

Pharmacy Strategic Plan

Implementation and Measurement of a Standard Pharmacy Clinical Practice Model Across a Multi-Hospital System

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OVERVIEW

- ◆ Role of Clinical Pharmacist
- ◆ PH&S Pharmacy Strategic Plan
- ◆ “Standard” Practice Model
- ◆ Implementation Challenges
- ◆ Outcomes Measures
- ◆ Next Steps
- ◆ Conclusions

Alaska



Washington



Montana



Oregon



California



Key

- Health Care Campus
- ◆ Freestanding Long Term Care Facility
- ▲ Housing and Assisted Living
- Owned Primary Care Network
- ★ Educational Facility
- ▼ Adult and Child Day Care Centers
- ◆ Home Health and Hospice Services
- Medical Laboratory Services
- Providence Health Plan

Providence Health & Services

as of December 31, 2008

Employees	49,434
States	5
Hospital ministries	26
Ambulatory centers	12
Employed physicians	822
Health plan members	283,769
Long-term care beds	1,827
Assisted living units	636

Long Range Vision for Pharmacy Work Force in Hospitals and Health Systems

- ◆ ASHP Statement on Pharmaceutical Care *Am J Hosp Pharm. 1993; 50:1720-3*
- ◆ Clinical Pharmacy Services in the U.S. in 2020: Services and Staffing *Pharmacotherapy 2004 Apr;24(4): 427-40*
- ◆ ASHP Council on Education and Workforce Development *Am J Health-Syst Pharm – Vol 64 Jun 15, 2007*

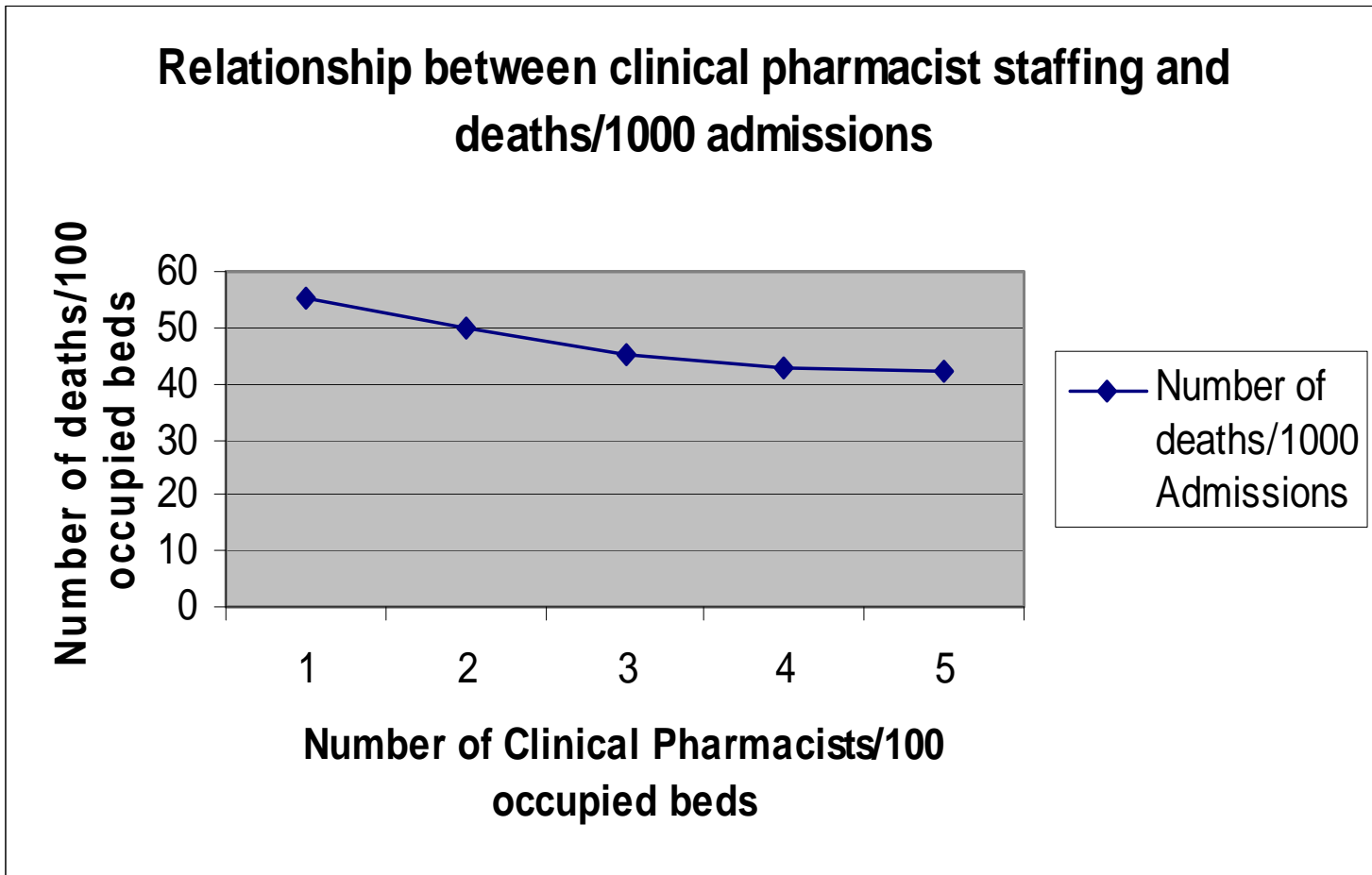
Role of the Pharmacist in Hospitals

- ◆ Reviewing individual patients' medication orders for safety and effectiveness and taking corrective action as indicated
- ◆ Collaboratively managing medication therapy for individual patients.
- ◆ Educating patients and caregivers about medications and their use.
- ◆ Leading continuous improvements in the medication use process.
- ◆ Leading the interdisciplinary and collaborative development of medication use policies and procedures.

Clinical Pharmacist Affect Mortality

- ◆ Review of patient data base for nearly 3 million patients at 885 hospitals.
- ◆ Compared hospitals with 14 different pharmacy clinical services to those without.
- ◆ Seven services associated with reduced mortality rate.
 - Drug Use evaluation
 - Patient Education
 - ADR Management
 - Pharmacy Protocol Management
 - Code Team Participation
 - Admission Drug Histories
 - Participation on Rounds.

