**se **D**isorder **T**reatment **P**rogram ("ISUDT").

- **U**rine **T**oxicology **S**creenings or **U**rine **D**rug **S**creens (UTOX or UDS) are a key component of the MAT program. These Utox screenings help guide a patient's treatment, manage their medication and assist in determining compliance and success of the program.

- The Statewide goal for Utox screenings is 85% compliance. According to the ISUDT Dashboard, Centinela (CEN) is below this goal.

- For patient safety and success in the program, CEN is determined to meet and maintain the State Goal of 85% compliance.

Project Charter

- **Problem Statement**: CEN has been below the State goal of 85% compliance in regard to the Utox Screenings for over a year and has seen a downward trend in toxicology screenings.

- **Project Objective**: To get CENs Utox compliance rate to the State goal of 85% or higher and continually maintain those numbers.

- **Primary Metric**: Percentage of MAT patients that complete the Utox screening within 45 days or when ordered, whichever comes first.

Team Members

- **Champion:** [redacted], *CNE*
- **Process Owner:** [redacted], *Resource SRN II*
- **Executive Sponsor:** [redacted], *CNE*
- **Team Members:**
  - [redacted], *OT(T)*
  - [redacted], *SRN II*
  - [redacted], *CME*
  - [redacted], *CP&S*
  - [redacted], *CHSA II/CSE(A)*
  - [redacted], *RN*
  - [redacted], *LVN*
  - [redacted], *AGPA*
  - [redacted], *CC III(A)*
  - [redacted], *Sr. Lab Asst.*

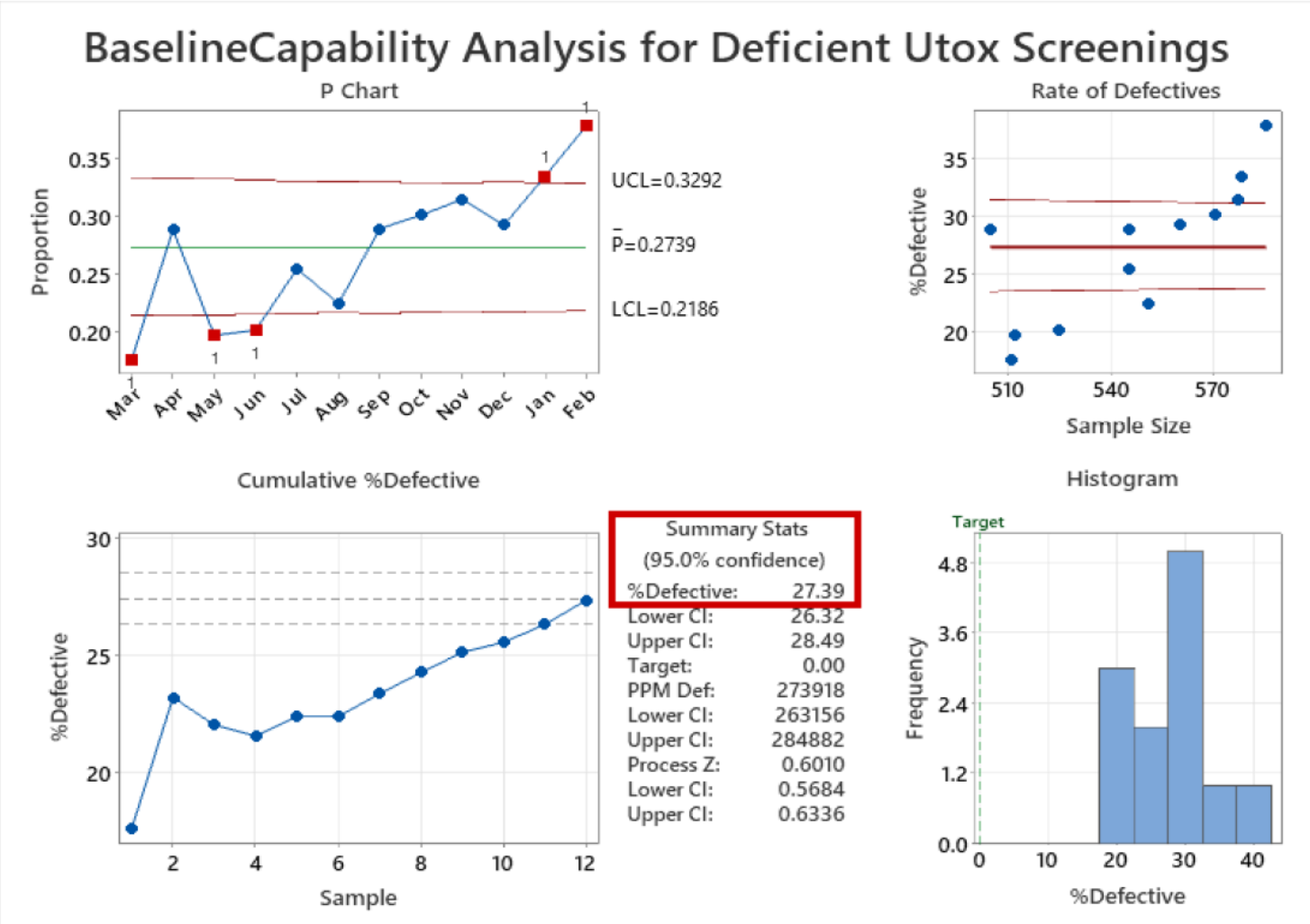
Measure Phase

Gather the process inputs, set up and validate the measurement system, and determine the baseline for the primary metric.

Process Description

- MAT patients are required to have Utox Monitoring done every 45 days.
- Performed a Gemba walk through the lab process.
- The PCP places the order in CERNER.
- The Utox order is “dispatched” as a “timed study” in the Lab que 7 days prior to the ordered collection date.
- The earliest the lab can collect the sample is 1 workday prior to the scheduled collection date.
- Once collected the status of the order in the lab que goes to “collected.”
- Sample is sent out to be processed, status changes to “In Transit.”
- When results are returned, the status of the order in the que goes to “complete.”
- The 45-day clock resets when the status becomes “collected.”

