

# The Health Information Technology Summit

San Francisco – March, 2005

## Sutter Health's System HIT Initiatives

Presented By:

**Todd Peterson**

VP & CIO, System Support Operations



*Sutter Health*

Community Based, Not For Profit

# Leadership

- **Pull** the string and it will follow wherever you wish; **push** the string and go nowhere.
- The Best leaders have sense enough to **pick good** people and the **self restraint** to keep from meddling with them while they do their good work.
- **Leadership** and **communications** are inseparable; you can't have one without the other.
- Sutter Health's CEO, Van Johnson, defines **Leadership** as a change agent in the transformation of Healthcare Delivery.

# Sutter Health System Demographics

- Northern California / Hawaii
- 28 Hospitals, 9 Medical Foundations, 27 other Business units across 100+ communities
- 41,000 employees
- 4,500 aligned Physicians
- 1% of all USA Births occur in Sutter Health Hospitals
- Over 5,800 lic Beds
- \$5.8 Billion 2004 Net Revenue
- \$1.4 Billion in IT Capital through 2014
- Long Term View of IT Change vs. Short term projects

# IT Leadership

## Change Leadership - It's All About Trust

- **Requires the long view**
- **Focus on strategic alignment, not control**
- **Communicate personally and relentlessly in all directions**
- **Respect and adapt to the operational priorities**
- **Continuously draw the connections to operational priorities**
- **Humor and humility**
- **Count to 10**

# Sutter Health Information System Achievements in 2004

**Computer World's "2<sup>nd</sup> year" Top 100 Places to work – North America" (Top places for opportunities for Women in Technology**  
**Information Weeks "Top 500 Innovators (4th year in a Row)**  
**Information Weeks "Innovators and Leaders 2004"**  
**Hospital and Health networks : 100 Most Wired Hospitals (3rd year)**  
**Diversity Awards : Diversity Magazine**  
**E-Healthcare Leadership (Gold) for PAMF's "Best Interactive site and best Care / Disease Management Site (Supported by System Support IS)**  
**Cover Story for Patient safety : Information Week**  
**Cover Story for Data Integration : Information Week**  
**Cover Story for IT Leadership : Advance Health Information Executives**  
**Cover Story : Healthcare Leaders**  
**Feature Articles on Sutter IT : Healthcare Informatics, Information Week, E-Week, Health Data Management, Diversity Magazine**

