



Bar-Coding at the Bedside

Presented by:

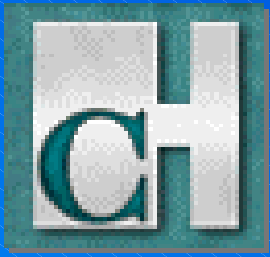
Diane W. Allen, RN, MS, CNOR

Chief Nursing Officer & VP of Operations

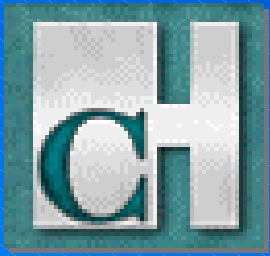
Concord Hospital

Concord, New Hampshire

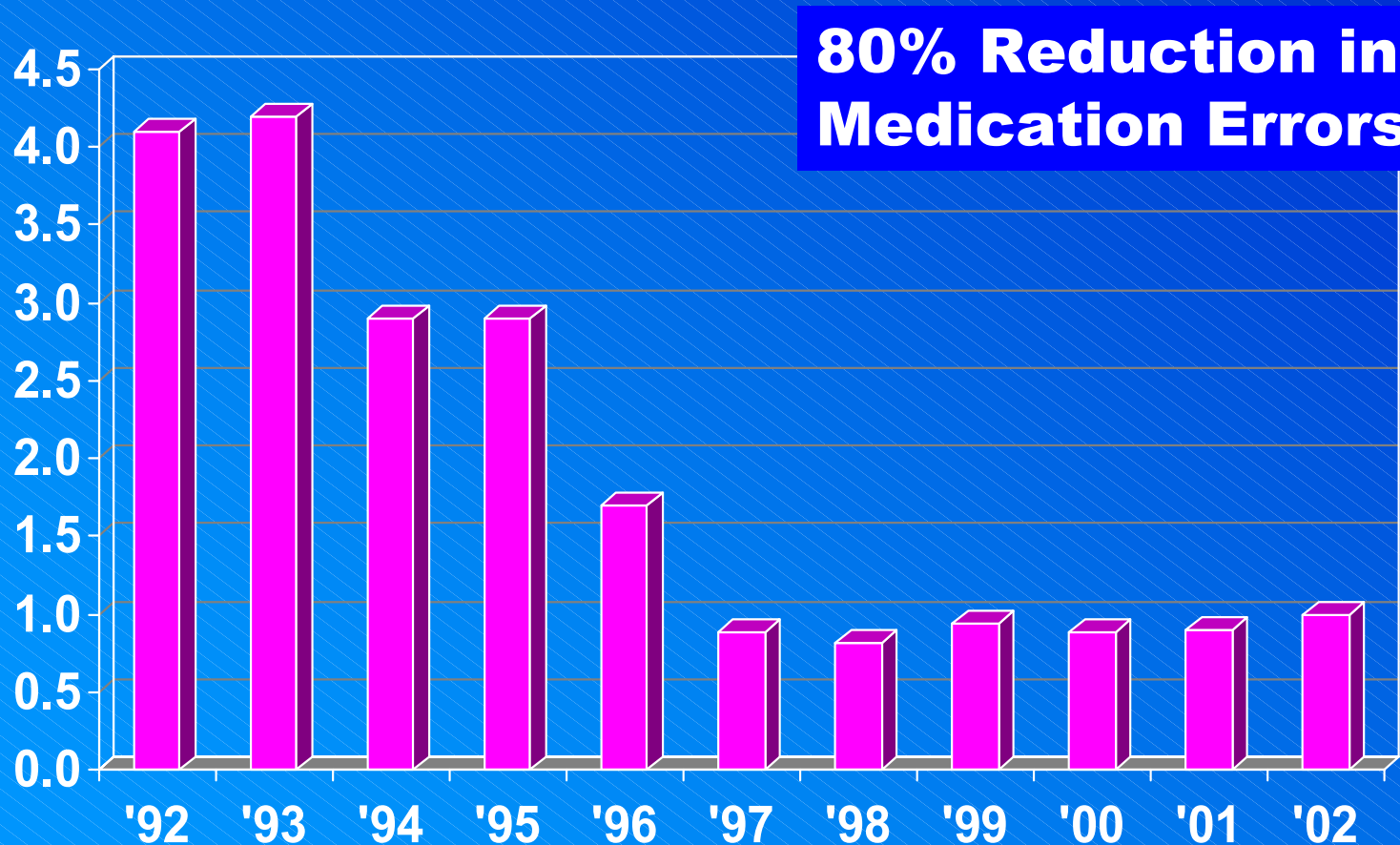
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Empowering Healthcare

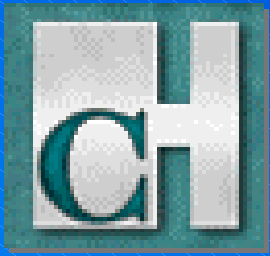


Our Results . . .

