



CALIFORNIA  
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# Legislating Patient Safety: The California Experience

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# **The Problem:** Preventable medical errors are a huge and largely invisible cause of death in California and nationwide.

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- In CA, an estimated 10,000 people die each year from preventable medical errors and 140,000 people are injured as a result of medical treatment.
- Across the nation, approximately 120 preventable deaths occur each day.
- Between 1978 and 1999, 9 to 22 patients died unnecessarily each year at every community hospital in the country.

# California's Response: SB 1875 Passed to Require Hospitals to Create Medication Error Reduction Plans

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The law required each hospital's plan to:

- Eliminate or substantially reduce medication-related errors
- Use technology shown to be effective at reducing medication errors
- Be submitted by January 1, 2002
- Be implemented by January 1, 2005

Exemptions included:

- Rural hospitals could forgo the technology requirement
- Hospitals undergoing seismic upgrade could delay implementation deadline

# SB 1875 Requires Hospitals to Create Plans Based on Several Guiding Principles\*

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1. Address facility-wide reduction of medication errors and be led by a multi-disciplinary, accountable committee.
2. Include effective reporting mechanisms to ensure medication error review and to identify actual or potential medication-errors.
3. Establish baseline assessment and annual review of the effectiveness of the medication error reduction plan.
4. Include technology implementation.
5. Show evidence of having reviewed pertinent literature related to the reduction of medication errors.

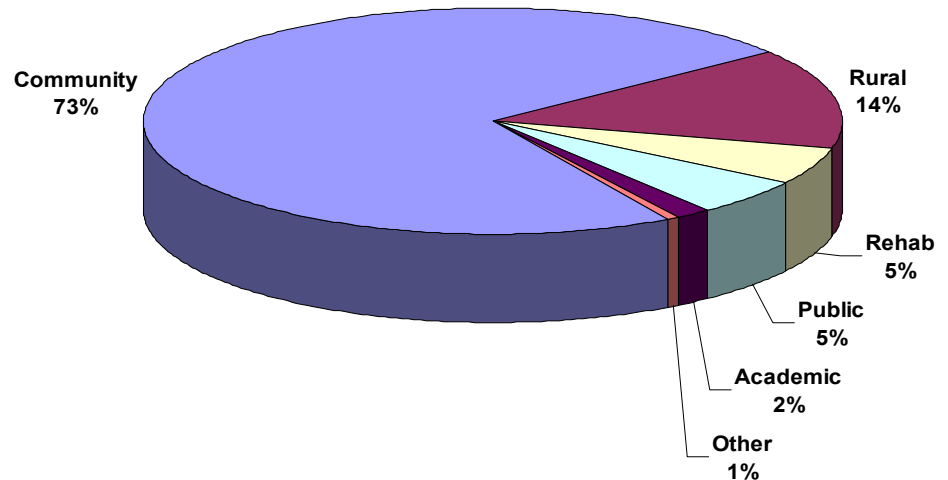
\*Developed by the Department of Health Services

# Analysis of Hospitals' Plans

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Under a grant from CHCF, Convergence Health Consulting (CHC) reviewed 344 hospitals' plans, representing 84 percent of plans submitted to DHS, and abstracted their contents.

- 66 plans were unavailable for analysis at hospital's request for exemption from public release.
- The vast majority of hospitals identified themselves as community hospitals.
- 410 out of 411 hospitals ultimately submitted plans to DHS.
- Only one hospital requested a delay in implementation due to seismic construction



