

Utilizing Technology and  
Automation to Improve  
Profitability, Professionalism and  
Patient Safety  
In Community Pharmacy



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# Goals and Objectives

Pharmacists have an obligation to ensure that their patient's safely receive their medications and the appropriate counselling that they deserve.

Pharmacy is a business and the pharmacist must also strive to make sure that his or her operation is reasonably profitable.

US pharmacies are now filling more than 3.2 billion prescriptions per year and pharmacists are gearing up to meet the needs of aging Americans.



# Goals and Objectives

A 2003 study estimated that 51.5 million errors occur during the filling of these very same prescriptions.

This study noted that dispensing errors are a problem on a national level, at a rate of about 4 errors per day in a pharmacy filling 250 prescriptions daily.

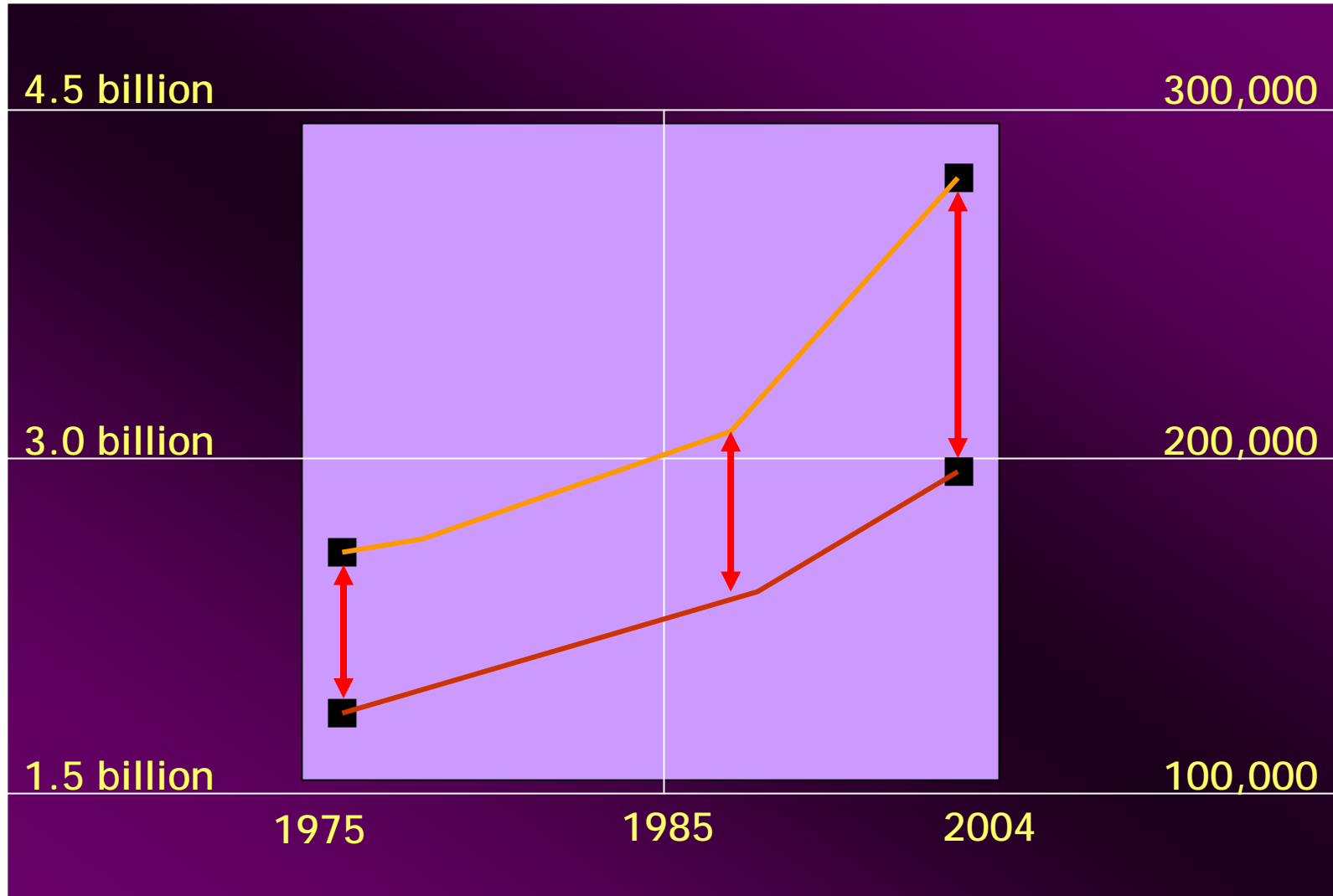
“Can technology and automation sufficiently and positively address this concern?”



