

# Reduction of IV Room Waste

## A Case Report Utilizing Lean Principles

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# Disclosure



- The content of this presentation has been created by the presenter and does not necessarily reflect the views of Baxter Healthcare Corporation
- Baxter has provided an honorarium for this presentation to St. Rita's Medical Center in support of pharmacy education.

# Learning Objectives



- Review key concepts of Lean methodology
- Review the IV room waste project at St. Rita's Medical Center and discuss how Lean concepts were applied

# St. Rita's Medical Center



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# St. Rita's Medical Center



- 450 bed, level II trauma center
- Non-profit community hospital – part of CHP health-system
- Pharmacy practice environment includes decentralized model, clinical dosing and monitoring services, robotic distribution, and affiliations with Ohio Northern University and University of Findlay Colleges of Pharmacy.

# Operational Excellence



- Lean/Six Sigma program at SRMC in existence since 6/2007
- 1 Blackbelt, 2 Greenbelts, and 69 trained Lean Leaders on site
- Currently, 75% of management team is trained in Change Acceleration Process (CAP) and Work Out (WO)
- Goal of 100% of management team to be trained in Lean Awareness

# What is Lean?



- Lean...the relentless pursuit of the perfect process through waste elimination...
- Increases customer value by eliminating waste throughout the value stream<sup>1</sup>

1. Womack JP, Jones DT. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York, NY: Simon and Schuster; 1996.

# Lean Thinking



Providing a way to do more and more with less and less – less human effort, less equipment, less time, and less space – while coming closer and closer to providing customers with exactly what they want<sup>1</sup>

1. Womack JP, Jones DT. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York, NY: Simon and Schuster; 1996.

# Steps in Lean<sup>2</sup>



- Define actual performance
- Define desired performance
- Gather and analyze data
- Identify root causes
- Remove root causes
- Change procedures to sustain gains
- Standardize

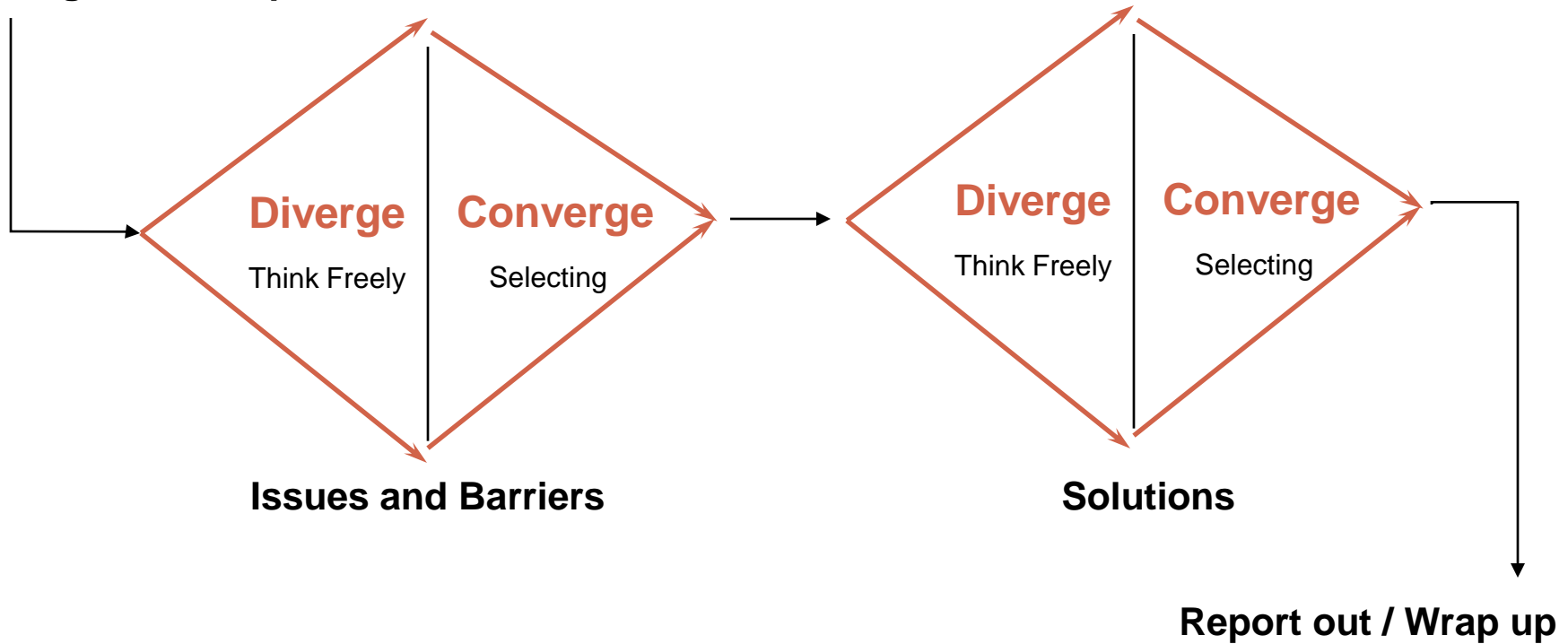
2. <http://www.creative-healthcare.com/pdf/PerformanceImprovementInPharma.pdf>. Accessed March 10, 2011.