Baseline Capability



12 months of data

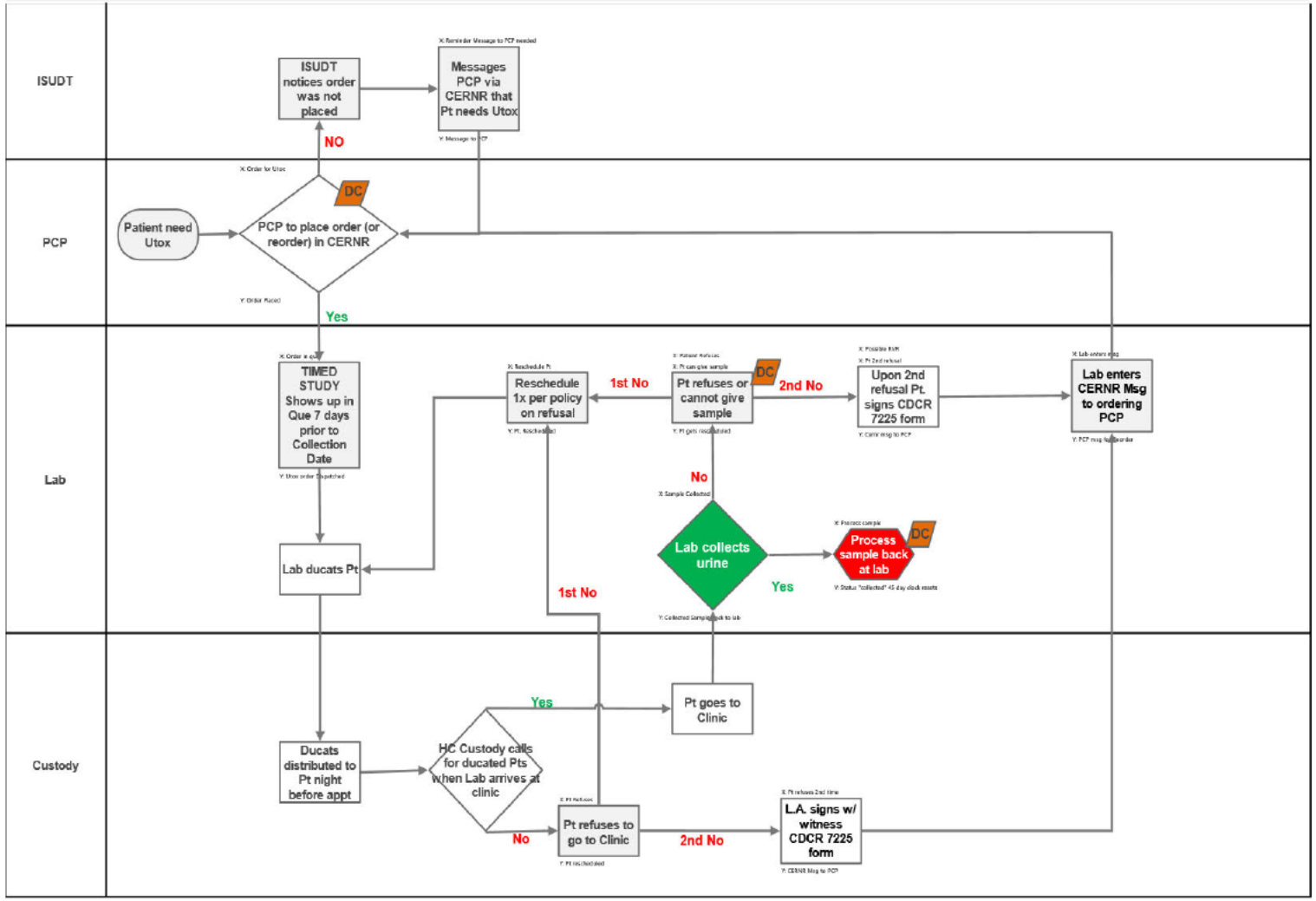
Current Defect Rate: 27%

Baseline Compliance: 73%

This analysis tells us that our process is out of control due to numerous outliers. The process is also not capable because we are unable to reach and maintain our goal of 85%.

To attain our goal, we need a defect rate of no more that 15%.

Initial Process Map



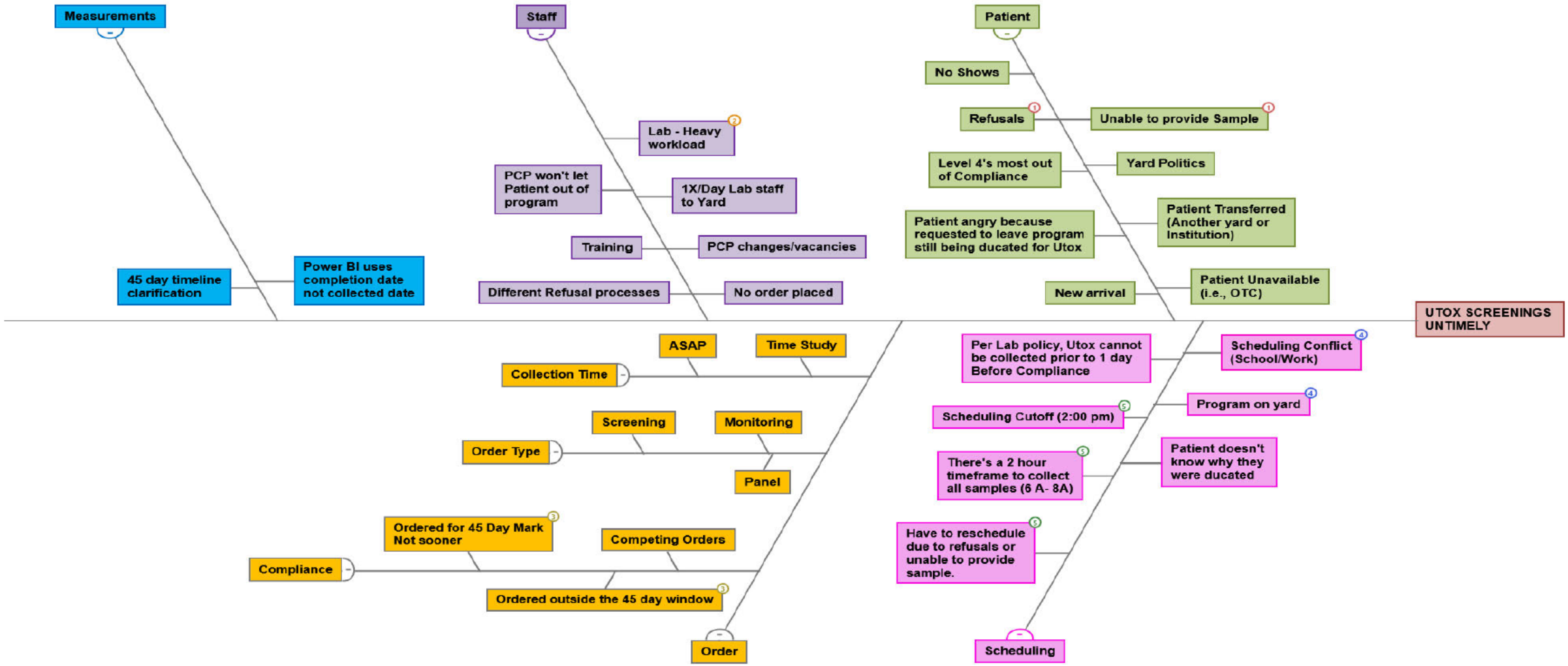
4 disciplines involved in the process – (Swim Lanes)

17 identified steps

3 Data Collection Points

1 Value Added Steps

Brainstorming Using Fishbone



Measurement System Analysis

Dashboard Measurement System Analysis

Does the denominator for this metric correctly capture all the actual process opportunities?	YES
Number of "NO" errors:	0
Number of "YES" errors:	0
MSA Results and Actions:	PASS: no action required—dashboard data can be used with confidence

Samples Designated as "NO" (out of compliance)

Samples Designated as "YES" (in compliance)

- We looked at 30 non-compliant & 30 compliant files with 0 defects.
- We are confident that our dashboard data is correct
- 3 main reasons for non-compliance: patient refusals, late collection and orders past the 45-day limit.

Analyze Phase

Analyze data to determine the critical inputs affecting the primary metric.

Next steps

- Completed the Failure Modes and Effects Analysis (FMEA)
- Patient Refusals, Lab Issues & Orders Over 45 Days were the top issues identified as potential X's in the FMEA.
- Surveyed the patients as to why they refuse Utox Screenings
- Audited 124 patient charts for Utox orders

Failure Modes and Effects Analysis (FMEA) Findings

- Patient Refusals
- Can't give a sample
- Orders Past 45 days

Step #	Process Map - Activity	Key Process Input	Potential Failure Mode	Potential Failure Effects	SEV	Potential Causes	OCC	Current Controls	DET	RPN
6	Custody calls for Pt when Lab arrives at clinic	Pt called to Clinic	Pt refuses; not called; yard down; politics	No sample collected	6	Pt refuses; not called; yard down; politics	6	Unpred.	9	324
8	Pt refuses or can't give sample	Pt Rescheduled	No sample	No results/ Results delayed	6	Uses bathroom before appt	6	Unpred.	9	324
1	PCP places Order	Order for Utox	Ordered past 45 days	Non-compliant Dashboard	8	Ordered past 45 days; new arrival	7	Dashboard	3	168
9	Pt continues to refuse	Pt refusal	No sample	No results	10	Confidentiality Concerns	8	None	2	160
4	Earliest Lab can collect is day before order day	Earliest Date for Collection	Sample not collected	No results	7	Staffing shortages;	7	Ducat process	3	147
7	Pt goes to Clinic	Sample collected	Not his urine;	Bad sample	7	fear of written up	2	Who watches/no preventatives	10	140
5	Lab Ducats Pt	Pt Ducated	Not sent out timely	No refural	6	Not submitted or after 2 pm; staffing shortages	6	Lab scheduling que	3	108
2	PCP places Order/ Reorder in CERNR	Order for Utox	No order placed	No sample collected	8	Human error	5	Dashboard	2	80
10	Lab mgs PCP via CERNR	PCP reorders Utox	Reorder not generated	No sample collected	7	Human error	5	Dashboard	2	70
11	Lab processes sample	Sample processed	Lost sample	No results	7	Human error	1		1	7
3	Timed Study shows up in que 7 days prior to order date	Utox order Dispatched	No potential for failure		1	CERNrR failure	1	IT Dept	1	1

Resident Survey of 4 Main Yards

QUALITY MANAGEMENT
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SURVEY FOR

Medication Assisted Treatment (MAT) Program

Are you a participant in the MAT program? YES ☐ NO ☐
(If your answer is "NO", stop with the survey. Thank you for your time, it's very appreciated.)

Have you ever refused to give a Urine sample to the lab when requested? YES ☐ NO ☐

If you have refused, why did you refuse?

