



# Lean 6-Sigma Program



# California Department of Corrections and Rehabilitation

Richard J. Donovan Correctional Facility

CALIFORNIA CORRECTIONAL  
HEALTH CARE SERVICES

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San Diego, CA



# Intra-Institution Medication Continuity

- ❖ **Problem Statement:** Over a six month period, RJD has averaged **60%** on a statewide measure of intra-institution medication continuity. Lapses in care can result in negative health outcomes, including worsening of symptoms, decompensation, and hospital admission.
- ❖ **Objective:** To improve medication continuity during intra-institution transfers, such that medications have been successfully transferred to an inmate's new location at least **95%** of the time.
- ❖ **Project Team Members:**
  - ❖ **Scott Anderson** – Correctional Captain
  - ❖ **Rafael Segovia** – Correctional Sergeant
  - ❖ **William Edrozo** – Correctional Officer
  - ❖ **Shraddha Sukhadia** – Pharmacist
  - ❖ **Sheera Sengsourya** – Licensed Vocational Nurse
  - ❖ **Robyn Inaba** – Senior Psychologist Specialist



# Baseline Capability

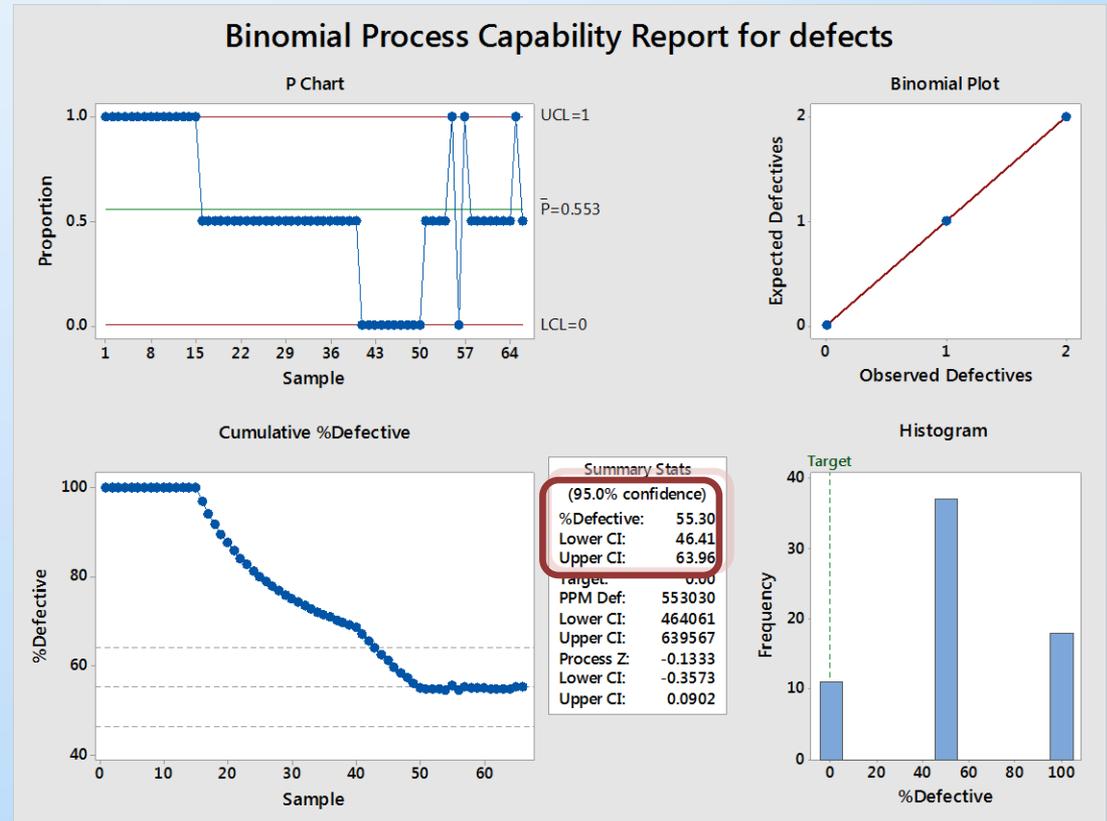
❖ Redefined baseline to account for staff work arounds (waste)

❖ Two (2) opportunities per inmate transfer

★ 1. Were medications successfully transferred at the time of the inmate's move?:  
**71% yield**

