

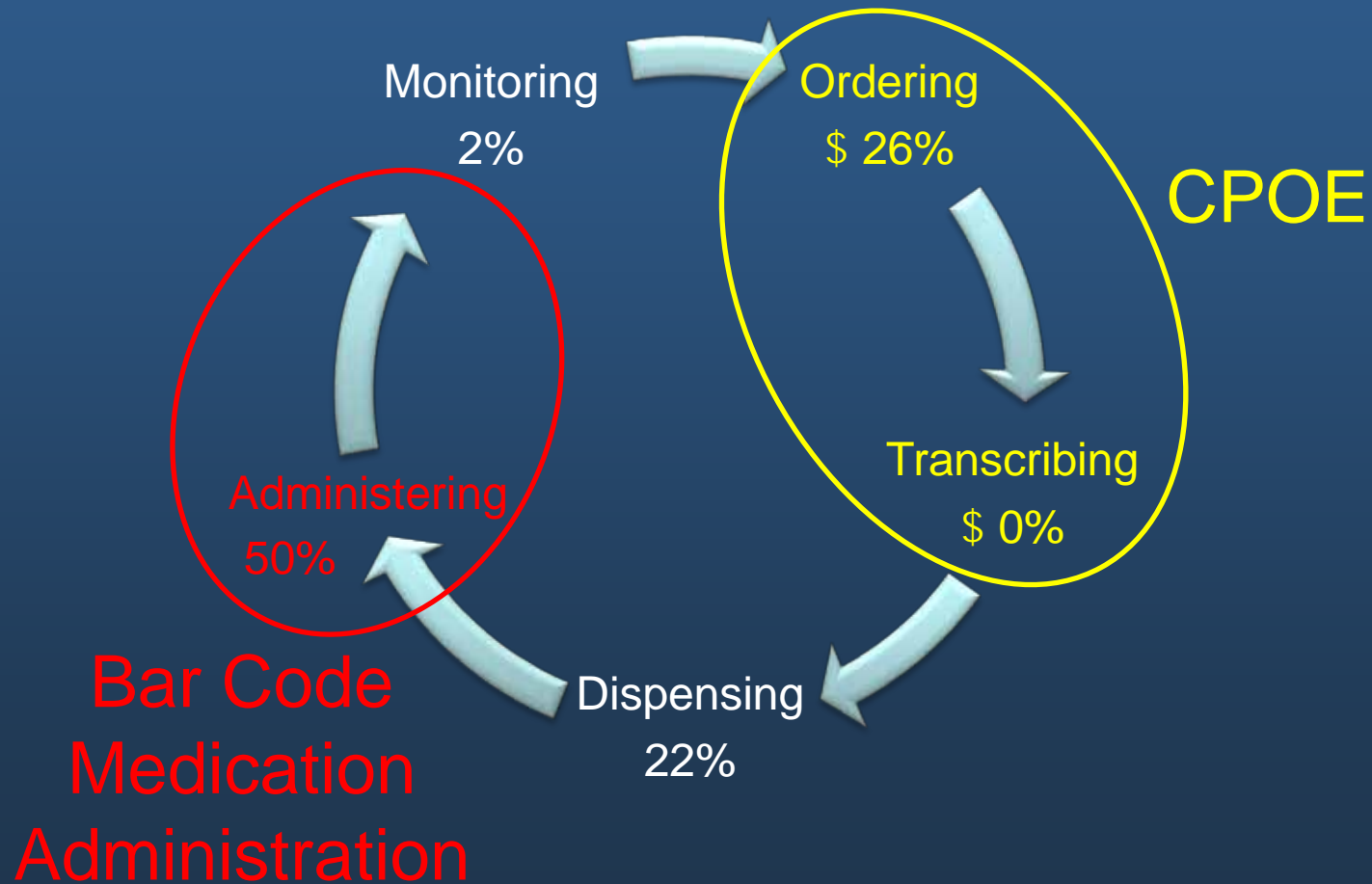


Improving the Safety, Efficiency & Effectiveness of the Medication Administration Process