- ☐ Recent/Relapsed drug use
- ☐ No longer wish to participate in the program
- ☐ Confidentiality/Privacy concerns, such as (example) _____
- ☐ Parole Board Oversight/Fear of Parole Board Denial
- ☐ Fear of Custody write ups
- ☐ Not knowing why being ducated for lab
- ☐ Lack of understanding of program guidelines
- ☐ Other _____

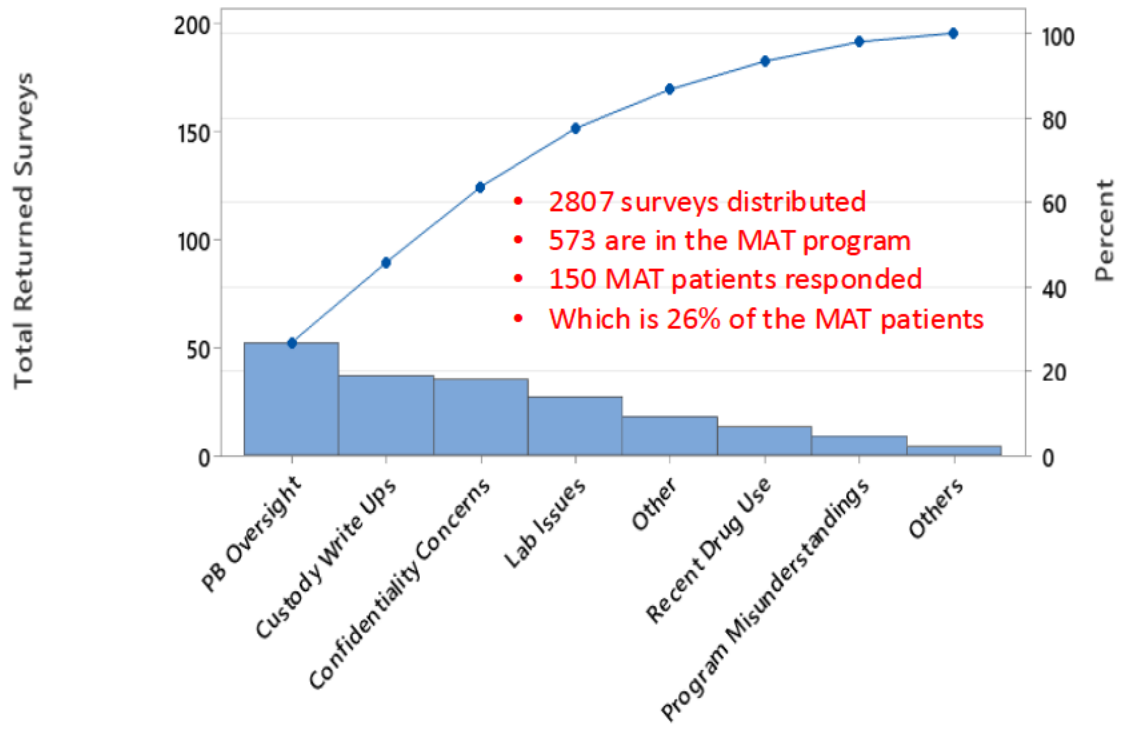
Any suggestions on how to increase compliance with Urine Screenings or how to better serve you with the program?

_____

_____

Thank you for participating in our survey!! Your responses are greatly appreciated. 😊

Key Findings 1 – Parole Board/Confidentiality



Totals	52	37	35	27	18	13	9	4
Percent	26.7	19.0	17.9	13.8	9.2	6.7	4.6	2.1
Cumulative %	26.7	45.6	63.6	77.4	86.7	93.3	97.9	100.0

Method

p_1: proportion where Sample 1 = Event
p_2: proportion where Sample 2 = Event
Difference: $p_1 - p_2$

Descriptive Statistics

Sample	N	Event	Sample p
Sample 1	150	52	0.346667
Sample 2	150	27	0.180000

Estimation for Difference

Difference	95% CI for Difference
0.166667	(0.068788, 0.264546)

CI based on normal approximation

Test

Null hypothesis $H_0: p_1 - p_2 = 0$
Alternative hypothesis $H_1: p_1 - p_2 \neq 0$

Method	Z-Value	P-Value
Normal approximation	3.34	0.001
Fisher's exact		0.002

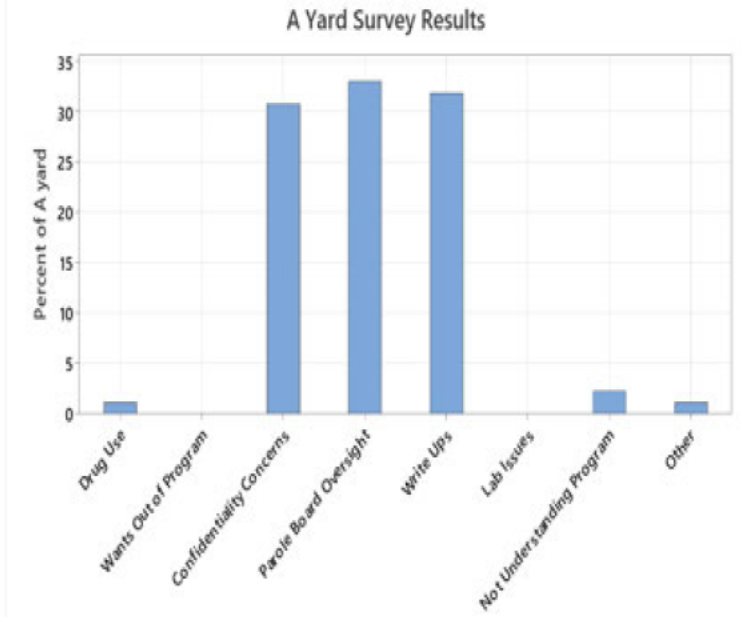
- **Sample 1 = Parole Board Oversight**
- **Sample 2 = Lab Issues**

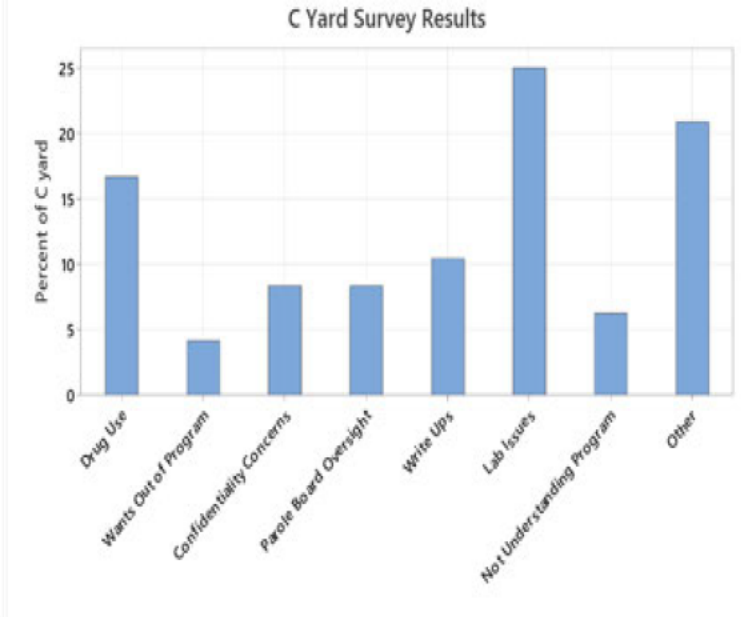
Null Hypothesis P Value = 0
Alt. Hypothesis P Value ≠ 0

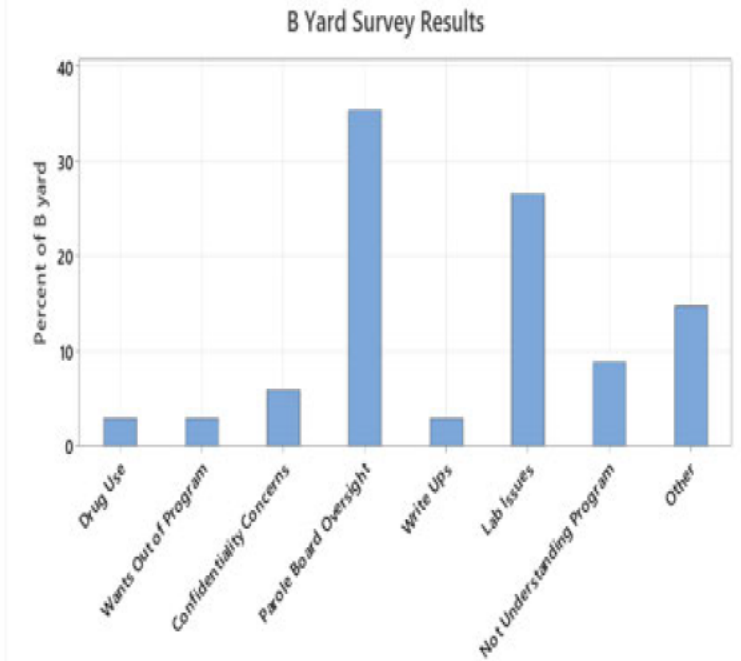
The P is low (below .05) therefore the Null has to go.