2. Was the SOMS Form generated and handed off to the receiving location?:  
**18% yield**

❖ Average yield: 45%

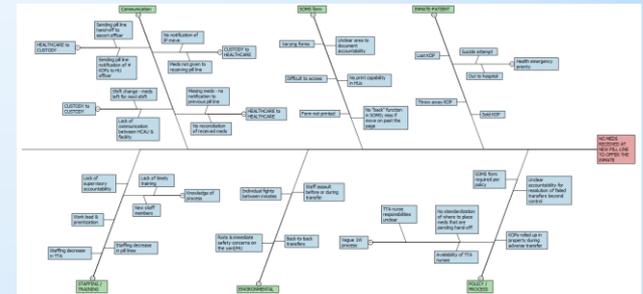




# Analysis Tools

Fishbone Example

❖ **Fishbone diagram:** visualize potential contributing factors to failed medication transfers



❖ **Pareto charts:** graphically represent the most common defects

❖ **Failure Modes and Effects Analysis (FMEA):** identify and prioritize critical problems and risks

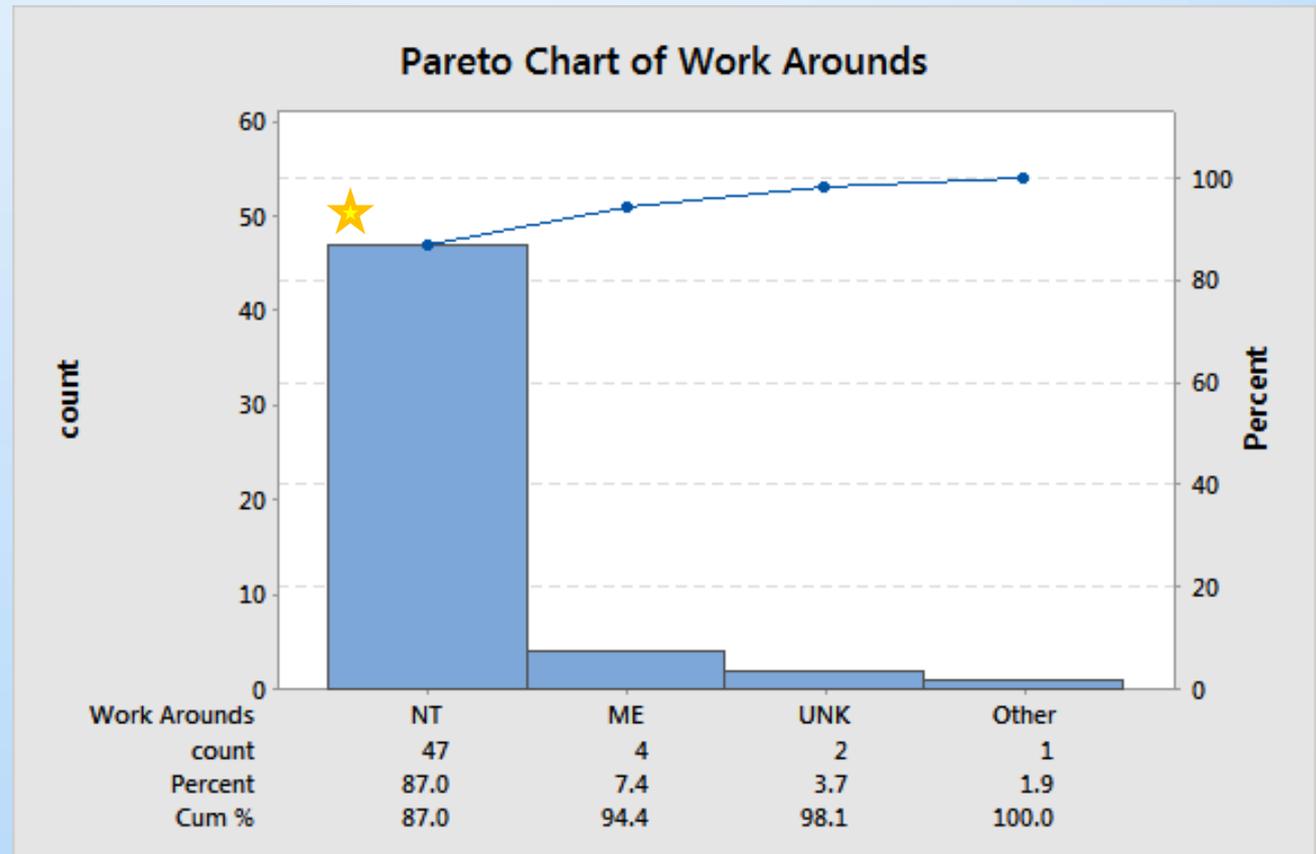
FMEA Example

Process Map - Activity	Key Process Input	Potential Failure Mode	Potential Failure Effects	SEV	Potential Causes	OCC	Current Controls	DET	RPN
Receiving pill line reconciles med	received NA/DOT meds/MAR	IP comes to line and there are no or missing meds	missing medications - no meds to give to IP	10	meds never given to receiving pill line	7	none	10	700
(1W) TTA nurse retrieves meds	nurse aware & available	meds not transferred	no meds to give - receiving vial - missing medications - no meds to give IP	10	TTA nurse busy	6	none	10	600
Previous pill line packages meds	NA/DOT meds/MAR	missing or inappropriate med package given to custody	no meds given to S&S officer - no meds transferred	10	nursing didn't know about transfer, so didn't package meds	6	none	10	600

