TIMELY EMERGENT MENTAL HEALTH REFERRALS

CCHCS LEAN SIX SIGMA PROGRAM

GREEN BELT | [redacted], CHIEF EXECUTIVE OFFICER

SALINAS VALLEY STATE PRISON

Where We Started

Project Background

- Since the implementation of EHRS in September 2017, the compliance of Emergent Mental Health Referrals decreased to a low of 63%.
- Institutions with less than a 100% of Emergent health referrals being completed in the 4 hour window allotted run the risk of patient/inmate treatment delays and consequently having patients require Higher Levels of Care (HLOC). More severe outcomes could be mental decompensation, grave disability, self harm and Suicide.
- From a Performance Improvement perspective, SVSP has seen improvement in most domains of its healthcare dashboard. Mental health indicators are on the rise but lag behind other areas.
- A Lean Six Sigma project with a Mental Health process was chosen as a strategic approach to increase the process improvement skill set of SVSP staff and enhance relationships between Custody, Medical, Mental Health and HQ.

Project Charter

- **Problem Statement**: Since the implementation of EHRS in September 2017, SVSP noted a decrease in the compliance of Emergent Mental Health Referrals. Staff believe timely completion of the referrals are affected by misunderstanding the definition of an emergent referral, order entry completion, timely notification to Mental health and work periods (i.e. weekdays vs. weekends/holidays)
- **Project Objectives**:
  - Focus on MHPC part of the process during business hours as the first step*
  - Maintain compliance with Timely Mental Health Emergent Referrals
  - Suicide ideation reduction and Early Intervention
- **Primary Metric:** Emergent Referral compliance > 95% as tracked and monitored in “On Demand” daily reviews

SVSP Healthcare Dashboard Results by 1st Quarter 2016 -2018

	1st Quarter 2016			1st Quarter 2017			Cerner Go-Live		1st Quarter 2018		
SCHEDULING & ACCESS TO CARE	Jan-16	Feb-16	Mar-16	Jan-17	Feb-17	Mar-17	Sep-17	Oct-17	Jan-18	Feb-18	Mar-18
Medical Services	74%	81%	85%	73%	81%	81%	71%	75%	88%	88%	92%
RN FTF Triage 1 Day	95%	98%	96%	96%	97%	96%	91%	89%	94%	98%	99%
PCP Urgent Referrals 1 Day	100%	100%	100%	100%	100%	100%	75%	33%	79%	83%	92%
PCP Routine Referrals 14 Days	34%	48%	64%	40%	41%	47%	65%	83%	86%	94%	98%
Chronic Care as Ordered	39%	61%	72%	33%	54%	59%	52%	79%	92%	87%	98%
High Priority Specialty 14 Days	50%	61%	52%	53%	63%	62%	78%	82%	80%	69%	74%
Routine Specialty 90 Days	81%	80%	86%	77%	87%	82%	56%	77%	84%	85%	82%
Return from HLOC 5 Days	68%	81%	100%	65%	93%	86%	50%	61%	88%	81%	91%
Laboratory Services as Ordered	98%	96%	96%	100%	100%	99%	93%	94%	91%	95%	96%
Radiology Services as Ordered	100%	100%	100%	93%	93%	100%	77%	77%	95%	98%	97%
Mental Health Services	89%	93%	95%	72%	74%	77%	56%	55%	56%	60%	68%
Referral Timeframes	93%	96%	98%	66%	66%	75%	79%	80%	84%	86%	84%
EOP Structured Treatment	78%	90%	92%	72%	77%	79%	23%	18%	13%	20%	45%
Contact Timeframes	94%	94%	94%	77%	77%	78%	65%	67%	70%	72%	73%
Primary Clinician Contact Timeframes	96%	96%	96%	74%	76%	79%	48%	60%	63%	60%	66%
Psychiatrist Contact Timeframes	87%	88%	88%	78%	80%	78%	90%	82%	78%	88%	84%
IDTT Contact Timeframes	100%	99%	98%	80%	74%	77%	58%	60%	67%	68%	69%
Seen as Scheduled	82%	84%	87%	84%	87%	88%	81%	77%	82%	80%	73%
Medical Services	73%	76%	79%	76%	83%	85%	76%	65%	61%	67%	61%
Mental Health Services	92%	98%	98%	92%	92%	92%	84%	82%	99%	86%	72%
Dental Services	82%	79%	84%	85%	87%	86%	84%	85%	87%	86%	86%

On Demand: Emergent MH Referrals Data

Timely MH Referrals	35.2	84%
Initial CompletedMHMDConsultEmergent (in Hours)	90.0	0%
Initial CompletedMHMDConsultUrgent (in Hours)	23.5	57%
Initial RVRMhaOrderCompletion (in Days)	1.6	75%
Initial CompletedMHPCConsultUrgent (in Hours)	71.1	84%
Initial CompletedMHMDConsultRoutine (in WorkDays)	2.1	85%
Initial CompletedMHPCConsultEmergent (in Hours)	3.8	85%
Initial CompletedMHPCConsultRoutine (in WorkDays)	1.1	87%
Initial CompletedMedNonComplianceConsult (in Days)	0.0	100%

