



The Value of an Electronic Health Record System in Lean Process Improvement and Research Innovation



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Action Research in Lean Process Improvement in Outpatient Clinical Services

- Rapid Improvement
Capacity Expansion
- Express Intake
- Expedited Hiring
and Training
- Grants Management



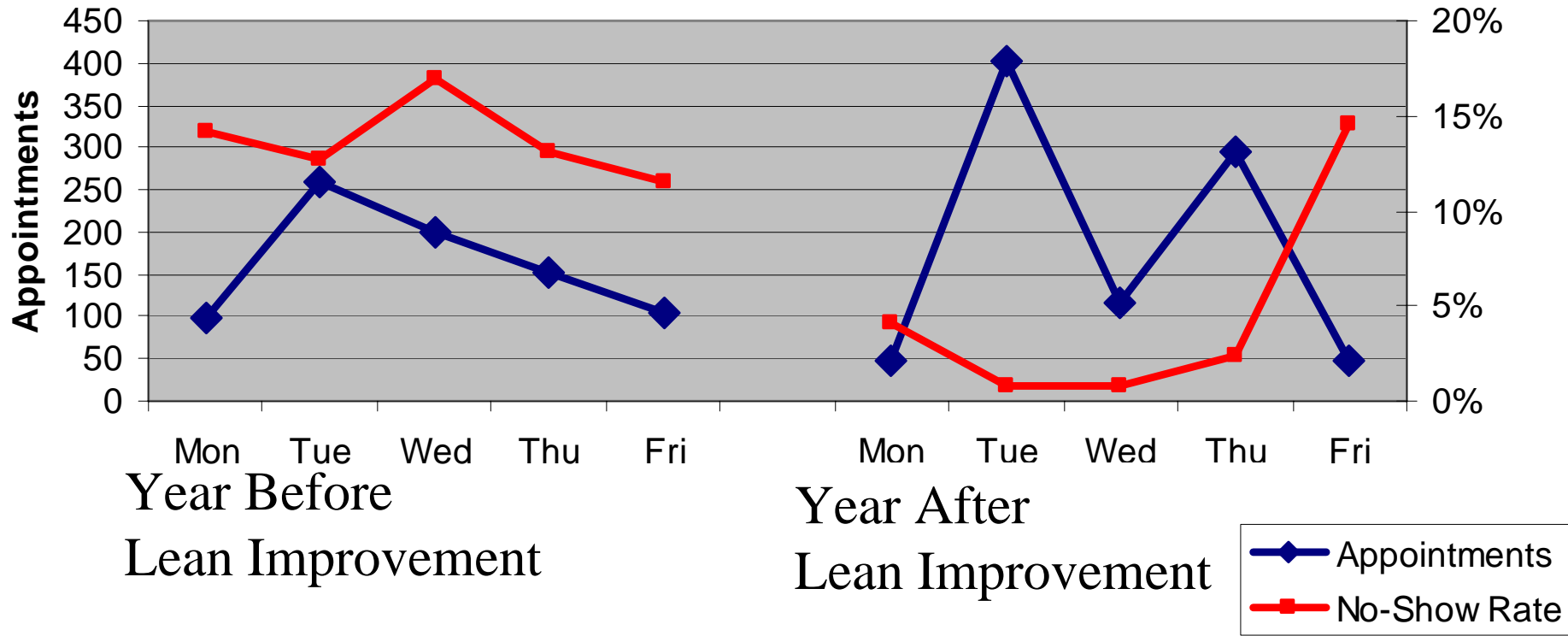
Lean Process Improvement: One Year After *Rapid Improvement Capacity Expansion*