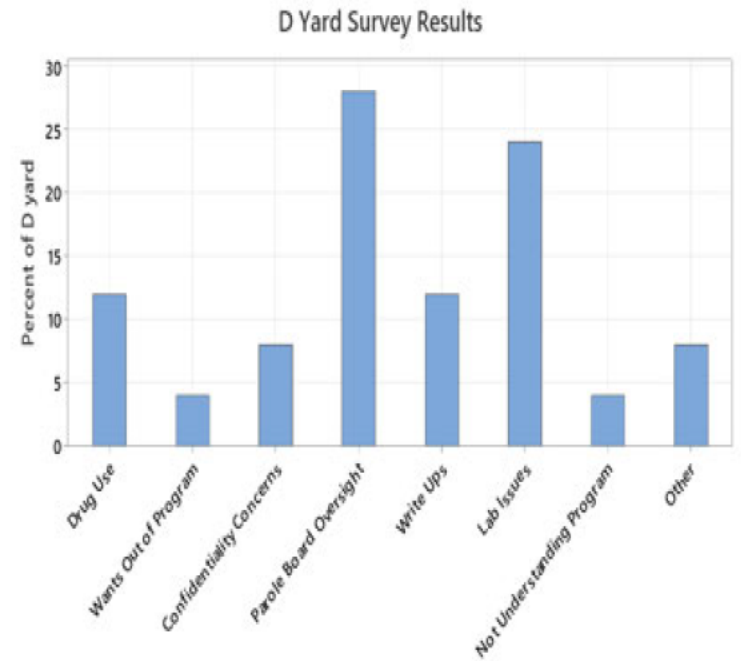
The Alternate Hypothesis is true and there is a significant difference between these 2 issues.

Bar Charts of Survey Results





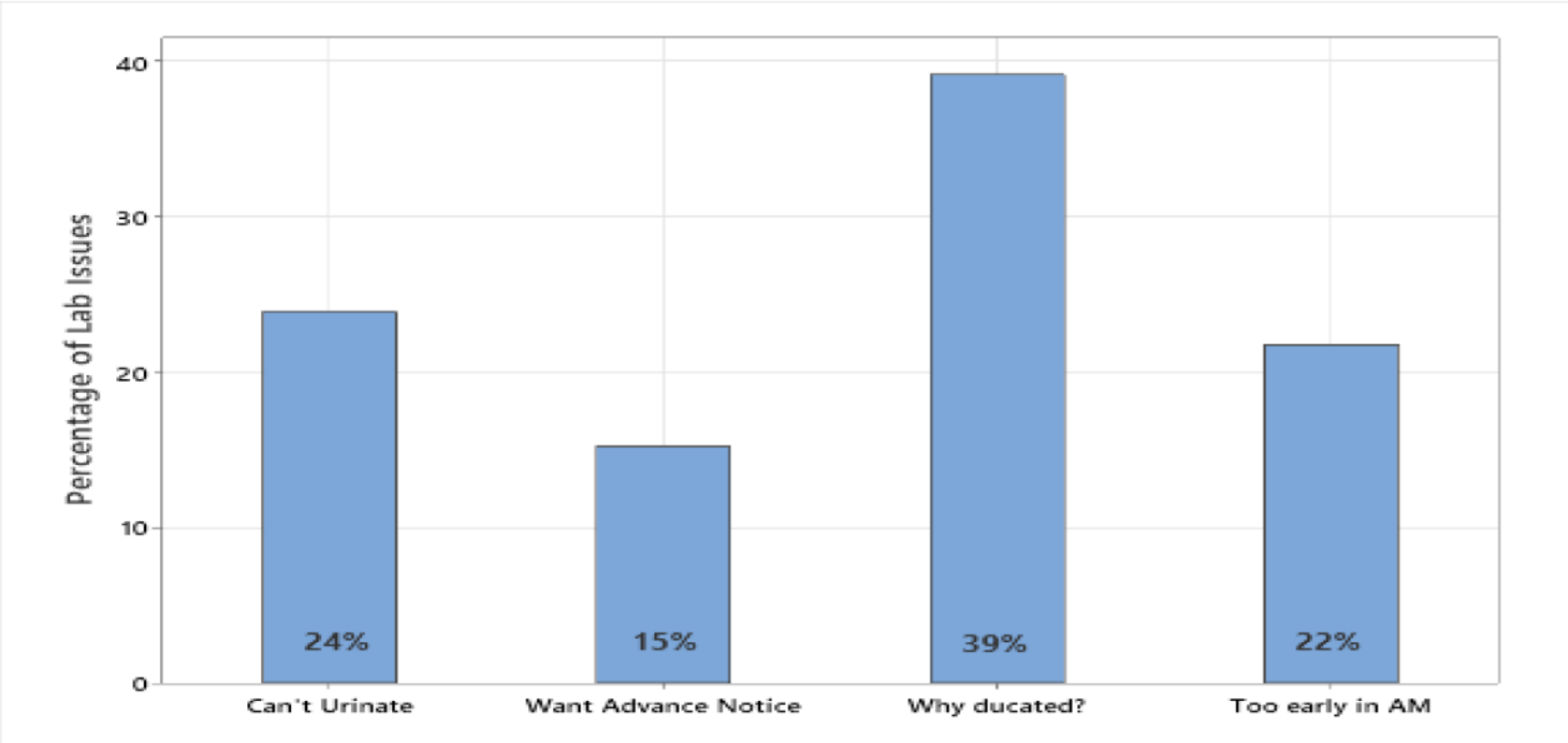




Parole Board Oversight Background

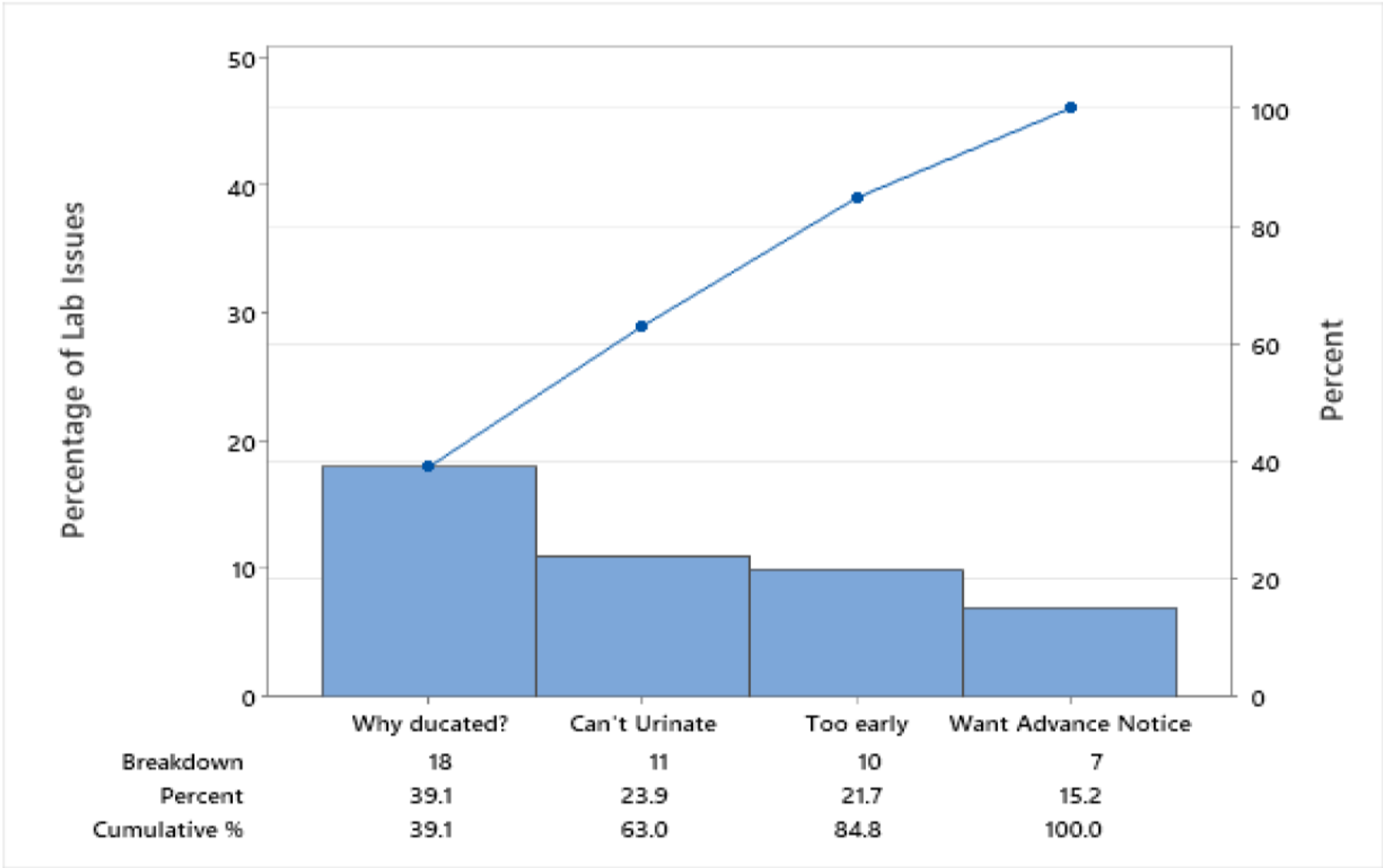
- Prop. 47 lowered drug offenses from Felony to Misdemeanor
- Prop. 57 early release (parole) for nonviolent offenders. This proposition gave the authority for CDCR to release medical records to the Parole Board
- These 2 propositions were put together into Assembly Bill (AB) 109. Requires PB to look at activities including drug usage, conduct in prison, classes and other rehab issues including their medical records
- Patients believe BPH view MAT as a negative and use it as a strike against them
- CEN elevated this issue to the Region IV Inmate Advisory Council (IAC) regarding potential training for the Parole Board to help change this stigma. As of now, nor response has been received