Clinical Pharmacy Services and Mortality Rates

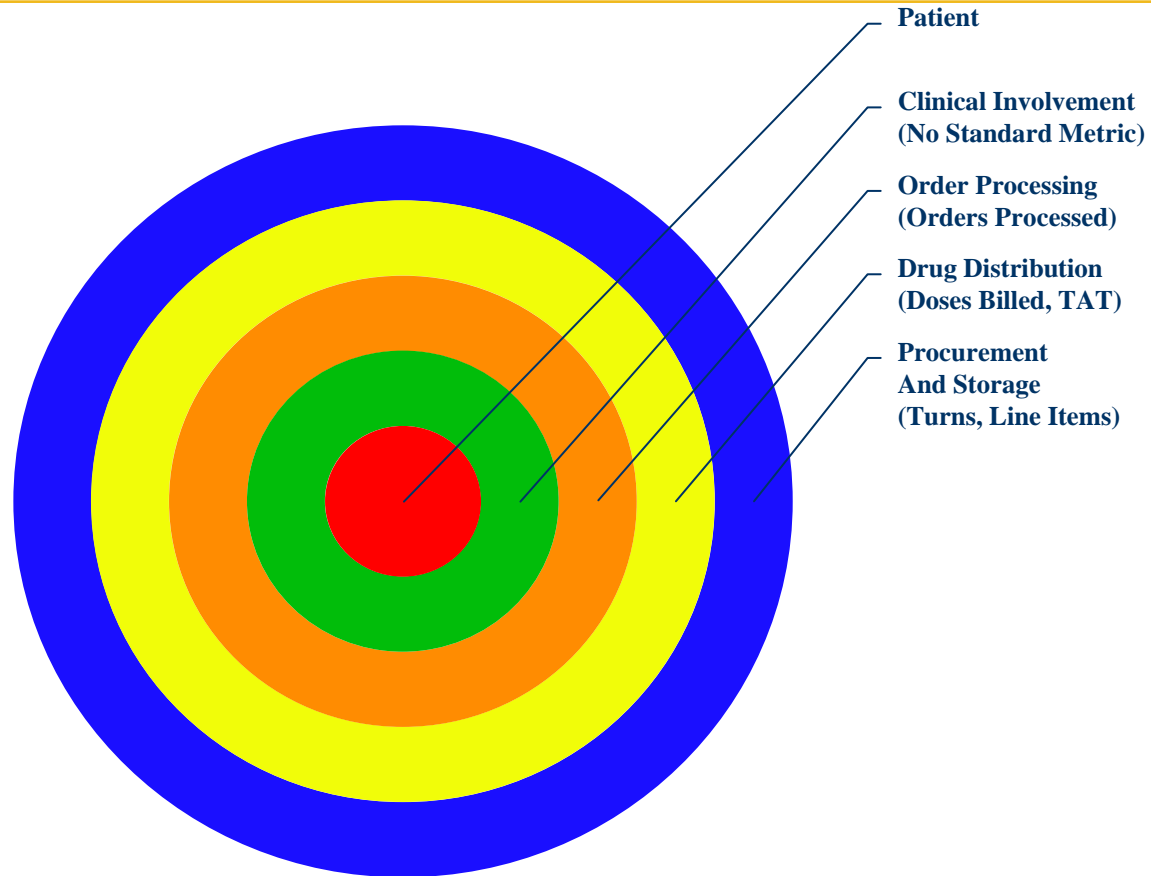


How Common Are these Services?

- ◆ Only 38% of hospitals overall have service specific pharmacists review therapy.
 - 72% at hospitals greater than 400 beds
 - 26% at hospitals 200 beds or less
- ◆ Only 24% of hospitals have pharmacists reviewing medication therapy for 75% or more of patients.



Why Are Pharmacy Clinical Service So Variable?



Pharmacy Resource Council Strategic Plan Framework

Foundation

PH&S Mission, Vision & Values

System Strategy

We will succeed as "One Ministry Committed to Excellence"

PRC Vision:

Enhancing quality of life through safe & effective medication use

PRC Outcomes:

- Utilize a standardized system to demonstrate the value of clinical pharmacy
- 100% of CMS clinical quality indicators met relative to pharmaceutical care
- Implement technology solutions to eliminate preventable medication adverse events
- Pharmacist will review the therapy of 100% of patients with complex & high-risk medication regimens
- Achieve system-wide target of 90% compliance with market share contracts
- Develop & adopt a standardized training and competency assessment program at least biannually with 100% compliance
- Compliance with regulatory requirements

PRC Strategic Priorities:

Attract and retain the best workforce

Leverage Technology

Enhance Quality & Scope of Pharmacy Clinical Services

Leverage System Wide Capabilities

Tactics:

(Specific Steps to Achieve Individual Strategies)

- Participate in and develop education programs.
- Develop HR strategy
- Career advancement

- Implement proven technology applications
- Coordinate and enhance pharmacy informatics resource
- Standardize technology

- System wide reporting tool
- Benchmark internally and externally
- Implement standard practice model

- Direct patient care
- Communicate success
- Develop Common Metrics / Benchmarking Program

- Regional P&T Process
- Shared services / resources
- Identify and share best practice

Mission Inspired

People Centered

Service Oriented

Quality Focused

Financially Responsible

Operating Commitments

Clinical Practice Initiative for Pharmacy

- ◆ **Enhance the quality and scope of pharmacy clinical services**
 - **Implement a standard clinical practice model for pharmacy**
 - **Implement reporting tool for clinical pharmacy interventions**
 - **Develop standard metric to measure and benchmark clinical services system wide**

PRACTICE MODEL OPTIONS

- ◆ Order Review Based
- ◆ Target Drug Based
- ◆ Rounding Based
- ◆ Profile Review Based
- ◆ CPOE Based?