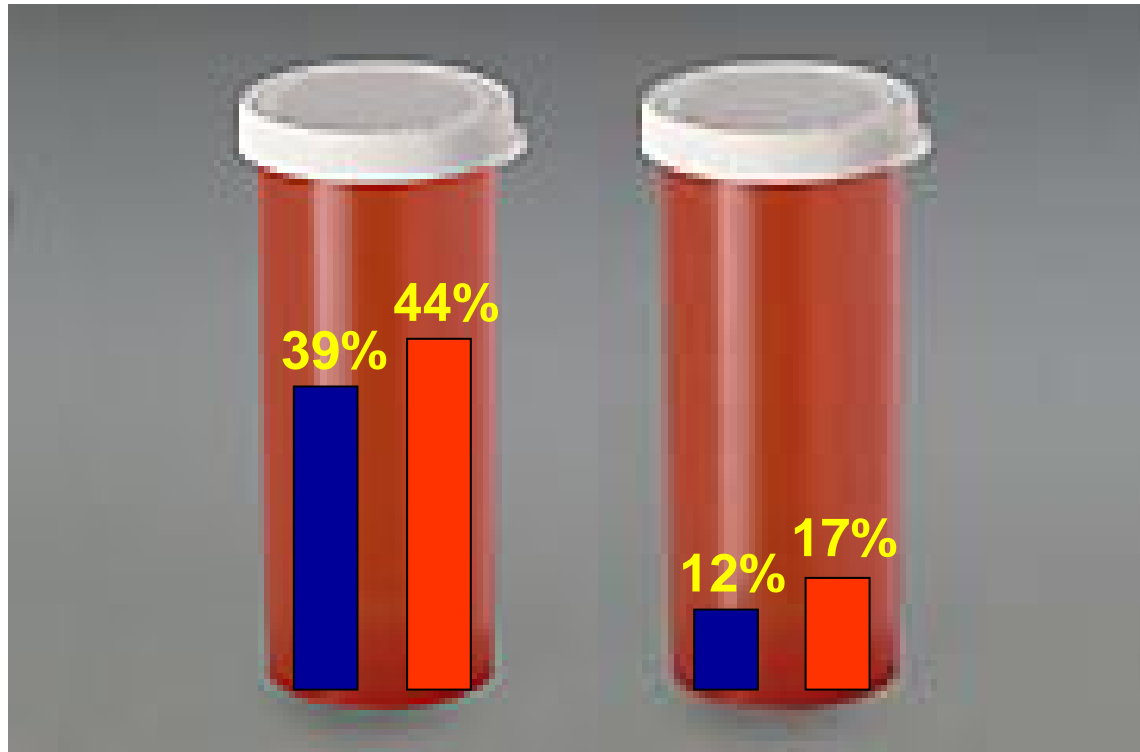
Prescriptions

# Challenges

Pharmacists



# Challenges



Took at least one drug in the past month

Took three or more drugs in the past month

1988 to 1994

1999 to 2000

# Fact

The volume of dispensed prescriptions is expected to balloon  
**46% over the next 5 years**



# Fact

The projected increase in the number of  
available pharmacists will be only 5.4%



# Fact

**“Dispensing errors occur at a rate of 4 errors per day in a pharmacy filling 250 prescriptions daily.”**

# Opportunity

“The pharmacist is an underutilized asset in the community.”

Mark Gregory, Kerr Drug

“One of the first to train its pharmacists as consultants.”



& WORLD REPORT  
**U.S. News**

# Challenges

“20% of a pharmacist’s time is spent dealing with insurance issues.”

Survey Sponsored by the NACDS



& WORLD REPORT  
**U.S. News**

# Fact

Deploying additional personnel  
will not address:

*Prescription volume*  
*Personnel shortages*  
*Patient safety*



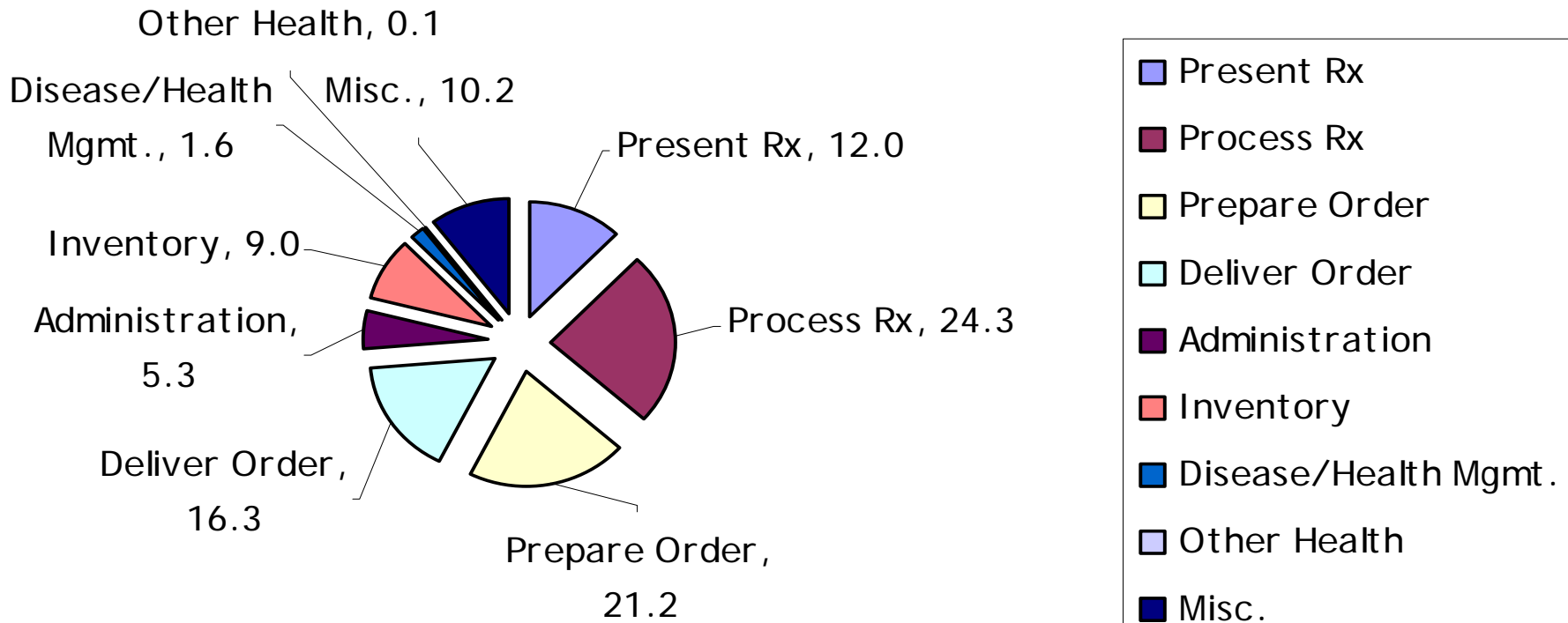
**Technology and Automation:**

**Will It Help?**



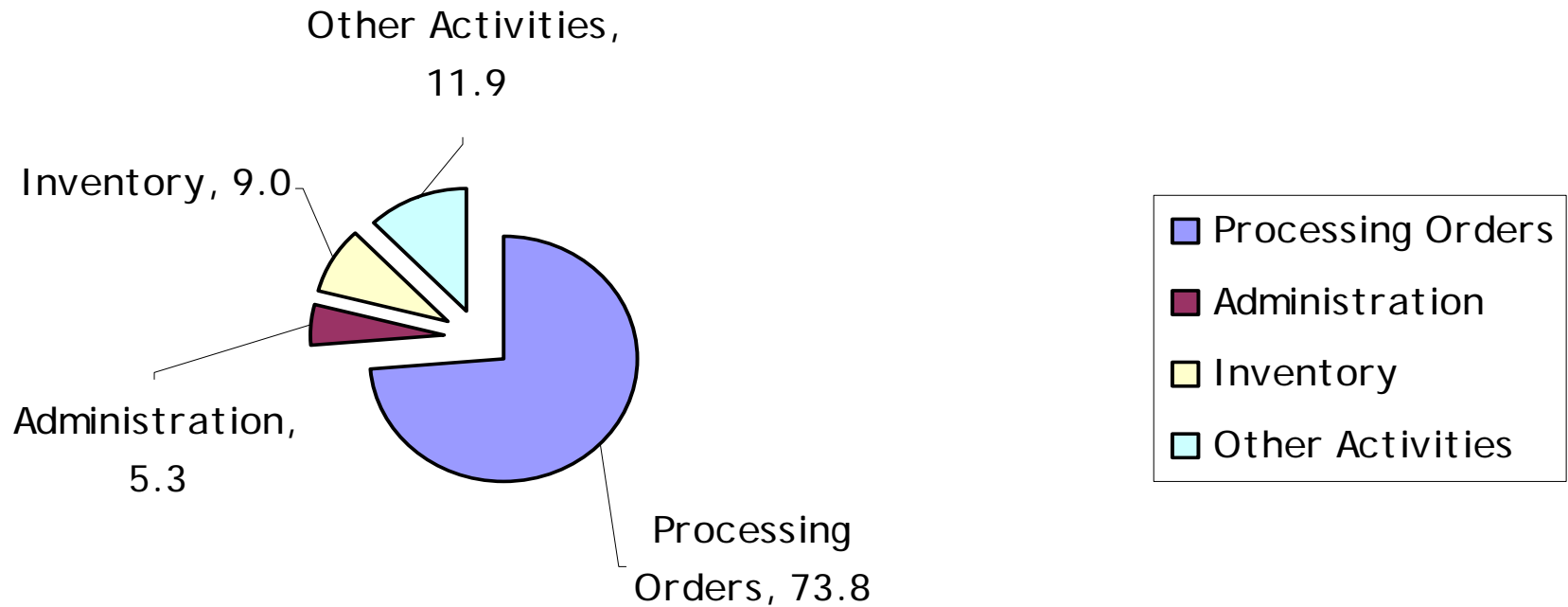
# Fact

## Average Amount of Time Spent per Pharmacy Process



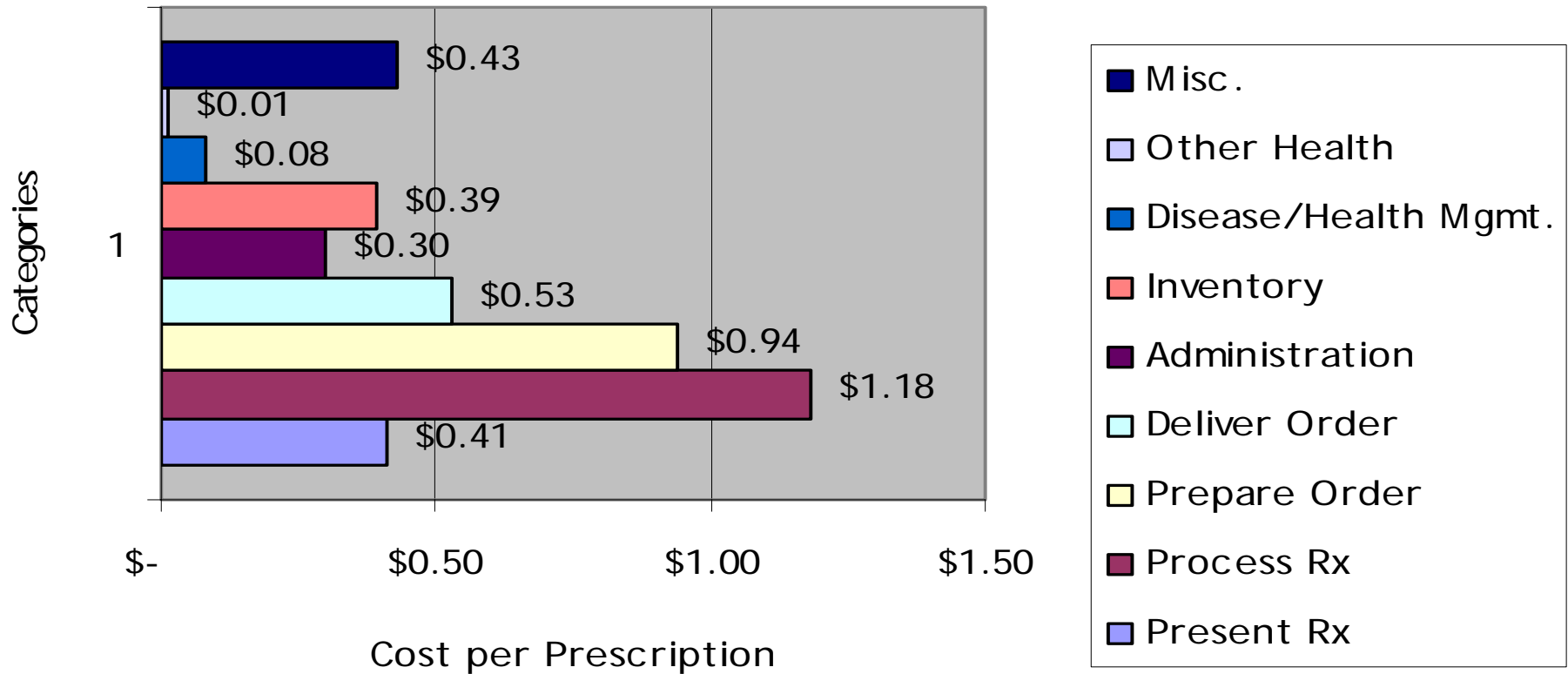
# Fact

## Average Amount of Time Spent per Pharmacy Process



# Fact

## Average Labor Cost per Prescription



# Fact

## Average Labor Cost per Prescription

### \$4.27

# Fact

- Categorized 89 detailed pharmacy activities.
- Pharmacists are involved in approximately 63.
- Pharmacists need only be involved in 12-15 key activities.
- This would free up approximately 60 - 70% of the pharmacist time.
- Perform more value-added activities, such as disease management and other health related activities.
- Initiated a focus group study and now has an Insurance Technician Training and Certification Program .