RICE Results

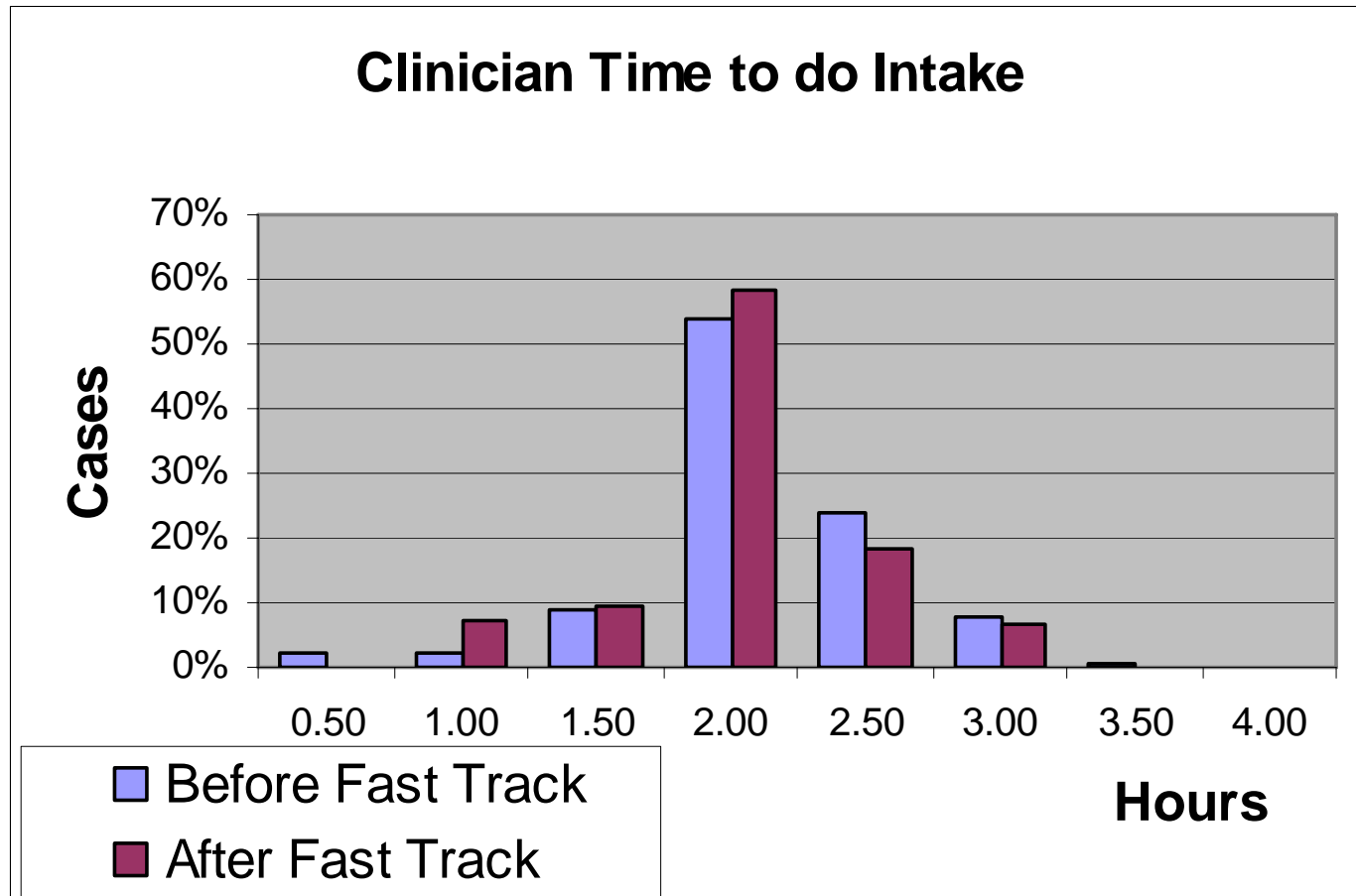
- Analysis of the **1,726** intake appointments for the one year before and the full year after the lean project
- **27% increase in service capacity**
 - from 703 to 890 kept appointments) to intake new consumers
- **12% reduction in the no-show rate**
 - from 14% to 2% no-show
- **Capacity increase of 187 additional people** who were able to access needed services, without increasing staff or other expenses for these services
- **93 fewer no-shows** for intake appointments during the first full year of RICE improved operations.