# IT Cost Statistics

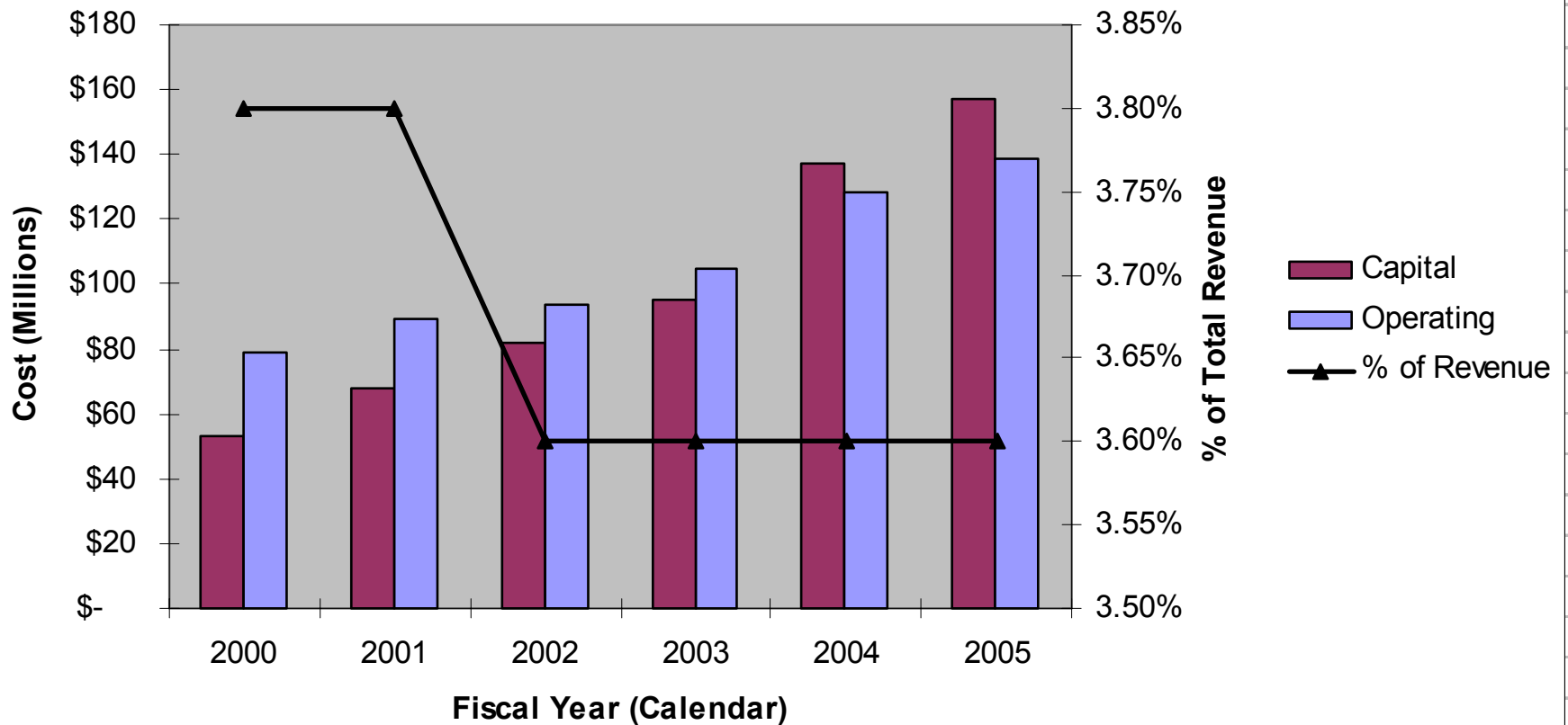
## ■ Capital

2000	\$ 53 Million
2001	\$ 68 Million
2002	\$ 82 Million
2003	\$ 95 Million
2004	\$137 Million
2005	\$157 Million

## ■ Operating

2000	\$ 79 Million	Combined 3.8 %
2001	\$ 89 Million	Combined 3.8 %
2002	\$ 94 Million	Combined 3.6 %
2003	\$ 105 Million	Combined 3.6 %
2004	\$ 128 Million	Combined 3.6 %
2005	\$ 139 Million	Combined 3.6 %

# IT Cost Statistics



# Enterprise-wide SHIRE

- Enterprise Master Person Index and Common/Enterprise Scheduling
- SHEW
- Clinical/Case Management and Outcomes Reporting (Health Status, Health Risk, Patient Satisfaction, Clinical Results)
- Clinical Decision Support
- Protocols/Guidelines
- Rules-based Order Entry

## Integrated Patient Care at the Regional Level

Clinician View, Patient View (MY CHART)

## Data Model and Standards

### Patient Care In-Patient

Nursing/Documentation, Electronic Medical Record

### Patient Care Ambulatory

Clinical Documentation, Electronic Medical Record (EPIC)

### Communications Between Ancillaries /Nursing/Billing

Order Entry and Results Reporting (SHIPER & EPIC WEB)

### Communications Between Ancillaries/Offices/Billing

Order Entry and Results Reporting (EPIC & EPIC WEB)

### Clinical Department Workflow and Billing

Laboratory & Radiology (SunQuest), RX, Niche Depts,  
Transcription

### Clinical Department Workflow and Billing

Laboratory & Radiology (SunQuest), Transcription, Niche  
Depts

### Transaction Systems to Support Billing

ADT/REG(MS4), Medical Records(MS4), Patient  
Accounting(MS4), Financial Decision Support System (TSI),  
Regulatory Compliance, Contract Mgmt, Eligibility/Referral  
Mgmt(MS4/HDX), Managed Care

### Transaction Systems to Support Billing

Physician Practice Mgmt(IDX), Managed Care, Contract Mgmt,  
Eligibility/Referral Mgmt