**Advancing Pharmacy with Technology™**

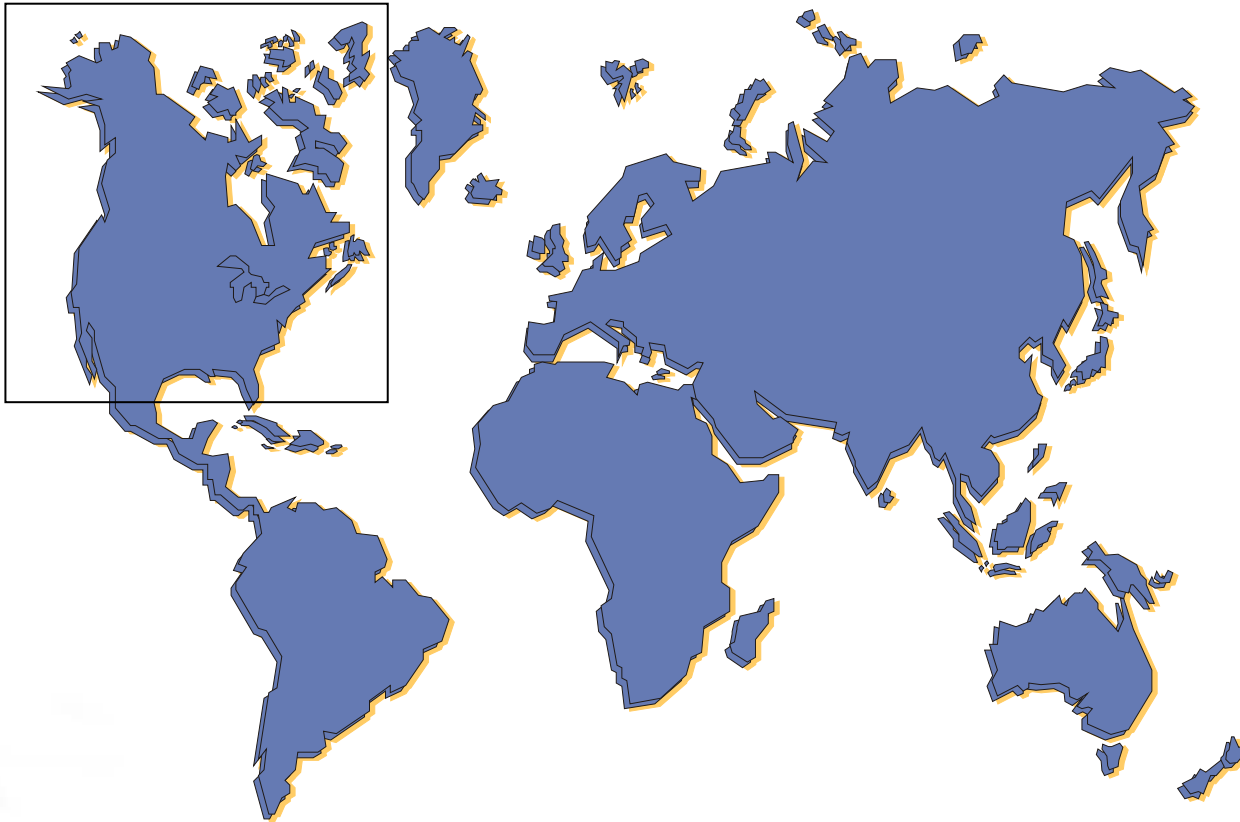


**Technology and Automation:**

**Where do We Start?**



**82.3% of outpatient and community prescriptions are filled from bulk**



**The rest of the world has converted, almost entirely, to “patient packs.”**



# Dispensing from Bulk



Stock

+



vial

+



count & pour

+



label



Sounds simple enough...right?