Lean Process Improvement: *RICE* Project System Transformation

Appointments Scheduled and No-Show Rates

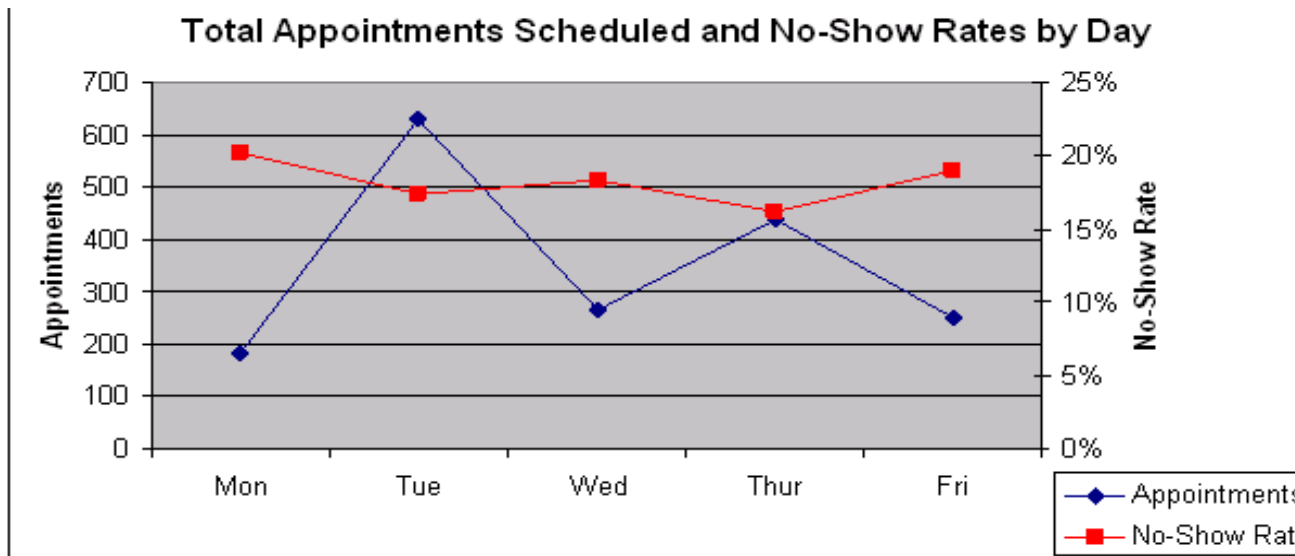
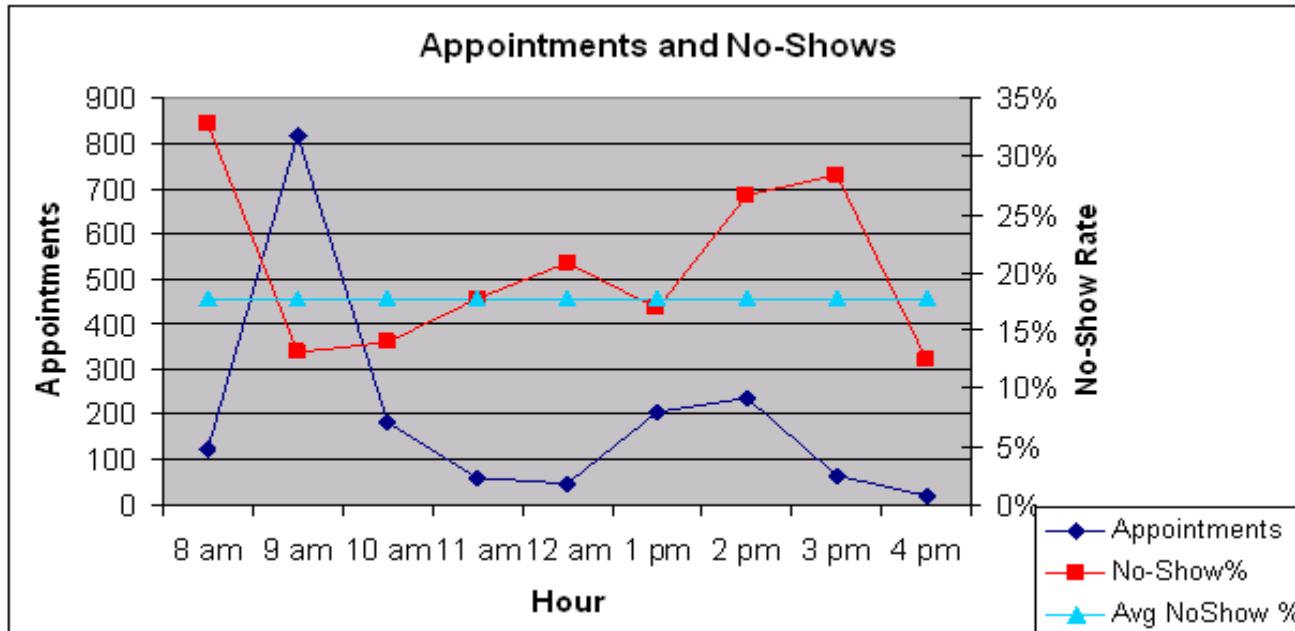


Lean Process Improvement: *Express Intake: Fast Track Project*



LaGanga, L. R., & Lawrence, S. R. (2009). POMS Proceedings and Presentation, May 2, 1:30 p.m., Knave.