# The Basic Concept



As you facilitate, you will follow the basic divergent and convergent processes.  
Both steps are needed for effective solutions.

## Opening and Set-up



# Issue to Address



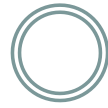
- On average, the pharmacy at SRMC wasted around \$10,000 to \$12,000 monthly due to inefficiencies in the IV room.
- Yearly impact of over \$140,000 in avoidable cost to the organization.
- It was decided that the department would hold a 4-hour Lean event to combat the problem.

# The Lean Team!



Image used with permission - St. Rita's Medical Center; Courtesy Nancy Rampe

# The Lean Team!



- Nurses
- Pharmacist
- Pharmacy Technician
- IT
- Pharmacy Student

# Goals and Objectives of the Event



- Reduce waste from our IV room by 60% within the first 3 months
- Stretch goal to reduce waste by 90% by the end of 2010
- Objective: positively impact the financial status of the organization as well as maintain proper inventory of medications for our patients

# Voice of the Customer



- VOC is the sum total of the needs expressed by all customer groups.
- VOC data collection tools include:
  - Focus groups
  - Interviews
  - Surveys
  - Complaints and suggestions

# Why is VOC Important?



- Customer behavior is a key input to strategy and process design.
- VOC is a tool used to discover what customers care most about; it's a way of collecting data about your customers' needs and desires.

# Voice of the Customer



Customer	Comment
Physician	Wasting medications leaves the potential for reduced supply when needed. May not have available for the next patient when needed
Physician	If medication not available will waste physician time trying to decide on an alternative regimen
Patient	Wasting medications will reduce SRMC supply which may in turn affect whether or not the next patient is eligible to receive the medication
Technician	Missing doses having to be re-made which takes away time; wasted doses take time to credit to patient and then waste
Pharmacist	Missing doses having to be re-made which takes away time
SRMC	Wasted medications in turn means wasted dollars which negatively impacts the financial status of the Medical Center