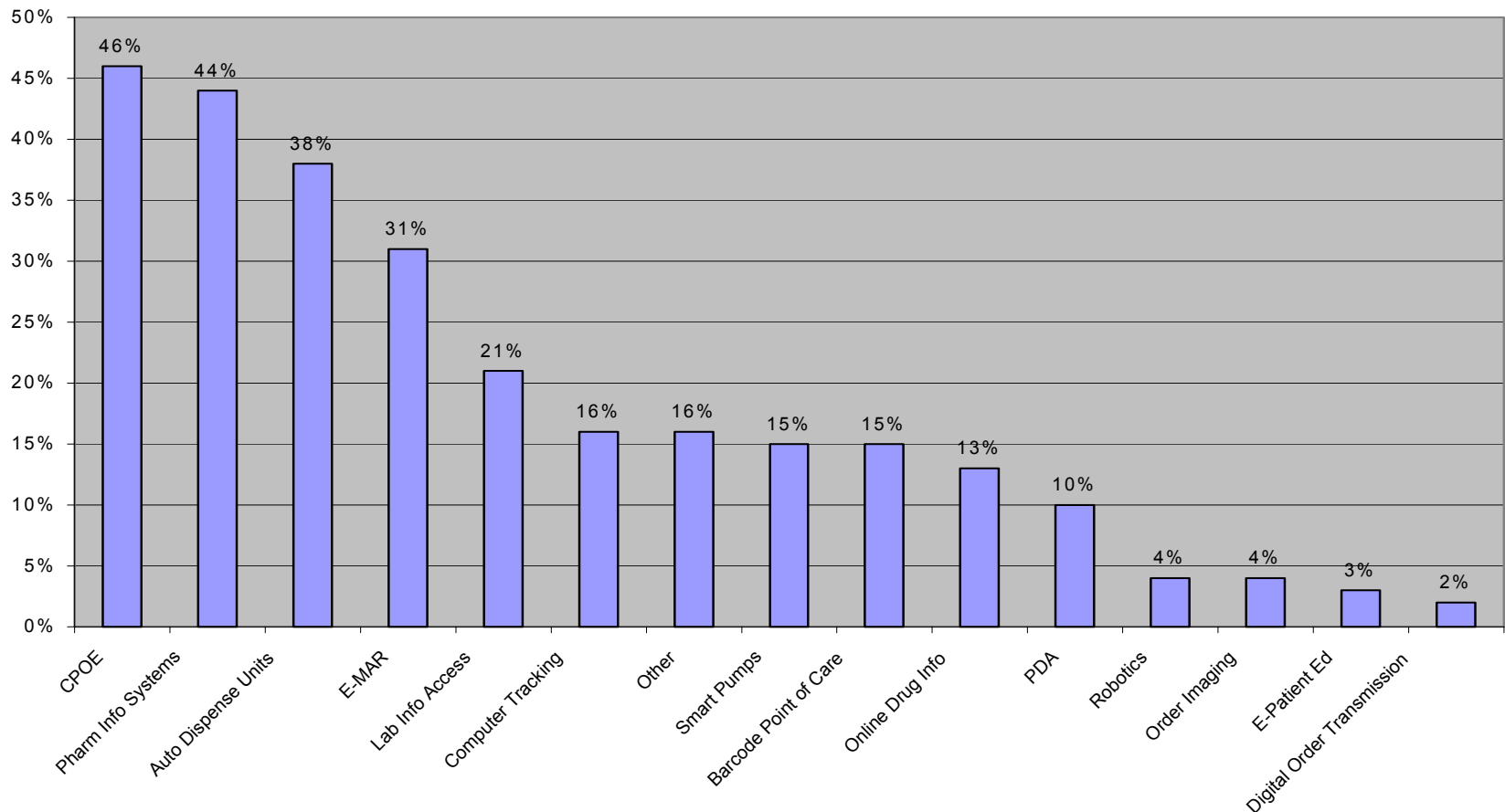
# Plans Submitted by Hospitals Exceed the Minimum Requirements of SB1875

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- Most hospitals have a mature and sophisticated infrastructure for medication error reduction
- Computerized physician order entry (CPOE) is the most common technology proposed, followed by pharmacy information systems (PIS)
- Almost half of California hospitals plan to deploy CPOE by 2005
- Most hospitals plan to implement multiple technology tools to reduce errors
  - 45 percent plan to use at least three
  - 32 percent plan to use at least four

# Hospitals' Plans Include a Variety of Technology Tools

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Hospitals typically employ more than one tool, therefore percentages add up to more than 100 percent.