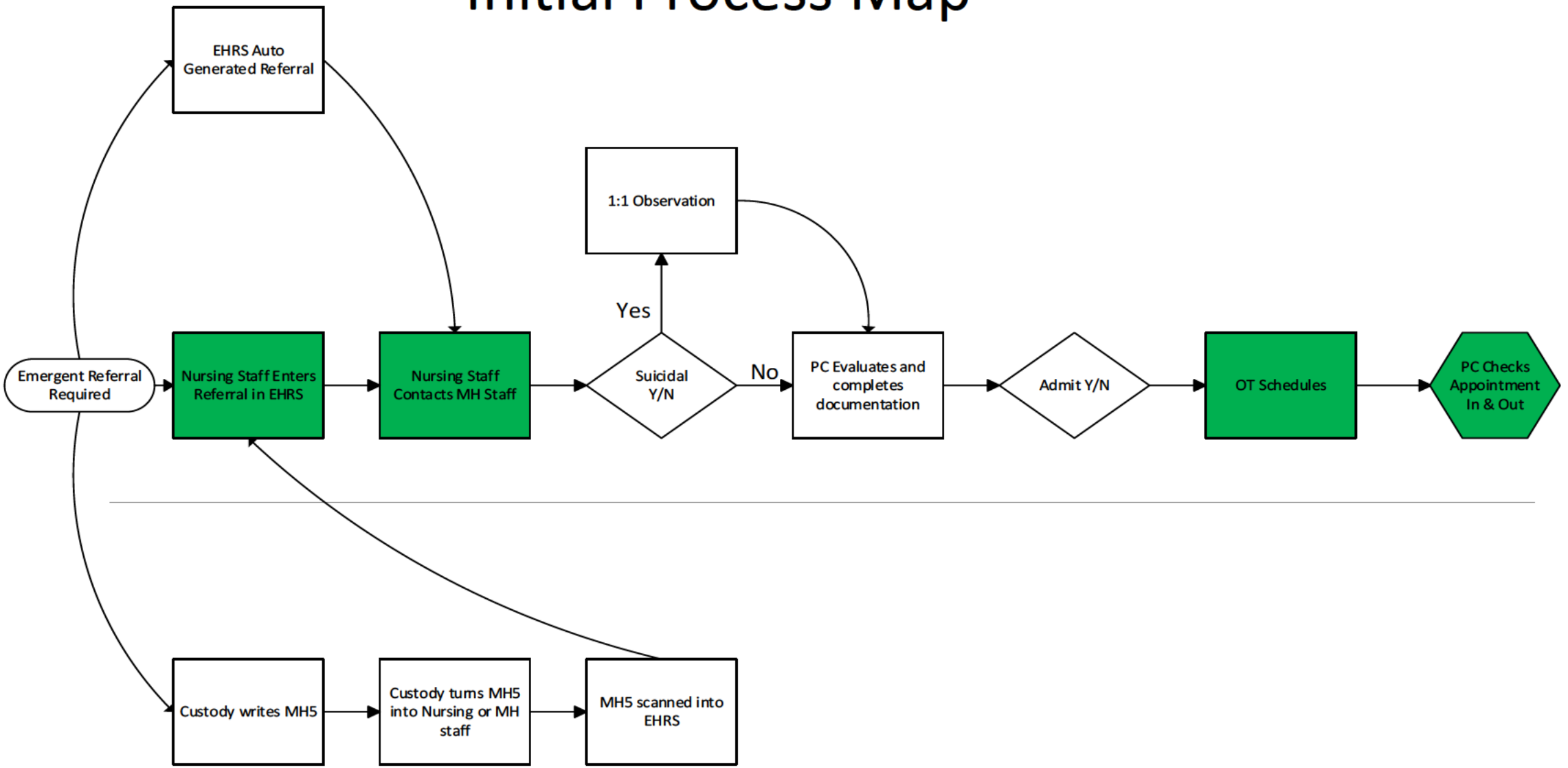
Initial CompletedMHPCConsultEmergent (in Hours) (101)	ML EOP	SVSP	4/25/2018 8:00:00 PM	185	Initiated on Apr 25 2018 3:00PM. Due Apr 25 2018 8:00PM. Completed on May 3 2018 1:09PM	Order incorrectly placed on inpatient encounter	NURSING DATA ENTRY ERROR
	ML CCCMS	SVSP	4/6/2018 4:00:00 PM	69	Initiated on Apr 6 2018 11:54AM. Due Apr 6 2018 4:00PM. Completed on Apr 9 2018 1:05PM	Was not scheduled until 4/9/18 11:21, seen 4/9/18 14:30	MHPC ERROR, MHPC SUPERVISOR DID NOT ASSIGN PC TO COMPLETE REFERRAL
	ASU	SVSP	4/28/2018 3:00:00 PM	43	Initiated on Apr 28 2018 10:14AM. Due Apr 28 2018 3:00PM. Completed on Apr 30 2018 10:22AM	MHPC checked Order in/out on wrong date	MHPC training issue,
	ASU	SVSP	4/29/2018 2:00:00 PM	20	Initiated on Apr 29 2018 9:21AM. Due Apr 29 2018 2:00PM. Completed on Apr 30 2018 10:22AM	MHPC checked Order in/out on wrong date	MHPC training issue,
	ICF	SVSP	4/8/2018 3:00:00 PM	19	Initiated on Apr 8 2018 10:12AM. Due Apr 8 2018 3:00PM. Completed on Apr 9 2018 10:32AM	PIP	PIP
	ML CCCMS	SVSP	4/25/2018 6:00:00 PM	18	Initiated on Apr 25 2018 1:55PM. Due Apr 25 2018 6:00PM. Completed on Apr 26 2018 12:04PM	Order checked in/out on wrong date	MHPC training issue,

Team Members

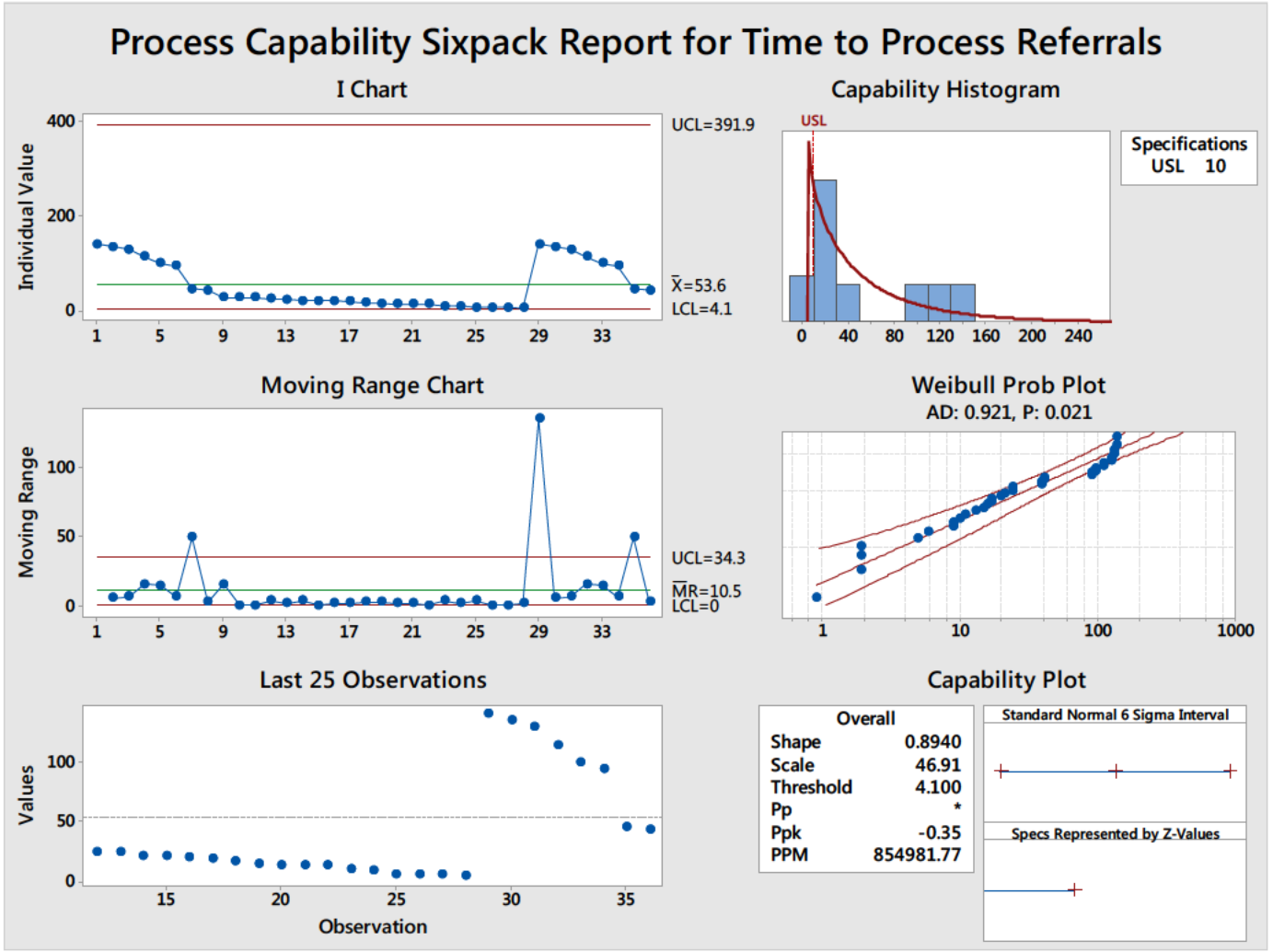
- Green Belt Candidate: (, CEO)
- Process Owner/ Champion: (, CMH)
- Executive Sponsor: , Region II CEO)
- Team Members:
  - Senior Psychologist
  - , CHSA II Mental Health
  - , OSS II
  - , OT
  - , Scheduler
  - , PT
  - , SPT
  - , HPSI
  - HSPSI