Appointment Data



And coming soon:
Tracking reminder calls

Clinical Outcomes and Recovery Data

(1) Recovery Marker Inventory (RMI)

(Staff rating of member progress in recovery on eight dimensions. Used to inform clinical & program decisions - every 2 mo.)



(4) Recovery Needs Level (RNL)

(Suggests best level of services for stage of recovery)



To what degree is **RECOVERY** happening?

- ▷ Multiple perspectives
- ▷ Multiple dimensions
- ▷ Change over time

(2) Promoting Recovery in Organizations (PRO)

(Consumer evaluation of how specific programs and staff are promoting recovery - random sample 1x per yr.)

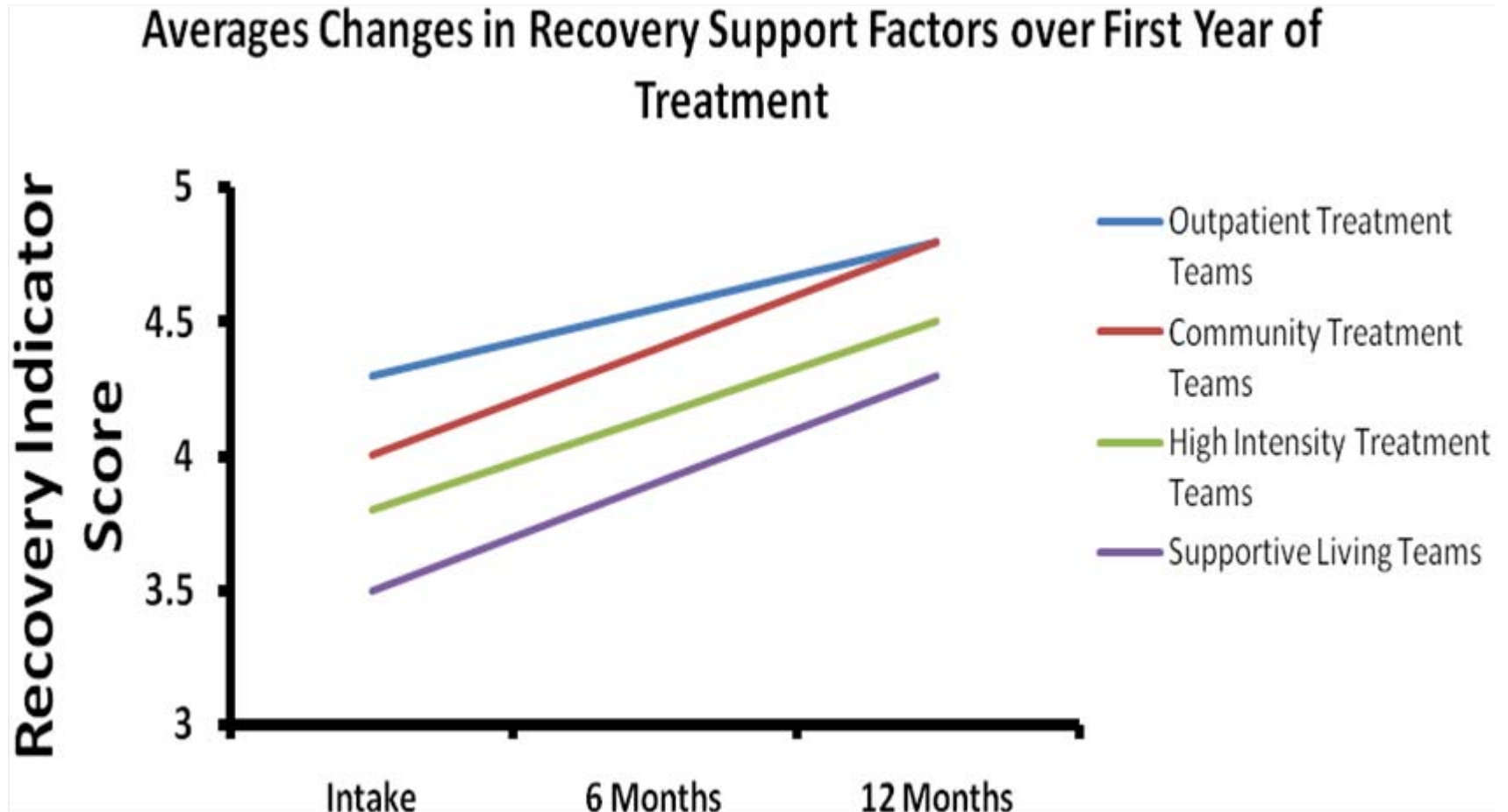


(3) Recovery Measure by Consumer (RMC)

(Consumer's rating of their own recovery on five dimensions - all members every 6 months)