ORDER REVIEW BASED

GOOD POINTS

- ◆ Potentially Economical
- ◆ Avoids Most Major Drug Related Problems (DRPs)
- ◆ Concurrent
- ◆ Unit Pharmacist Aware of Current Therapy
- ◆ Address Issues Quickly After Order Written

BAD POINTS

- ◆ Dispensing a Priority for All Pharmacists
- ◆ Difficult to Follow Up on Complex Issues
- ◆ No Time for Projects
- ◆ Difficult to Get Big Picture of Care
- ◆ Perception of RPh Role
- ◆ Single-Check Only

TARGET DRUG BASED

GOOD POINTS

- ◆ Efficient/ Economical
- ◆ Address Most Major DRPs
- ◆ RPh Able to Prioritize
- ◆ Improved Perception of RPh Role
- ◆ Can Allow for Protocol/ Project Time

BAD POINTS

- ◆ Missed Opportunities for Improved Care
- ◆ Narrow Focus
- ◆ Disconnected From Big Picture of Patient Care
- ◆ Perceived as Having Narrow Focus/Role by Hospital Staff
- ◆ Reactive

ROUNDING BASED

GOOD POINTS

- ◆ Comprehensive Care
- ◆ Proactive Input
- ◆ Incorporation of RPh into Healthcare Team
- ◆ Improve as Practitioner
- ◆ Opportunity to Educate Physicians and Other Staff

BAD POINTS

- ◆ Inefficient
- ◆ Requires Hospitalist and/ or Teaching Model for Medical Care

PROFILE REVIEW BASED

GOOD POINTS

- ◆ Efficient/ Economical
- ◆ Address Most DRPs
- ◆ RPh Able to Prioritize
- ◆ Improved Perception of RPh Role
- ◆ Can Allow for Protocol/ Project Time
- ◆ Ability to be Proactive

BAD POINTS

- ◆ Requires Resources in Staffing and Tools
- ◆ Rely on Order Review by core staff
- ◆ Not as Complete Care as Rounding Model

PH&S “Standard” Practice Model

- ◆ Unit-based Clinical Staff
- ◆ Defined (Specialized) Clinical Services
- ◆ Profile Review / Rounding
- ◆ Documentation Program
- ◆ Clinical Decision Support
- ◆ Centralized Order Entry
- ◆ Standards of Care / Protocols

Practice Model Requirements

Distribution:

- ◆ **Staff Dedicated to Order Review**
- ◆ **Order Image Scanner Technology**
- ◆ **Distribution Efficiency: e.g. Tech Check Tech, Triage Tech/RPh, Automation**

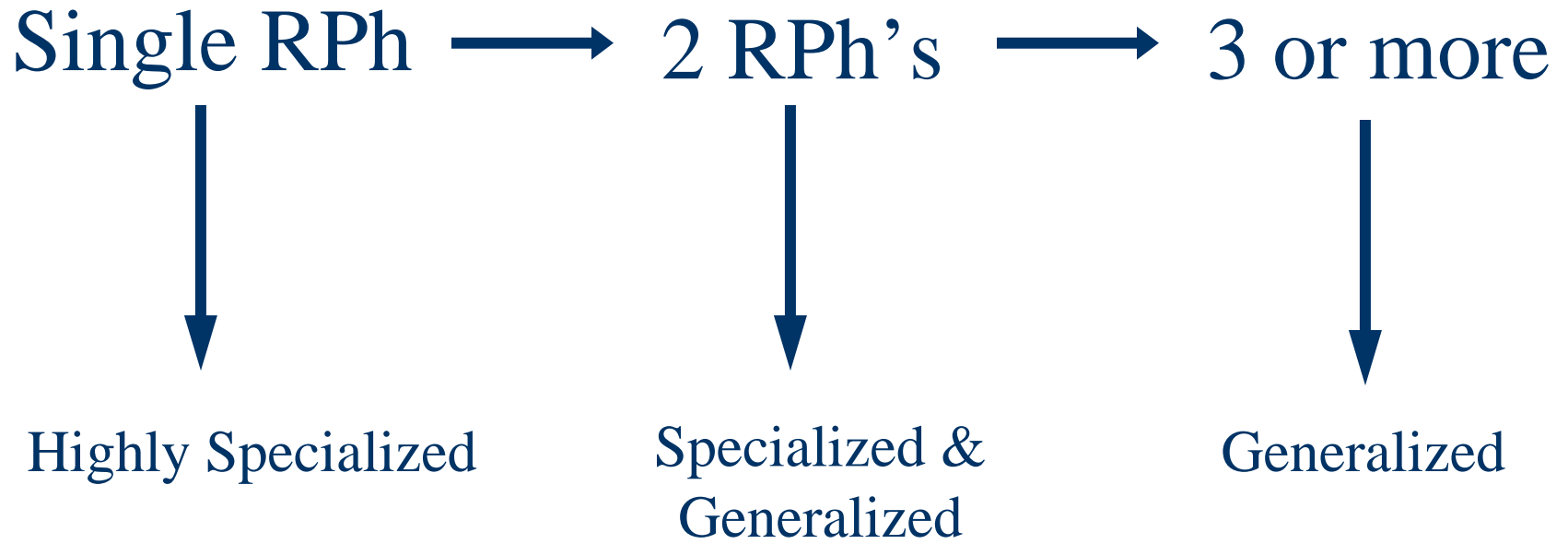
Clinical Practice:

- ◆ **Staff Dedicated to Drug Therapy Management**
- ◆ **Intervention Program (Quantifi®)**
- ◆ **Decision Support Tools (Sentri 7®)**

STANDARDS OF PRACTICE

- ◆ Workflow
- ◆ Documentation
- ◆ Order Entry Review
- ◆ Profile Review
- ◆ Rounding
- ◆ Competencies
- ◆ Preceptor

DEDICATED STAFF OPTIONS - PER CLINICAL SERVICE



2 RPH'S - PER CLINICAL SERVICE

Alternating Between Clinical Service and Distribution (e.g. month on, month off)

- ◆ Still build relationships
- ◆ Professional development
- ◆ Opportunity to work with a partner
- ◆ High level of care
- ◆ Time for projects
- ◆ Students
- ◆ More flexible, can scope for any hospital size
- ◆ Comprehend whole pharmacy process
- ◆ High level of staff satisfaction



Where the Rubber Hits the Road – Implementation Challenges

- ◆ CHANGE!
- ◆ Resources
 - F.T.E.s
 - I.T. Resources
 - Automation, scanning equipment, etc
- ◆ Recruitment
- ◆ Training

Financial Impact of Practice Model

1. Documented changes in therapy by pharmacist
– direct and cost avoidance combined savings
2. Supply costs
3. Premier Outlook® benchmark data

Evaluation of Three Providence Hospitals

- Providence Sacred Heart Medical Center (PSHMC)
- Providence Holy Family Hospital (PHFH)
- St. Patrick Hospital (SPH)

Sacred Heart Medical Center

- ◆ 2004 Goal: Document Financial Impact of Pharmacy Clinical Practice Model
 - 12 “decentralized” clinical services already established
 - Implementation of clinical documentation program.
 - Savings by intervention type per service (values based on cost-avoidance)
 - Performance report shared monthly with each clinical service
 - Track total expense and benchmark data