Key Findings 2 – Lab Issues



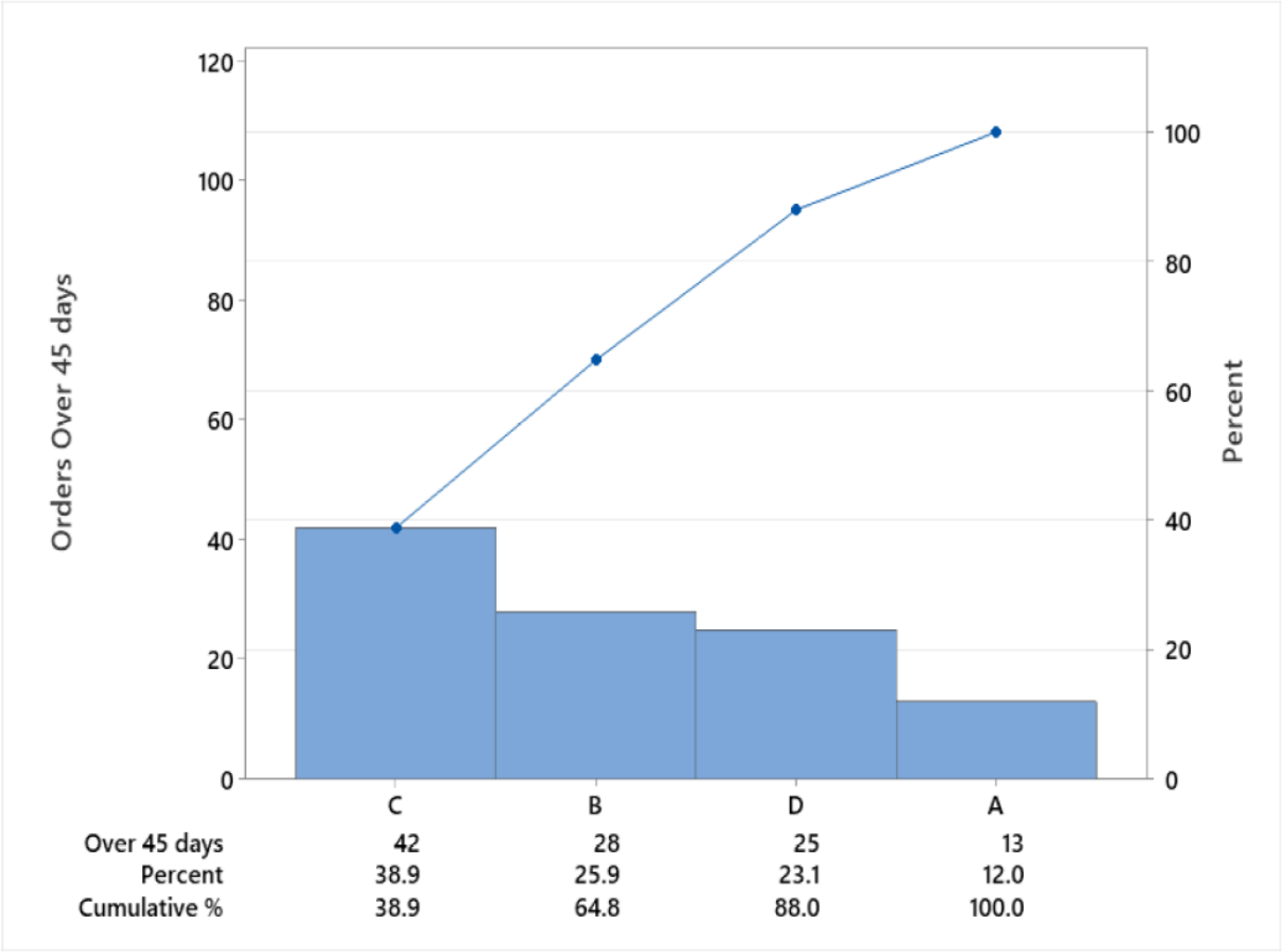
- **150 Survey Responses**
- **46 (31%) Responses related to Lab Issues**

Pareto Chart of Lab Issues



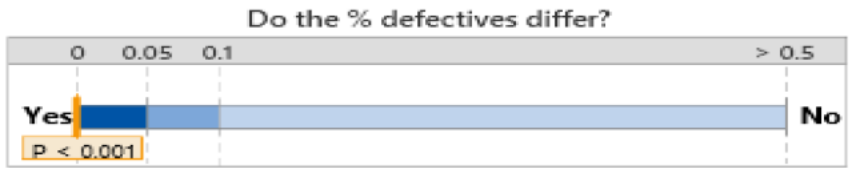
Breakdown	18	11	10	7
Percent	39.1	23.9	21.7	15.2
Cumulative %	39.1	63.0	84.8	100.0

Key Findings 3 – Orders over 45 Days

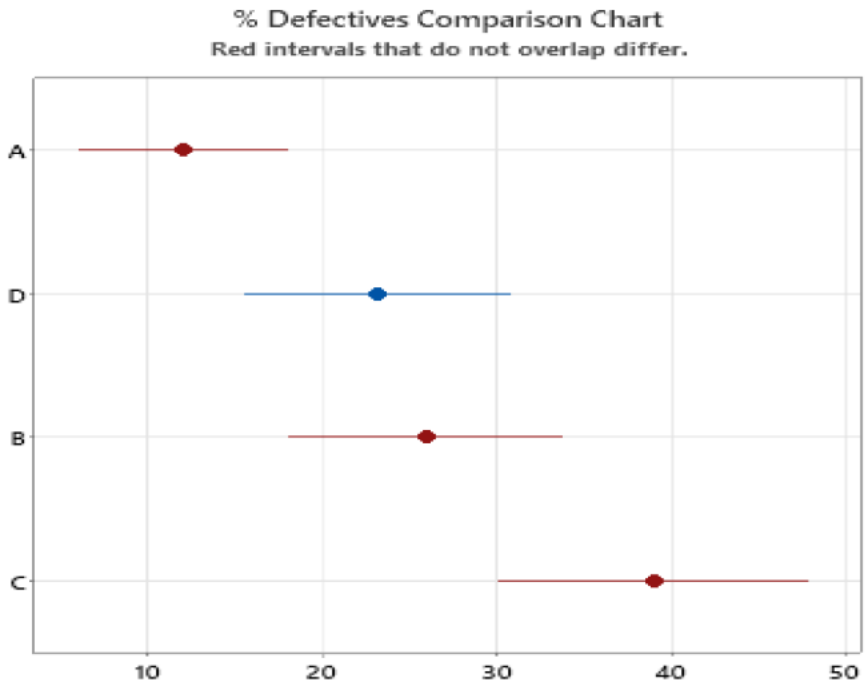


- **February - 124 Charts were audited**
- **108 (87%) had Utox orders over 45 days**
- **16 had Utox orders for 45 days or less**

Statistical Analysis between Clinics



Differences among the % defectives are significant ($p < 0.05$).