Northwest Patient Safety Conference
May 19, 2011

Joan Ching RN, MN, CPHQ
Administrative Director, Hospital Quality & Safety

Reported Errors in Medication Management Process



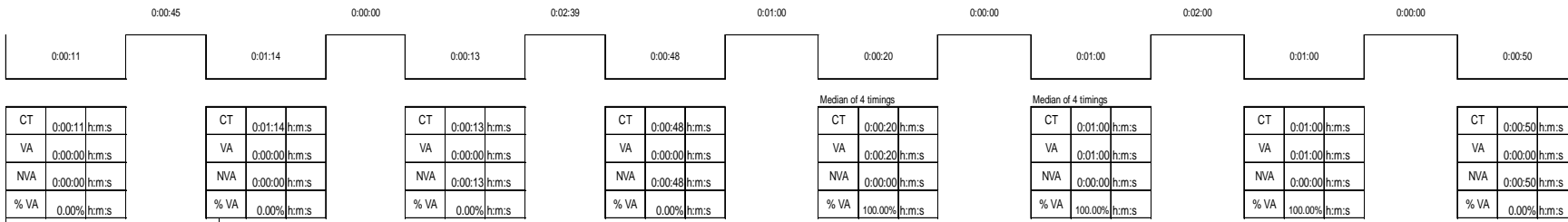
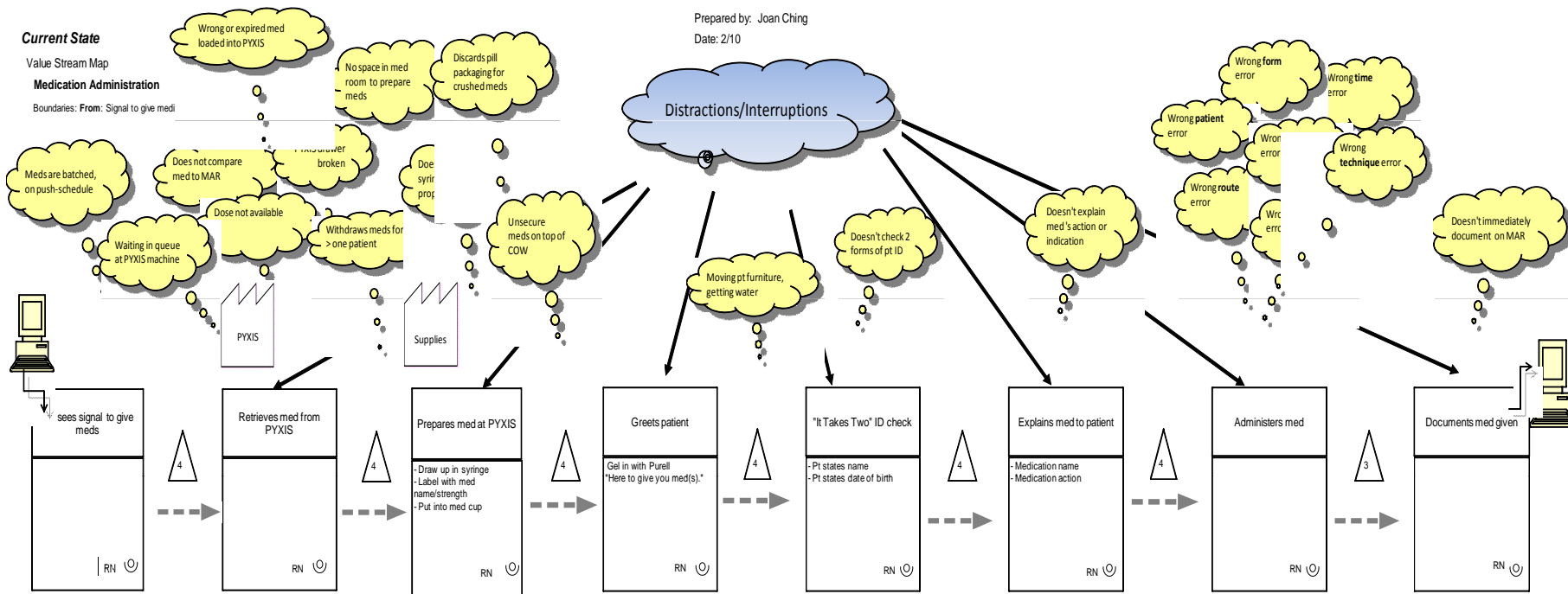
Prepared by: Joan Ching
Date: 2/10

Current State

Value Stream Map

Medication Administration

Boundaries: From: Signal to give med



CT	0:00:11	h:m:s
VA	0:00:00	h:m:s
NVA	0:00:00	h:m:s
% VA	0.00%	h:m:s

CT	0:01:14	h:m:s
VA	0:00:00	h:m:s
NVA	0:00:00	h:m:s
% VA	0.00%	h:m:s

CT	0:00:13	h:m:s
VA	0:00:00	h:m:s
NVA	0:00:13	h:m:s
% VA	0.00%	h:m:s

CT	0:00:48	h:m:s
VA	0:00:00	h:m:s
NVA	0:00:48	h:m:s
% VA	0.00%	h:m:s

Median of 4 timings

CT	0:00:20	h:m:s
VA	0:00:20	h:m:s
NVA	0:00:00	h:m:s
% VA	100.00%	h:m:s

Median of 4 timings

CT	0:01:00	h:m:s
VA	0:01:00	h:m:s
NVA	0:00:00	h:m:s
% VA	100.00%	h:m:s

CT	0:01:00	h:m:s
VA	0:01:00	h:m:s
NVA	0:00:00	h:m:s
% VA	100.00%	h:m:s

CT	0:00:50	h:m:s
VA	0:00:00	h:m:s
NVA	0:00:50	h:m:s
% VA	0.00%	h:m:s

Takt Time = Time Available / Demand (max washer output)
 $1245 \text{ min} / 109 \text{ meds} = 11.4 \text{ min}$

Lead Time	0:12:00	h:m:s
Cycle Time	0:04:16	h:m:s
Value Added (VA) Time	0:02:20	h:m:s
Non Value Added (NVA) Time	0:08:15	h:m:s
% VA	19%	%
% NVA	69%	%
Operators Needed	0.37	