Example Service Line Pharmacy Savings Report

Expenses & Cost Saving Initiatives per Pharmacy Service Line

SURGICAL SERVICES

EXPENSES

Salary Expense

2 Week Period Starting	7/25/2004	Year To Date Starting 6/13/04
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\$ 4,008.00	\$ 15,078.40
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COST SAVING INITIATIVES

Changes Made in Therapy

	# of Interventions	2 wk total	Year To Date
Allergy Avoided	2	\$ 182.16	\$ 182.16
Med Order Clarification	31	\$ 2,823.48	\$ 5,282.64
Consult	7	\$ -	\$ -
Med DC'D by RPh	15	\$ 1,366.20	\$ 2,914.56
Dose Adjusted	21	\$ 1,912.68	\$ 4,462.92
Duplicate DC'D	1	\$ 91.08	\$ 273.24
DVT Prophylaxis by RPh	0	\$ -	\$ -
Epogen Use Avoided	0	\$ -	\$ -
Formulary Sub	6	\$ 324.00	\$ 594.00
Interaction Avoided	0	\$ -	\$ 91.08
Med Changed	0	\$ -	\$ 182.16
Adjust for Renal Fx	8	\$ 728.64	\$ 1,912.68
Route Changed	16	\$ 560.96	\$ 1,121.92
Med Started	15	\$ 1,366.20	\$ 2,368.08

Other Initiatives

N/V	\$ -
Routine Order (item cost)	\$ -
Misc Cost Savings	\$ -

TOTAL COST SAVINGS

\$ 9,355.40	\$ 19,385.44
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NET SAVINGS/LOSS

\$ 5,347.40	\$ 4,307.04
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Initial Service Financial Report

Expenses & Cost Saving Initiatives All Pharmacy Service Lines						
	<i>2 weeks starting</i>			YTD		
	<i>7/25/2004</i>			<i>Starting 6/13/04</i>		
	Salary Expense	Dollars Saved	Profit/Loss	Salary Expense	Dollars Saved	Profit/Loss
ED/OR	\$ 3,235	\$ 2,509	(\$726)	\$ 12,352	\$ 10,489	(\$1,863)
ICU	\$ 6,165	\$ 5,340	(\$825)	\$ 21,814	\$ 24,092	\$2,278
Peds	\$ 3,598	\$ 9,202	\$5,604	\$ 29,992	\$ 22,280	(\$7,712)
NICU	\$ 3,598	\$ 4,977	\$1,379	\$ 10,456	\$ 9,928	(\$527)
Peds Onc	\$ 3,923	\$ 8,065	\$4,141	\$ 13,366	\$ 18,736	\$5,370
Surg	\$ 4,008	\$ 9,355	\$5,347	\$ 15,078	\$ 19,385	\$4,307
Neur/Nephro	\$ 4,884	\$ 2,799	(\$2,085)	\$ 15,645	\$ 11,016	(\$4,629)
Cardiology	\$ 4,070	\$ 7,075	\$3,005	\$ 14,815	\$ 12,988	(\$1,827)
Oncology	\$ 4,070	\$ 5,042	\$972	\$ 14,815	\$ 11,509	(\$3,306)
CTT	\$ 4,070	\$ 9,480	\$5,410	\$ 15,954	\$ 14,006	(\$1,949)
Psych	\$ 3,253	\$ 2,256	(\$997)	\$ 12,044	\$ 5,953	(\$6,091)
IMR	\$ 1,712	\$ 783	(\$929)	\$ 6,847	\$ 783	(\$6,064)
Total	\$ 46,586	\$ 66,883	\$ 20,297	\$ 183,178	\$ 161,165	(\$22,013)