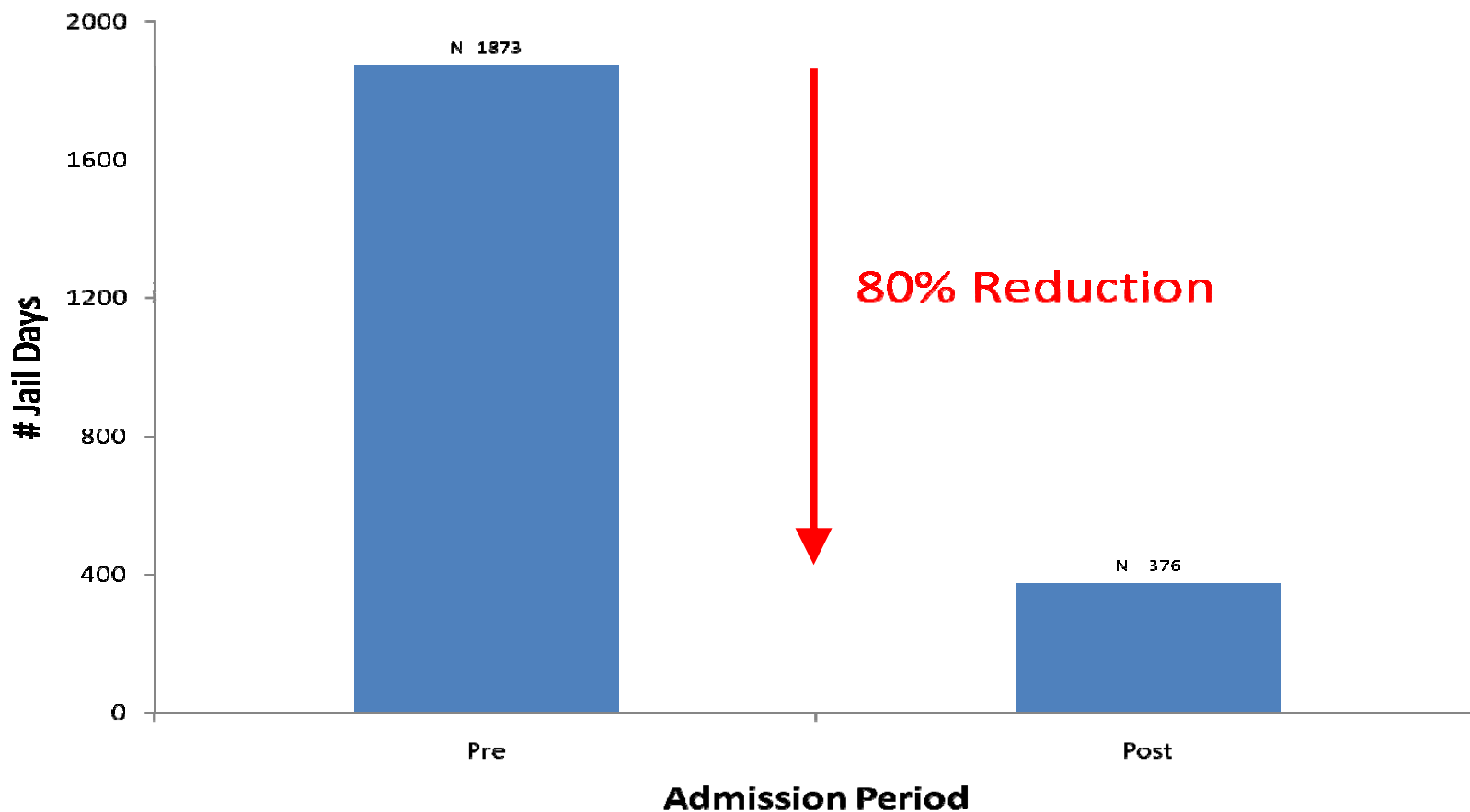
Recovery Marker Indicators



Outcomes Data: Court to Community Treatment Program

- **After 18 months:**
- 2/3 Have Not Been Re-Arrested
- 80% Reduction in Jail Time
- \$ Hundreds of thousands Savings to Taxpayers

Change in # of Jail Days: All Clients



**Dissertation (Information Systems),
Text data mining and clustering to predict clinical outcomes,
Zainab Monjed Alqenaei (2009): An Investigation of the
Relationship between Consumer Recovery Indicators and
Clinicians' Reports Using Multivariate Analyses of the
Singular Value Decomposition of a Textual Corpus**