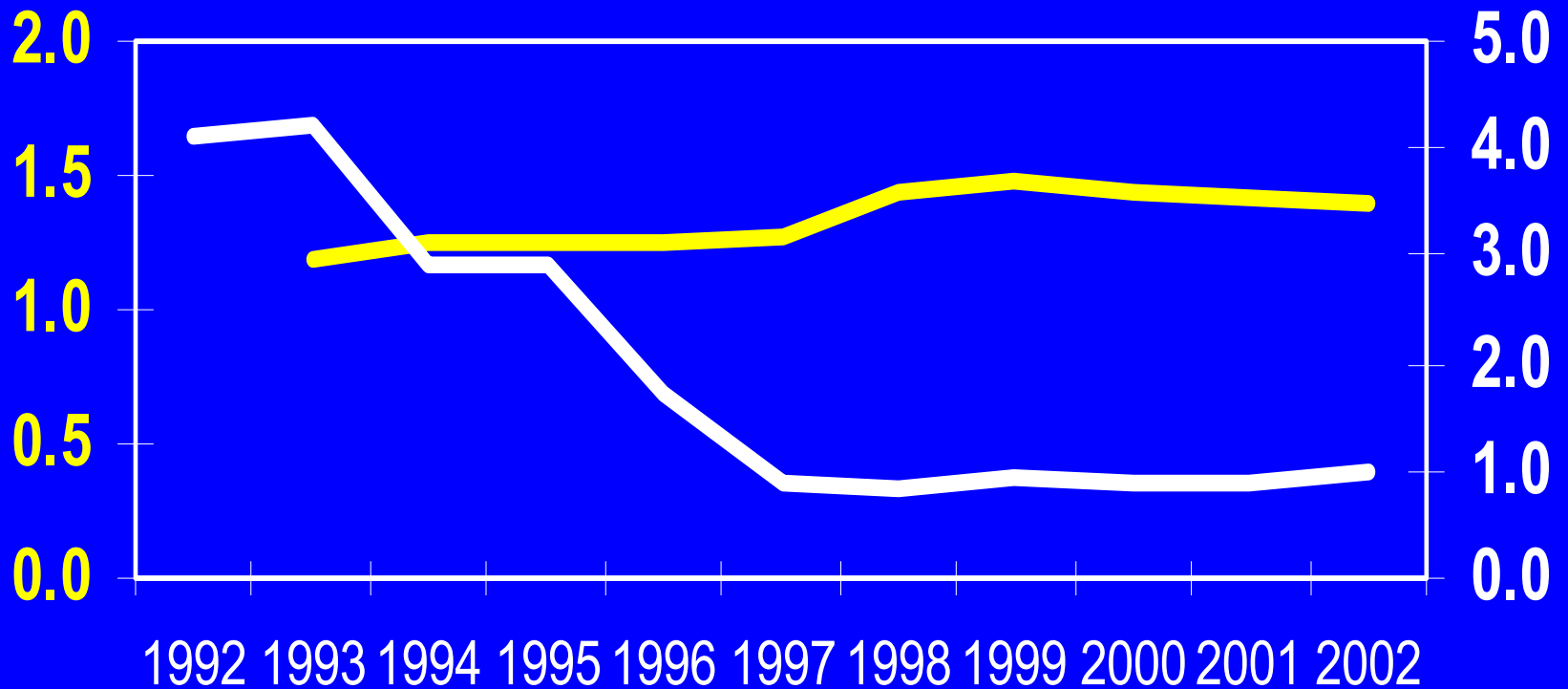


Medication Errors per 100 Adjusted Admissions

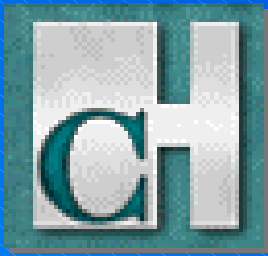




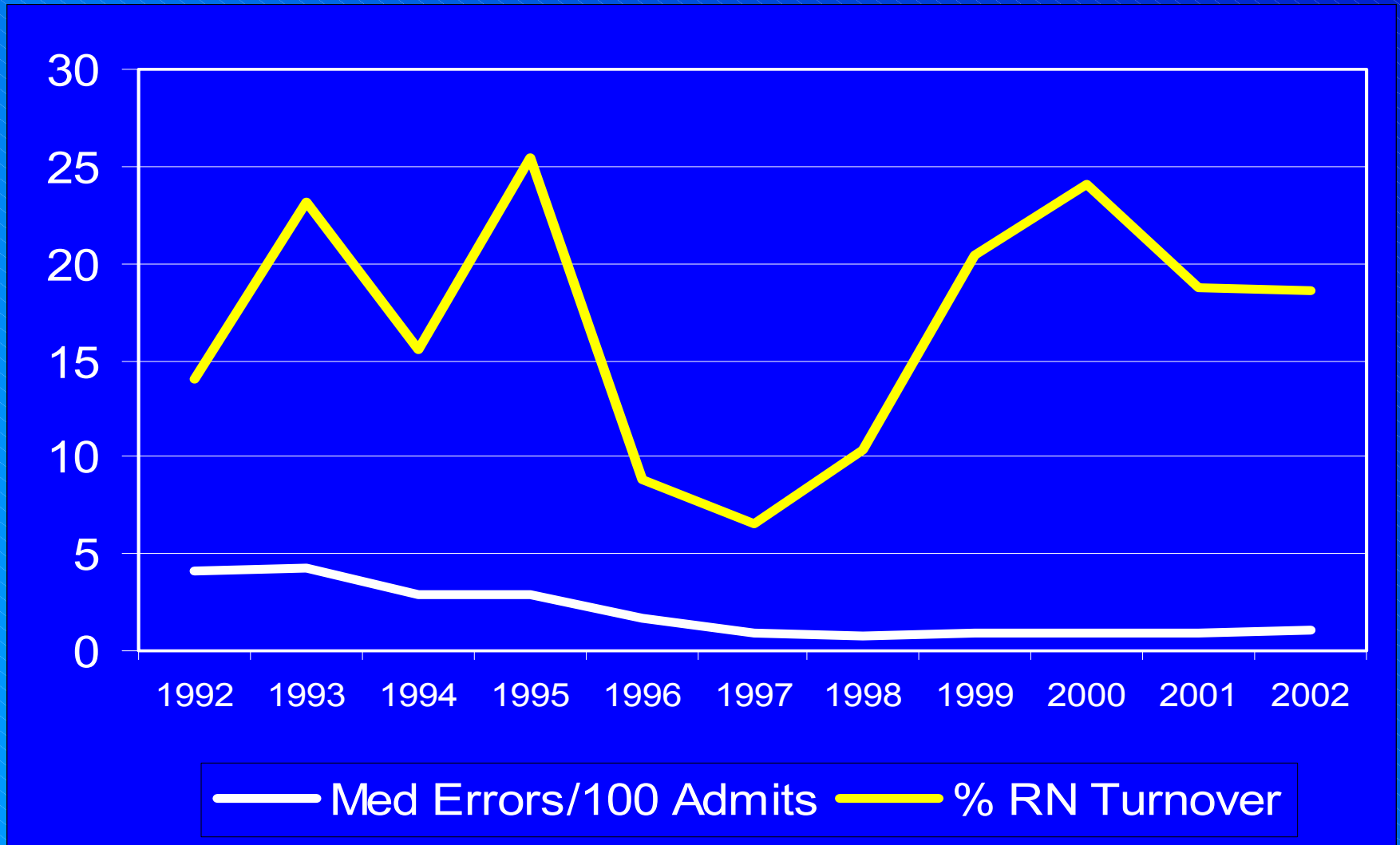
Med Errors Compared to CMI

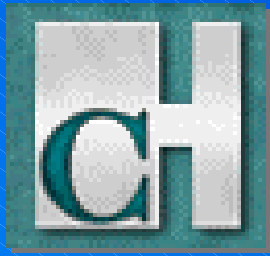


— CMI — MedError

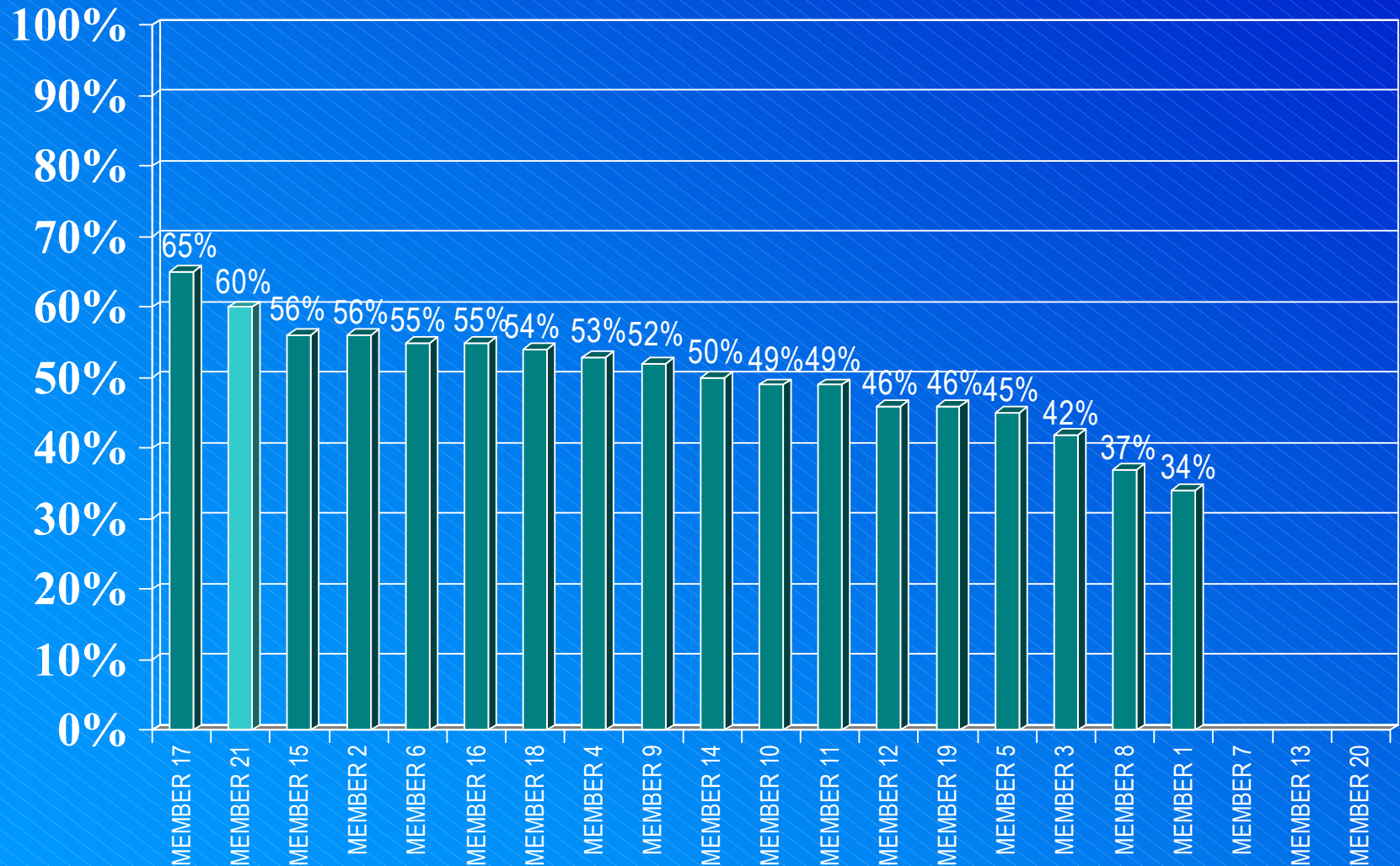


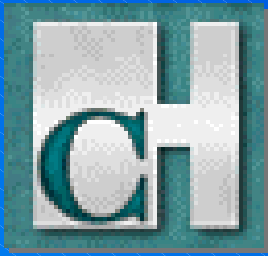
Med Errors Compared to RN Turnover



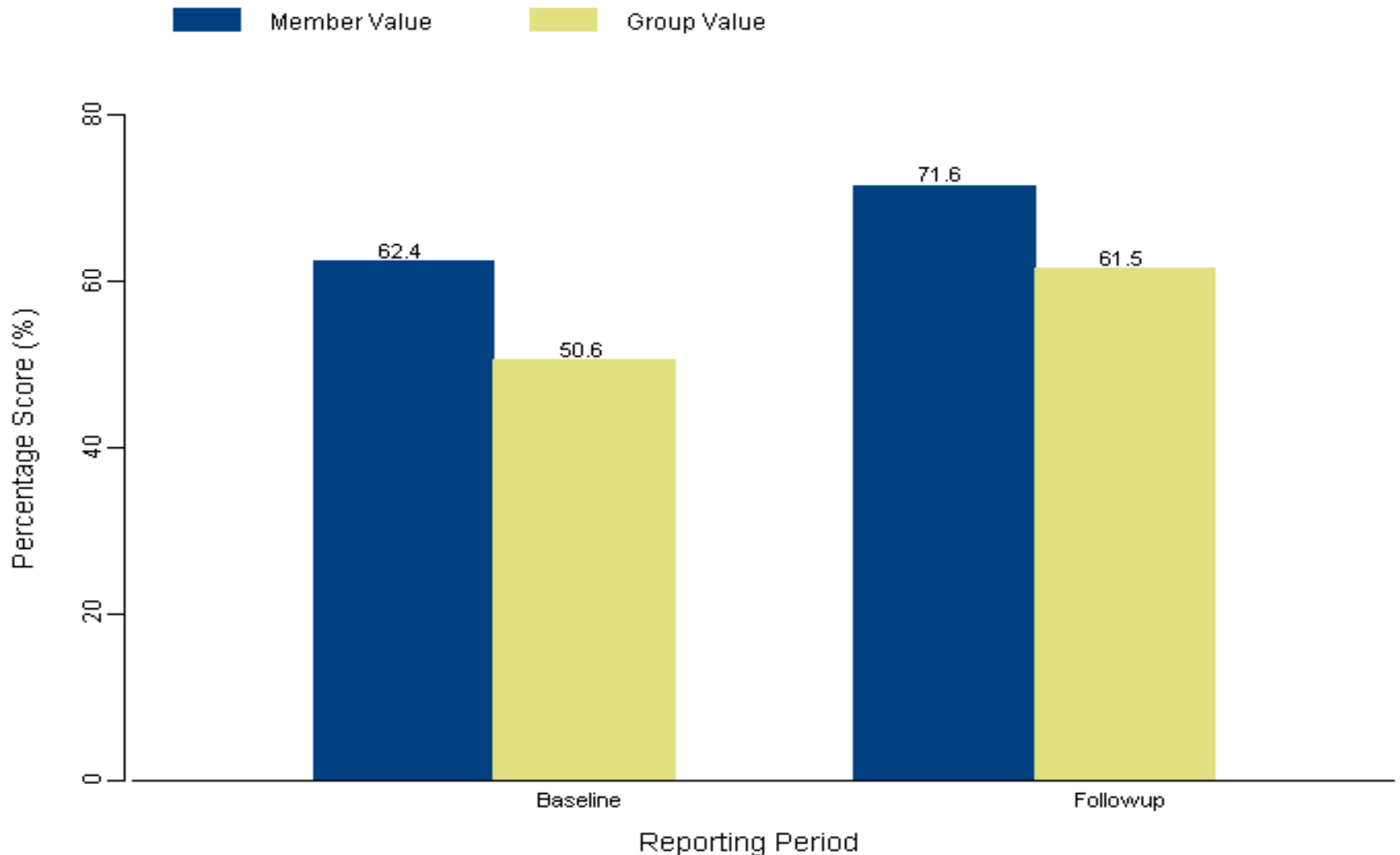