CALNOC Medication Administration Accuracy Survey

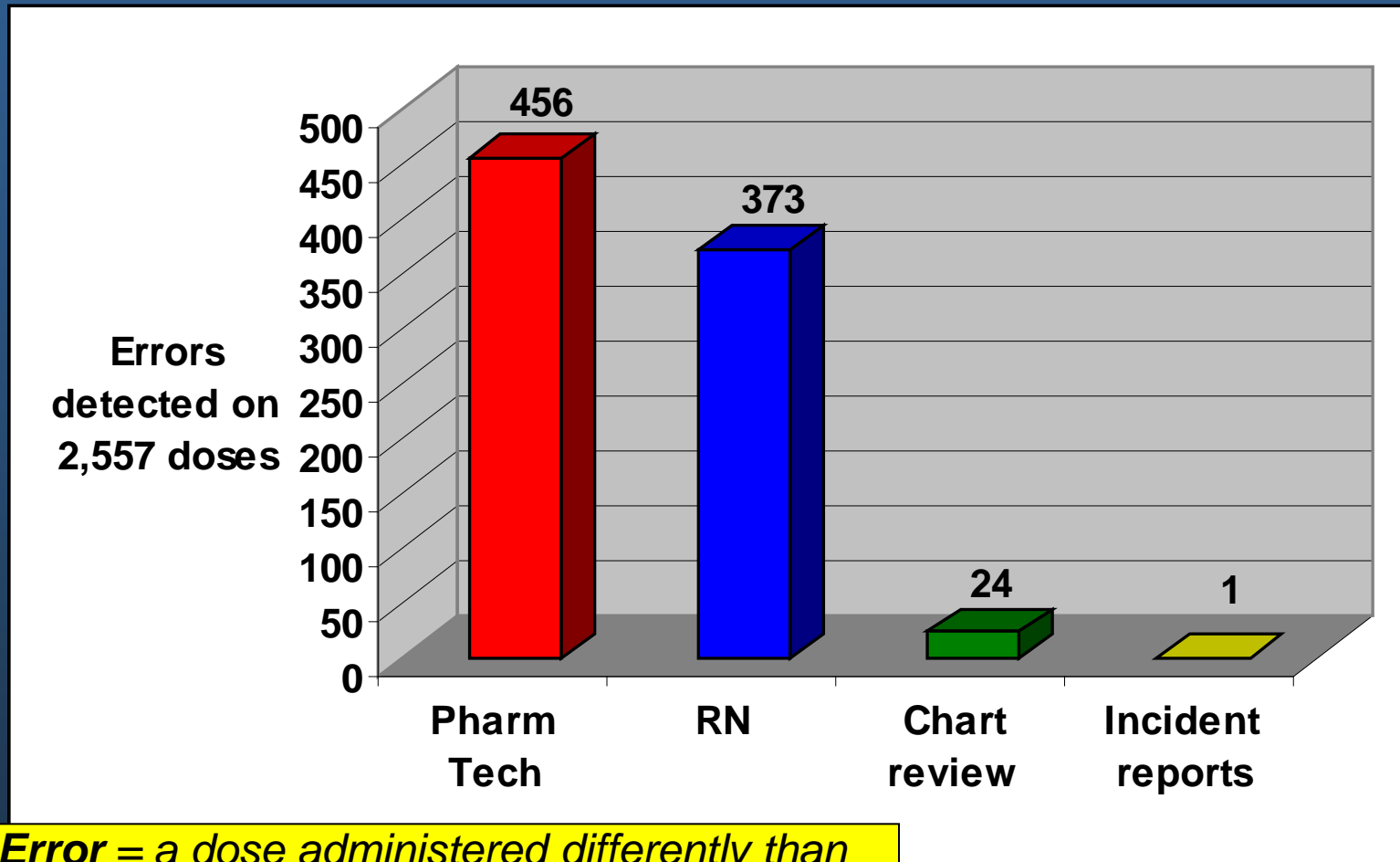


Betty Irene Moore

- Systematic assessment, targeted improvement
- Barker & Pepper's research
 - § 1 of 5 doses in error
 - § Wrong time 43%
 - § Wrong dose 17%
 - § 7% error rate (>40/day in 300-bed facility)



Comparing Error Detection Methods



Error = a dose administered differently than ordered on the patient's medical record

The Six Safe Practices



- Compares med w/ MAR
- Med labeled throughout
- Checks 2 forms of pt ID
- Explains med to pt
- Charts med immediately
- No distractions or interruptions



Our Study Methods: Observation & Error Review

Naïve observation is a process whereby the observers do not know the actual medication order but observe the entire preparation and administration process.

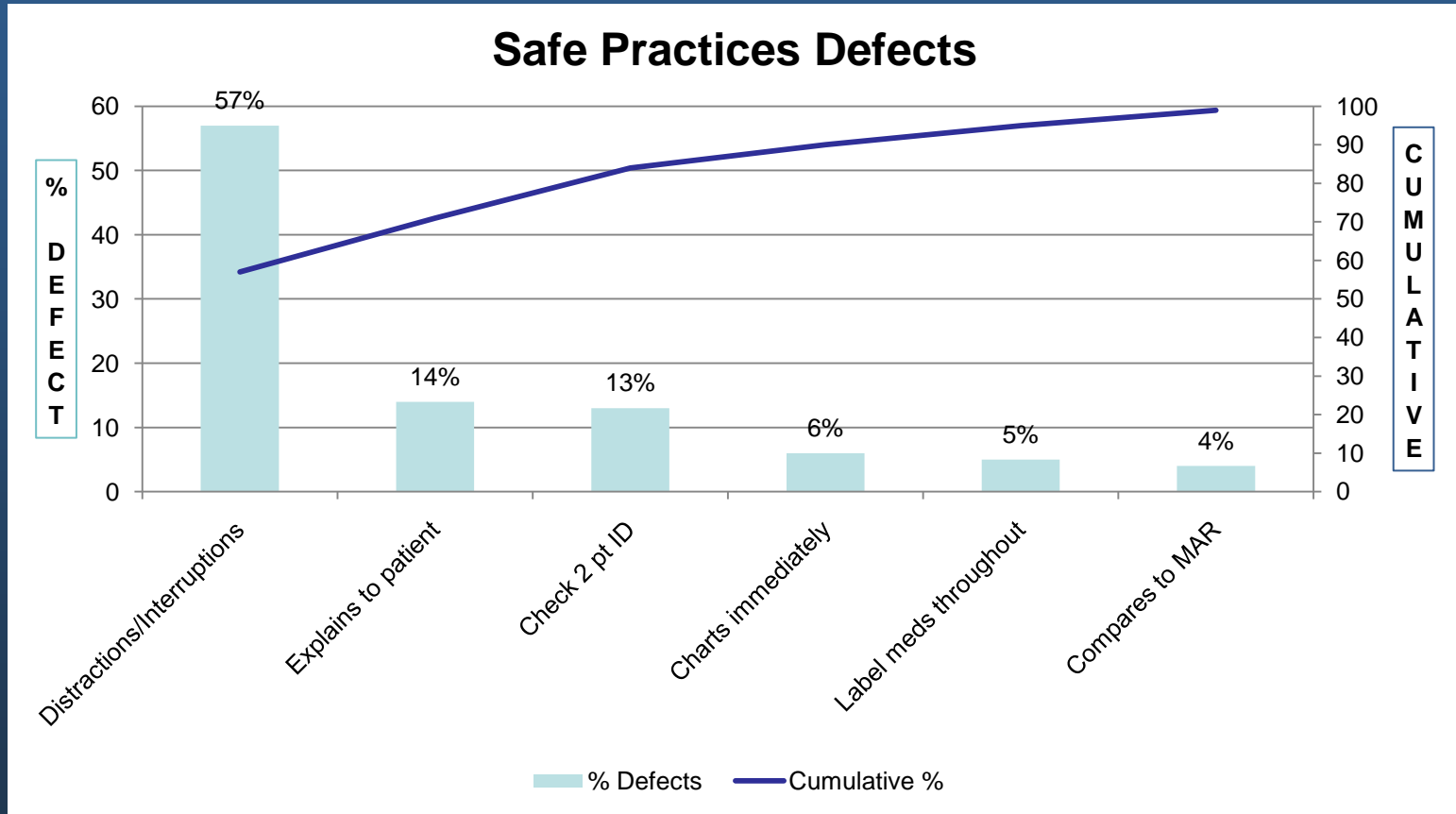


Comparative record review is performed later to determine number, type of errors, and frequency of each type of medication error.