❖ **Hypothesis Testing:** determine significant differences in the success rate between two separate areas

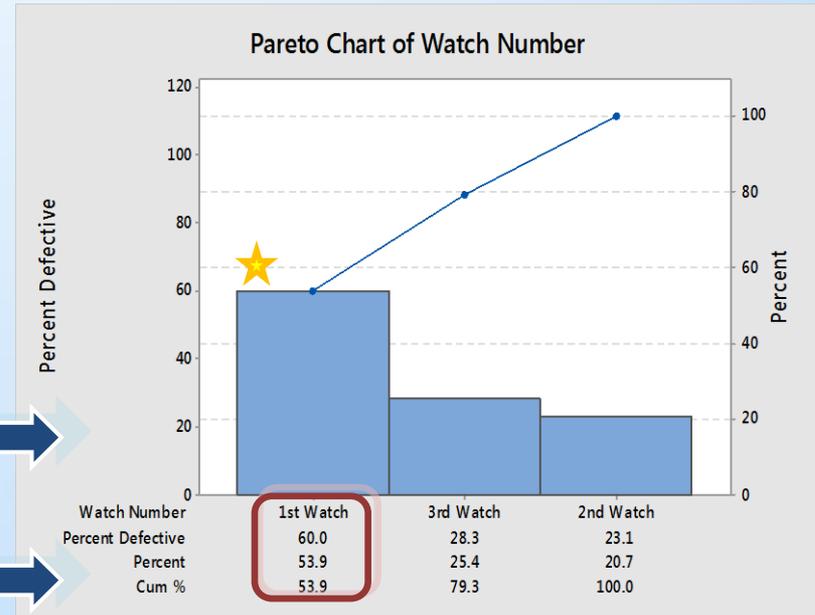
# Key Analytical Finding #1: Staff Work Arounds (Waste)

- ❖ **NT:** Nursing staff transferred the medications
- ❖ **ME:** Medication error report generated
- ❖ Work arounds are initiated **AFTER THE DEFECT HAS ALREADY OCCURRED**
- ❖ “Lean” principle: **Get it done RIGHT the 1<sup>ST</sup> time!**



# Key Analytical Finding #2: Time & Location Comparisons

	MORE Defects	vs	LESS Defects	P-value "α risk" = 0.05
1.	Non-AdSeg	vs	AdSeg	0.004
2.	1W	vs	2W	0.016
3.	1W	vs	3W	0.009



❖ Results of these hypothesis tests indicate **statistically significant differences** in the amount of defects between the given areas

1. LESS defects going into Administrative Segregation (AdSeg)
2. MORE defects during first watch transfers (10:00pm to 6:00am)

# Critical X's

- ❖ Critical X: A main process input affecting successful outputs
  - ❖ **Notification to Nursing staff in the pill lines that an inmate is moving**
    - During second watch (6:00am to 2:00pm) & third watch (2:00pm to 10:00pm)
    - Subsequent inputs affected: pill line staff packaging medications to hand off to Custody staff
  
  - ❖ **Notification to Nursing staff in the Treatment and Triage Area (TTA) that an inmate is moving**
    - During first watch (10:00pm to 6:00am)
    - No Healthcare staff on the yards
    - Reliant on TTA nurses to ensure medication continuity – however, there is no delineated process for medication retrieval during this time
    - Subsequent inputs affected: TTA nurses ensuring medications are transferred prior to the 6:00am pill pass



# Improvement Techniques

## ❖ Internal Movement Checklist

- Correctional Sergeant of the sending location generates checklist
- Ensures both Custody & Healthcare staff are notified
- Requires signatures from both Custody & Healthcare staff for dual accountability

## ❖ Standardized first watch procedures for the TTA

- Utilizes the same checklist to notify the Nursing Supervisor
- Requires Nursing staff to retrieve medications from the sending location
- Medications will be picked up by the second watch pill line staff to take back to their post in time for the AM administration