# The Entire Process



order entry



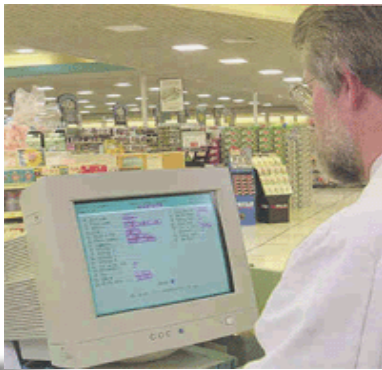
adjudication



labeling



filling



verification



quality assurance



storing and billing



delivery validation

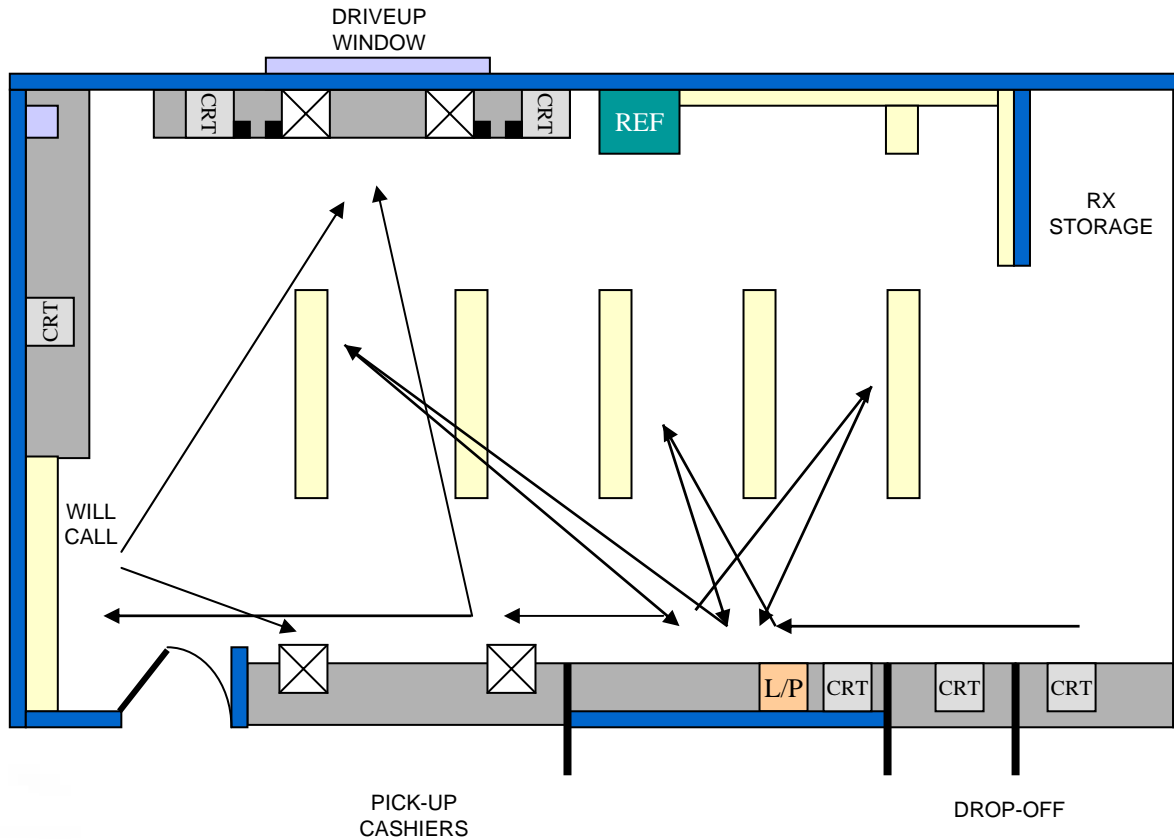


Really quite complex!!

# Pharmacy Workspace, Design and Workflow



# Pharmacy Workspace

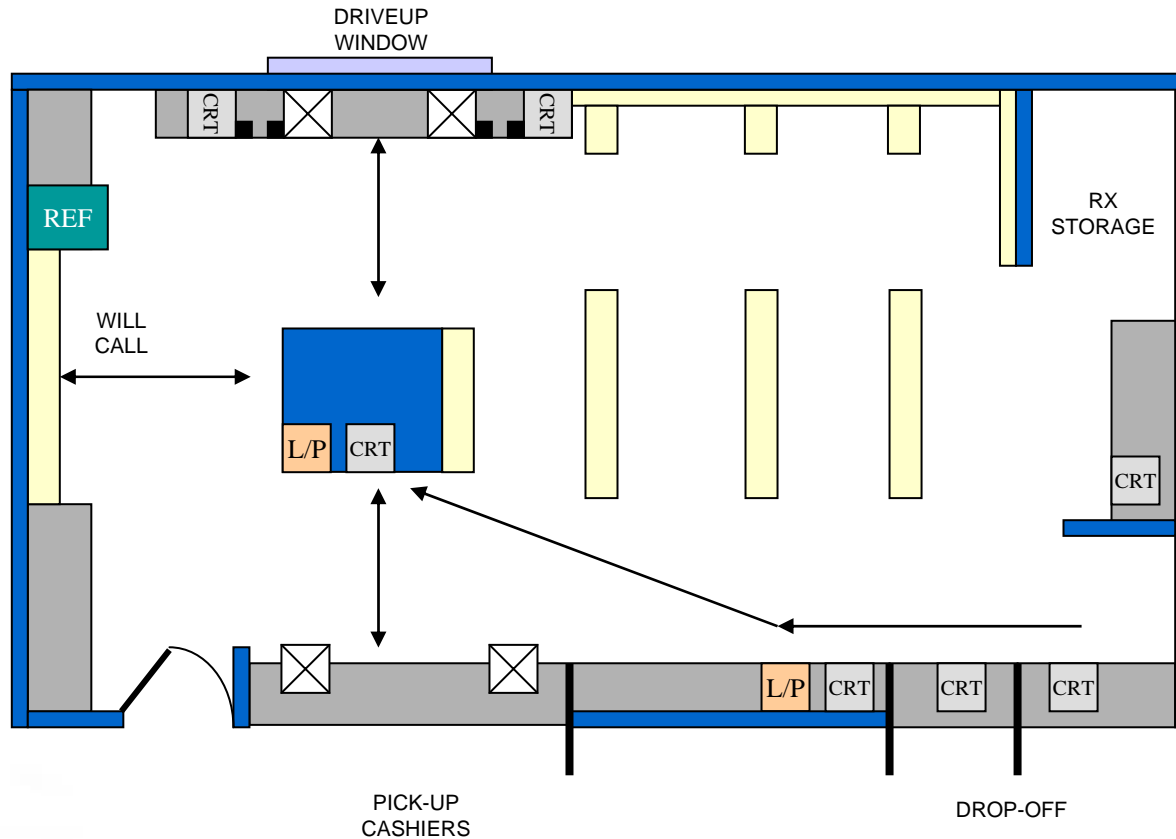


Determine flow of traffic and where work occurs

What technology can be applied and where does it go?