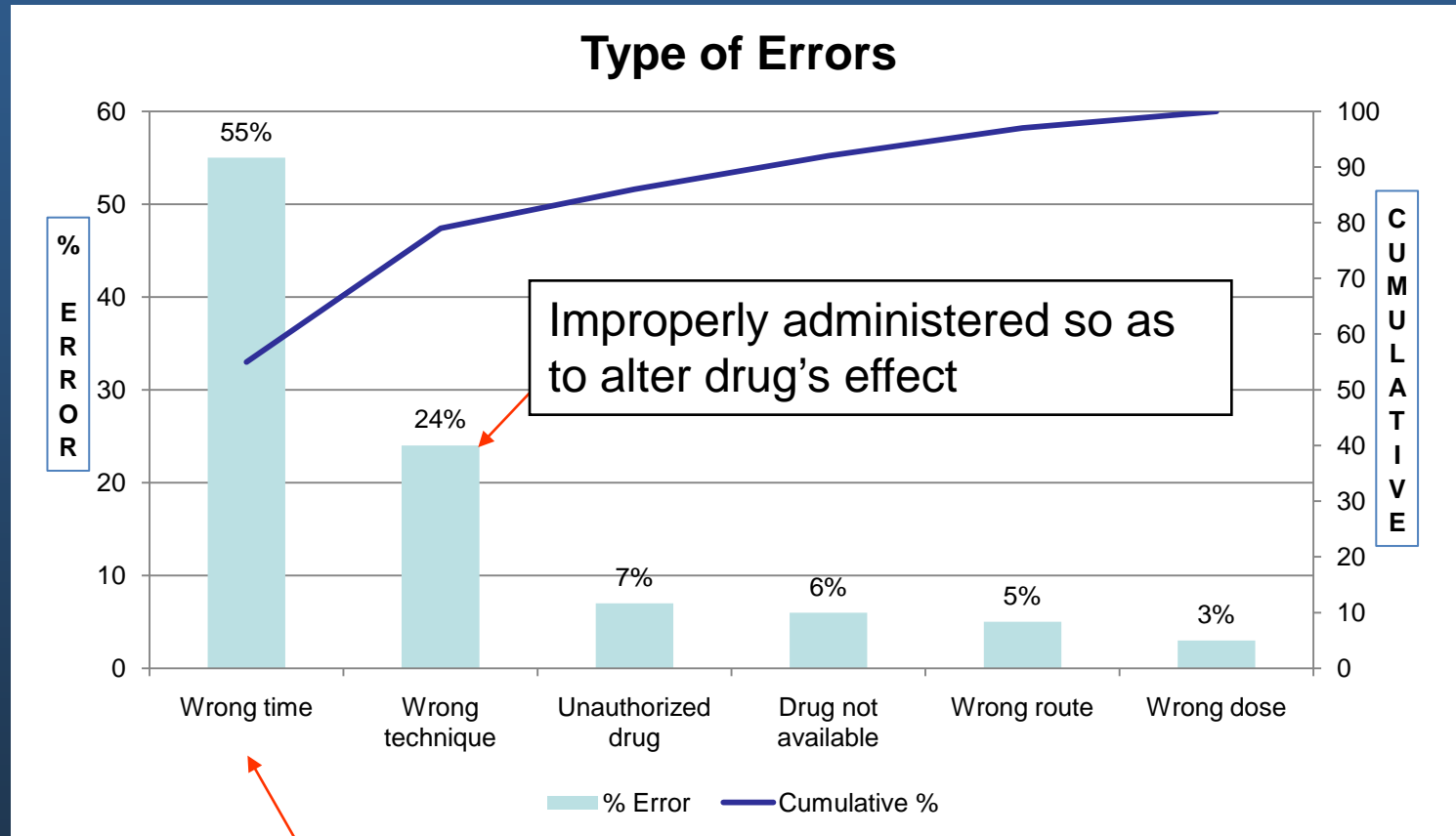
Baseline Measures

Jan-Feb 2010 N=898 doses



Baseline Measures

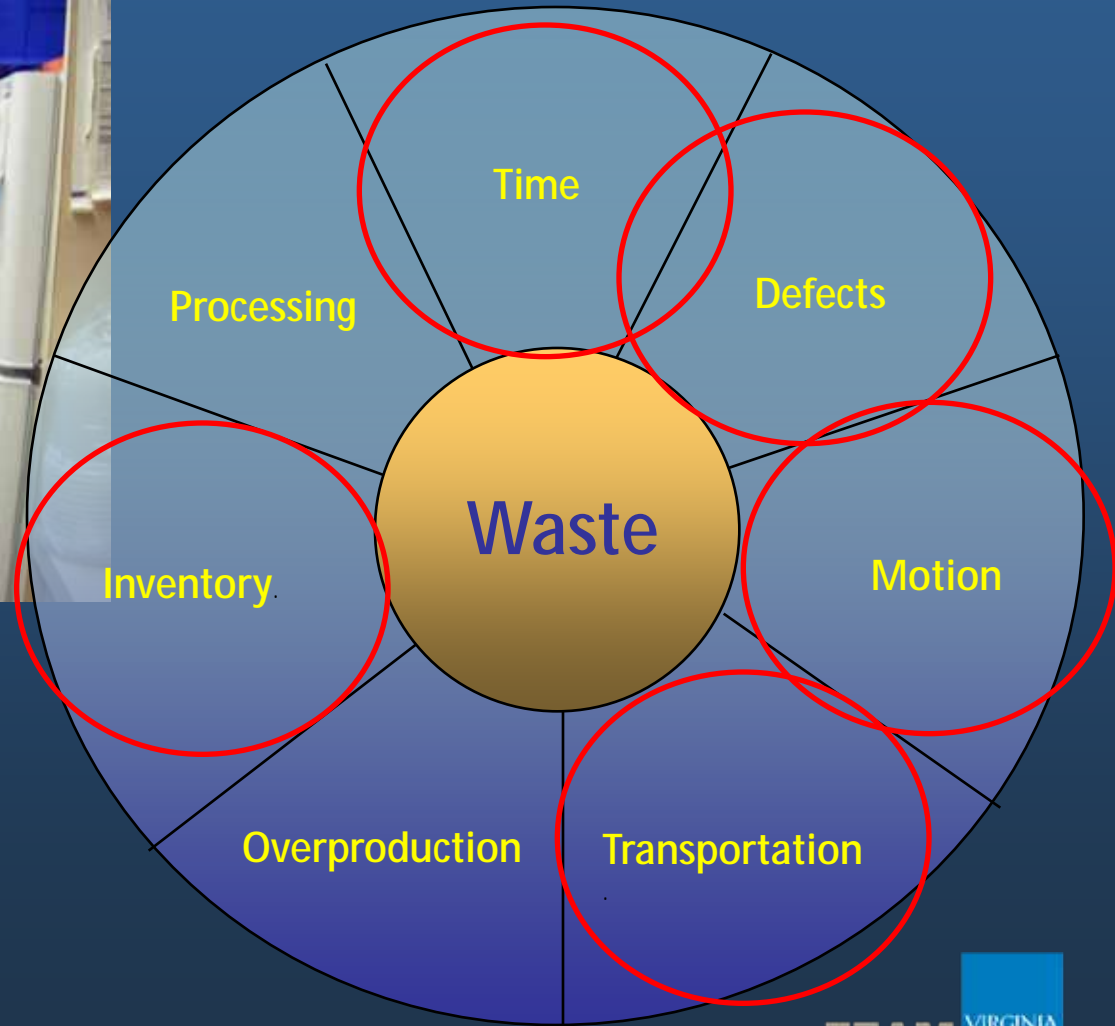
Jan-Feb 2010 N=898 doses



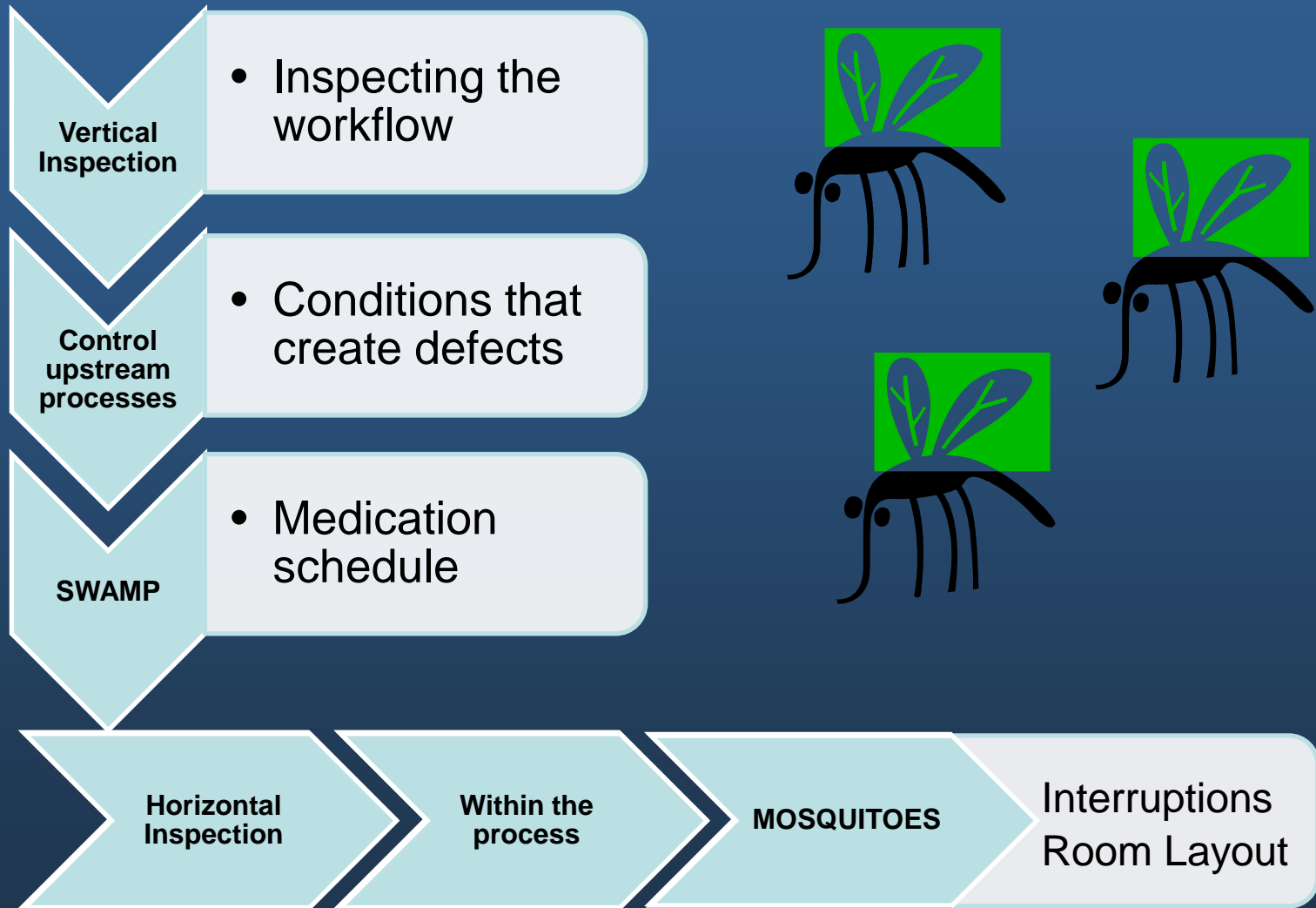
Reducing Waste in the RN's Day



The 9 AM Line-up



Approaches to Mistake Proofing



Interruptions

- “Expected, natural component of RN work”
- 89% of interruptions $\bar{\sigma}$ **negatively** impact patient safety