# For Most Hospitals, CPOE Is the Technology of Choice

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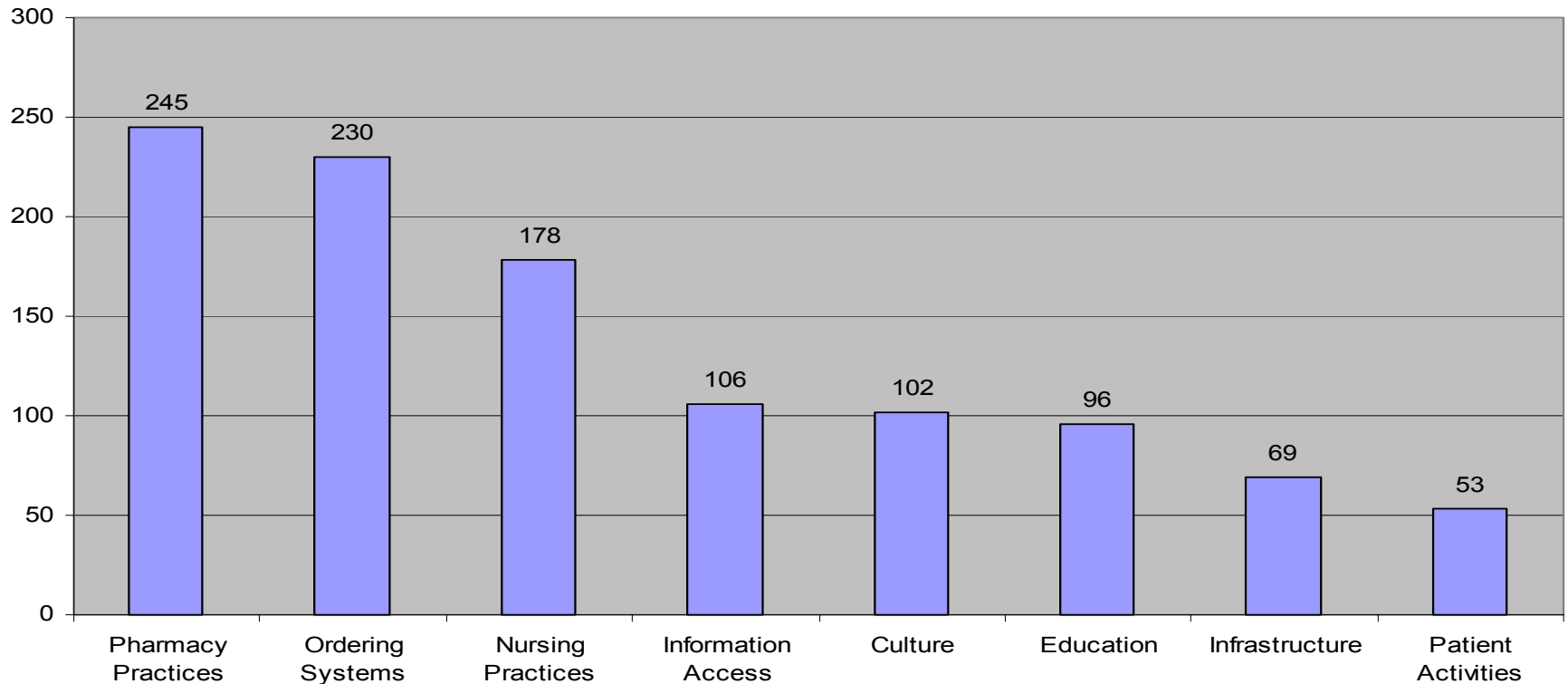
- A CPOE system:
  - Prompts against the possibility of drug interaction, allergy, and overdose;
  - Provides physicians with accurate, current information on drugs new to the market;
  - Eliminates confusion among drug names that sound alike; and,
  - Eliminates most legibility issues and improves communication between physicians and pharmacists.
- CPOE has demonstrated potential:
  - At Boston's Brigham and Women's Hospital CPOE reduced error rates by 55 percent — from 10.7 to 4.9 per 1,000 patient-days. Rates of serious medication errors fell by 88 percent in a subsequent study.