Technical Infrastructure    IDX    Lawson  
IT Cost    Containment

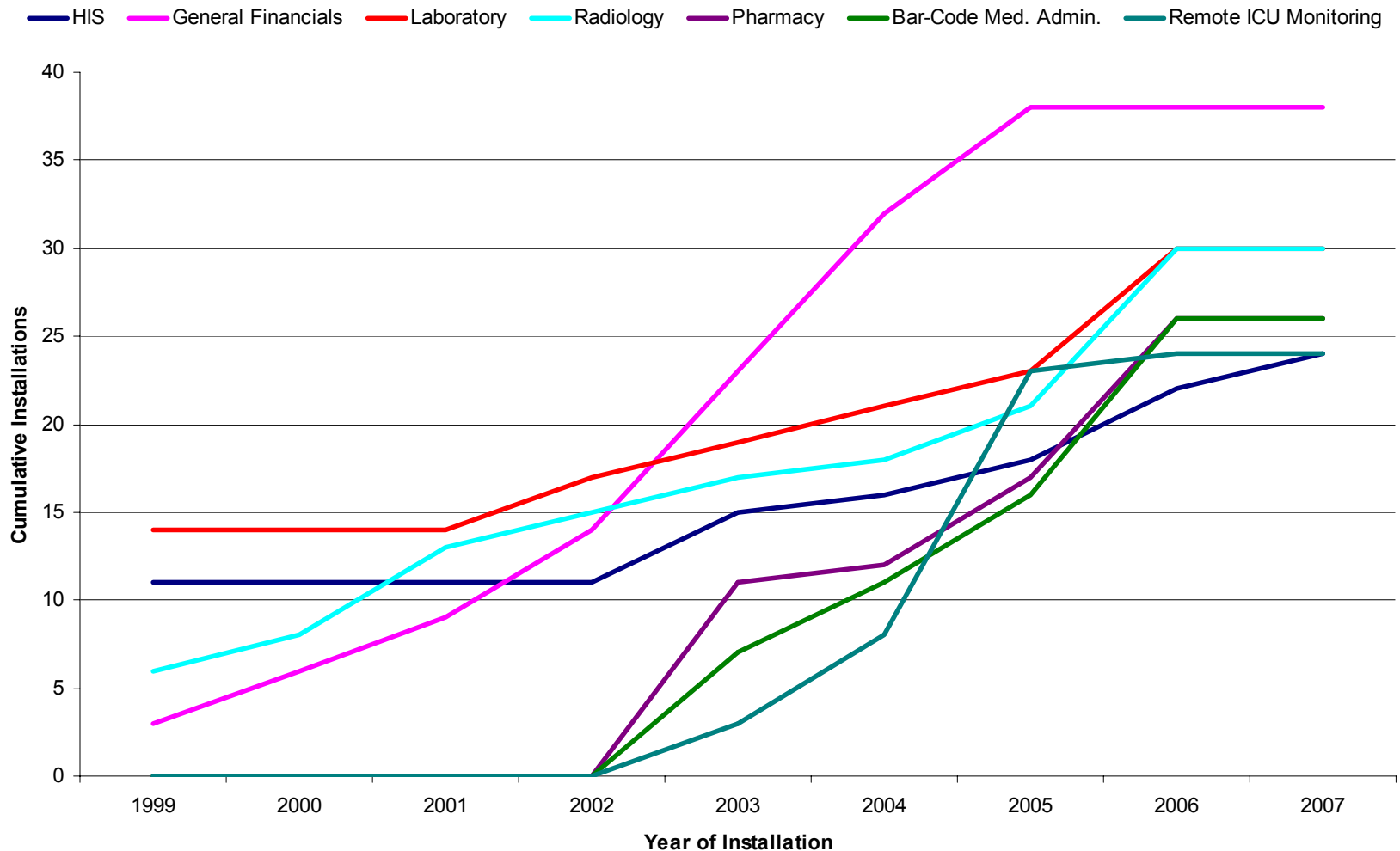
Data Standards  
Reporting Links

IT Value    Web Enabled Apps    Project Management  
Security



# Standard Application Activity

Application Installation Activity



Color Implementation Time lines														
5 year IT forecast for Standards														
	MS4							Lawson,						
	2002	2003	2004	2005	2006	2007		2002	2003	2004	2005	2006	2007	
Central														
Sutter Auburn Faith Hospital														
Sutter Medical Center, Sacramento														
Sutter Continuing Care Corporation														
Sutter Davis Hospital														
Sutter Medical Foundation														
Sutter Roseville Medical Center														
Solono Regional Med Foud.														
Central Valley														
Gould Medical Foundation								GL all						
Memorial Hospital														
Los Banos														
Sutter Tracy Community Hospital														
Delta Med Foundation (**)														
North / Coast														
Sutter Amador														
Sutter Coast Hospital														
Sutter Lakeside Hospital														
Sutter Medical Foundation - N. Bay														
Sutter North Medical Foundation														
Sutter Medical Center Santa Rosa														
Bay Region														
Alta Bates Medical Center / Summit														
Delta Memorial Hospital				*										
Eden				*										
Sutter Solano Medical Center				*										
Marin General Hospital/Novato							HR/PR all							
California Pacific Medical Center														