Facilitating Change

Initial Process Map



Baseline Capability/Performance



- A *Ppk value* of 2 *means* the distance between the average and the nearest spec limit *is* 6 standard deviations and thus the process fills only half this interval. This leaves a safety margin. The larger *Ppk is*, the better the capability.
- PPM parts per million is high, due to our initial high defect rate consistent with the compliance issues reported following Cerner implementation

Results of Brainstorming Using Fishbone

Brainstorming session with Interdisciplinary team using a Fishbone Diagram identified the following factors driving non compliance:

- Team decided that in order to solve all process issues with Emergent Health Referrals the MHPC process during business hours would be the best place to start.
- Lack of specific guidance for key staff on the definition of an Emergent vs. Urgent Referrals
- No LOP to formally document the process across all disciplines – Nursing, MHPC, MHMD, Custody
- The entire team insisted training and more training was needed.
- Barriers to getting in touch with MH clinician occurs but mostly weekends.

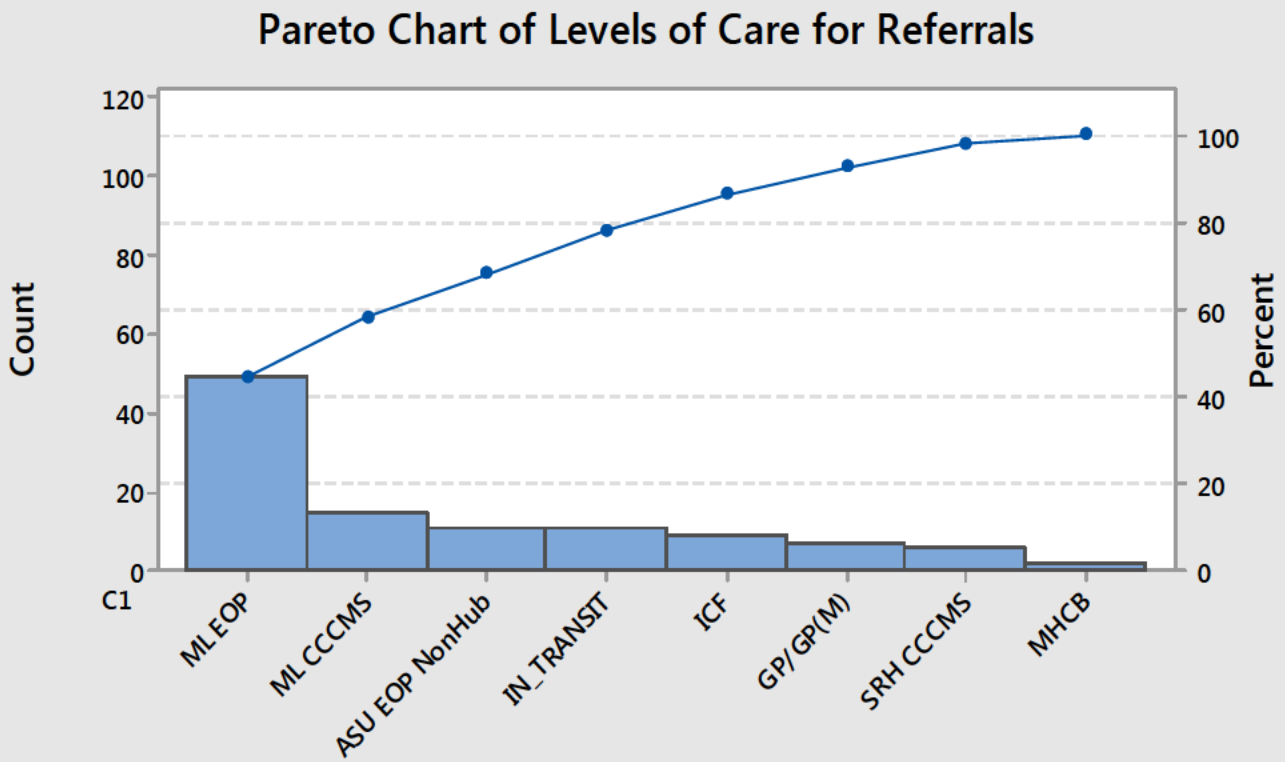
Failure Modes and Effects Analysis (FMEA) Findings

- FMEA was conducted to identify and rank issues impacting referral compliance according to RPN (Risk Priority Number)
- Top RPN items identified were
  - LOP clarifying what constitutes a MH Emergent Referral for all staff including Suicidality, Grave Disability, PREA
  - Without LOP& training there will continue to be issues with order entry and referral calls to clinician
  - MHPC needs to complete referrals (check in and check out)