-- Hall, et al., *JONA*, 40(4), April 2010

- 12% # in procedural **failures**
- 13% # in clinical **errors**
- # interruption frequency $\bar{\sigma}$ # **error severity**

-- Westbrook, et al., *Arch Intern Med*, 170(8), April 26, 2010



Visual Control & Mistake Proofing



Medication Room

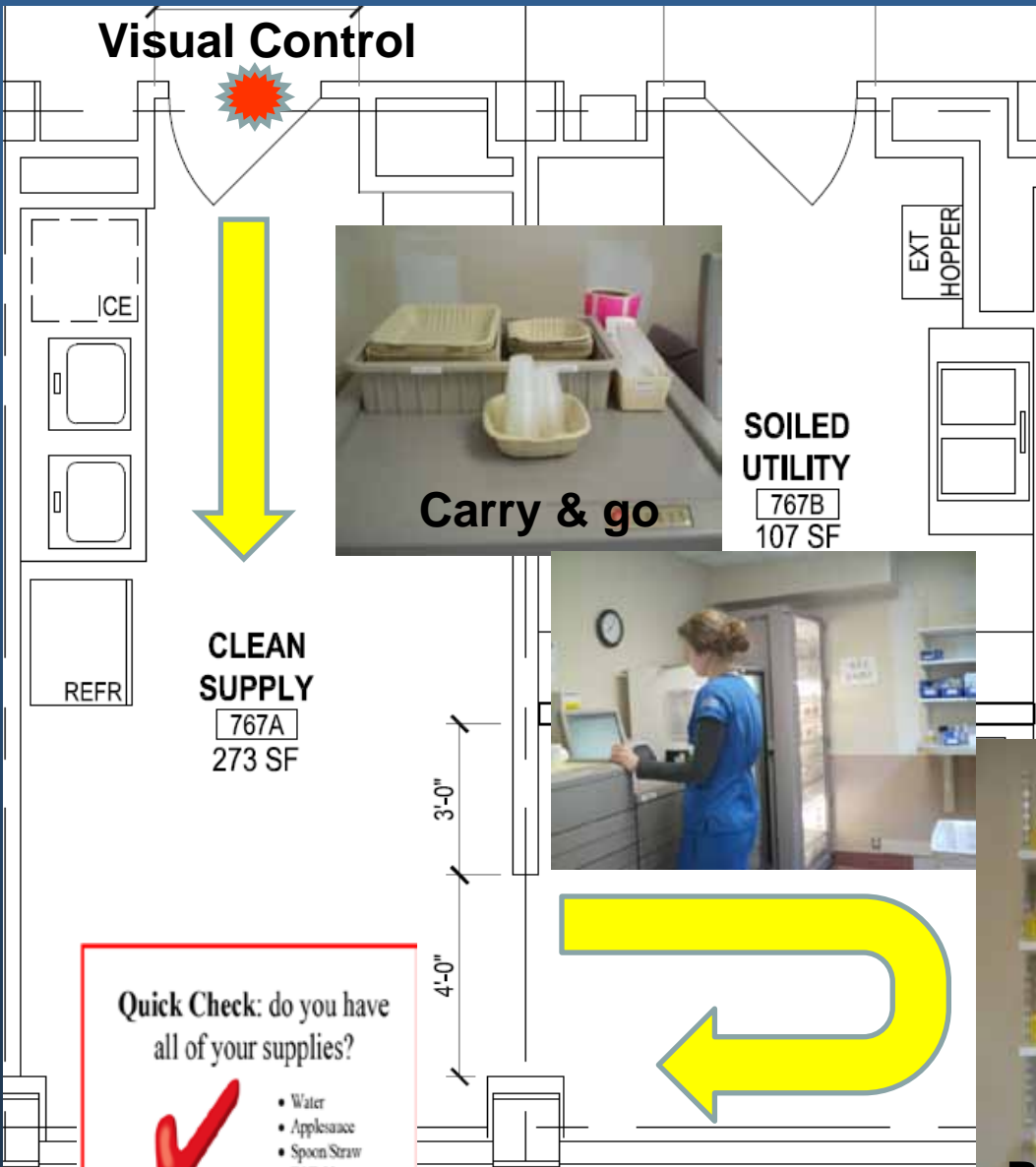
Visual Control & Mistake Proofing



- Flashing bike light mounted to WOW pinnacle
- Widespread campaign
- A protected hour to exclusively focus on medications
 - § Redirect telephone calls
 - § Reschedule supply restocking



Visual Control



SOILED UTILITY
767B
107 SF



CLEAN SUPPLY
767A
273 SF

3'-0"

4'-0"



- i Walking
- i Wasted motion
- \$ Hunt-and-find
- \$ Forgotten supplies

Quick Check: do you have all of your supplies?