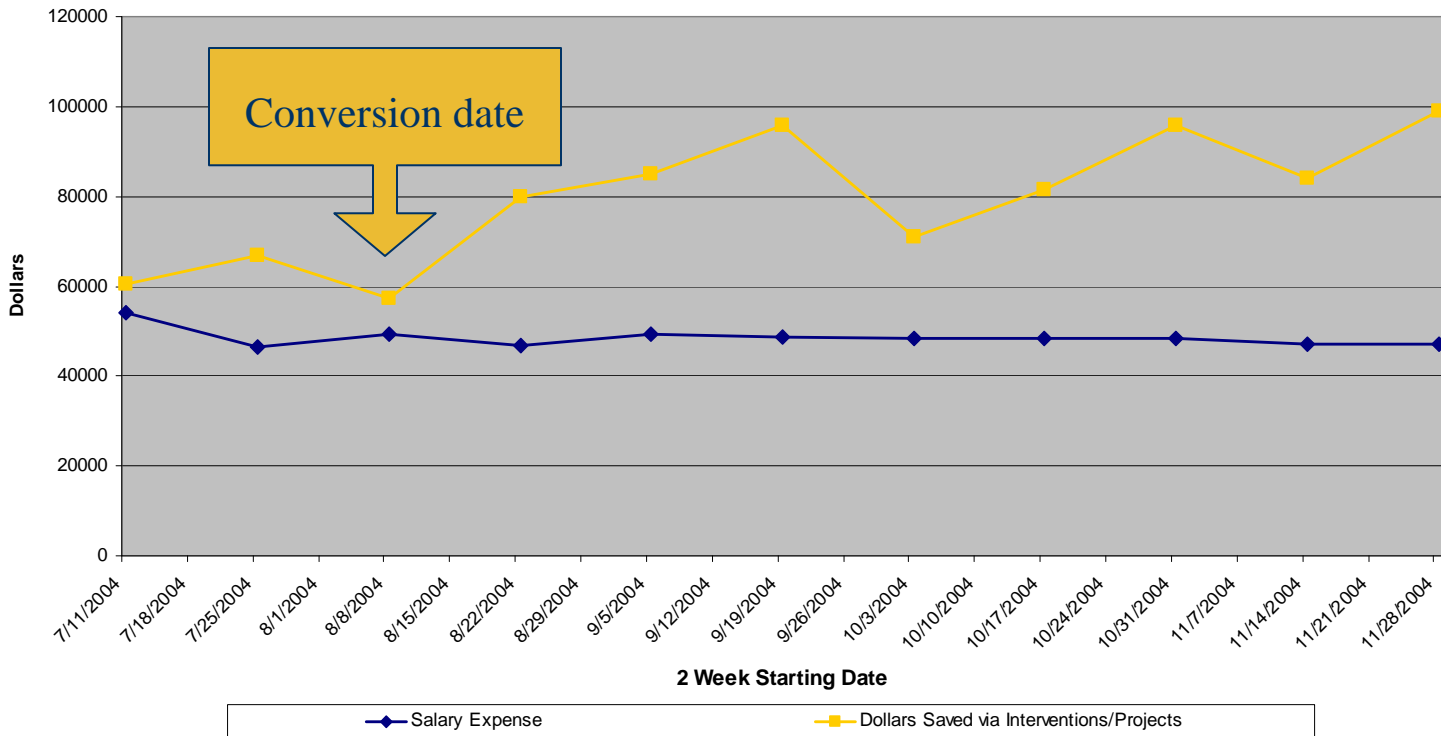
Report from 12/12/2004

Expenses & Cost Saving Initiatives All Pharmacy Service Lines							
	2 weeks starting 12/12/2004			YTD Starting 6/13/04			
	Salary Expense	Cost Saving Initiatives	NET SAVINGS/LOSS	Salary Expense	Cost Saving Initiatives	NET SAVINGS/LOSS	
ED/OR	\$ 2,931	\$ 5,927	\$ 2,996	\$ 44,587	\$ 55,353	\$ 10,766	
ICU	\$ 4,885	\$ 6,410	\$ 1,525	\$ 78,654	\$ 150,632	\$ 71,978	
Peds	\$ 2,687	\$ 14,406	\$ 11,719	\$ 49,459	\$ 138,032	\$ 88,573	
NICU	\$ 1,647	\$ 3,481	\$ 1,834	\$ 47,117	\$ 55,364	\$ 8,247	
Peds Onc	\$ 3,354	\$ 7,926	\$ 4,572	\$ 53,708	\$ 107,795	\$ 54,087	
Surg	\$ 4,264	\$ 12,155	\$ 7,891	\$ 64,257	\$ 116,590	\$ 52,333	
Neur/Nephro	\$ 4,393	\$ 6,783	\$ 2,390	\$ 65,220	\$ 65,481	\$ 261	
Cardiology	\$ 3,903	\$ 7,419	\$ 3,516	\$ 59,742	\$ 68,275	\$ 8,533	
Oncology	\$ 3,903	\$ 4,873	\$ 970	\$ 59,742	\$ 78,035	\$ 18,293	
CTT	\$ 3,908	\$ 16,319	\$ 12,411	\$ 62,312	\$ 99,278	\$ 36,966	
Psych	\$ 2,606	\$ 2,476	(\$130)	\$ 43,936	\$ 32,741	(\$11,195)	
IMR	\$ 1,224	\$ 308	(\$916)	\$ 23,474	\$ 27,494	\$ 4,020	
Total	\$ 39,705	\$ 88,483	\$ 48,778	\$ 649,946	\$ 995,070	\$ 345,124	

Cost Savings Documented PSHMC

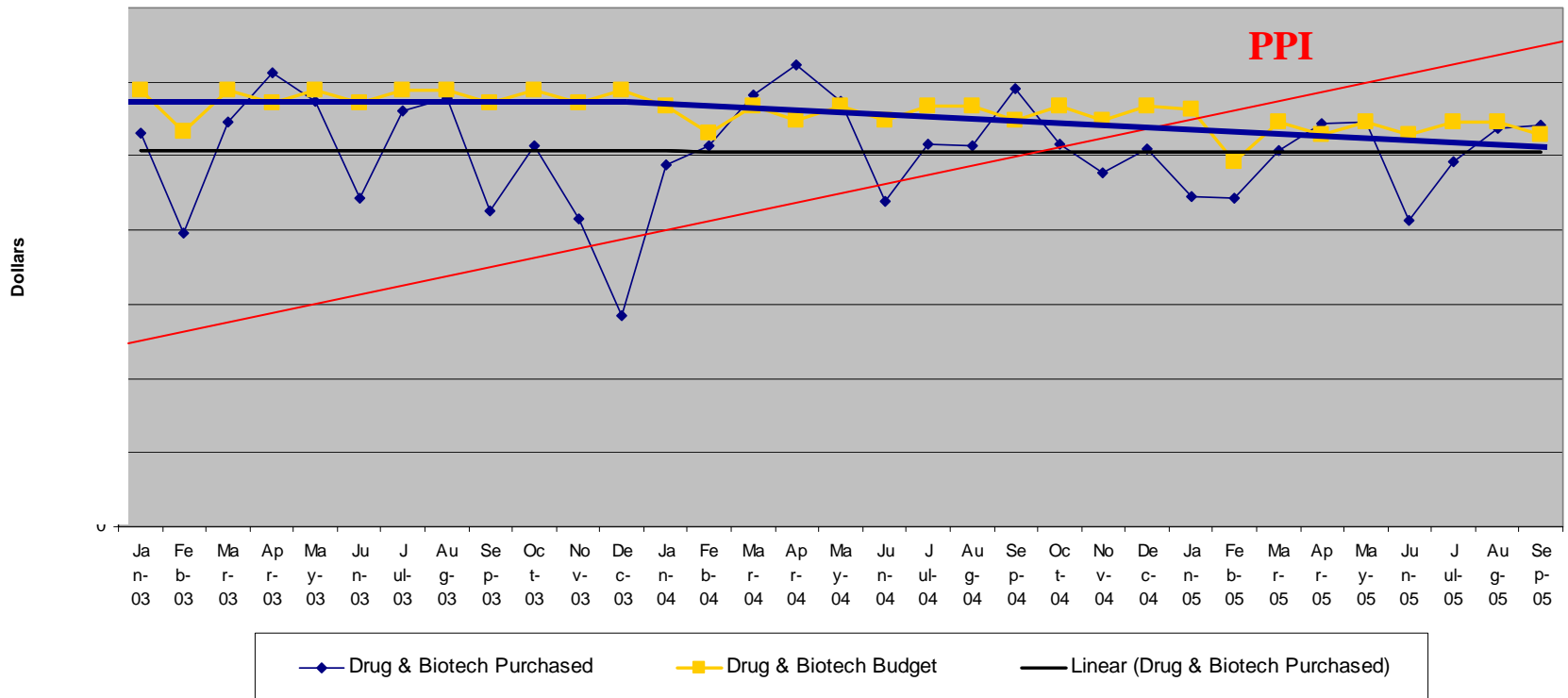
(savings from documentation program)