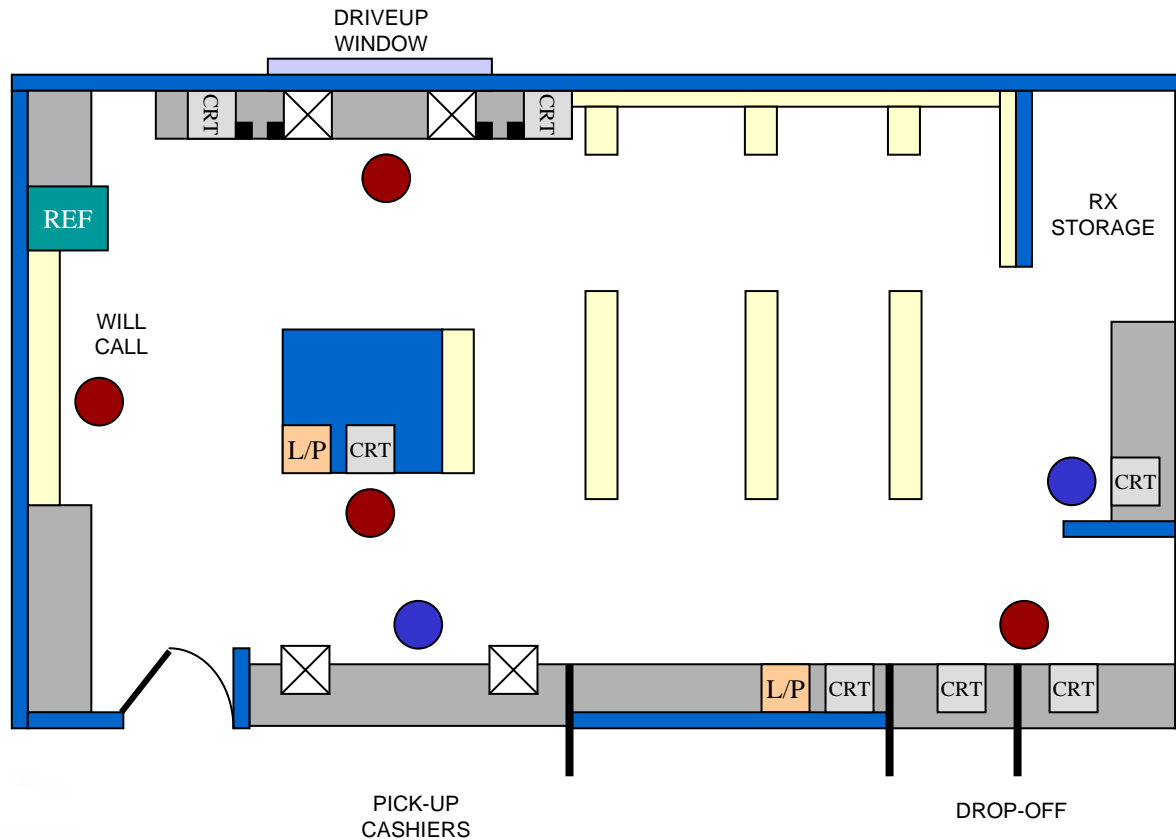
# Pharmacy Workspace



Adjust to reduce travel and increase efficiency



# Pharmacy Workspace



Establish clear and efficient responsibilities



# Pharmacy Technology & Automation



# Pharmacy Technology

Pharmacy Management System

IVR

Internet

E-prescribing



# Pharmacy Technology and Automation

## Pharmacy technology:

- Facilitate order entry, processing and billing
- Provide access to patient and drug data
- Enhance information transmission and access



# Pharmacy Automation

Automated Counting and Robotics

Pharmacy Management System

IVR

Internet

E-prescribing



# Automated Counting



McKesson Universal 2010™



NovoTech SureCount™



# Automated Counting



Kirby Lester KL15e



Kirby Lester KL25



Kirby Lester KL16ipc



# Automated Counting



McKesson Cassettes, Cells and AccuMed™

# Automated Counting



AutoMed QuickFill™, QuickFill Plus™ and FastFill™

# Automated Counting



Innovation Associates SmartCabinet™ and Enterprise™

# Robotic Dispensing



ScriptPro SP200®



McKesson AccuScript™

# Robotic Dispensing



AutoMed FastFill 200™



Parata RDS™

# Pharmacy Technology and Automation

## Pharmacy technology:

- Facilitate order entry, processing and billing
- Provide access to patient and drug data
- Enhance information transmission and access

## Automated counting and robotics:

- Increase productivity and efficiency
- Eliminate manual labor from the process
- Enhance dispensing accuracy



# Pharmacy Technology and Automation

200 plus cells or cassettes

150 scripts per hour

40 to 60% of your total daily volume

Vial retrieval

Labeling (icons, warnings, languages)

Etc.

**What More Do You Need?**



# What Are the Users Saying?



# Importance of Automated Workflow

25% of the major chains  
**15% of the regional chains**  
19 % of independents  
56 % of the hospitals

**“have some type of an  
automated workflow system.”**

55% of the regional chains, **without an automated workflow system**, plan to implement such a system over the next two years.

# Pharmacy Automation

Automated Counting and Robotics

Automated Workflow Systems

Pharmacy Management System

IVR

Internet

E-prescribing



# Defining Automated Workflow

- **Automatically divide each task** of the prescription processing into separate steps.
- Efficiently perform each task according to a **standardized set of rules.**
- **Track and manage** the entire process.



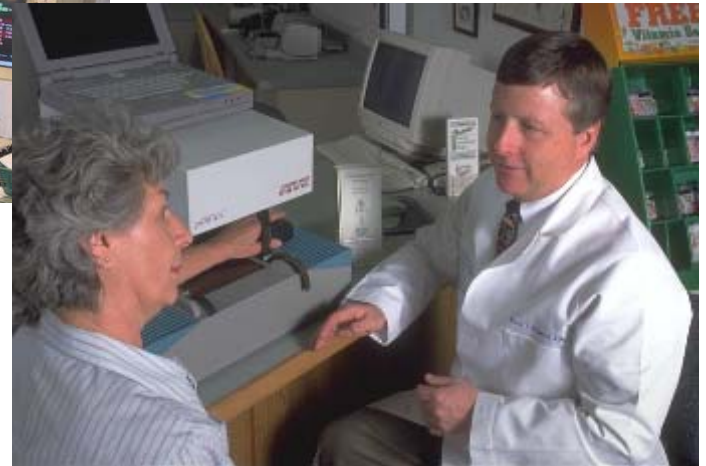
# Automated Workflow Systems



**Chaos**



**Order**



**Patient Care**



# Automated Workflow Systems



1. Imaging/Data Entry



2. Filling



3. Order Grouping



4. Verification



5. Patient Notification



McKesson Pharmacy 2000

# Automated Workflow Systems



ScriptPro SP Central®

# Automated Workflow Systems



QuickScriptPlus CheckStationActive Order Screen


20 Active Rx

Patient	Medication	Cnt
<b>Tom Sharp</b>	<b>Pickup: 01:02 Thu 13</b>	
Rx: 21204	CERTS GREEN, 5cal Quick-Pk-Channe #2	1
Rx: 21201	TIC TACS Green, 16 cal FastFill-Cassette#2	80
Rx: 21202	TIC TACS Orange, 16 cal FastFill-C61-Cassette#65	90
Rx: 21203	SP RONOLACTONE TABLETS, 100 mg Ray One	1
<b>Tom Gibson</b>	<b>Pickup: 01:02 Thu 13</b>	
Rx: 51202	TIC TACS Orange, 16 cal FastFill-C61-Cassette#65	80
Rx: 51203	SP RONOLACTONE TABLETS, 100 mg Ray One	1
Rx: 51204	CERTS GREEN, 5cal Quick-Pk-Channe #2	1
Rx: 51201	TIC TACS Green, 16 cal FastFill-Cassette#2	80
<b>Tom Mitchell</b>	<b>Pickup: 01:02 Thu 13</b>	
Rx: 21204	CERTS GREEN, 5cal	1