# Hospitals Also Plan to Use Non-technology Strategies to Reduce Errors

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**Non-technology Strategies by Type and Frequency**



# Non-Technology Strategies Complement Technology Strategies

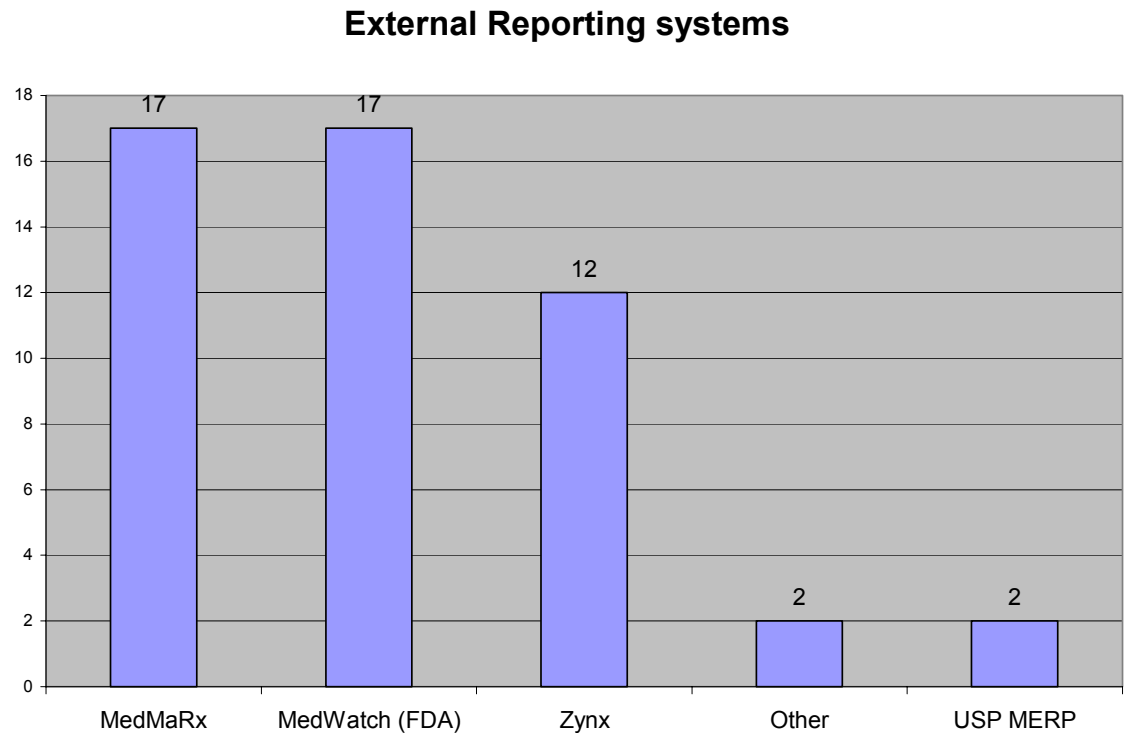
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- Many hospitals chose multiple non-technology methods to reduce medication errors that often correlated with JCAHO or other standards and practices
- Many were used as a precursor to a technology tool (e.g., decision rules and pre-printed orders prior to CPOE deployment)
- The most aggressive plans chose strategies from every aspect of the medication delivery process
- Innovative non-technology strategies included:
  - Work-rest schedules
  - Medication administration pathway systems (MAPS) i.e., multi-disciplinary teams using clinical “pathways” to systematically reduce errors
  - Computer screen savers as education/communication tools