# SIPOC



- Suppliers
- Inputs
- Process
- Outputs
- Customers

# SIPOC



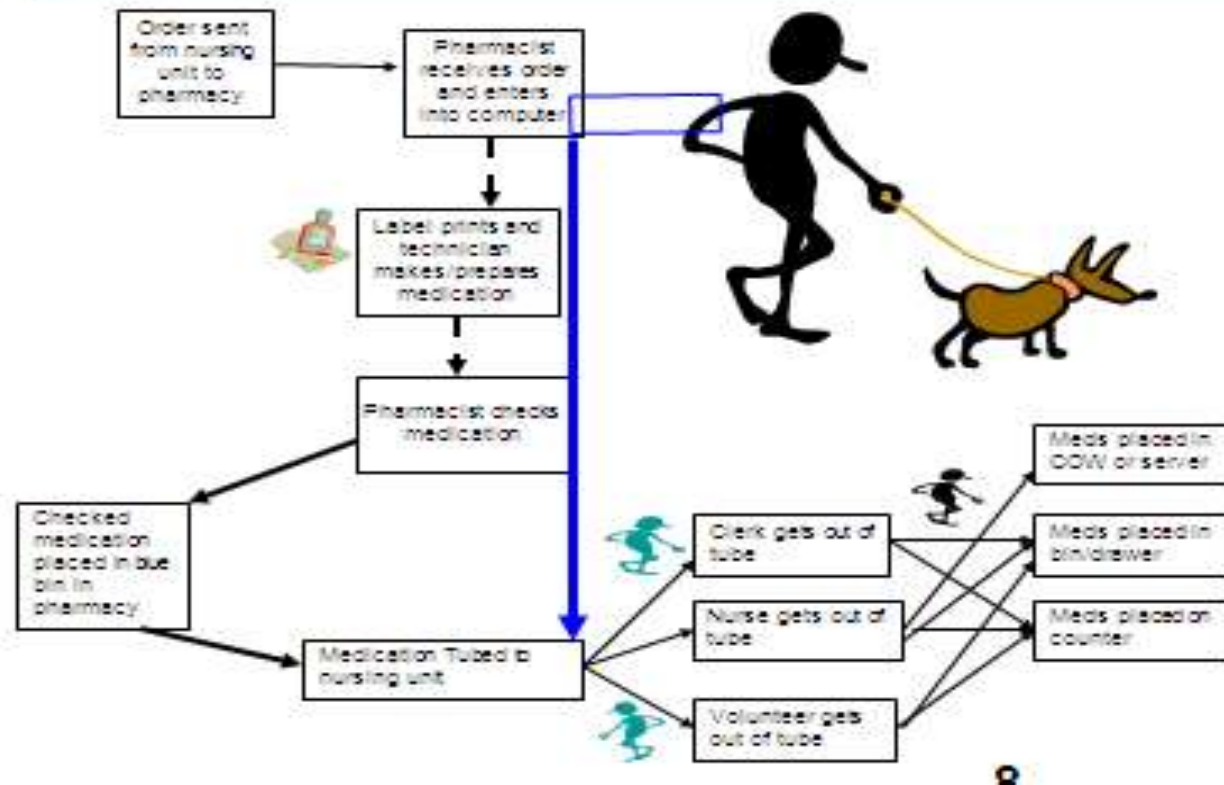
## SIPOC

Supplier	Input	Process	Output	Customer
A	Drugs	IV label prints	IV Admixture	Patient
B	IV Solutions	Obtain drug		Nurse
C	Admixture	Obtain supplies		Pharmacist
	Supplies	Tech compounds		Technician
		RPh checks		
		Sent to floor or delivery by tech or sent via tube		
		RN receives IV admixture		

# Current State Process Map



## Current Process Map for IV Room



# Brainstorming Problems!



- Various tools available to use through Lean training
- Develop a parking lot
- Narrow your focus

# Brainstorming Problems!



- Medications made too far in advance – may be discontinued or changed
- Lost medications
- Patient's discharged report
- High dollar medications