Color Implementation Time lines														
5 year IT forecast for Standards														
	Lab							RAD						
	2002	2003	2004	2005	2006	2007		2002	2003	2004	2005	2006	2007	
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6/30/04    Version 6.1													
	Lab						Rad						
	2001	2002	2003	2004	2005	2006	2001	2002	2003	2004	2005	2006	
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Western Bay													
Marin General Hospital/Novato													
Mills Peninsula Medical Center													
California Pacific Medical Center													
Sutter Medical Center Santa Rosa													
Peninsula / South Coast													
Palo Alto Medical Foundation													
Santa Cruz Medical Foundation													
Camino Med Group													
Sutter Connect													

## Color Implementation Time lines

## SH Patient Safety

## 2003/ 2004/ 2005 in Draft IT Plans

	E-MAP						E-ICU						Mediware					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007

[illegible]

Sutter Auburn Faith Hospital								
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[illegible]

<b>Sutter Continuing Care Corporation</b>			
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Sutter Davis Hospital							
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## Sutter Medical Foundation

Sutter Roseville Medical Center						
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[illegible][illegible]

Gould Medical Foundation			
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Sutter Lakeside Hospital								
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Sutter Medical Foundation - N. Bay					
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Sutter North Medical Foundation			
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<b>Sutter Connect</b>			
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# Example of IT project life Cycle

- Bar Coding “ impact” to Patient Safety
- Technology Challenge
- IT Challenge
- Project Start
- Project Review

# Real Time Automated Checking

Starting with the “Five Rights”...

- **Right patient**
- **Right drug**
- **Right dose**
- **Right time**
- **Right Route of Administration**





# Intercepting Medication Errors

	Prescribing	Transcribing	Dispensing	Administering
Medication Phase Error Distribution	39%	12%	11%	38%
Per 100 Errors	39	12	11	38
Intercept Rate	48%	33%	34%	2%
# Errors Reaching Patient	20	8	7	37
True Error Rate	28%	11%	10%	51%

# Bar-coding

- Prevents medical mistakes
- Significantly curtails simple, human errors
- Reduces stress for overworked nurses
- Provides real cost savings