Which % defectives differ?

X	Differs from
A	B C
D	
B	A
C	A

Comments

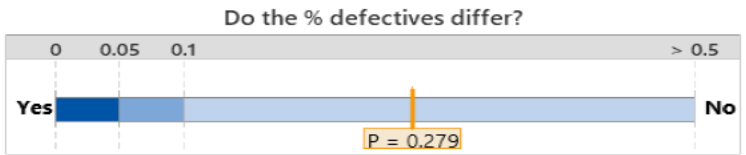
Null Hypothesis: There is no statistical difference between the clinics for orders over 45 daus.

Alternate hypothesis: There is a statistical difference between the clinics for orders over 45 days.

The P value is .001, less than .05, therefore, the Null Hypothesis is void and the Alternate is true.

There is a statistical difference between the clinics when it comes to the orders for Utox being more than 45 days.

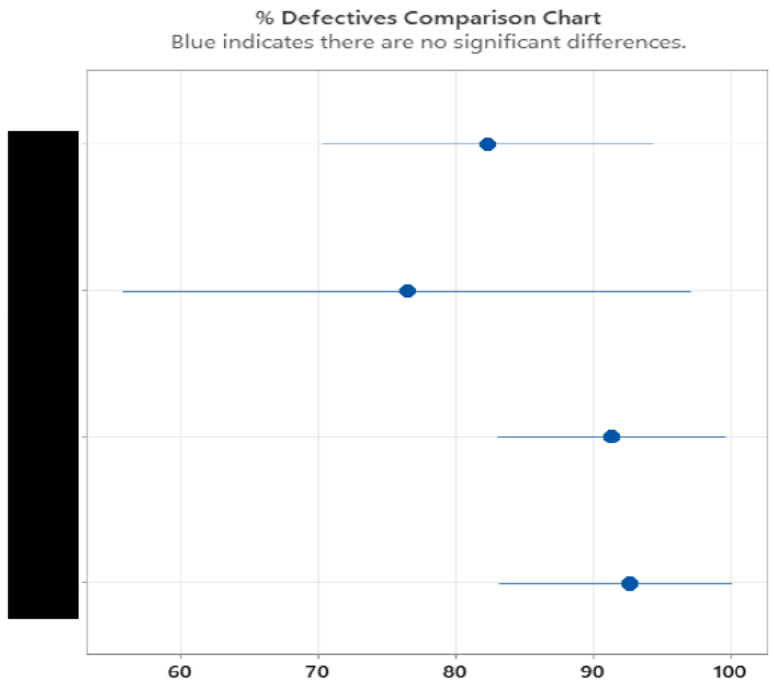
Statistical Analysis between PCP's



Differences among the % defectives are not significant (p > 0.05).

Which % defectives differ?

#	PCP	Differs from
1	[redacted]	None Identified
2		
3		
4		



Comments

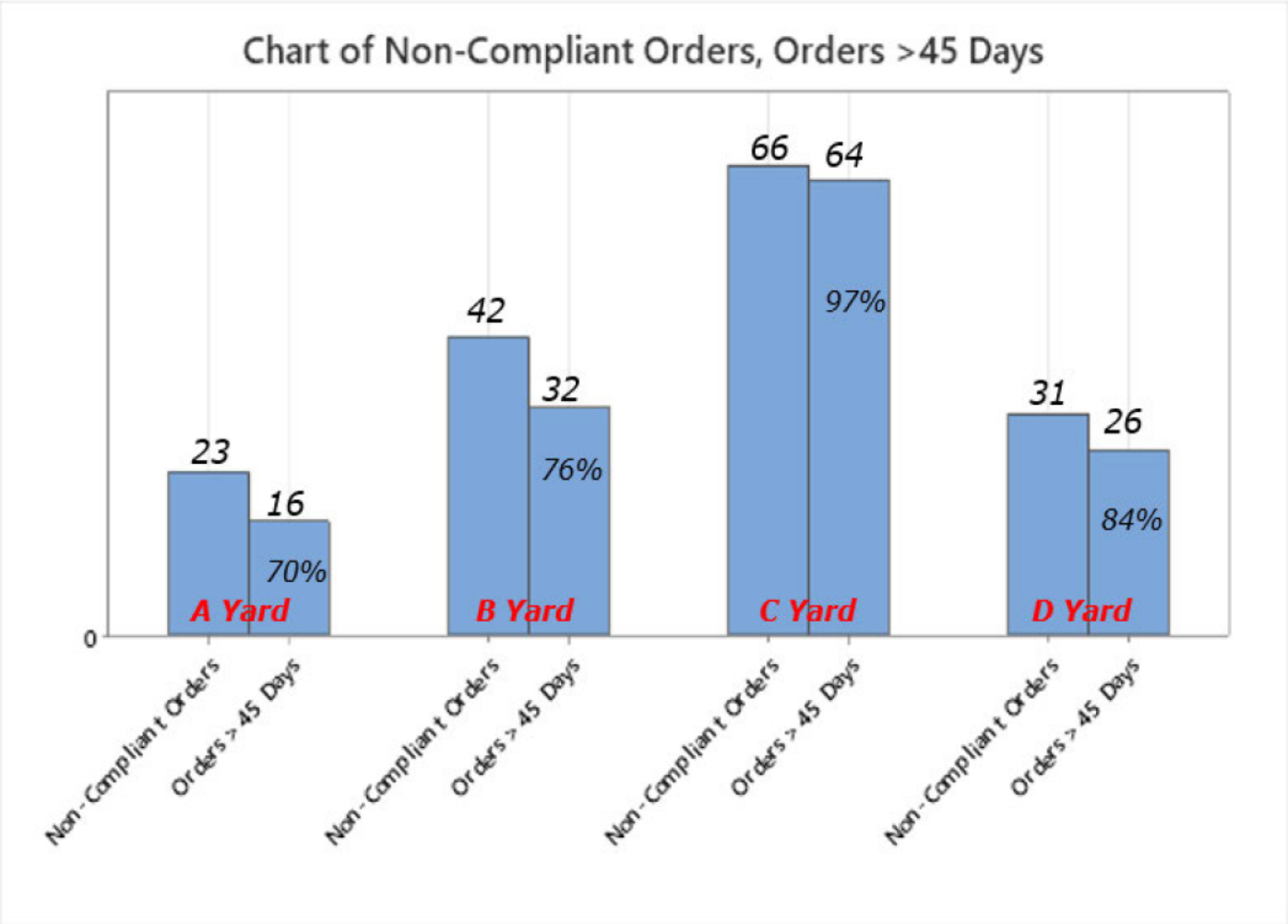
Null Hypothesis -- There is NOT a significant difference between the PCP's ordering over 45 days.

Alternate Hypothesis -- There IS a significant difference between the PCP's ordering over 45 days.

The P value is greater than .05 therefore the NULL Hypothesis is true, there is not a significant difference between the PCP's ordering over 45 days.