FMEA

															Revised Metrics			
Step #	Process Map - Activity	Key Process Input	Potential Failure Mode	Potential Failure Effects	SEV	Potential Causes	OCC	Current Controls	DET	RPN	Actions Recommended	Responsibility	Target End Date	Actions Taken	Actual End Date	SEV	OCC	DET	RPN
1	RN Input referral	nursing	referral not entered in 4hrs	delay in care and placement	8	training	9	check queue	10	720	Develop LOP					7	5	7	245
2	RN Input referral	nursing	no phone call	clinician not notified	10	training	10	check queue	10	1000	OJT	CMH & CHSA	6/30/2018			10	5	10	500
3	RN call	Phone call to clinician	no phone call	clinician not notified	10	wrong phone number	7	phone distribution list	10	700	Central line implemented for Emergent referrals	CMH	6/30/2018			10	4	10	400
4	MHPC complete referral	MPHC schedule	referral missed	referral falls out of 4 hr compliance	10	high caseload suicide claims	5	CIT	7	350	CIT staffing/ LOP	CMH/CEO	6/30/2018			10	2	4	80
5		Checkin and Out	incorrect dates and times entered	referal falls out of 4 hr compliance	10	human error	7	HPSJ audit	2	140	training	CMH	6/22/2018			10	1	2	20
6	OT input referral	OT schedules	referral delayed	referal falls out of compliance	8	caseload	8	CHSA II, CMH	7	448	scheduling practice, LOP					6	5	4	120

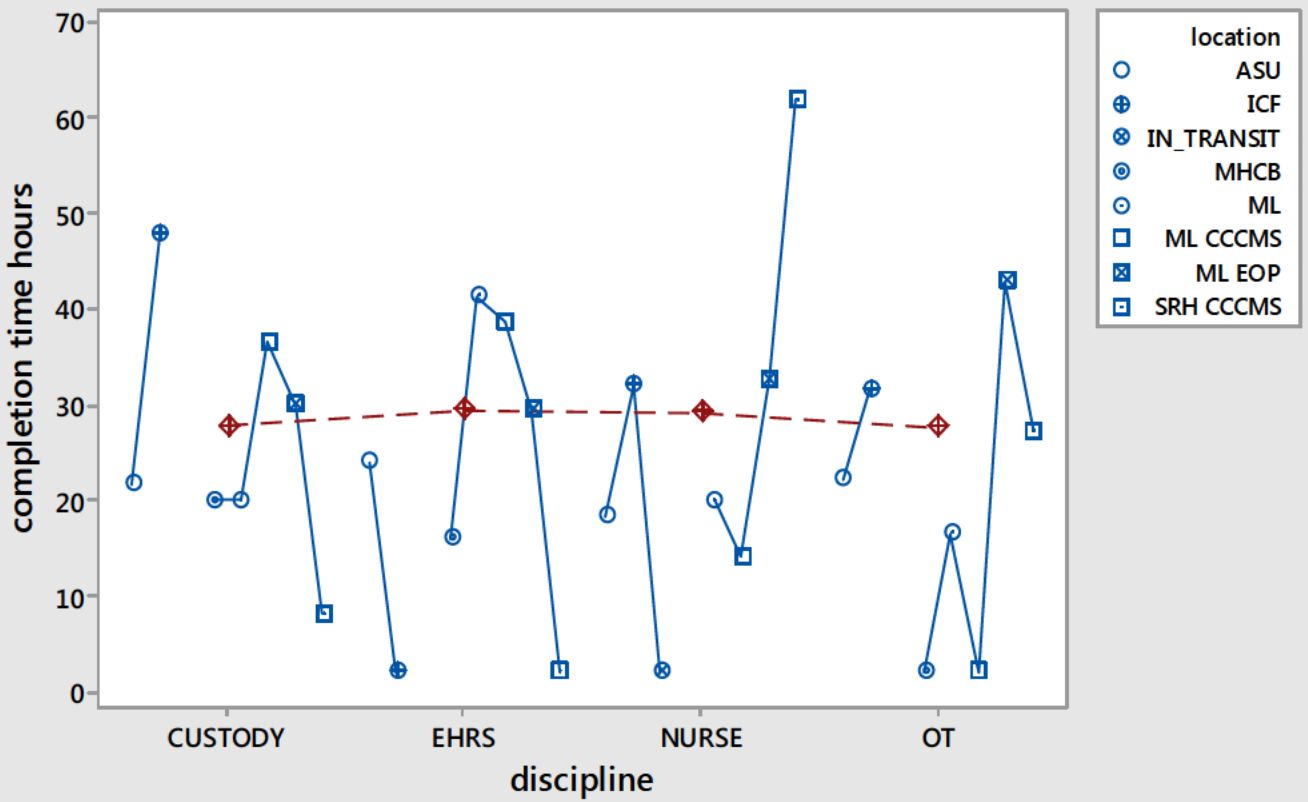
Key Findings 1: About Half of the Emergent Referrals were from ML EOP



Count	49	15	11	11	9	7	6	2
Percent	44.5	13.6	10.0	10.0	8.2	6.4	5.5	1.8
Cum %	44.5	58.2	68.2	78.2	86.4	92.7	98.2	100.0