- Water
- Appliance
- Spoon/Straw
- IV Tubing

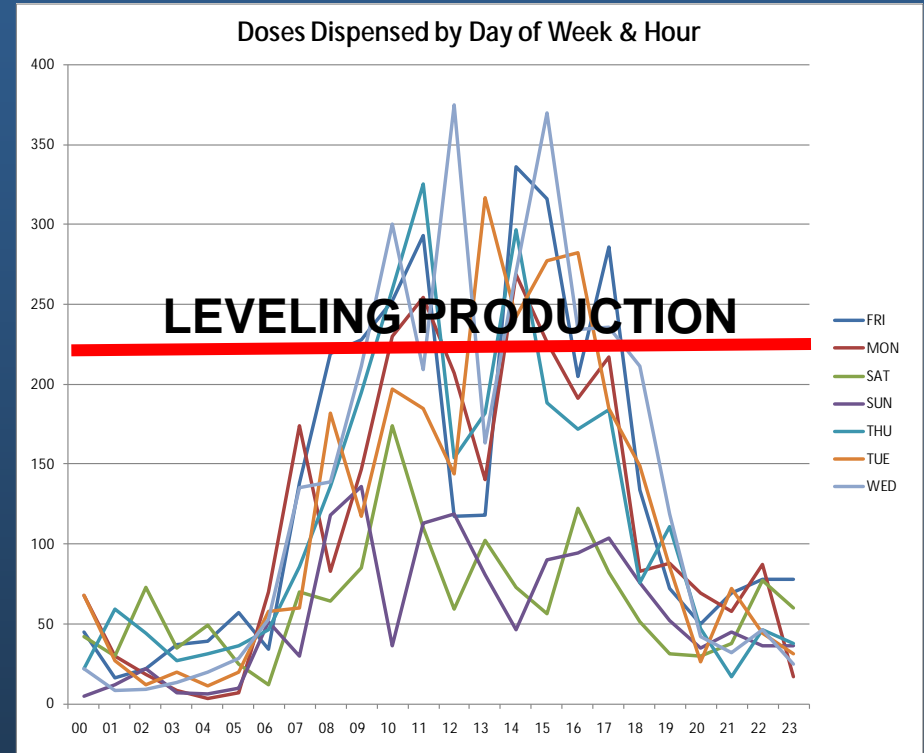
Self-Check

AFTER



Medication Administration Schedule

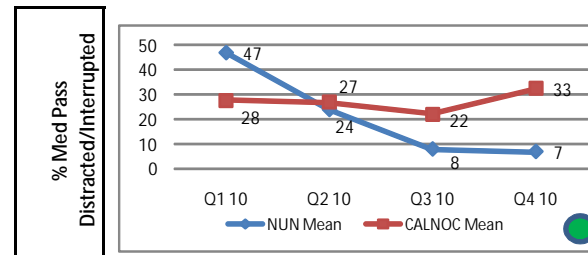
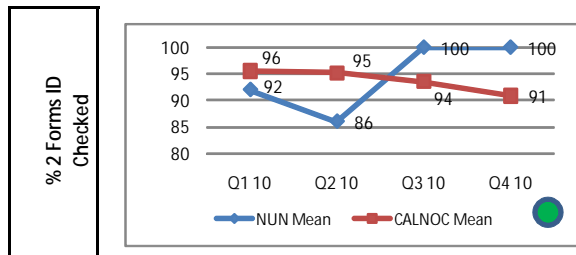
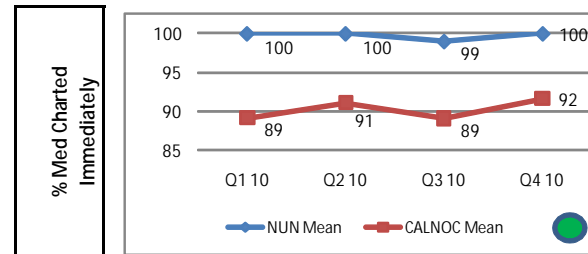
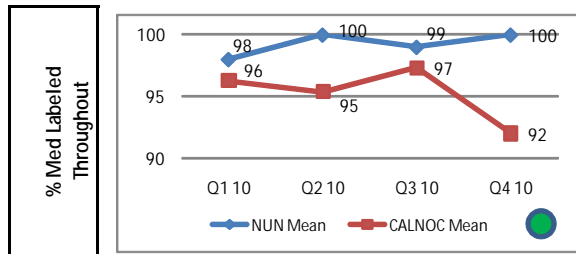
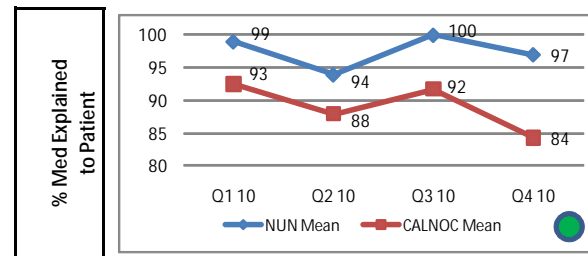
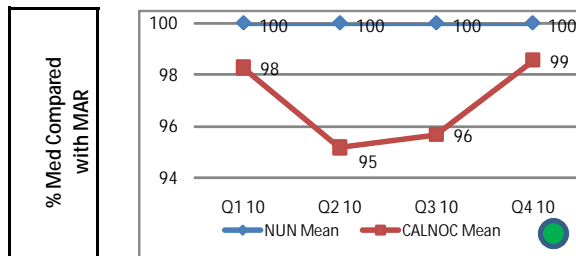
Frequency Code:	Standard Times:
Daily.....	0900
q 12 hr.....	0900 - 2100
BID.....	0900 - 1700
Tid.....	0900 - 1300 - 1700
Tid with meals.....	0800 - 1200 - 1800
Tid ac.....	0700 - 1100 - 1700
Tid pc.....	0900 - 1300 - 1900
Qid.....	0900 - 1300 - 1700 - 2100
Qid with meals.....	0800 - 1200 - 1800 - 2100
Qid ac and hs.....	0730 - 1200 - 1700 - 2100
Qid pc and hs.....	0900 - 1300 - 1900 - 2100
q 2 hr.....	0900-1100-1300-1500-1700 etc.
q 3 hr.....	0100-0400-0700-1000-1300 etc.
q 4 hr.....	0100-0500-0900-1300-1700 etc.
q 4 hr while awake.....	0500 - 0900 - 1300 - 1700 - 2100
5 times /day.....	0500 - 0900 - 1300 - 1700 - 2100
q 6 hr.....	0600 - 1200 - 1800 - 2400
q 6 hr ac.....	0600 - 1100 - 1600 - 2300
q 8 hr.....	0100 - 0900 - 1700
q.8 hr.....	0500-1300-2100 (oral)
qam or daily.....	0900
q48 hr.....	Designated time printed on Medication Administration Record (MAR) every <u>other</u> day.