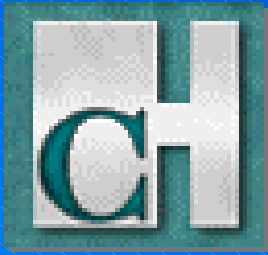
ISMP Survey Results December 2000





ISMP Survey Results 2003 Compared to 2000





Concord Hospital - At a Glance

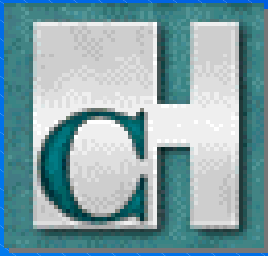
(photo by Rixon Photography)





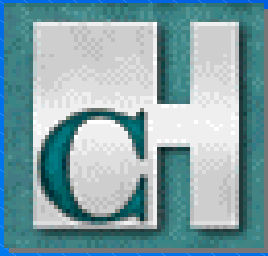
Concord Hospital - At a Glance

- ◆ **295 bed not-for-profit regional medical center**
- ◆ **Located in the capital city of Concord, NH**
- ◆ **2nd busiest acute care hospital in New Hampshire**
- ◆ **Serving approximately 150,000 patients**
- ◆ **Regional referral center for:**
 - **Orthopaedic Services**
 - **Cardiac Services**
 - **Women's Health**
 - **Comprehensive Cancer Services**



Clinical Technology Development & Medication Safety as Organizational Priorities

- ◆ **2001: One of “10 Most Improved”**
 - **HHN “Most Wired” Hospitals & Health Care Systems**
- ◆ **2001: VIP Award for Clinical Achievement**
 - **Awarded for reduction of medication errors**
 - **McKesson Corporation**
- ◆ **2002: One of 100 “Most Wired”**
 - **HHN “Most Wired” Hospitals & Health Care Systems**
- ◆ **2002: Cheers Award for Safe Medication Practice**
 - **Institute for Safe Medication Practices**
- ◆ **2003: One of 100 “Most Wired Small & Rural”**
 - **HHN “Most Wired” Hospitals & Health Care Systems**