# Brainstorming Resolutions!

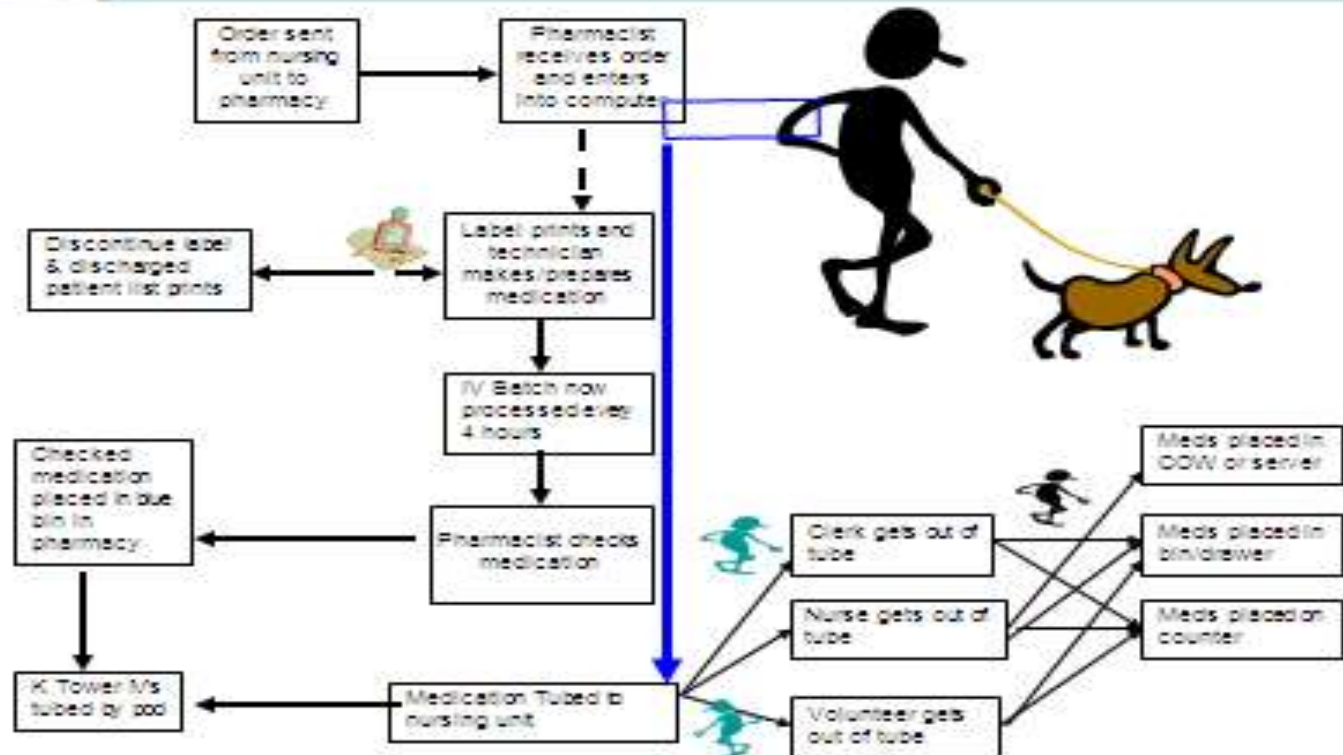


- Change to 4-hour IV batches
- Secure tube high dollar medications
- Label for discontinued patients
- Report for discharged patients
- Staff education – both nursing and pharmacy