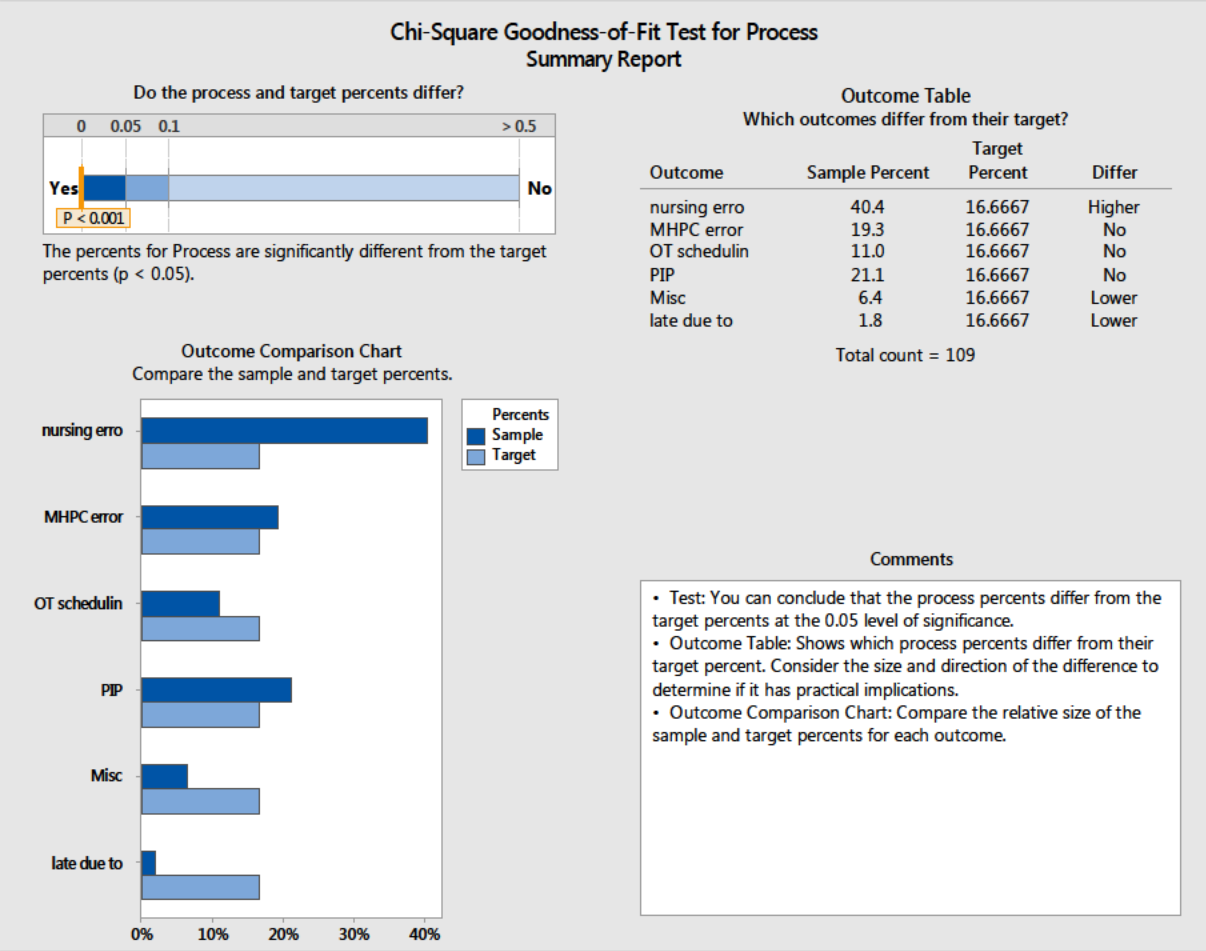
- Pareto Analysis of Referrals by location shows largest number of Emergent Health Referrals are from ML EOP and CCCMS
- This finding was expected

Key Findings 2 : No Relationship found between location, completion and discipline



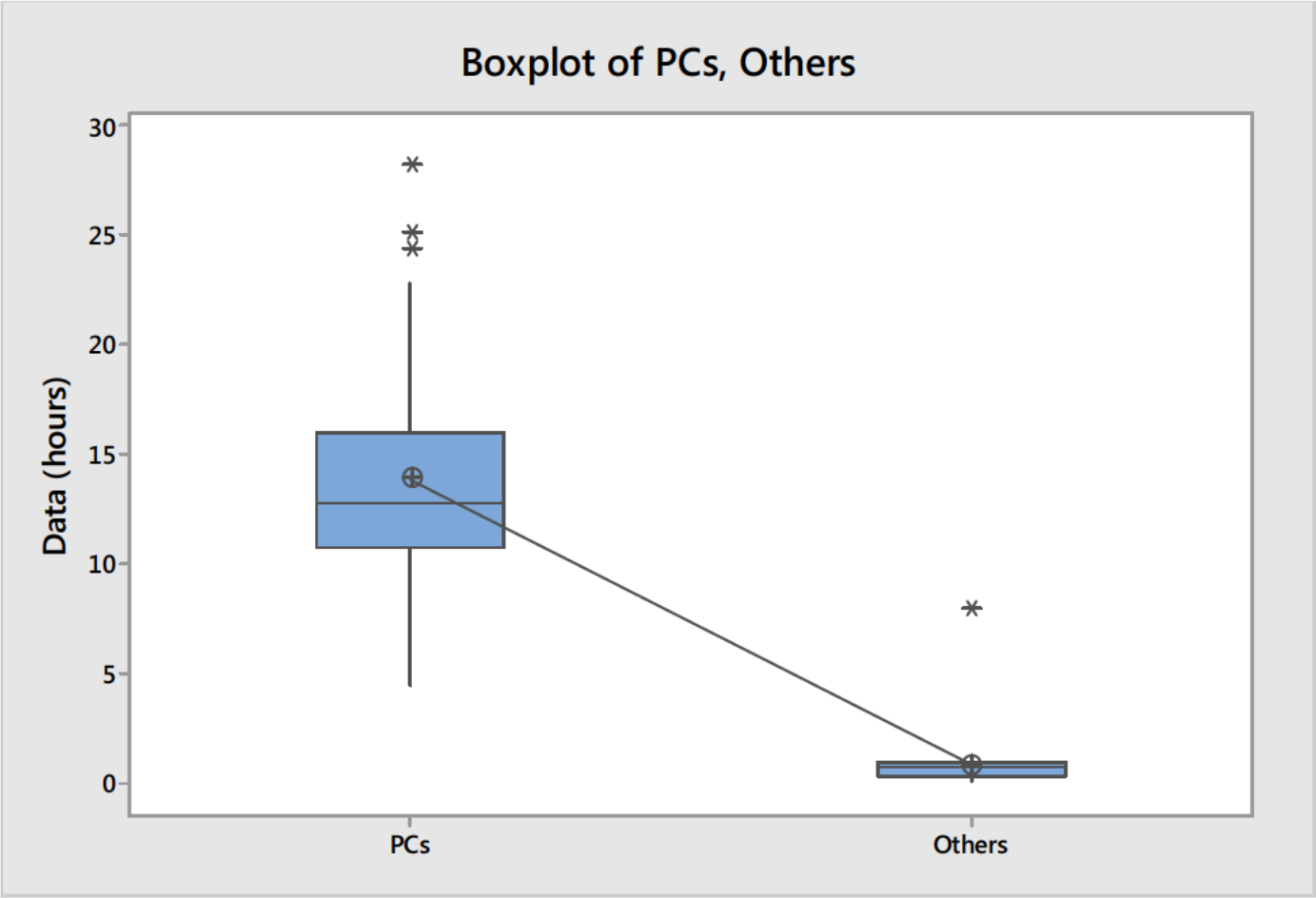
- Multi Vari chart completed looking at data by
  - Completion times
  - Location/ Source of Referral
  - Discipline
  - No relationship tying these “X factors” together