Overall Pharmacy Clinical Service Profit/Loss



Drug Purchases vs. Budget

Drugs and Biotech Budget vs. Purchased





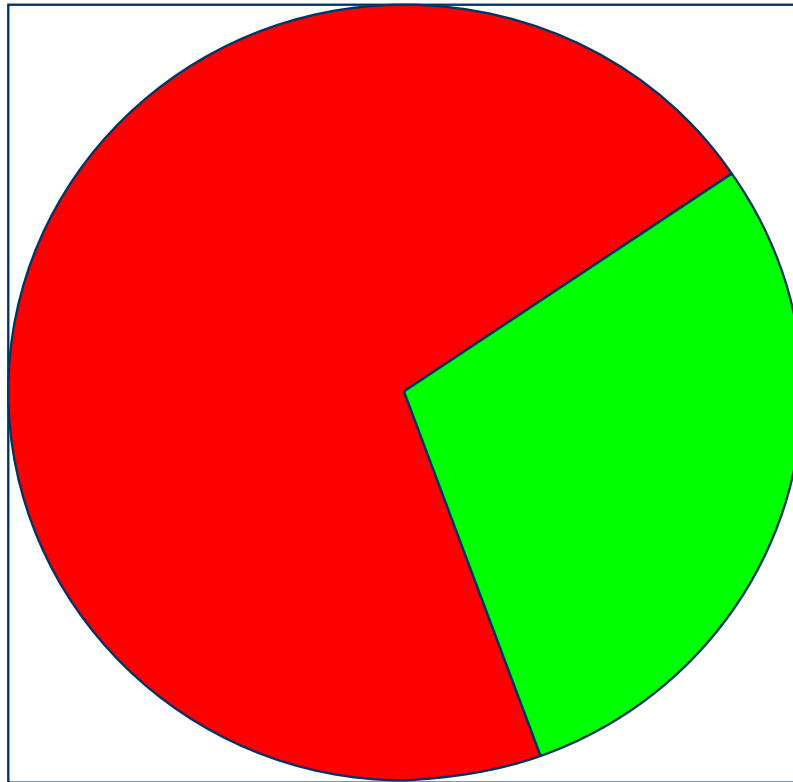
Premier Outlook Report Q4 2005 SHMC

Pharmacy: CMI Adjusted Pt. Days

DEMOGRAPHICS		LABOR					EXPENSE			
Facility	Average Monthly Volume	Worked FTEs	Total Worked Hours/Unit	Total Paid Hrs/Unit	Benefit %	Overtime %	Labor Exp/Unit - WI	Supply Exp/Unit	Other Exp/Unit	Total Exp/Unit - WI
Summary										
61	21,458	63.06	0.51	0.59	12.35%	3.00%	\$18.67	\$43.67	\$2.38	\$64.71
Peer 25th	21,123	46.68	0.38	0.41	7.74%	2.98%	\$14.78	\$48.59	\$1.37	\$64.75
Peer 33rd	21,730	48.28	0.38	0.41	7.95%	3.71%	\$14.95	\$49.16	\$1.66	\$65.02
Peer 50th	22,411	48.47	0.38	0.42	8.35%	4.42%	\$15.28	\$54.77	\$2.14	\$74.06
Detail										
144	23,067	48.35	0.37	0.41	9.77%	0.69%	\$14.26	\$49.18	\$0.45	\$63.89
98	19,226	41.67	0.38	0.41	7.09%	5.10%	\$15.61	\$46.81	\$2.62	\$65.03
7	21,755	48.59	0.39	0.42	7.96%	3.74%	\$14.95	\$72.82	\$1.67	\$89.45
140	35,870	88.66	0.43	0.47	8.73%	7.41%	\$18.45	\$60.36	\$4.28	\$83.09
61	21,458	63.06	0.51	0.59	12.35%	3.00%	\$18.67	\$43.67	\$2.38	\$64.71
Peer 25th	21,123	46.68	0.38	0.41	7.74%	2.98%	\$14.78	\$48.59	\$1.37	\$64.75
Peer 33rd	21,730	48.28	0.38	0.41	7.95%	3.71%	\$14.95	\$49.16	\$1.66	\$65.02
Peer 50th	22,411	48.47	0.38	0.42	8.35%	4.42%	\$15.28	\$54.77	\$2.14	\$74.06
Regional 25th	5,940	16.31	0.45	0.50	8.58%	2.18%	\$16.19	\$47.78	\$1.01	\$66.71
Regional 33rd	6,368	18.86	0.51	0.56	8.77%	2.19%	\$16.56	\$52.23	\$1.41	\$68.26
Regional 50th	7,641	22.53	0.52	0.57	9.55%	3.46%	\$18.07	\$56.69	\$2.04	\$74.54
National 25th	3,934	10.04	0.36	0.41	8.08%	0.80%	\$12.75	\$41.15	\$0.94	\$57.02
National 33rd	5,177	12.67	0.38	0.42	8.71%	1.14%	\$13.93	\$43.18	\$1.42	\$60.61
National 50th	7,641	18.95	0.42	0.47	10.10%	1.79%	\$15.46	\$50.15	\$2.39	\$67.63