# Error Reporting Systems Are Prevalent in Hospitals

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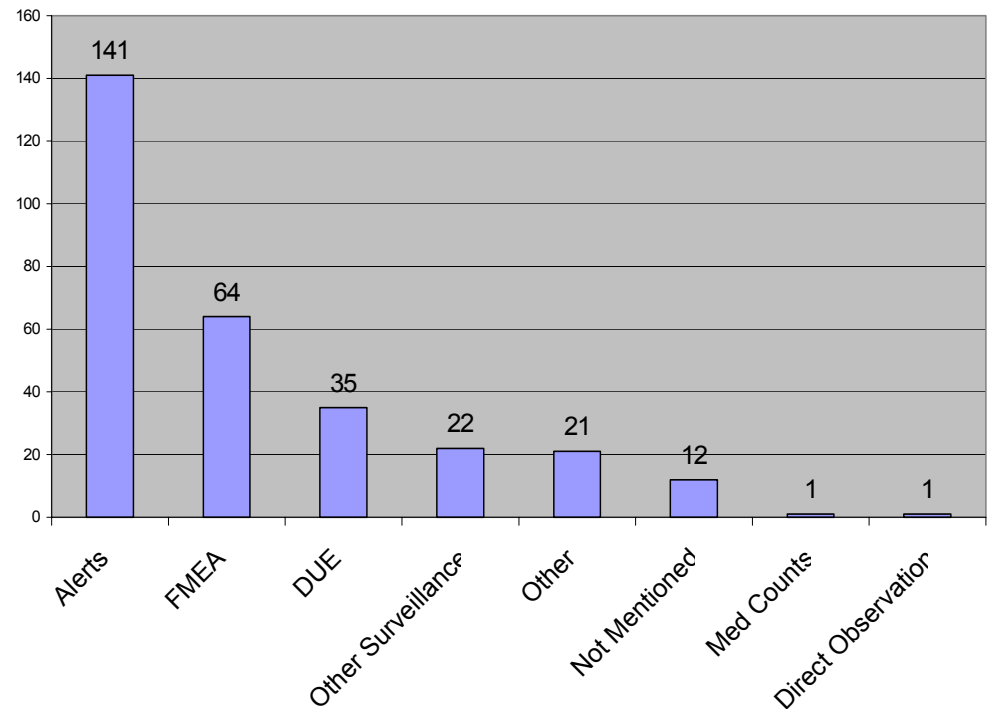
- Nearly 99 percent use internal reporting systems
- Only 17 percent report errors to an external agency
- 89 percent have mechanisms to report “near misses”
- 65 percent use automated surveillance methods to detect errors



# Proactive Methodologies Help to Identify and Prevent Medication Errors

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- **Alerts**, usually from automated sources like pharmacy information systems, are the predominant method to anticipate or proactively reduce errors.
- **FMEA**, is an engineering method to analyze failure risks now required by the JCAHO as an accreditation standard.
- **Drug Use Evaluation (DUE)** is a longstanding technique to study specific pharmaceutical practice issues, often examining high-risk medications.



# SB1875 Legislation Has Resulted in Positive Changes in Medication Error Reduction

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- Patient safety efforts have gained substantial momentum.
- Hospitals appear to respond aggressively when external forces (legislation, JCAHO standards, Leapfrog) significantly overlap.
- The strongest approaches to medication safety use high-yield technology strategies built on the foundation of a sophisticated infrastructure and explicit attempts to increase a “culture of safety.”

# However, There Remains Room for Improvement

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- Few hospitals directly measure the detection or reduction of errors.
- Hospitals plans rarely describe explicit criteria for success.
- The level of physician participation is usually not described.
- The effectiveness of CPOE systems is not described.
- Error measurement (also called failure detection) strategies are in their infancy and are infrequently applied directly to care processes.
- The inability to quantify physician participation or CPOE system criteria for success are major flaws in current medication safety plans.