Key Findings 3 : Order Entry errors driven by discipline not shift or location



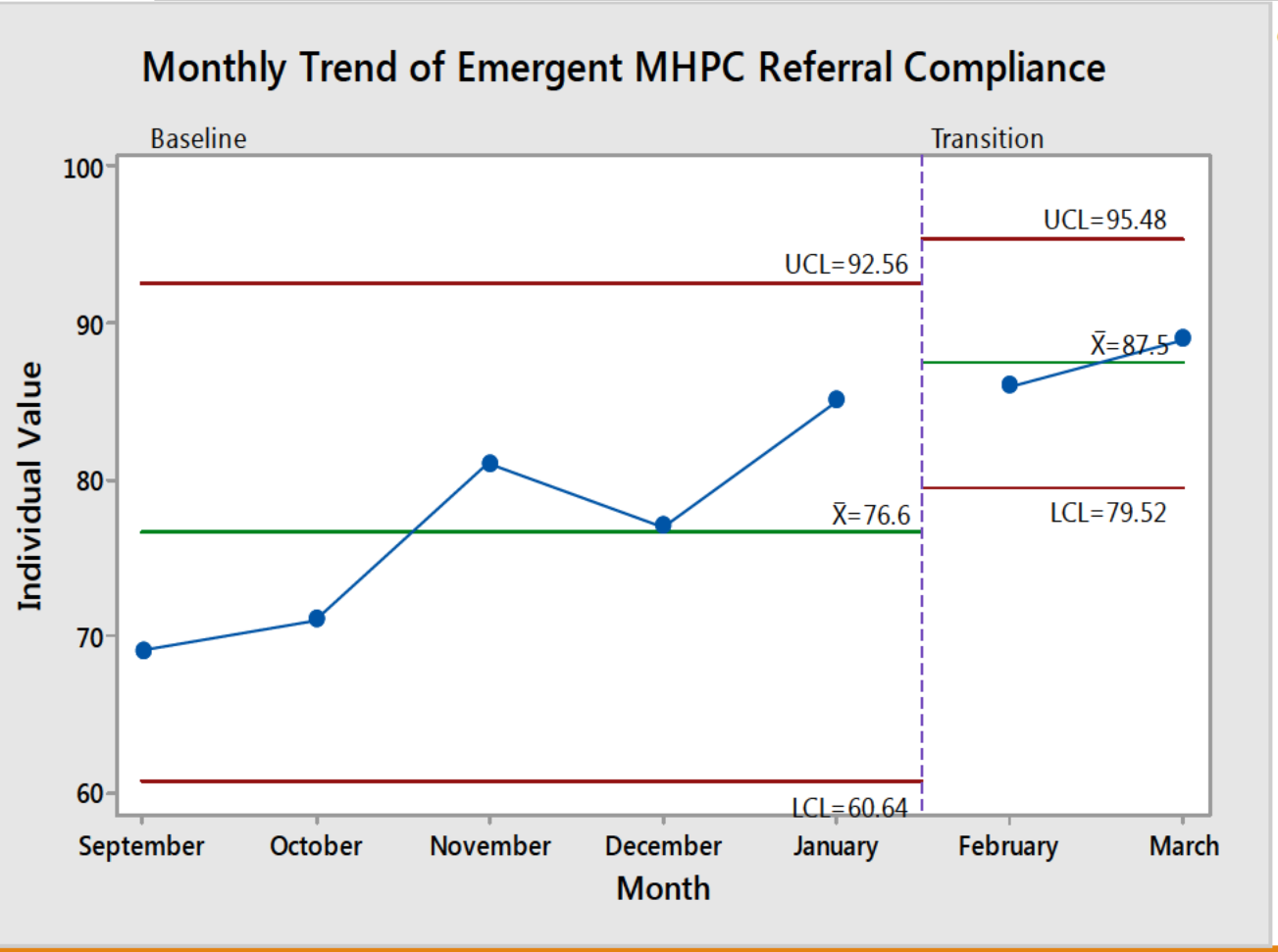
- Chi Square Goodness of Fit Test for process also shows largest difference from target percent by category is consistent with Pareto analysis :
  - Nursing 40.4%
  - Psychiatric In Patient 21.1%
  - MHPC 19.3 %
- Training and Performance Improvement resources should be prioritized and will have the most impact if focused on these disciplines

Key Findings 4: MPHC Closing out orders Impact on Average Referral time



- Boxplot graph shows MHPC forgetting to check out or close orders in Cerner on average outpace all other disciplines in terms of hours past compliance time frame
- Nursing order entry errors drive Non compliance in terms of volume of occurrences, but MHPC average time higher outside the compliance window
- MHPC check in and check out process a critical X for compliance

Key Findings 5 : New Triage and Daily review process improving compliance



- Triage process began 2/12/18 to review all MH Referrals placed when an OT is not on duty. The purpose of the triage is to review orders placed by Nursing and includes:
  1. Ensuring the correct order was placed MHPC vs. MHMD
  2. Ensuring the received date/time of the order is accurate (constant errors)
  3. Schedule the order within compliance timeframe
  4. Close the order within compliance timeframe