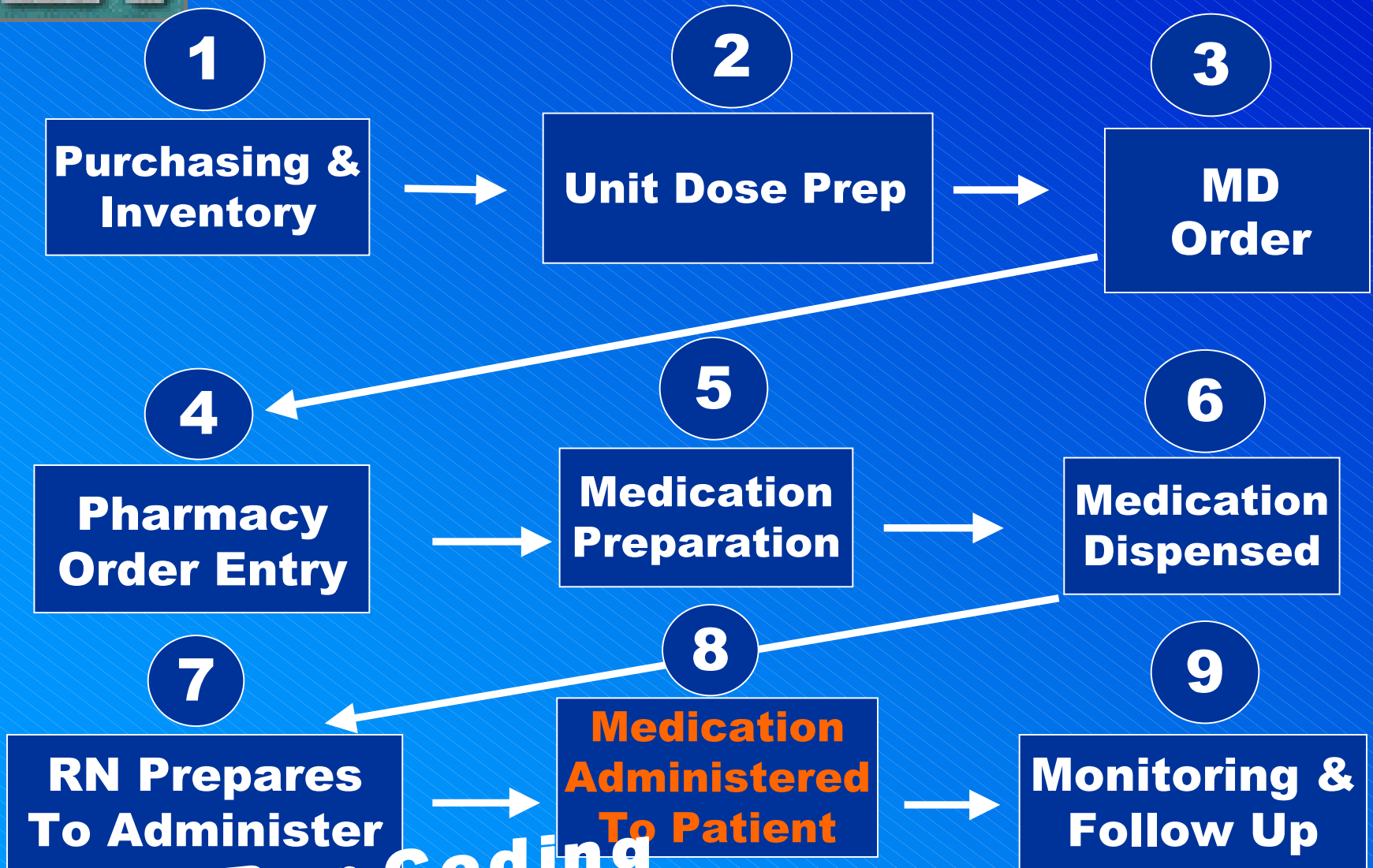
Making Medication Administration Safe at Concord Hospital

- ◆ **STAR Pharmacy System**
- ◆ **Decentralized Pharmacist Role**
- ◆ **Bar-Coding of Medications at Bedside**
- ◆ **Medication Administration Process PI**
 - **VHA Collaborative**
 - **ISMP Survey**
 - **IHI Quantum Leaps in Patient Safety**