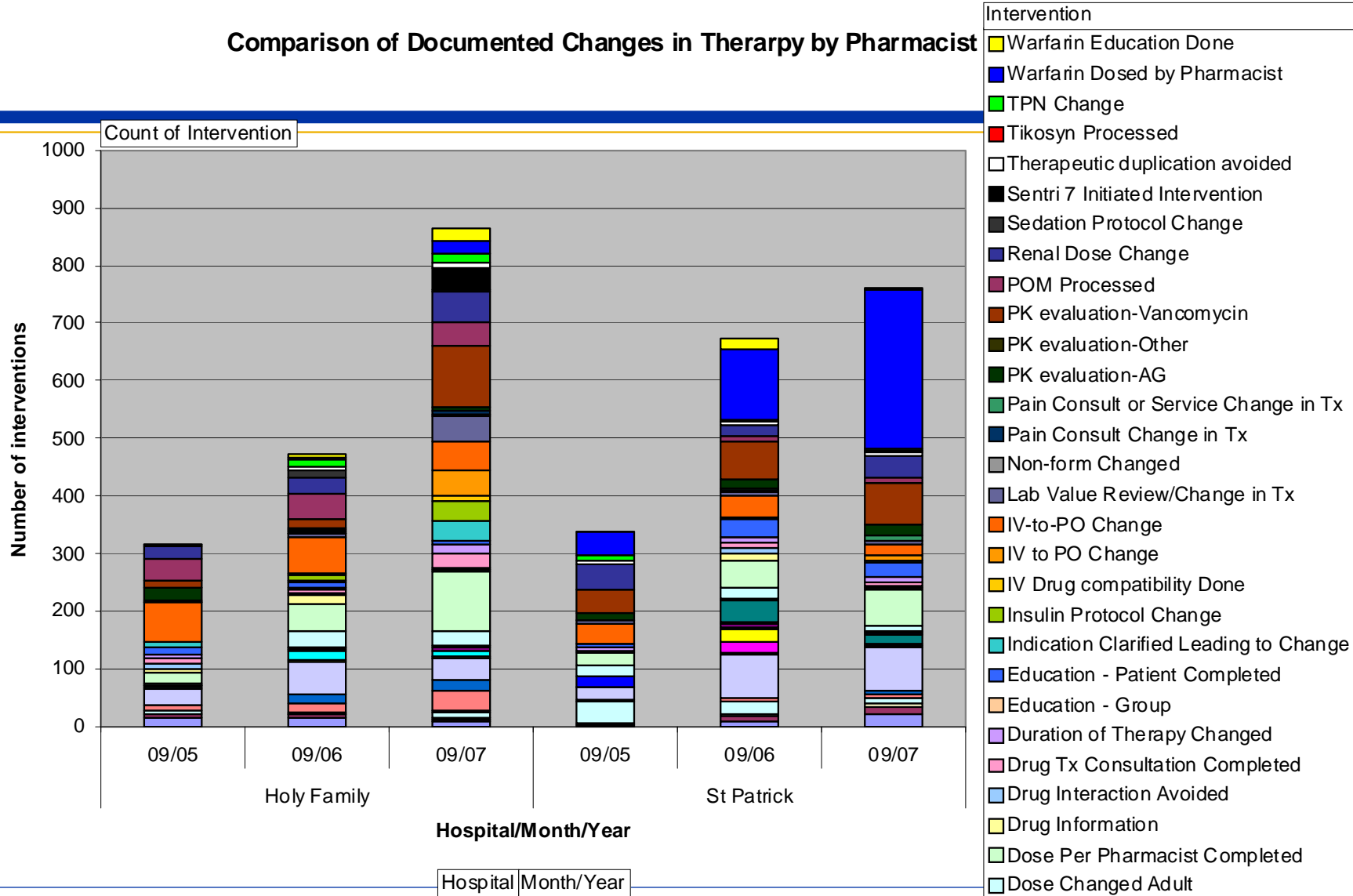
Pharmacy Labor vs. Drug Expense



HFH, SPH Conversions 2006

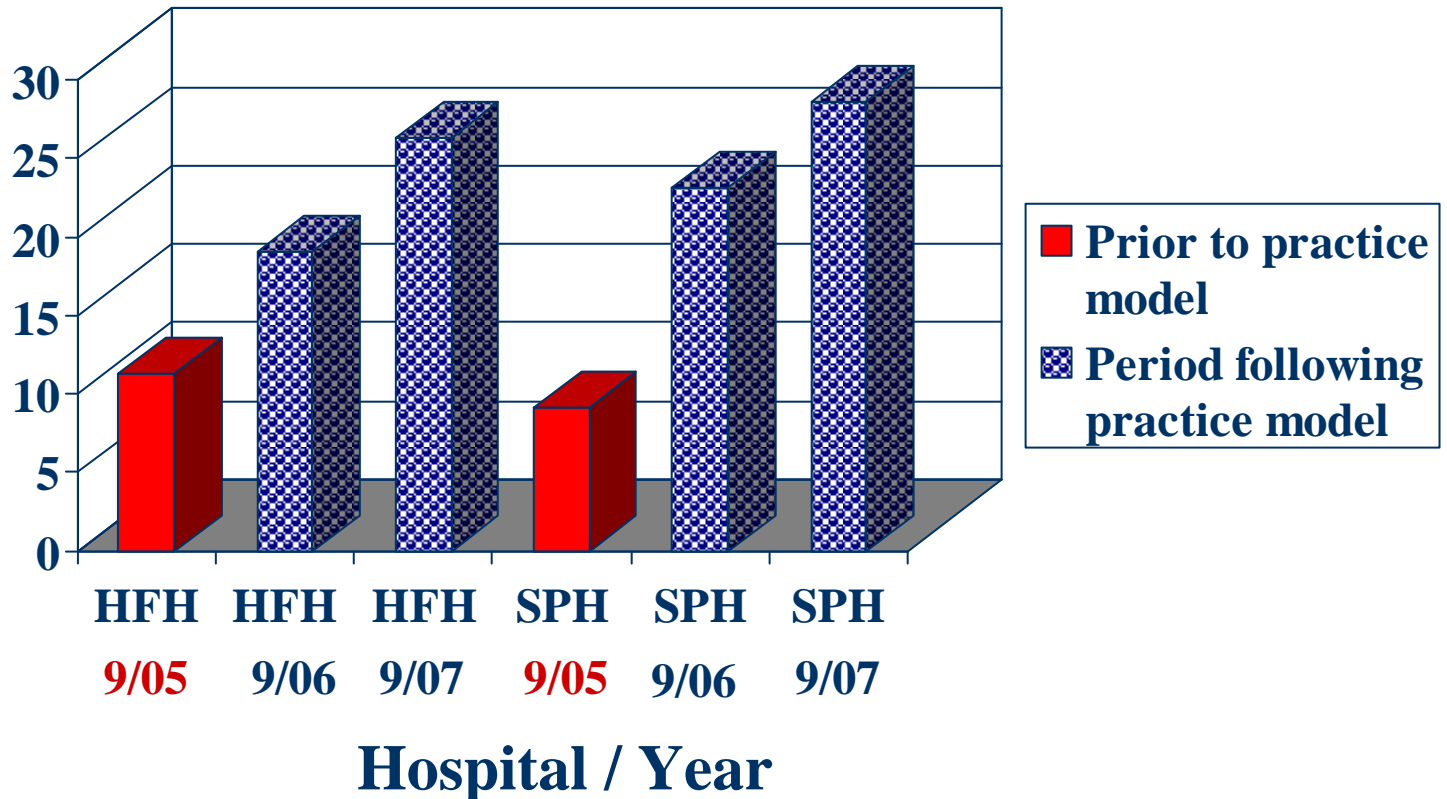
- ◆ **HFH: converted from “target drug” model**
 - Added 3.2 total additional F.T.E.
 - Established 3 clinical services (200 beds)
- ◆ **SPH: “unit based order entry” model**
 - Centralized order review – Pyxis Connect®
 - Implemented operational efficiencies
 - Phone tree, tech check tech, triage RPh, etc.
- ◆ **Documentation using clinical intervention software**