## ❖ Implemented a Local Operating Procedure #80 – Medication Continuity (OP #80) addendum

- Concretizes the procedures into local policy

## ❖ Training to supplement implementation of the OP#80 addendum and increase checklist exposure prior to improvement roll-out





# New Capability Analysis

❖ Pilot intervention across 4 facilities

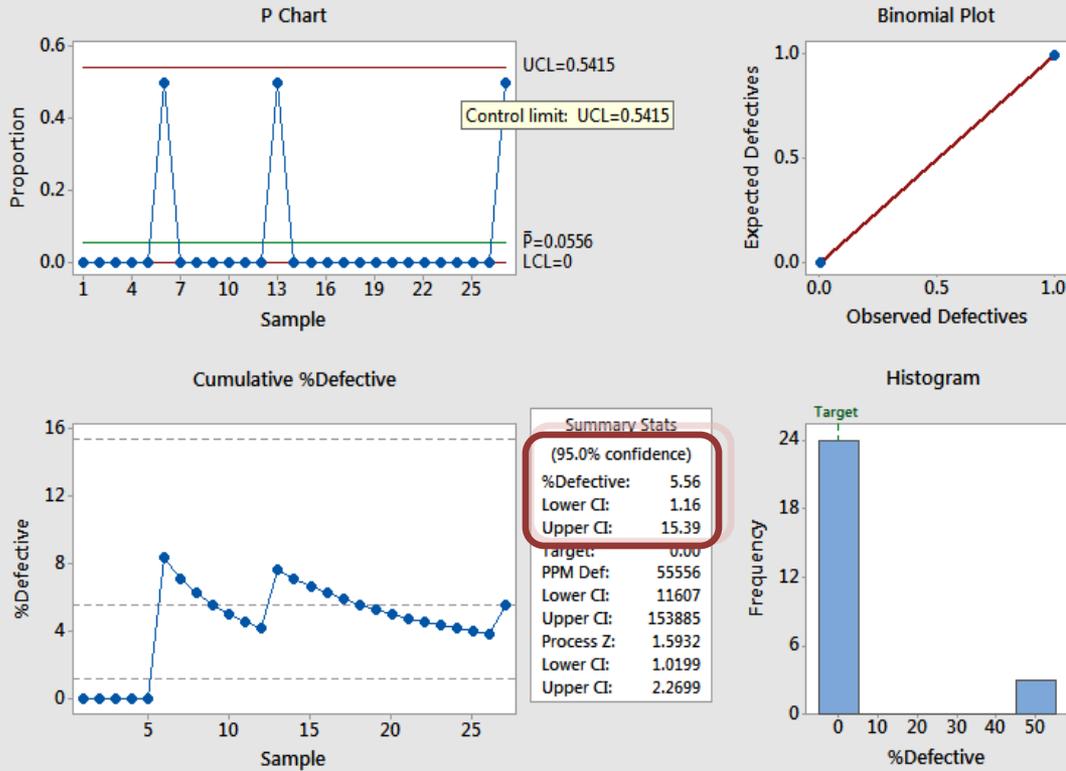
❖ Two (2) opportunities per inmate transfer

★ 1. Were medications successfully transferred at the time of the inmate's move?  
**100% yield (BL=71%)**

2. Was the SOMS Form IPTR 149 generated and handed off to the receiving location?  
**90% yield (BL=18%)**

❖ Average yield:  
**94% (BL=45%)**

Binomial Process Capability Report for Defects



❖ **ZERO** work arounds needed = more efficient use of resources

# Control & Audit Plan

- ❖ Ongoing data collection for a 3 month period
  - Medication/MAR transfer success tracked via daily Nursing Transfer Reports
  - Checklist utilization tracked via weekly collection from Facility Program Offices
- ❖ Monthly audit to determine % yield and % defective of transferred medications and checklist utilization
  - P-charts to verify process stability over time
  - Pareto charts of work-around frequency over time
  - Hypothesis testing to determine correlation between checklist compliance and yield
- ❖ Monthly reports to Facility Captains, the Warden, and the Healthcare Quality Management Committee of audit findings
  - Any deficiency patterns that arise will be evaluated by the process owner to adjust improvement techniques as statistically indicated



# Additional Benefits

- ❖ Increased continuity of medications = improved inmate health outcomes
- ❖ Reduction in work arounds by Healthcare staff that occur to maintain medication continuity when transfers fail = staff resources savings
- ❖ Reduction in costs to replace “missing” medications = monetary savings
- ❖ Increased collaboration between Custody and Healthcare staff members = improved workplace morale



# Green Belt Contact Information

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