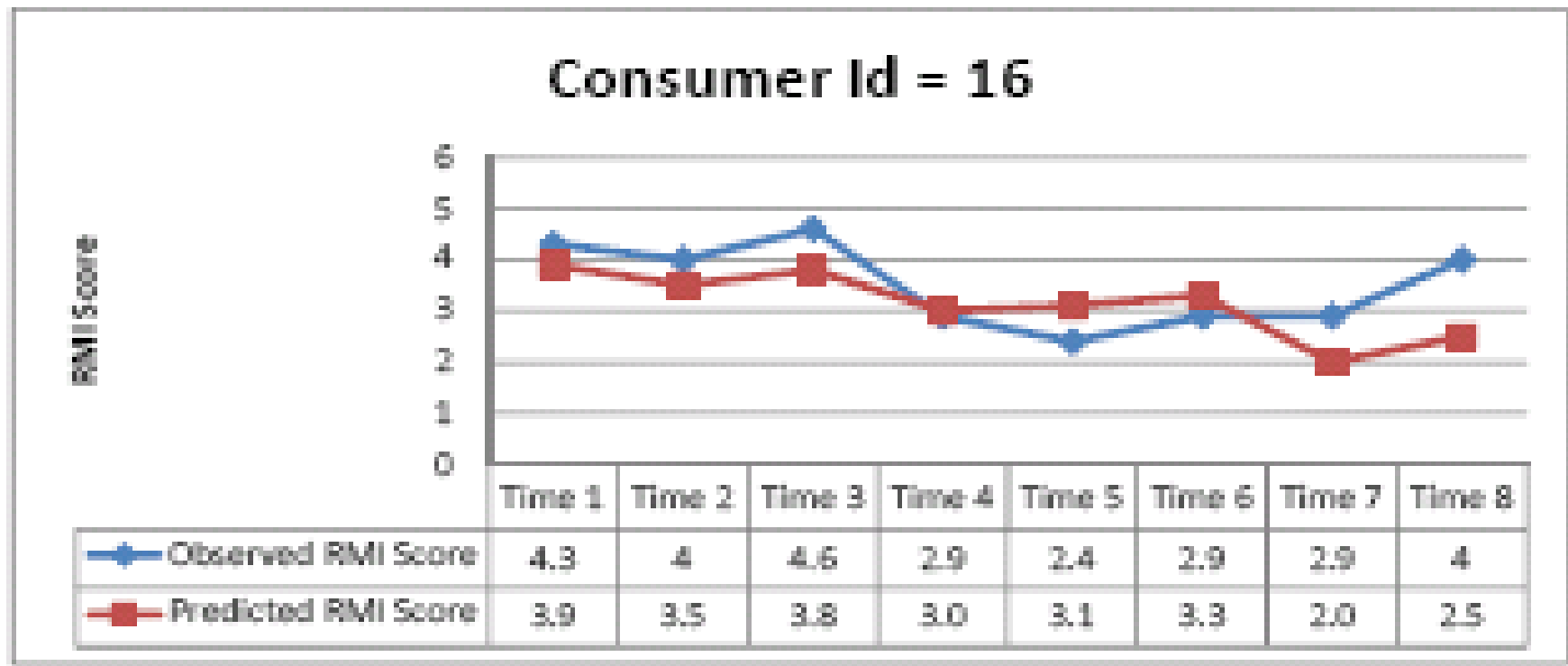
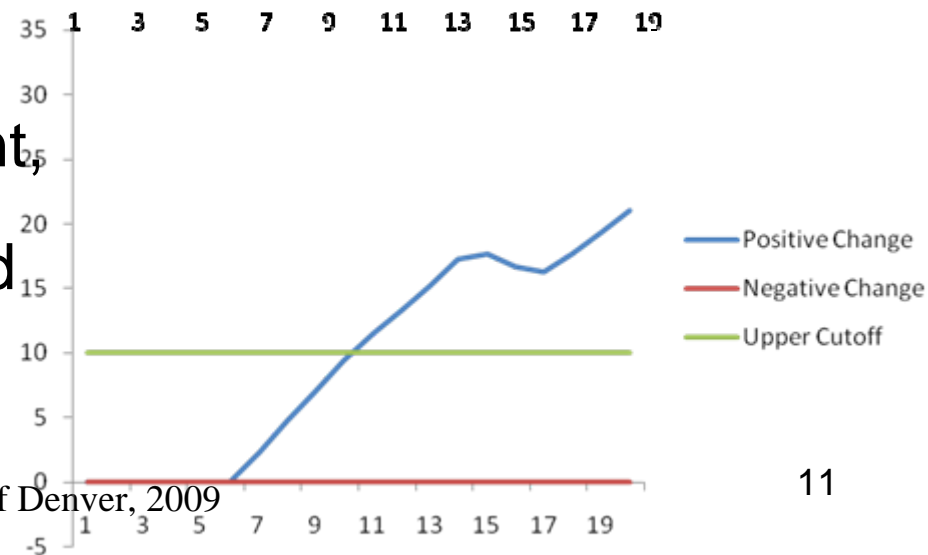
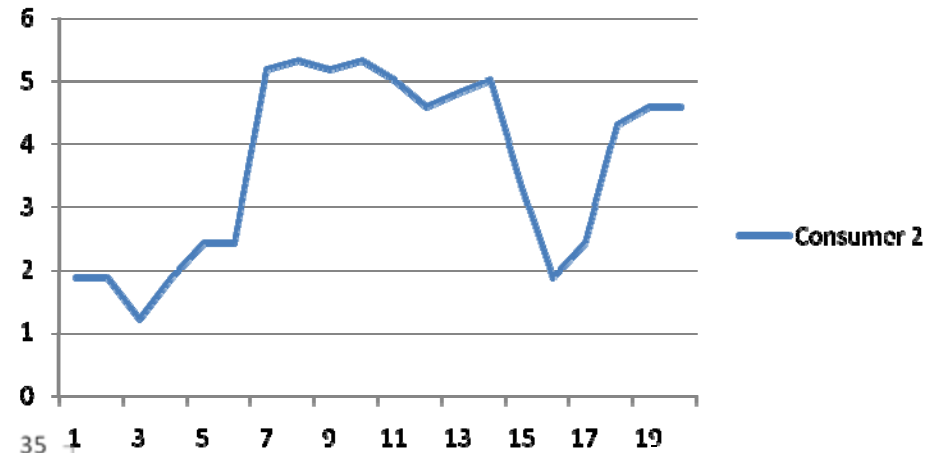


Figure 33. Recovery Scores Across Time

Incorporating Multilevel Techniques into Quality Control Charts

C.J. McKinney, Antonio Olmos,
Linda LaGanga, & Kathryn DeRoche
Consumer 2

- Due to the non-linear large changes it would be unclear if a change did occur in this consumer's RMI score.
- Looking at the adjusted cumulative change a clear increase is present, the increase is substantial, as indicated by being above the upper cutoff.



Interdisciplinary Collaboration, Operational Improvement, Research



Ideas?

Opportunities?

- Employee Motivation and Incentives
- Project Selection, Management, Agility
- Bottleneck reduction
in lean service operations projects
- Data mining for service effectiveness
- Stimulus grants