MEDICATION ADMINISTRATION PROCESS

Right Patient, Right Medication, Right Time, Right Dose, Right Route



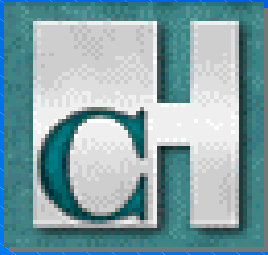
Bar-Coding



Components of Medication Bar-Coding System

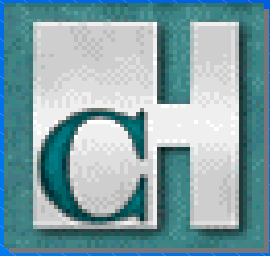
Bar-Code Label affixed to all individual med doses

- ◆ **Online Medication Administration Record as part of Clinical Documentation System**
- ◆ **Laptop computers with bar-code scanners - "COWS"**
- ◆ **Proxim 2mb/sec Wireless Network**



Bar-Coding at the Bedside

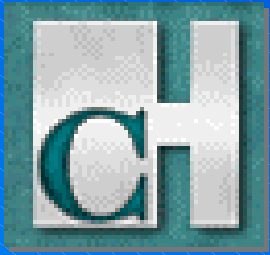




Bar-Coding at the Bedside

The Nurse

- ◆ **Scans Bar-Code on ID badge to log on and as “signature”**
- ◆ **Selects patient online**
- ◆ **Selects and reviews medication order online**
- ◆ **Scans Bar-Code on medication**



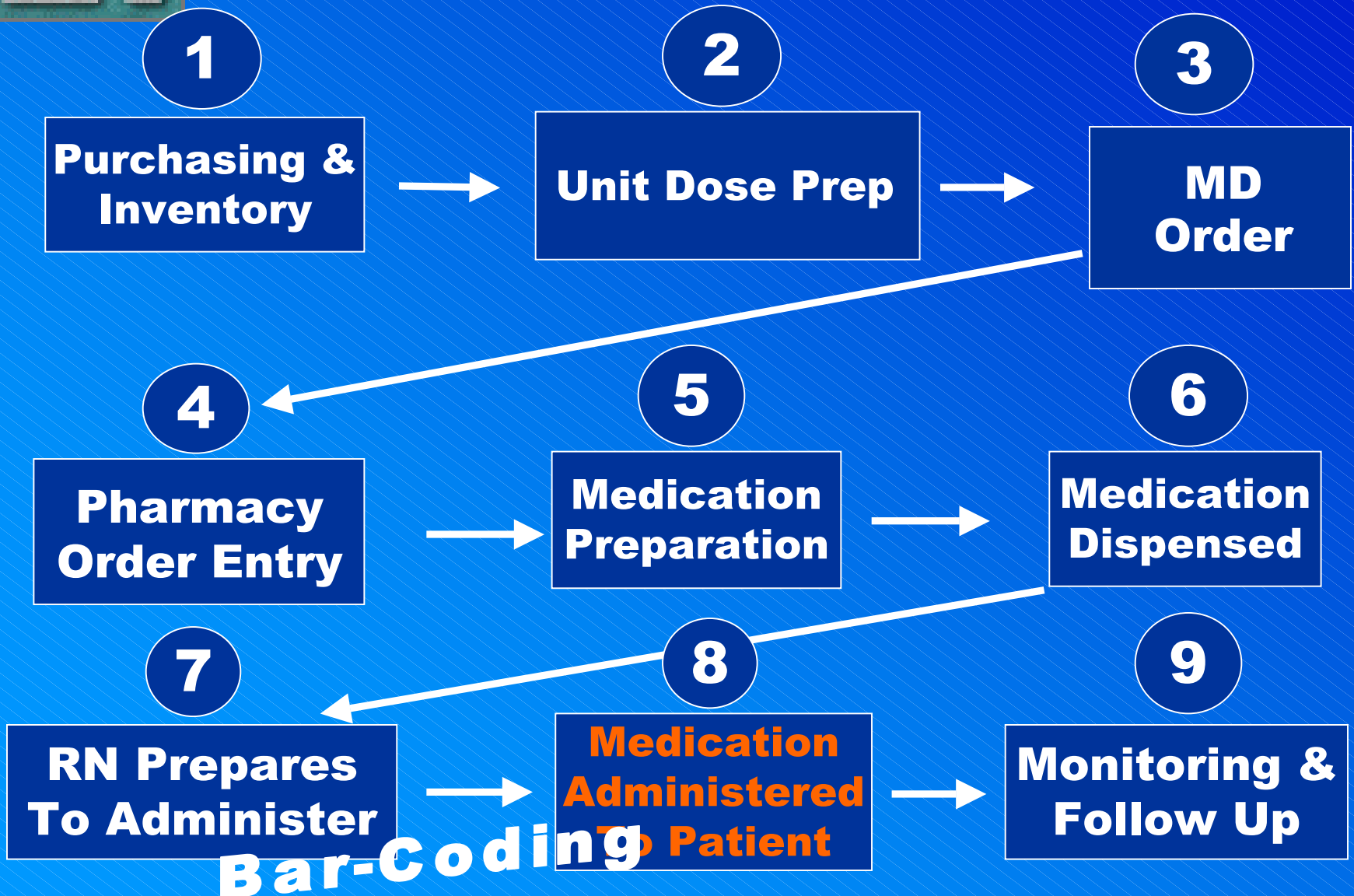
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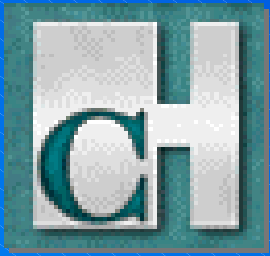
The Computer