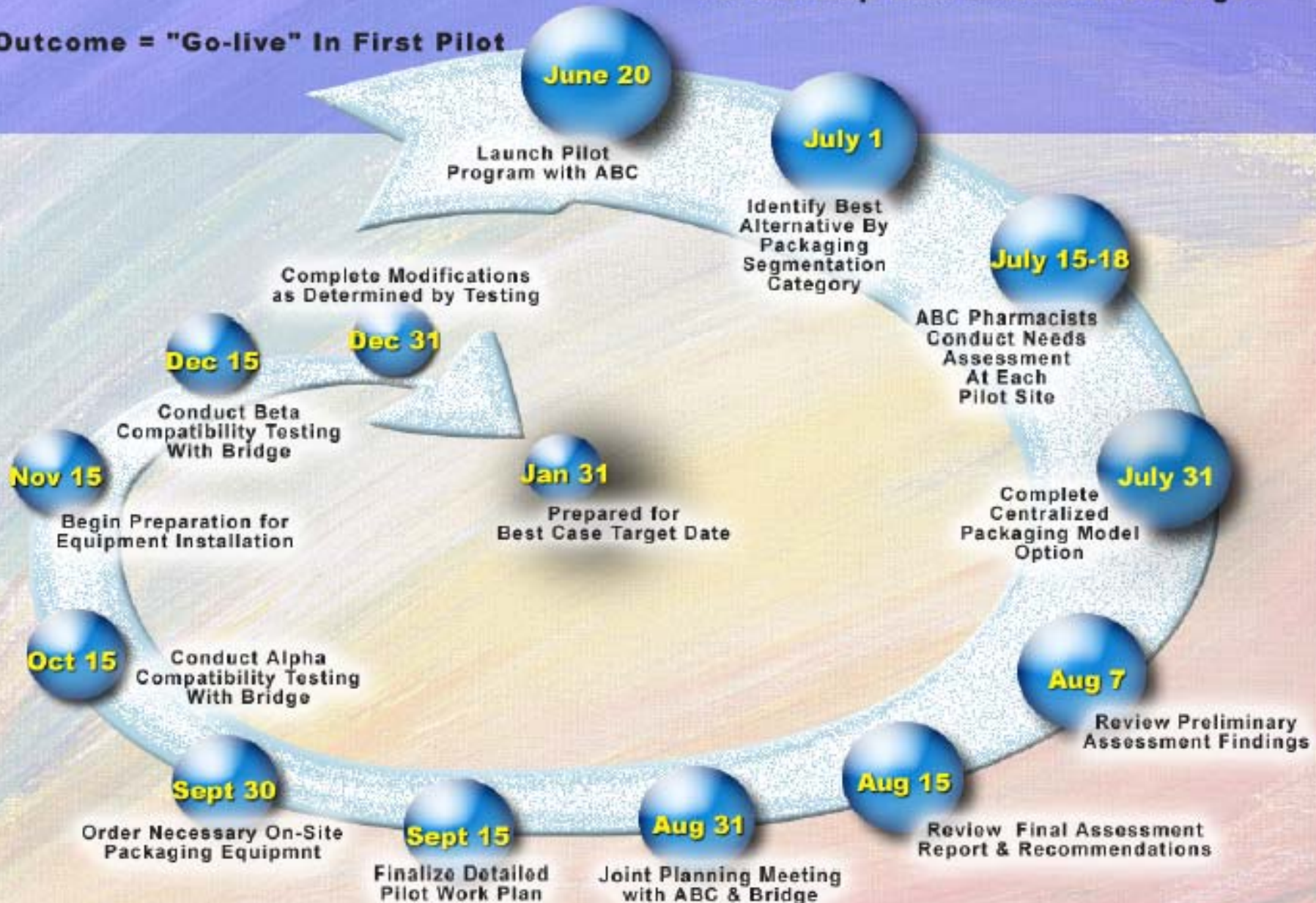
**“Bar-coded technology is needed for drug administration. It would prevent most of the errors that we see, even with the labeling and naming problems.”**