Unit Dashboard

MEDICATION ADMINISTRATION DASHBOARD NEUROLOGY-UROLOGY-NEUROSURGERY Level 17

Legend: ● Better than CALNOC ● Worse than CALNOC



2010 KAIZEN ACTIVITY

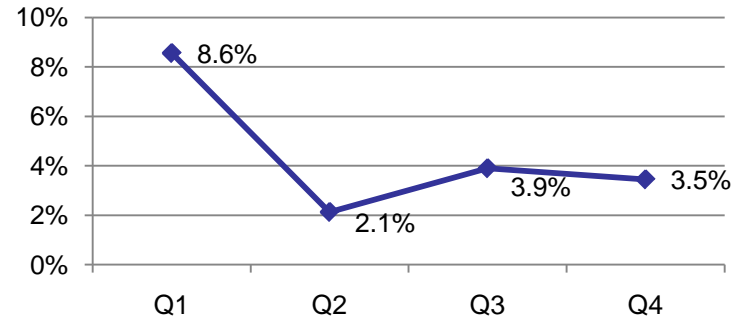
Rapid Process Improvement Wksp:

- Improving med room layout
- Medication preparation
- Medication administration
- Insulin administration
- Bar code medication packaging
- Bar code wrist band printing

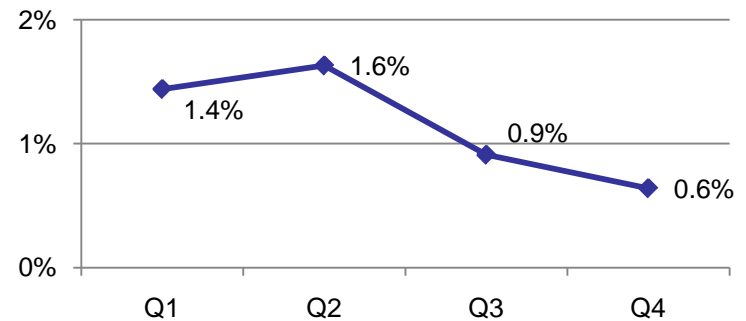
Kaizen Events:

- Bar code medication supply
- Crushed enteral medications
- Reducing telephone interruptions
- ED medication preparation
- Standardized visual control @ automated dispensing cabinet
- Reducing interruptions in patient room

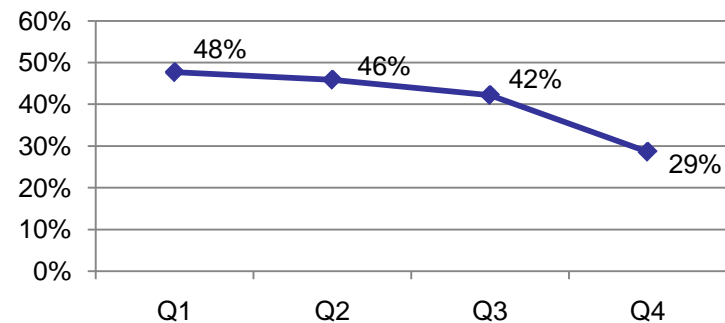
Wrong Time



Wrong Technique



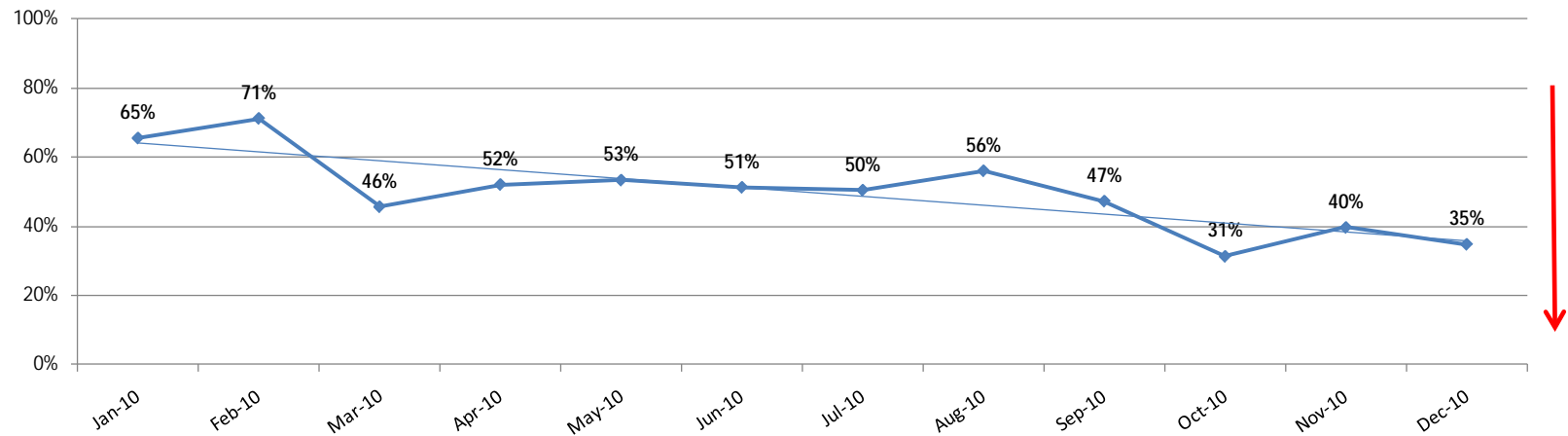
Distractions/Interruptions



Overall Risk & Defect Reduction

In 2010, we reduced the # of unsafe practices & med errors by 52%!

Percent Defect Rate



N=5,125 observed medication doses in 2010