Critical X's

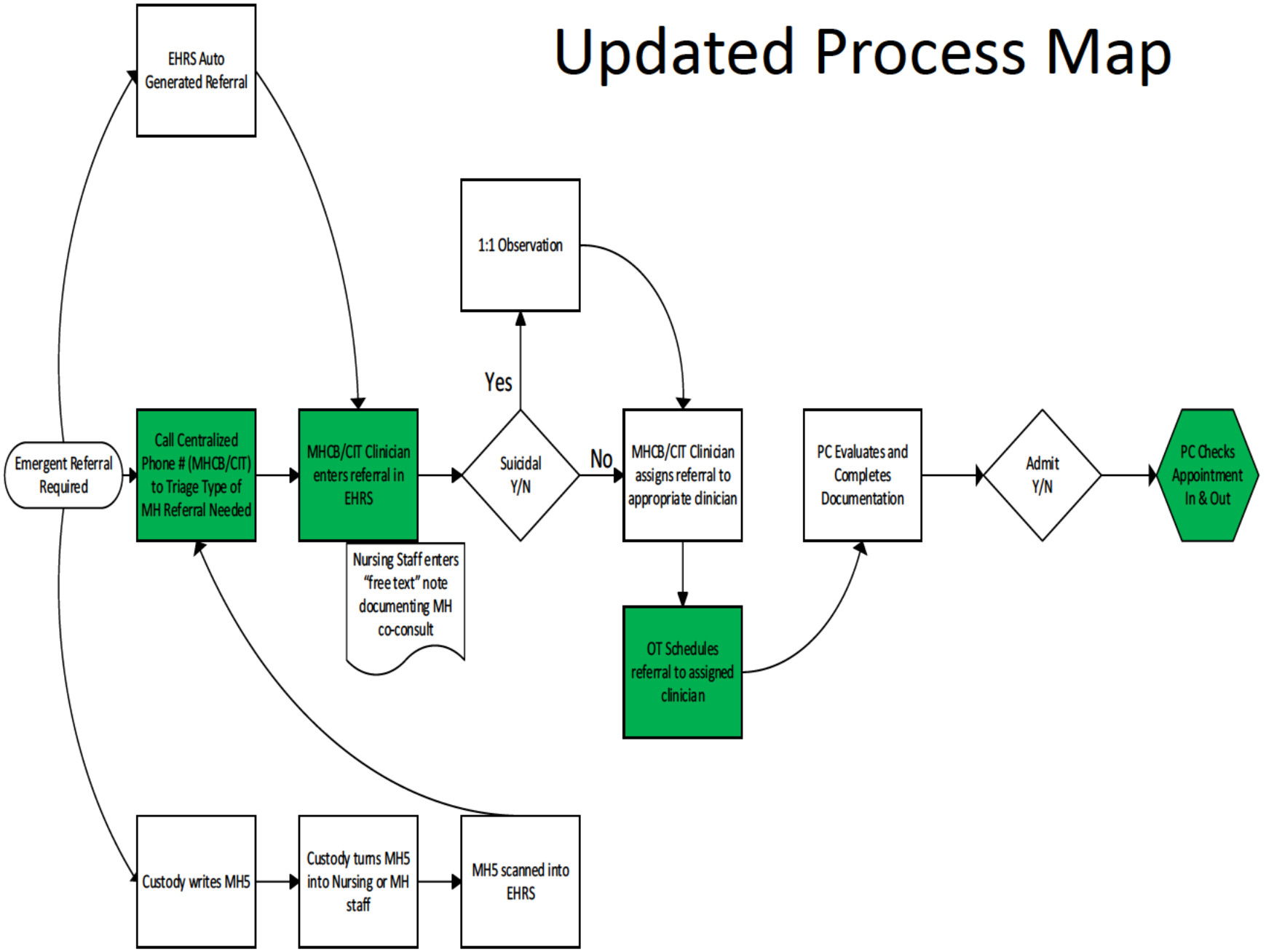
- Order entry
  - Nursing
  - MH Clinicians
  - PIP
    - Incorrect order entry in the system delays scheduling
    - Training and LOP for order entry and universal adoption of what constitutes a mental health emergent referral per 2009 Mental Health Program Guide & Cerner work flows needed
    - Timely contact of Clinicians important – Single phone number to contact clinicians recommended
- MHPC Check in & Check Out
  - Psychologist training in Cerner and reminders to close out referrals impact compliance time frames
  - Patients are being seen but errors or forgetting to check in and check out impact time

Where We Are Now

Improvements

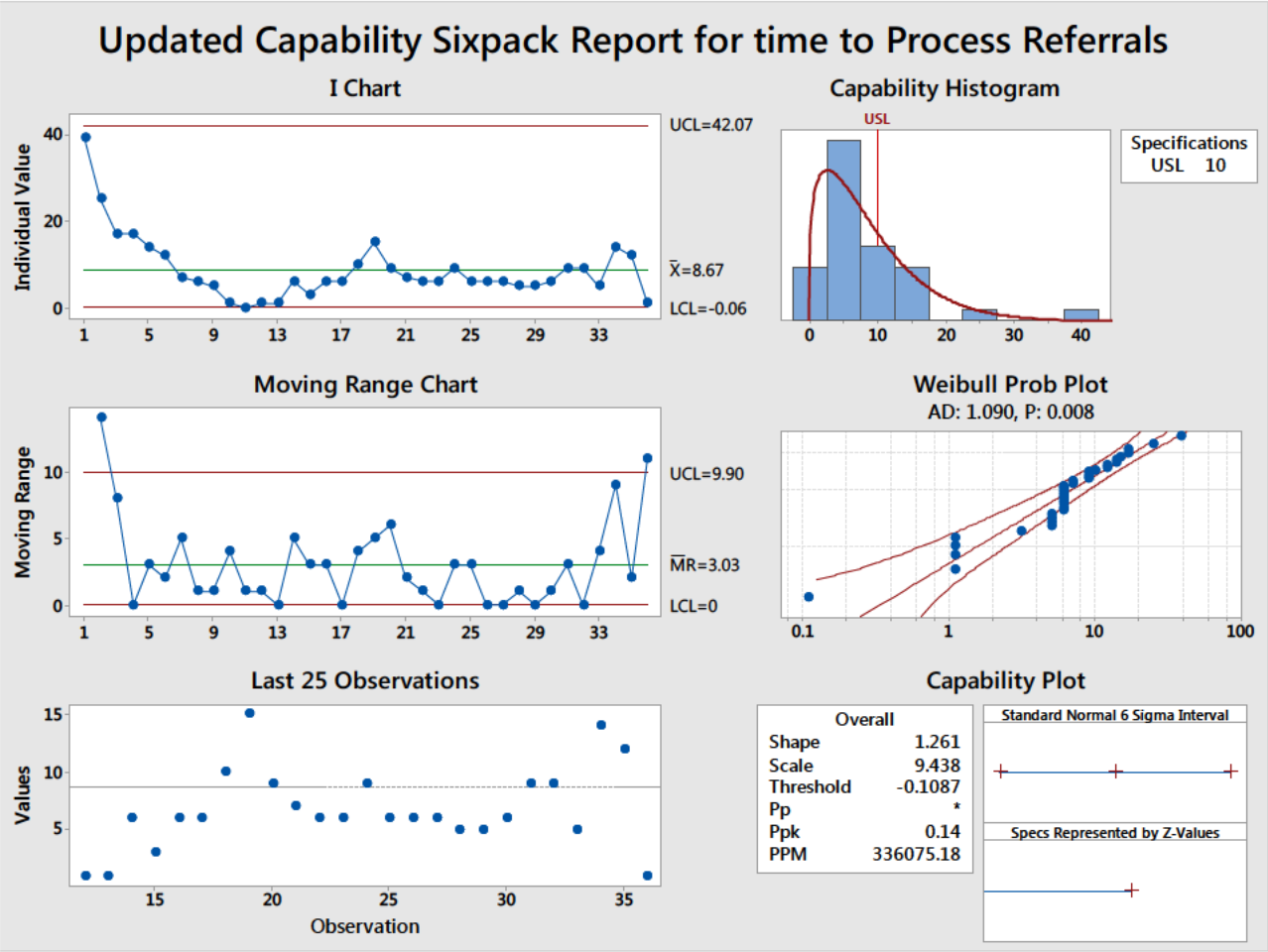
- MHPC Triage Process moved to the beginning of the Flow Map to triage calls
- LOP developed and implemented
- Centralized/ One phone number to call in Referrals
- Memorializing improvement interventions including:
  - Desk Procedure/Job Aid for MHPC Triage Process
  - Desk Procedure/Job Aid for Clinicians regarding checking out appointments and closing orders accurately
  - Develop consistent ongoing oversight and detectability of errors