**Institute for Safe Medication  
Practices President Michael R.  
Cohen, MS, FASHP**

# Bar Code Packaging Pilot:

Partnership with AmerisourceBergen

Outcome = "Go-live" In First Pilot





# Medication Errors Due to Similar Packaging

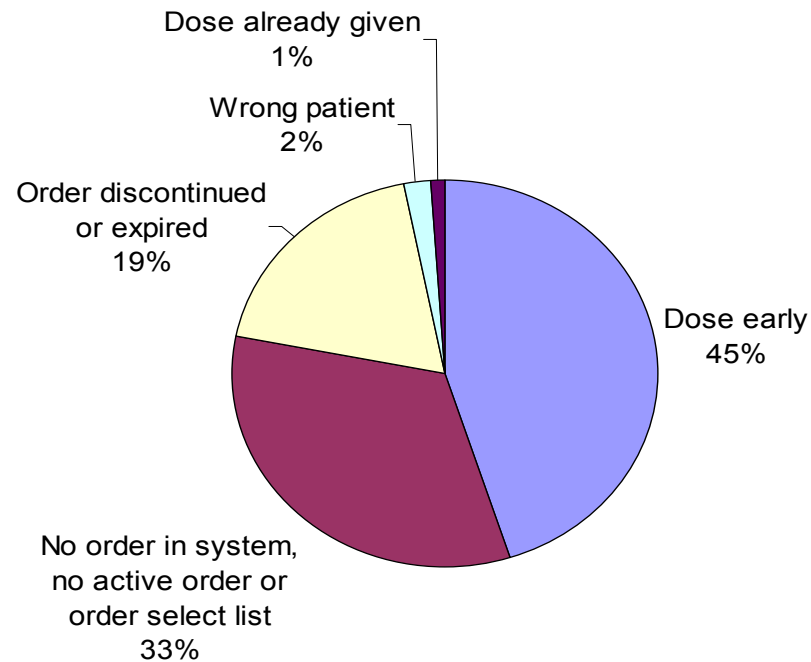


J. Smetzer,  
ISMP

Prompts to remind the nurse to check for “sound-alike” and “look-alike” drugs

# 300 Prevented Medication Errors, by Type

## 1% of Attempted Med Administrations in Sample



# Lessons Learned from E-Map

- Do the Pharmacy FIRST !!
- Don't assume that any medication can't be bar-coded
- Get Nurses and Pharmacists into the design as early as possible
- Put Carts at the beds side and **THE CARTS MATTER !!!!**
- Don't assume that this will make a change in patient care.

# EMR Project History

- IT asked for a review of EMR for combined In-Patient and outpatient by End of 2004
- IT was to review effect of a EMR on current work loads such as Lawson, E-Map and E-ICU
- EMR would reflect Foundation, IPA and other Care givers connecting into a united EMR as well as :
  - Review Clinical / Strategic and other time line needs
  - Recommend Vendor
  - Recommend Time line
  - Recommend Cost Model

# EMR Review

## ■ Business Drivers

- Institute of Medicine (IOM) Reports for EMR/ CPOE
- Leapfrog Group Requires EMR / CPOE
- Federal “E.H.R.” Initiative Announced Time lines . Political time lines shortening (President Bush, Senators Frist, Clinton, Kennedy, etc.
- Emerging Standard of Care requires EMR
- Patient Satisfaction / EMR Access ( PAMF)
- Cost Factors in how current vendors used
- Changes in Technology with further consolidation of hardware.



# EMR Review IOM Core

- 1: Health Information Data
- 2: Results Management
- 3: Order Entry/ Order Management
- 4: Decision Support
- 5: Electronic Communication
- 6: Patient Support
- 7: Administrative Processes
- 8: Reporting

# EMR Potential for Cost Savings (ROI)

- **Coding 10 % Increase per encounter \***
- **Faster completion of billing ( Documentation complete at time of billing) \***
- **Improved accuracy in documentation leads to fewer claim/bill denials; avoids costs of reconciliation and challenge.**
  - **33% decrease in Medicare disallowance of ordered tests at Geisinger Health System**
  - **\$1.1m to \$1.5m savings opportunity at Geisinger through online documentation, eligibility checking, and COB.**
  - **Immediacy in documentation avoids billing delays; accuracy reduces bill/claim denials.20% reduction at ThedaCare26%**
  - **65% to 75% decrease in “missed” charges at TehdaCare**

\* Hekman Group 2004

# EMR Potential for Cost Savings (ROI)

- Transcription \$ 8,000 / year / MD decrease \*
- Med Records \$ 3,000 / year / MD \*
- Decrease in paper, forms and folder costs.  
Geisinger saves printing and filing of 372,000 chart documents annually