Process

↑ ↓

5:05 PM



Active Orders

Completed Orders

Reset Orders

Priority

Find Manually

Setup

Print Label

Log Out

AutoMed WorkPath™ System

# Automated Workflow Systems



Innovation Associates Symphony™ Workflow



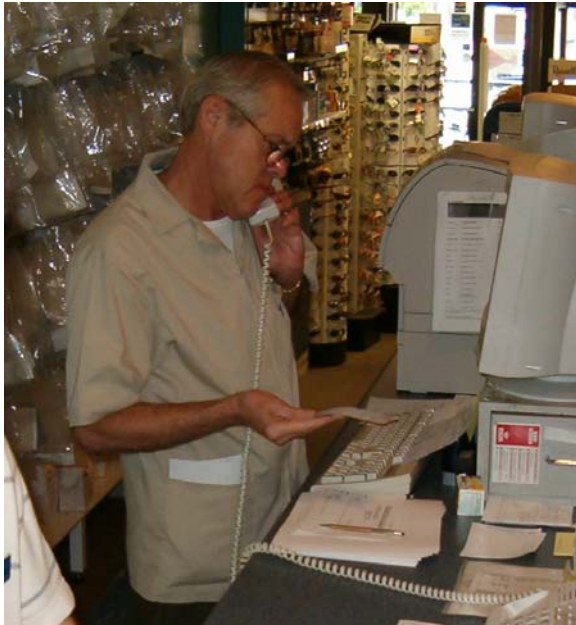
# The Real World

“Why is it that my dry cleaners can locate a suit in seconds, automatically, but it often takes minutes and sometimes hours to locate my prescription?”



# Automated Workflow Studies

## Order Entry



# Automated Workflow Studies

## Prescription Filling



**Pre Automation**



**Post Automation**



# Automated Workflow Studies

## Front Counter and Will Call



# Automated Workflow Studies

## Results of Studies

**Major shift in prescription filling responsibilities**

**Removed pharmacist from filling functions**



# Automated Workflow Studies

## Regional Chain

	Before		After	
Total Time Required	542 @ 2.62 min/Rx = 1,420 minutes		542 @ 1.36 min/Rx = 737 minutes	
% of Filling by Pharmacists	<b>43% RPh filling</b> 610 minutes/day 10.17 hours/day	\$508.83 per day	<b>7% RPh filling</b> 52 minutes/day 0.86 hours/day	\$42.99 per day
% of Filling by Technicians	<b>57% Tech filling</b> 809 minutes/day 13.49 hours/day	\$161.88 per day	<b>93% Tech filling</b> 685 minutes/day 11.42 hours/day	\$137.08 per day
TOTAL Filling Cost per Day	\$670.71 per day		\$180.07 per day	
<b>SAVINGS PER DAY</b>	<b>(\$490.64 per day)</b>			



# Automated Workflow Studies

## Results of Studies

**Major shift in prescription filling responsibilities**

**Removed pharmacist from filling functions**

**100% pharmacist verification**



# Automated Workflow Studies

## Prescription Verification



# Automated Workflow Studies

## Results of Studies

**Major shift in prescription filling responsibilities**

**Removed pharmacist from filling functions**

**100% pharmacist verification**

**Increased prescription filling capacity**



# Automated Workflow Studies

## Independent

Prescription Filling Capacity	Pre-installation	Post-installation
Total average time to complete and dispense a prescription - in minutes	7.185	5.494
Prescription Filling Capacity - in prescriptions	66.806 Rx per person, per day	87.368 Rx per person, per day
Additional Prescription Filling Capacity per person - in prescriptions	+20.256 Rx per day	
Additional Prescription Filling Capacity per person - percentage	<b>+24%</b>	