- ◆ **Matches Bar-Code to medication order**
- ◆ **Checks 5 rights of medication administration & notifies nurse of any discrepancies**
- ◆ **Documents medication administration**
- ◆ **Charges patient for medication**
- ◆ **Reminds the nurse of missed and late medications**



The “Final Line of Defense” in a Complex Process





“Hidden Benefits” of Medication Bar-Coding

- ◆ **Enhanced Reporting Capabilities**
 - Support PI & education activities
- ◆ **Recruitment & Retention**
 - Appeal of “high tech” environment
 - Recognition of patient safety/safe work environment as important retention factors



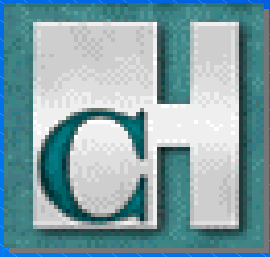
Implementation Process

- ◆ 6-8 month planning process
- ◆ Extensive Staff Involvement & Champions
- ◆ Pilot Unit
 - Developed standard procedures
 - Implemented Meds & IVPB's only on first unit
 - Resolved “bugs” & “glitches”
- ◆ Intense 24 x 7 support by expert resources
- ◆ Timely roll out to other units
- ◆ Formal evaluation at 3-months & 6-months



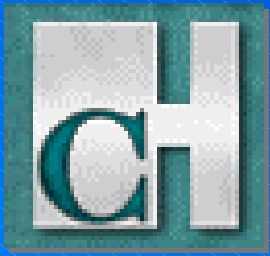
Early Challenges

- ◆ **Redesign of med administration process**
- ◆ **Uncovers practice issues**
 - **Belief systems & assumptions**
 - **Need to differentiate from “computer” issues**
- ◆ **Lack of commercially prepared individual med doses with bar-code labeling**



What Have We Done Lately?

- ◆ **Increased utilization of Bar-Coding**
 - **Decreased work arounds and “shadow system”**
 - **Upgraded scanners to newer more effective technology**
 - **Improved quality of Bar-Coding labels**
- ◆ **Reinforcement of importance of Bar-Coding**
- ◆ **Implemented Bar-Coding on Maternity and AM Admit Unit**



What Have We Done Lately?

- ◆ Executive Walk Arounds
- ◆ Blameless Culture and Anonymous reporting
 - Focus on Near Misses as Opportunities to prevent errors
 - Balance with accountability
- ◆ Birthdate as 2nd identifier for med admin and other key processes
- ◆ Standardized Abbreviations



Where are We Going?

- ◆ **Bring med carts closer to patients & Bar-Code scanning equipment**
- ◆ **Educate & involve patients in the process**
- ◆ **Implement bar-coding in PACU, Cardiac Cath Lab & Outpatient Units**
- ◆ **Implement hand-held devices for scanning patient ID bands**
- ◆ **Implement CPOE**



Why Does It Really Matter?

The Victims of a Medication Error

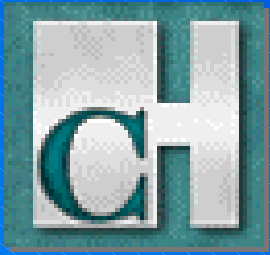
1.) The Patient

2.) The Nurse



Lessons Learned

- ◆ Don't underestimate the magnitude of the implementation
- ◆ Recognize that technology solves some problems but creates others
- ◆ A strong Pharmacy-Nursing relationship is essential
- ◆ Don't pilot on a specialty unit
- ◆ Standardization of med times across all units is essential



Lessons Learned

- ◆ **EVERYONE** needs to understand “The WHY”
- ◆ **Accept you are never done**



***We are better than we were
yesterday but not as good as
we will be tomorrow!***

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Empowering Healthcare