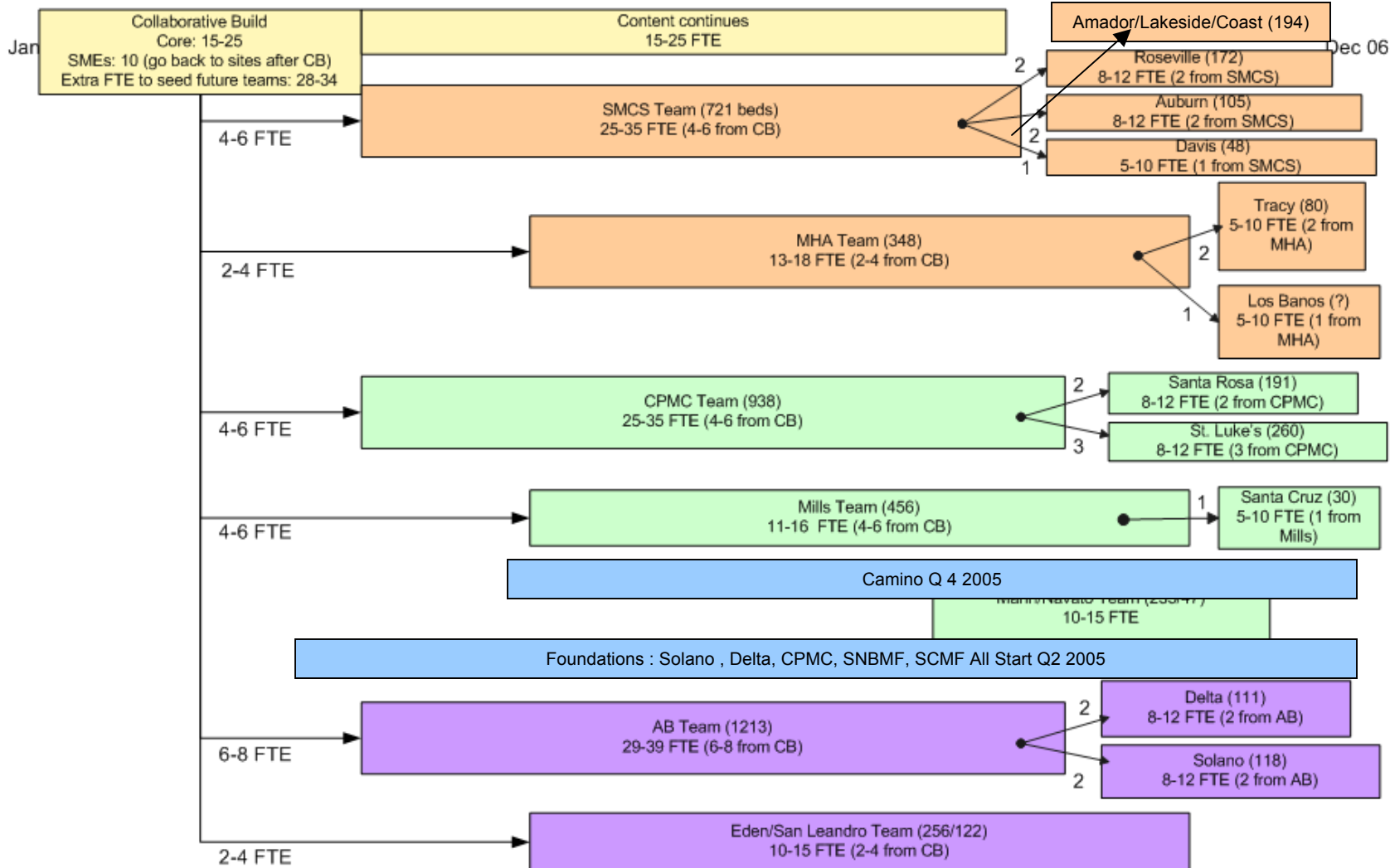
\* Hekman Group 2004

# EMR Potential for Cost Savings (ROI)

- **Increased Patient Safety/ decrease in patient errors**
  - Alert functions decrease ADE risk. \*
    - Savings estimated at \$28k annually Per ADE - \$17k in meds, \$7k in radiology, \$3k in lab, and \$1k in other ADE-related costs.
  - Study: Additional LOS attributable to ADE = 1.91 days; excess cost of hospitalization = \$2,262 \*\*
    - \* “Study: EMR/ CPOE Costs Can Be Recouped In Short Order”, Modern Physician, Joseph Conn, Feb 10, 2004
    - \*\* Classen et al., “Adverse drug events in hospitalized patients. Excess length of stay, extra costs, and attributable mortality.” JAMA 1997; 277:301-306

Upgrade Prod to ??? To accommodate EMFI

Apr-05 Jul-05 Oct-05 Jan-06 Apr-06 Jul-06 Oct-06



# 2007 Strategic Alignment

- Alignment of Information Systems to System Strategic Plan for 2007 convergence
- Allows for “Patient Centric” Healthcare
- EHR Shared across all forms of Sutter Health Medical Services
- Allows for “ Consumerism” in Healthcare Delivery

# Creating A Virtual Healthcare System Electronic Medical Record (EMR)/Electronic Master Patient Index (EMPI)

## EMR/EMPI

- Connect Inpatient & Outpatient
- Share Data
- Simplify referrals
- Enhance patient access
- Extend to IPA physicians with Epic Lite

Data to redesign pricing  
= Affordability

Flexibility to design new products  
= Customer Acquisition

Enhancements to transparency  
= Consumerism

San

Modesto

Santa Cruz

# Responding To Our Marketplace Meeting Customer Needs