Comparison of Documented Changes in Therapy by Pharmacist



Dollars Saved Per Patient Day

(combined cost avoidance and direct)



Cost Avoidance Calculations

Intervention	Number Increase Per Year	Clinical Impact Per Evidence	Cost Avoidance
Chemo Dose Eval/Change	72	3.6 ADE prevented (1 per 20)	\$7,920
Drug Therapy Consult	96	9% reduced LOS	\$7,200
Warfarin Per Pharmacist	53	Cost benefit 11.4:1	\$9,850
Warfarin Ed	48	17% decrease in readmit at 30 days	\$9,984
Dose Per Pharmacist	660	20 ADE prevented (1 per 33)	\$72,600
Total	833		\$107,554

Pharmaceutical Expense Trend

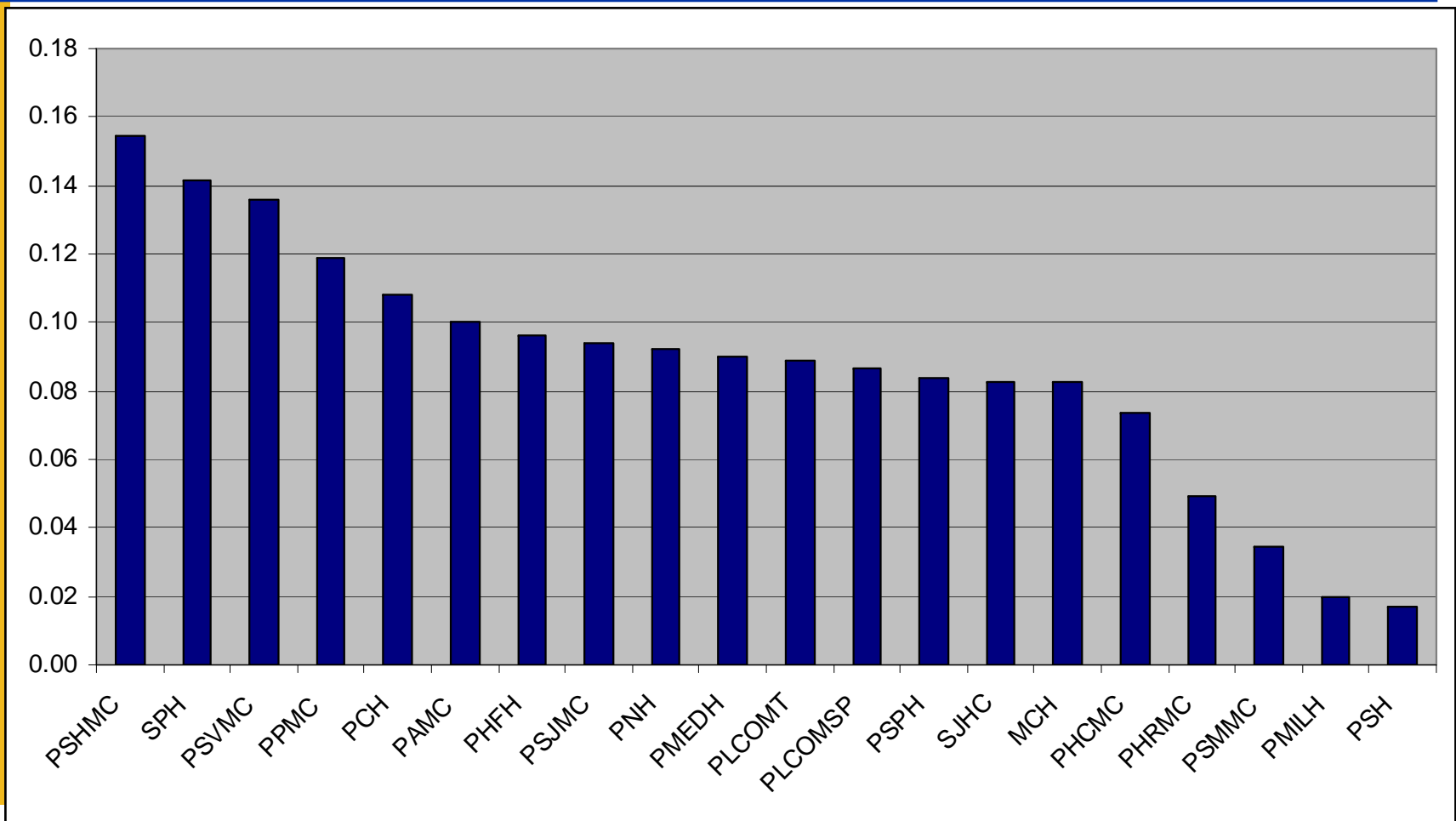
- ◆ Supply costs trended down for both hospitals beginning with the quarter the model was implemented.
- ◆ The pharmacy supply costs per case mix adjusted patient day have trended down each year for three years at each hospital.
- ◆ The total pharmacy expense is below the 25th percentile, despite labor expense above the 50th percentile.

Endorsements

“I fully support the implementation of the pharmacy clinical practice model as it delivers a significant return on investment both financially and on improving quality of care”

Tom Corley, President, HFH

Number of Interventions Documented Per Case-Mix Adjusted Admit June 2009



Examples of Pharmacy Interventions From Documentation Program at PH&S Hospitals

- ◆ Nitroprusside discontinued in a patient with compromised renal function (scr=6.1) avoiding a high risk of cyanide toxicity.
- ◆ Metformin discontinued in patients with poor renal function and/or receiving contrast avoiding risk of lactic acidosis.
- ◆ Patient admitted on warfarin with no INR ordered. INR ordered per pharmacy and held when level came back >6 therefore reducing the risk of bleeding.
- ◆ Heparin infusion stopped by pharmacist for an aPTT of 198 while also on warfarin which put the patient at a high risk of bleeding.

CONCLUSIONS

- ◆ **Clinical pharmacist have a significant impact that can be measured**
- ◆ **Effective management of drug utilization results in decreased supply costs**
- ◆ **Pharmacy productivity benchmarking should include a metric for clinical pharmacist activity and combine labor with supply cost**
- ◆ **Return on investment is greater than the cost for clinical pharmacists**

QUESTIONS?