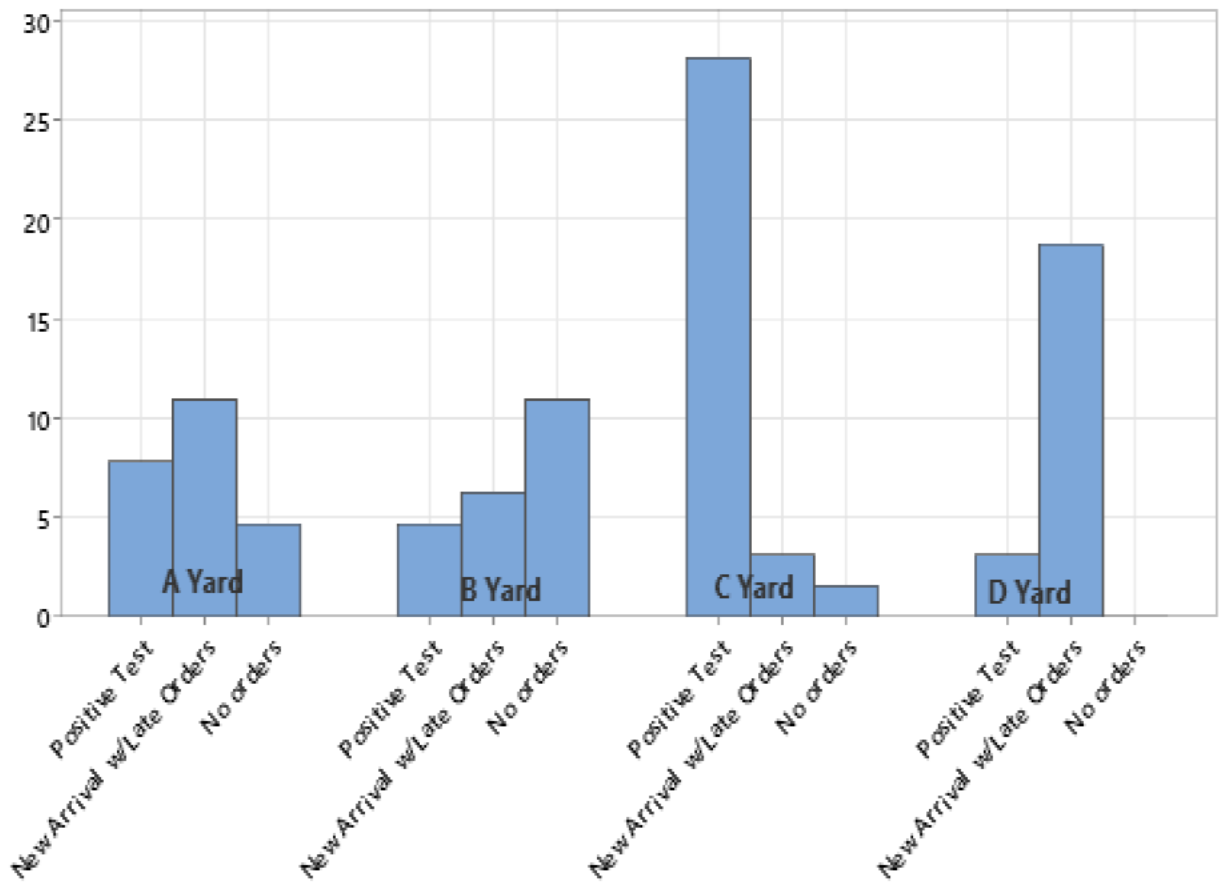
Blue intervals indicate that the % defectives do not differ significantly.

More Chart Audits – Orders over 45 Days



- **April - 162 Charts were audited**
- **138 (85%) had Utox orders over 45 days**

Breakdown of Orders Over 45 Days



Out of the 138 Orders over 45 Days

- 20% were positive for Fentanyl/Heroin/Opioids
- 18% were new arrivals that had late orders
- 8% had no orders at all

Per the Care Guide

Stage of Care	< 30 days	31-90 days	91 days – 2 years
UDS Order Frequency for Monitoring Tests*	Random	Random 2-4 wks	Random 4-6 wks

- Patient should NOT be told when test is to be done.
- If relapse occurs after an abstinence period, reset stage of care to <30 days with more frequent monitoring.
- If UDS consistent with therapy >2 years on controlled medication, continue random testing at least every 3 months.
- For questions on UDS testing or interpretation contact the AMCT.
- Many factors including state of hydration, other medications, genetics, patient's age, gender and urinary pH can affect the rate of excretion of parent drug and metabolites.

- *Utox Screenings are to be done every 45 days or sooner.*
- *If patient has been in Program for 2 years and following the program Utox screenings can go beyond 45 days (up to 3 months or 90 days).*
- *If patient should show positive for Opiates, Utox screenings need to be every 30 days or less.*

Having over 80% of the Utox screenings ordered over 45 day, raises patient safety and liability concerns.

Critical X's

- ❑ Parole Board Oversight/Confidentiality
- ❑ Not Knowing why Ducated
- ❑ Orders over 45-Days

Improve Phase

Identify and implement fixes for the problem, and analyze new data to validate the improvement.

Improvements

✓ Educate the population via their Tablets & Institutional TV, regarding the MAT program, what's expected of them, confidentiality of the medical team & the Parole Board expectations.

<u>Pending Improvements</u>

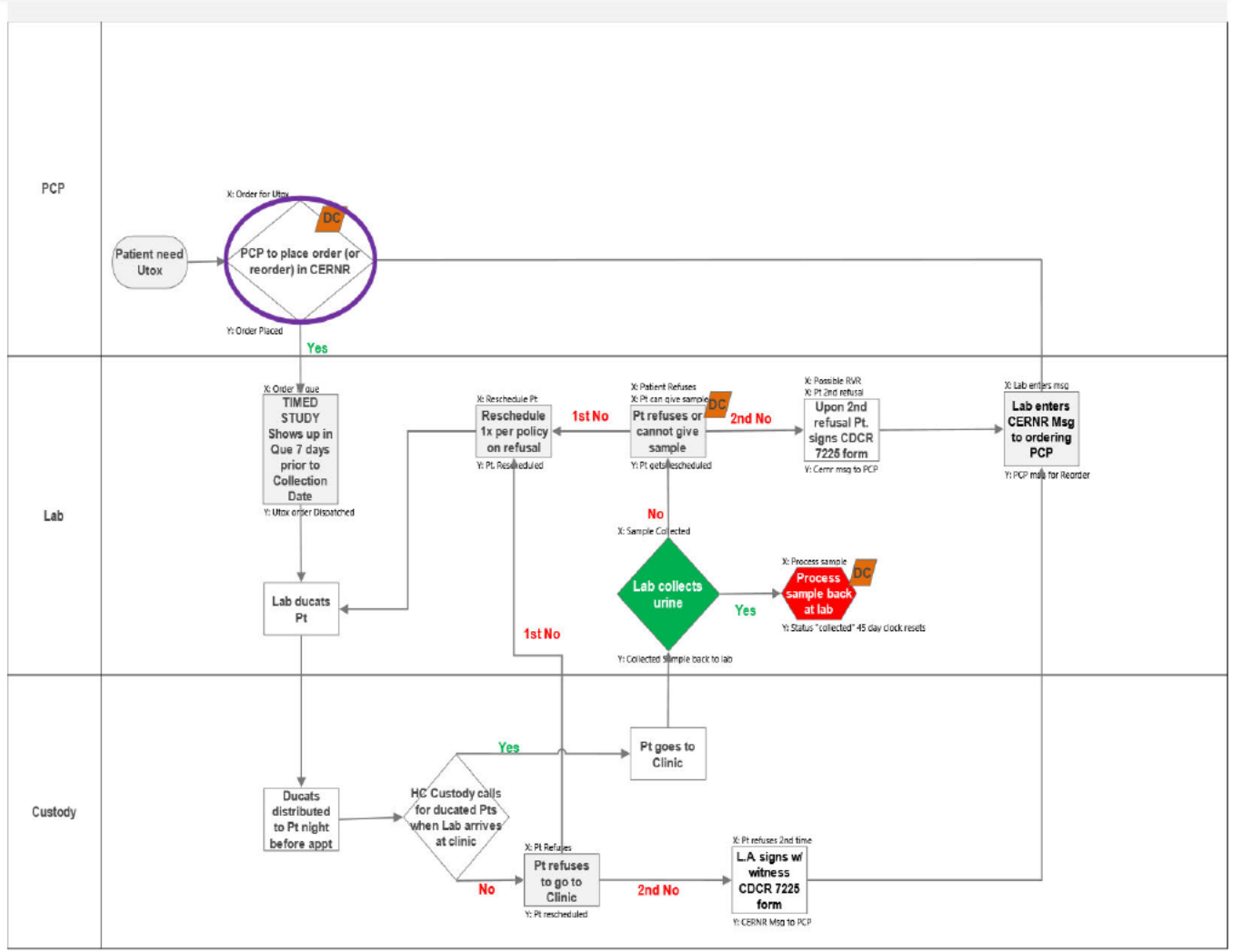
- Change the ducats so that the patient knows why they are being ducated and that they'll need to supply a Urine sample.
- Train the Care Teams on how to use and decipher the ISUDT Power BI Dashboard.
- Create a System-to-System process that before the PCP can sign the Utox results, there's a prompt to place an order for the next Utox. If PCP says "yes" then an order can be placed from there.

Control Phase

Implement controls to assure that the improvement remains permanent, and create a control plan with a sustaining and continuous improvement strategy.

Updated Process Map

- Eliminated 1 Discipline (swim lane deleted)
- Eliminated 2 non-value added steps
- Process now has 15 steps
- Still has 3 Data collection points and 1 Value Added step.