# Future State Process Map



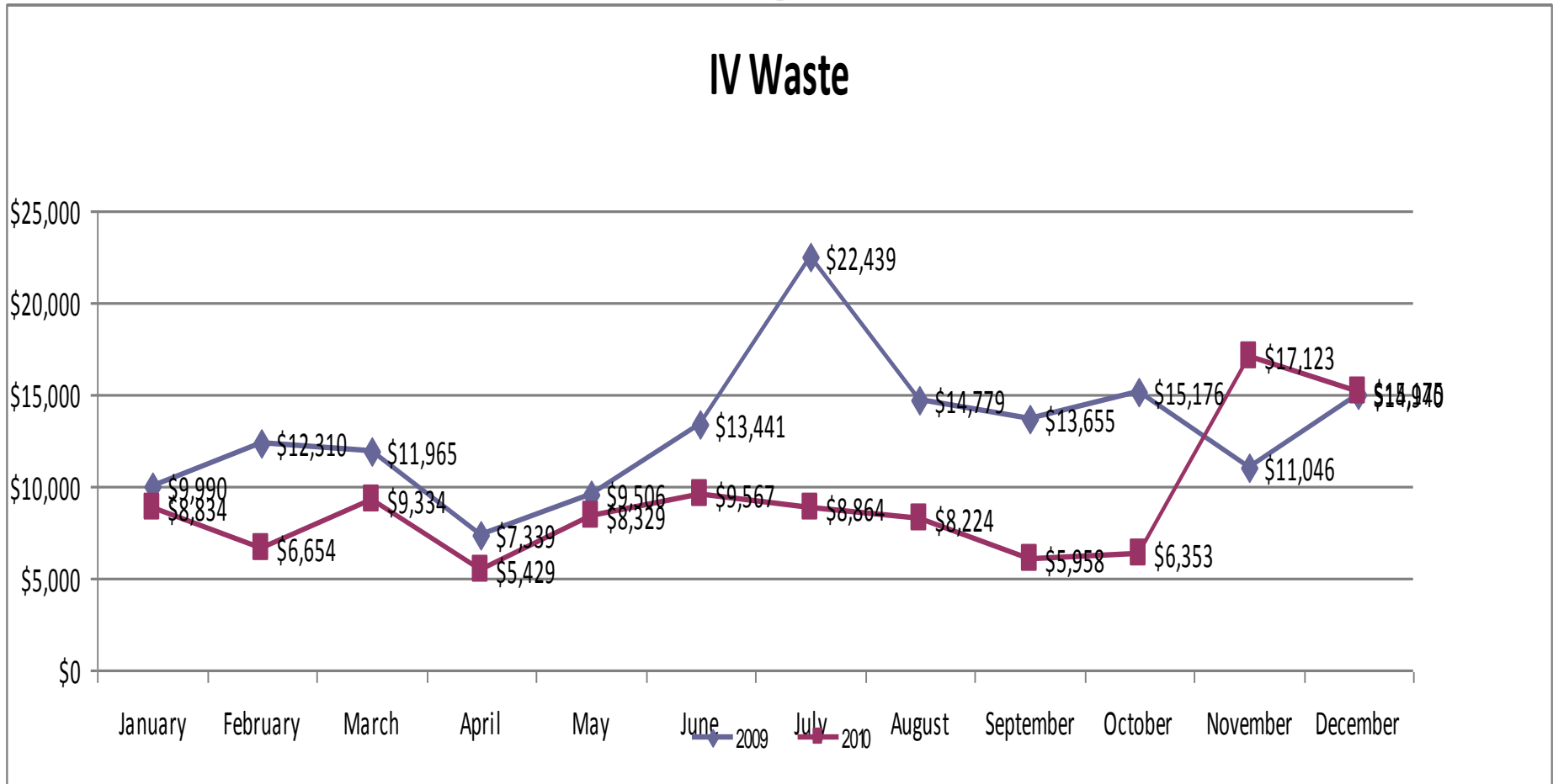
## Future State IV Room Process Map



# 2010 IV Room Waste



## IV Waste

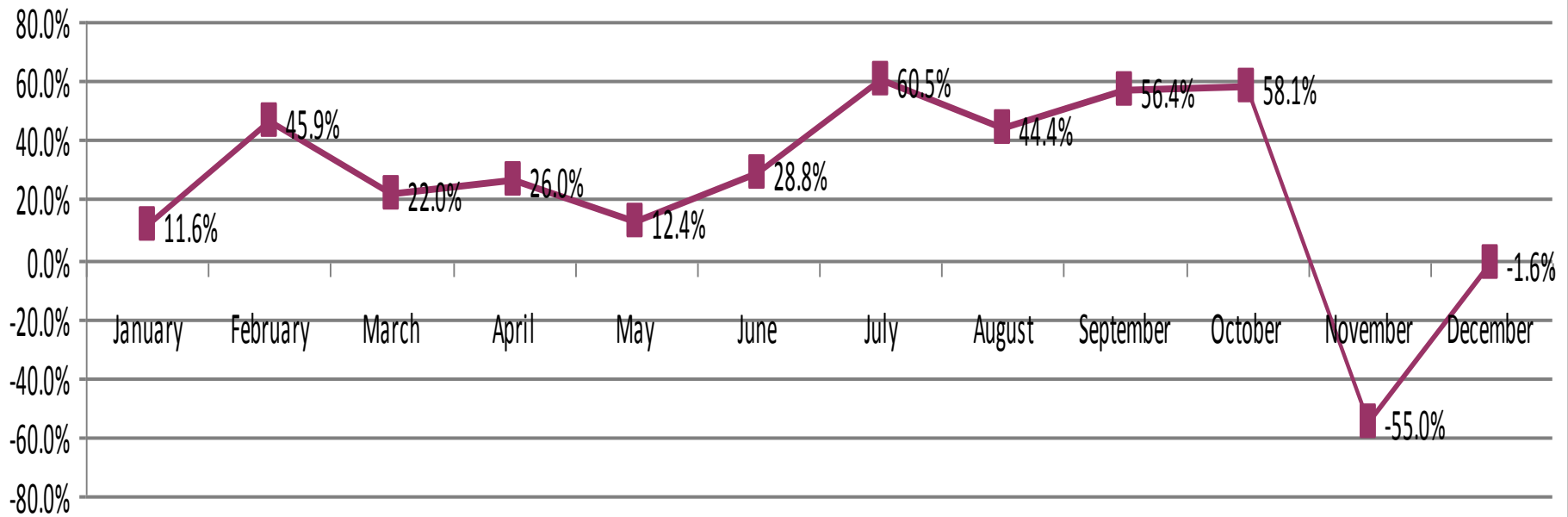


Data on file, St. Rita's Medical Center

# 2010 IV Room Improvement



## % Improvement



Data on file, St. Rita's Medical Center

# 2010 Savings



Net projected savings for SRMC in 2010  
is over \$65,366!!!!

# Conclusions



- Lean philosophy can be applied to multiple scenarios in healthcare to improve processes and reduce waste.
- The pharmacy department at SRMC has participated in multiple Lean events in 2010 including: reducing missed cath lab charges, many LOS projects, pharmacy late charges/credits, pain improvement project.

# References



1. Womack JP, Jones DT. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York, NY: Simon and Schuster; 1996.
2. Creative Healthcare. Lean & Six Sigma: The New Face of Performance Improvement in Pharma. Available at: <http://www.creative-healthcare.com/pdf/PerformanceImprovementInPharma.pdf>  
Accessed March 10, 2011.