# Automated Workflow Studies

## Results of Studies

**Major shift in prescription filling responsibilities**

**Removed pharmacist from filling functions**

**100% pharmacist verification**

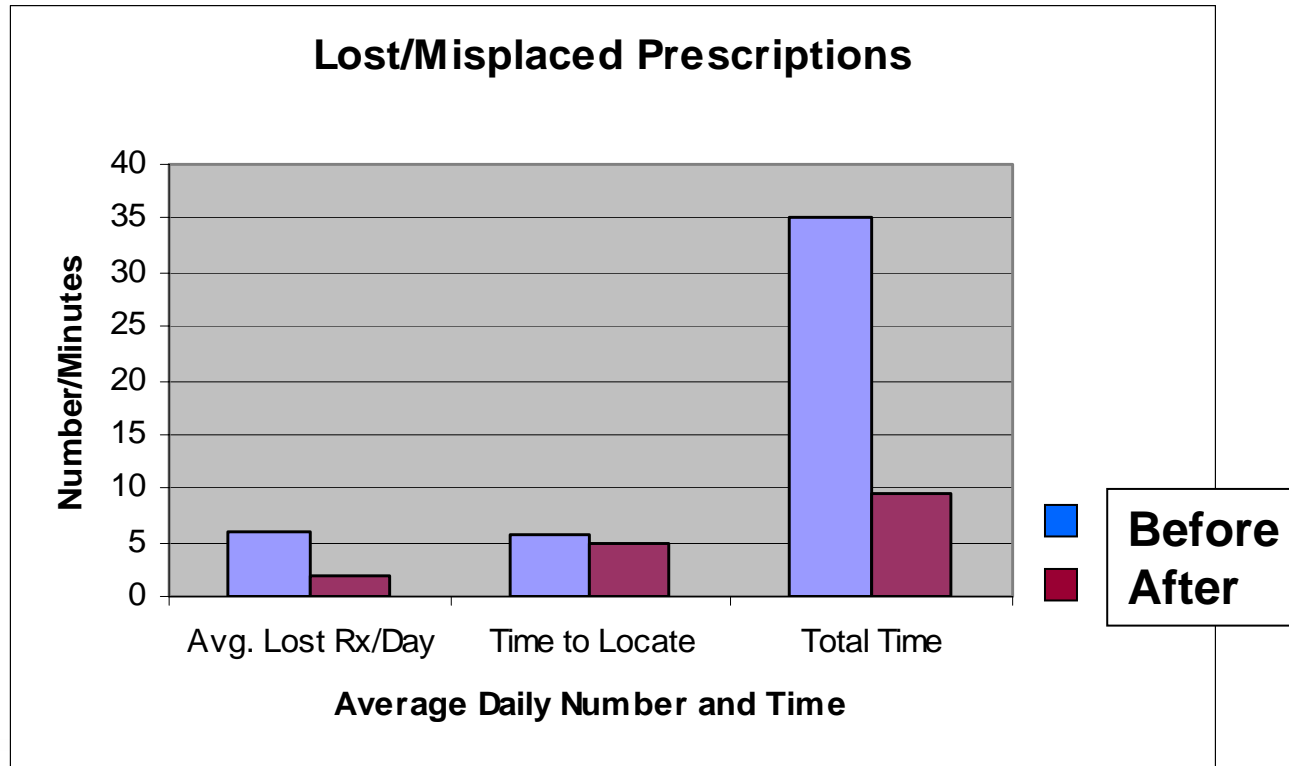
**Increased prescription filling capacity**

**Reduced lost/misplaced prescriptions & prescription look-up time**



# Automated Workflow Studies

## Independent



# Automated Workflow Studies

## Regional Chain

	Before		After	
Frequency of Lost Prescriptions	12/day @ 9.61 min/Rx = 115.32 min		2/day @ 6.23 min/Rx = 12.46 min	
Pharmacist involvement in resolving the lost prescription problem (assume 50%)	<b>50% RPh time</b> 57.6 minutes/day 0.961 hours/day	\$48.05 per day	<b>50% RPh time</b> 6.23 minutes/day 0.103 hours/day	\$5.19 per day
Technician involvement in resolving the lost prescription problem (assume 50%)	<b>50% Tech time</b> 57.6 minutes/day 0.961 hours/day	\$11.53 per day	<b>50% Tech time</b> 6.23 minutes/day 0.103 hours/day	\$1.25 per day
TOTAL Rx Tracking Cost per Day	\$59.58 per day		\$6.44 per day	
<b>SAVINGS PER DAY</b>	<b>(\$53.14 per day)</b>			



# PrairieStone Pharmacy



# PrairieStone Pharmacy



# PrairieStone Pharmacy



# PrairieStone Pharmacy



# PrairieStone Pharmacy



# Patient Safety

“Utilization of simple prescription technologies, like **bar codes** and **onscreen drug images**, can reduce medication dispensing errors by one full percentage point.”

# Patient Safety

## Causes of claims against pharmacists

Cause of claim	Percentage
Wrong drug	49.3
Right drug but wrong strength	25.9
Right drug but wrong directions	7.4

**82.6%** of the above claims could be resolved or eliminated by utilizing the appropriate pharmacy automation tools!

Source: Baker, Kenneth R., Pharmacists Mutual Claims Study 1989-1997, Speech, National Association of Chain Drug Stores Annual Convention, August 31, 1999. Reprinted with permission.

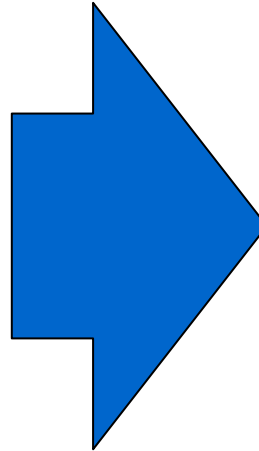
# Patient Safety

**83%** of the prescription errors in a community pharmacy are **discovered during patient counseling** and are corrected before the patient leaves the pharmacy.

# Professionalism

## Drug Distribution Practice

- Cost Effective Process
- Safety and Accuracy
- Efficient Distribution
- Balanced Workforce
- Increased Profitability

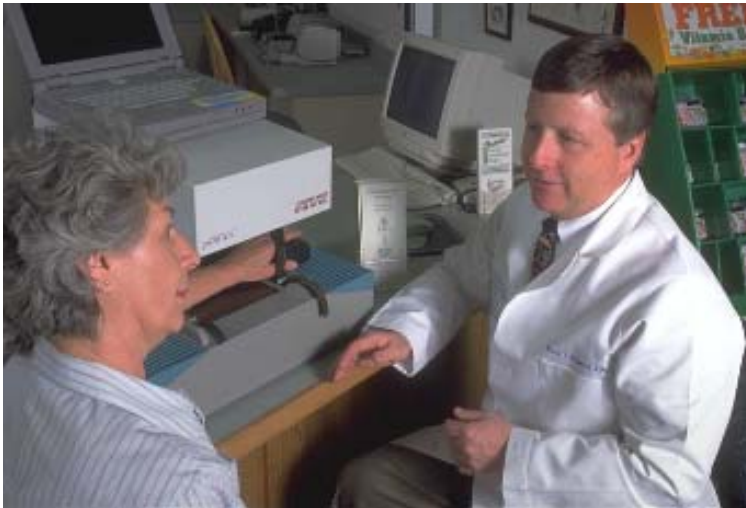


## Drug Therapy & Patient Management

- Clinical Pharmacy Practice
- Patient Participation
- Patient Communication
- Optimized Patient Care and Satisfaction

# Professionalism

## Expanding Roles for Community Pharmacists



## Opportunities to Re-deploy Pharmacists for Disease Management Programs

# Summary

**At the end of the day a technology investment should result in improvements that have a measurable and positive return on:**

**Your bottom line - profitability**

**Your staff's efficiency, morale & professionalism**

**Your patient's satisfaction and safety**

# Questions



The Thomsen *Group* Inc.

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