Updated Process Map



- Process changed to have MHPC triage process standardized and moved closer to the beginning of flow map
- Centralized number for calls
- Nursing Staff to Co- Consult on referrals

Updated Capability/Performance Analysis



- P value < 0.05 meaning non normal distribution, therefore non normal and 3 Parameter Weibull analysis used
- Fluctuation and stability in progress
- Ppk (process capability index) value for current process increased to 0.14 from - 0.35.
- Long term capability for new process improved
- PPM parts per million is lower, consistent with progress in referrals meeting compliance
- From a low of 63% to a current compliance 95% 6/24/18

Control Plan

- Memorialize Improvement Interventions
- Develop consistent ongoing oversight and detectability of errors
  - Daily review by HPSI Mental Health
  - Report trends at Quality Management Council
- LOP
- Job aid for placing orders
- Training/Job aid for clinicians regarding checking out appointments and closing orders accurately
  - Suicide Prevention Coordinator
- Desk Procedures including Checklist for Staff

Annual Soft Savings

Elimination of work:				
Name of Task That Was Removed	**Hours of Work Eliminated Per Each Item Processed**	**Number of Items Processed Each Year**	**Average Hourly Fully-Burdened Labor Cost for PY**	**Annual Labor Savings**
Removed nursing staff from entering MH referrals. By creating a centralized call in nursing staff will no longer waste time trying to get a hold of the proper MH clinician.	1	1,080	$77.31	$83,494.80
Triage process eliminates unnecessary emergent referrals that PC's have to complete.	1	360	$79.24	$28,526.40

- On average there are 120 MHPC Emergent Referrals per month. Approximately 65 - 70% of those referrals are input by nursing. By eliminating nursing from the process of inputting the MHPC referrals, and having a centralized call in nursing will no longer have to spend time trying to track down a MH clinician to notify of the referral. It is estimated that this will save nursing 1 hour on average per each referral. The average hourly fully-burdened labor cost is based on the mid-range salary of a state RN ($9572) plus 40% to include benefits, divided by 173.33 to get the hourly rate. This will result in an annual labor savings of $83,494.80.

- On average 25% (30) of the 120 MHPC Emergent Referrals, should not be emergent. By having a centralized call in and MH triaging and placing the orders, the appropriate level of order will be entered and the number of MHPC Emergent Referrals each month will decrease. On average an emergent referral takes an MHPC 1 hour to complete. Reducing the amount of emergent referrals by 25% will result in approximately 360 less emergent referrals in a year, this will eliminate 360 hours of work for the MHPC's. The average hourly fully-burdened labor cost is based on the mid-range salary of a licensed state Psychologist ($9810) plus 40% to include benefits, divided by 173.33 to get the hourly rate. This will result in an annual labor savings of $28,526.40.

- The elimination of these two processes results in a total annual labor savings of $112,021.20.

A3 Performance Tracker

General Information:

Project Title: Timely Emerget Mental Health Referrals
Agency/Department: Salinas Valley State Prison
Division/District/Office: Region 2
Champion/Process Owner: [redacted]
Green Belt: [redacted]
Executive Sponsor: [redacted]
Date: 6/15/18

Problem Statement:

Since the implementation of EHRS in September 2017, SVSP noted a decrease in the compliance of Emergent Mental Health Referrals. Staff believe timely completion of the referrals are affected by misunderstanding the definition of an emergent referral, order entry completion, timely notification to Mental health and work periods (i.e. weekdays vs. weekends/holidays)

Primary Metric:

Emergent Referral compliance > 95% as tracked and monitored on in "On Demand" daily reviews

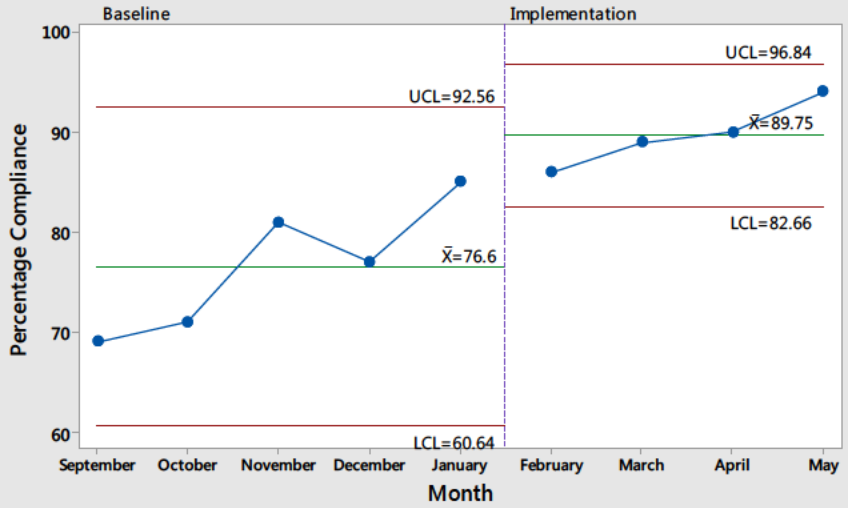
Goal is to have > 95 % compliance

Root Causes (Critical X's):

1. Order entry
   a. Nursing
   b. MH Clinicians
   c. PIP
2. MHPC Check in & Check Out

Solution Implementation Tracking:

item	status
Re-engineered/standardized MHPC Triage Process to move to the beginning of the Flow Map and receive call	In progress
Centralized phone number to call in Referrals	July 1
LOP developed and implemented	June 25
Desk Top and Job Aids for Staff	Target August 1



Baseline Average: 76%
Current Average: 89.75%
Current Capability: up to 96%

Project Summary and Lessons Learned

- SVSP has made significant improvements in the compliance of Emergent Mental Health Referrals. A Cross functional team ensured timely completion of the referrals by clarifying the definition of an emergent referral through the following:
  1. Develop LOP with clear guidelines to all staff on the definition of an Emergent Health Referral
  2. Hardwire Triage Process
  3. Training on the LOP continues to ensure order entry completion
  4. MHPC check in and check out times addressed through Job Aids and training
  5. One of the most important lessons learned is the value of cross functional teams
- A cross functional approach will be used to address the next area of improvement – MHMD emergent referrals

Green Belt Contact Information

- [redacted]
- Chief Executive Officer
- [redacted]
- [redacted]