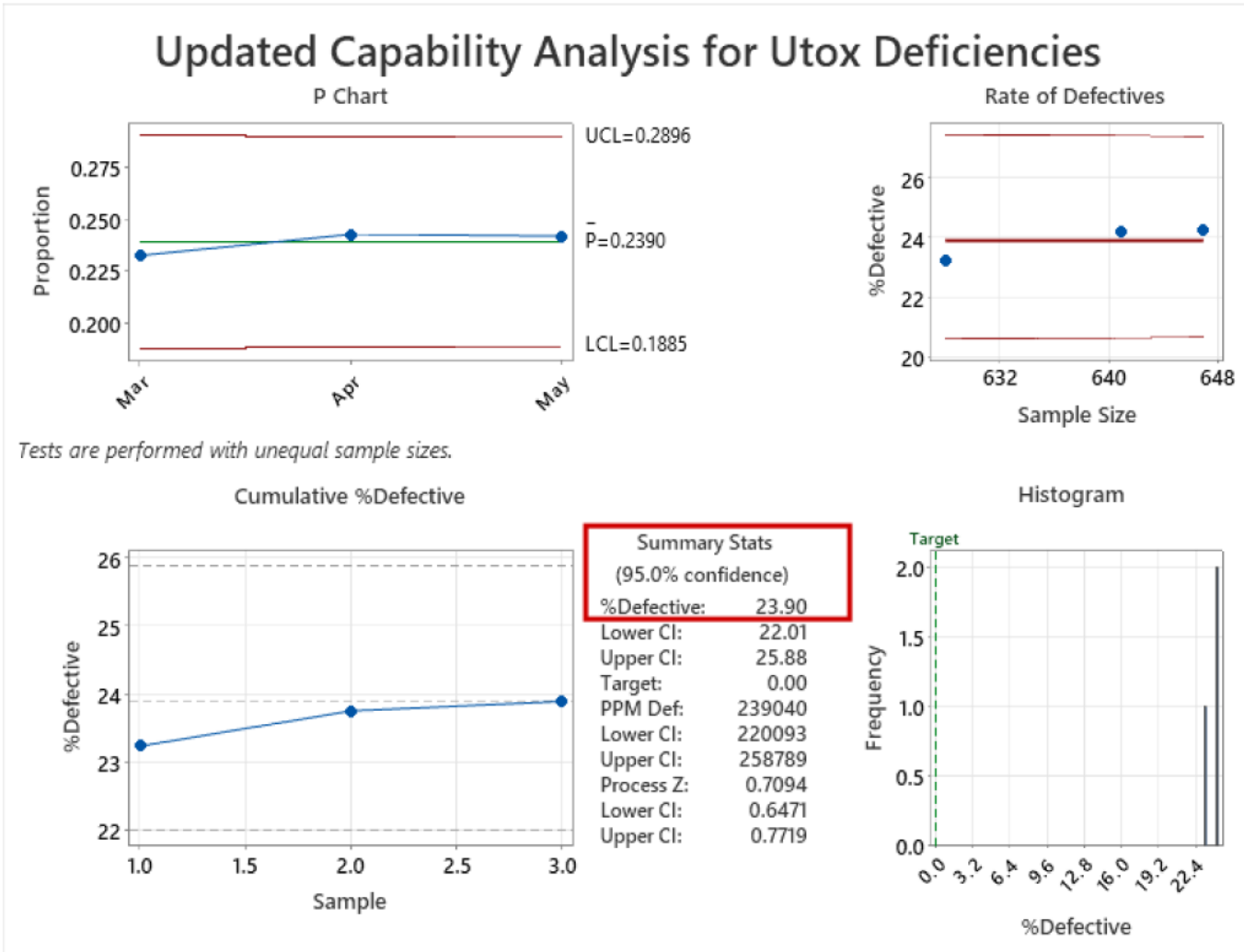
Updated Capability/Performance Analysis

Only 3 months worth of data since beginning the project and performing the Baseline Capability Analysis.

Updated Defect Rate:
24%

Updated Compliance:
76%

This analysis tells us that our process has been in control for the last 3 months but is still not capable as we are under our goal of 85%



Control Plan

- Providers will continue to order labs as needed for the patient.
- Care Teams will monitor their patients' compliance on the Power BI and discuss in Huddles and Pop Management.
- Lab will use new "Lab/Urine" ducats for all patients (not just MAT patients) that need to come to the lab for a urine test.
- ISUDT will continually teach the population via the institutional TV and/or tablets on the different programs within ISUDT, confidentiality concerns, overdose awareness, their responsibility for their sobriety, etc.

A3

A3 PERFORMANCE TRACKER

QUALITY MANAGEMENT LEAN SIX SIGMA

General Information:

Project Title: Medicated Assisted Treatment "MAT" Toxicology Screening
Agency/Department: CCHCS/Nursing
Division/District/Office: Centinela State Prison
Champion/Process Owner: [redacted]esource SRN II
Green Belt: [redacted]
Executive Sponsor: [redacted]
Date: 5/17/24

Problem Statement:

Centinela (CEN) has been below the State goal of 85% compliance for over a year and trending downward. CEN needs to get control over this metric in order to help the MAT patients succeed in the ISUDT program.

Primary Metric:

Percentage of MAT patients that complete the Utox screening within 45 days or when ordered, whichever comes first

Goal:

The goal is to get CEN Utox compliance rate at the goal of 85% or higher and continually maintain those numbers.

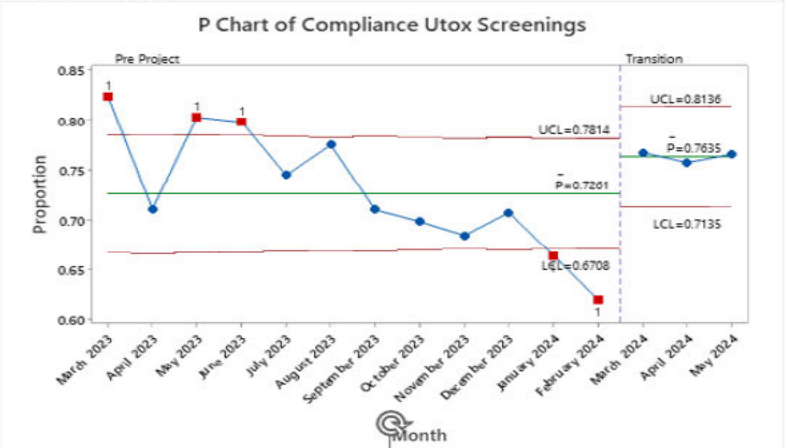
Root Causes (Critical X's):

- *PB Oversight/Confidentiality Concerns*
- *Patients don't know why they're ducated*
- *Orders written out beyond the 45 days limit*

Solution Implementation Tracking:

Item	Status
Pt Education on MAT & Confidentiality issues accessible through Inst. TV & tablets	Continuous
Elevated Pts. Concerns to Region IV – Pending Response	Pending
Update ducats so Pt is aware for reason of ducate	Pending
ISUDT Dashboard training for Care Teams	Pending
Automate follow-up Utox order via EHRS	Pending

Updated Control Chart:



Baseline Average: *72.61 Compliant*
Current Average: *76.35 Compliant*
Current Capability: 8.65 *percent within the goal*

A3 Performance Tracker – Lean 6 Sigma

Project Impacts

Annual Soft Savings = efficiency gains but do not directly save money from the budget.

Labor Savings – Resource RN & LVN time spend auditing charts and Lab personnel having to return to attempt a 2nd Utox collection.

Productivity Gains – Increase in Utox Screenings collected the 1st time.

TOTAL ANNUAL SAVINGS

$123,814.00

Project Impacts

- Improvements in the compliance of the ISUDT Power BI Urine Toxicology Screenings metric
- Increase in Utox collections
- Increased patient safety and reduced liability

Project Summary and Lessons Learned

SUMMARY:

- Urine Toxicology Screenings are a key component to the MAT program. All MAT patients are required to have a Utox screening done every 45 days or when ordered, whichever comes first. Original thoughts were that patient refusals were going to be the number 1 issue, but it was determined that orders over 45 days was the main issue with patient refusals being the 2nd biggest issue.

LESSONS LEARNED:

- What someone might perceive to be the issue may actually turn out to not be the issue at all.
- No matter how daunting the task – don't give up. Keep your head down, work hard and keep moving forward.

Green Belt Contact Information

- [redacted]
- [redacted]
- [redacted]
- [redacted]