Safe Patients Smart Hospitals

What Can Diagnostic Errors Learn
from Reducing CLABSI

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QUALITY AND SAFETY RESEARCH GROUP

JOHNS HOPKINS

I will .....

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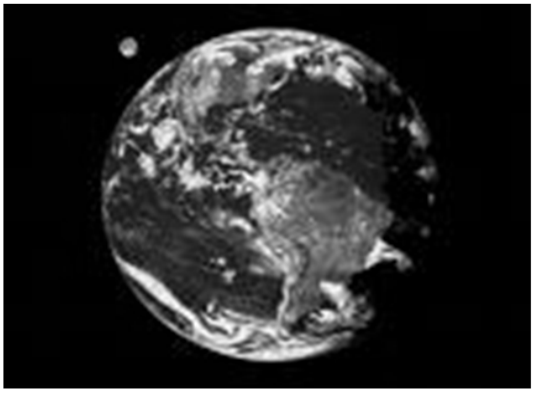
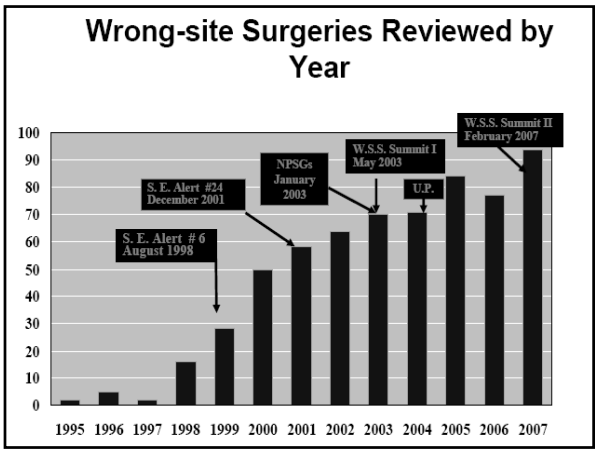




Please answer each question with a score of 1 (below average) to 5 (above average).

- How smart am I
- How hard do I work
- How kind am I
- How tall am I
- How good is the quality of care we provide

Types of Quality and Safety Problems

- Putting evidence into practice
- Learning from mistakes at local and system levels
- Improving teamwork and communication
- Reducing diagnostic errors
- Improving value (quality/cost)
- Reducing disparities

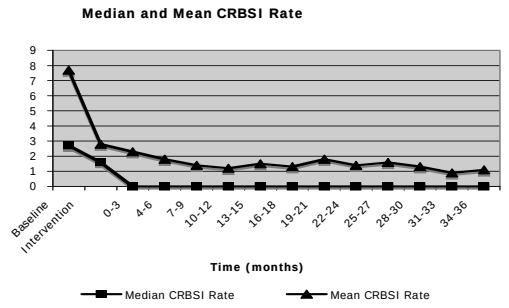
Pronovost Circulation 2009, BMJ 2009,

The CLABSI Story

Improving Care

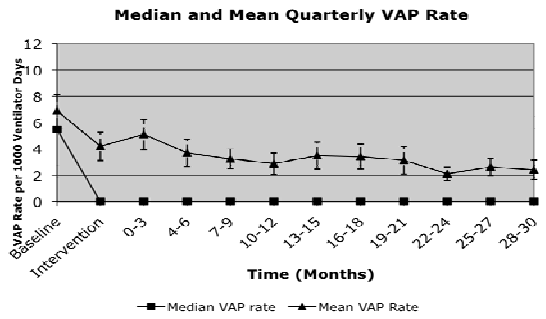
CUSP	Translating Evidence Into Practice (TRiP)
1. Educate staff on science of safety	1. Summarize the evidence in a checklist
2. Identify defects	2. Identify local barriers to implementation
3. Assign executive to adopt unit	3. Measure performance
4. Learn from one defect per quarter	4. Ensure all patients get the evidence • Engage • Educate • Execute • Evaluate
5. Implement teamwork tools	

www.safercare.net



Pronovost NEJM 2006: Pronovost BMJ 2010: Sawyer CCM2010

VAP Rate Over Time



Strategies for Adaptive Work

- Clarify what hill you will climb and invite others to determine how to climb it
- Surface real and perceived loss- the flip
- Eliminate monsters in the bathroom
- Tune into WIFM- Pepperoni Pizza
- Keep the temp pressure in the pressure cooker just right: not too hot and not too cold
- Have authentic conversations, value the dissenter

Heifetz: Leadership Without Easy Answers

Optimizing Patient Outcomes A National Model

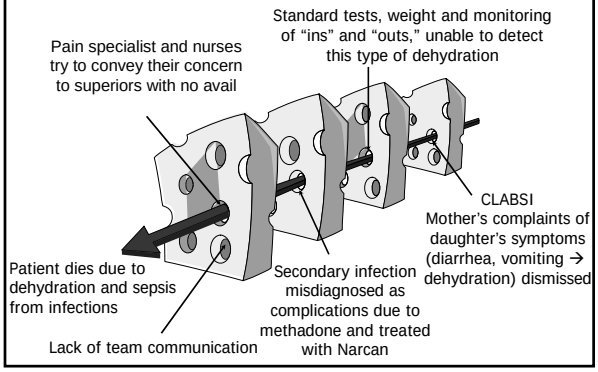
- Align efforts toward common purpose when:
  - Evidence to improve outcomes
  - Valid measure
  - Pilot project demonstrates improvement
- Management Levers
  - National roll out of Hopkins Program with HRET, MHA, JHU
  - Professionalism
- Social Pressure Levers
  - Public reporting, Consumers Union, Leapfrog, Media
- Economic Levers
- Regulatory Levers

How Does this Apply to Diagnostic Errors

Why Do Diagnostic Errors not get Attention

- Technical Problems
  - No national estimate of the magnitude of harm
  - No taxonomy or process to map diagnostic process
  - Lack of interdisciplinary teams
- Adaptive Problems
  - Lack of public dialogue about accuracy of diagnostic tests, risk thresholds and who pays

A Diagnostic Error Story



Process for Medication Errors

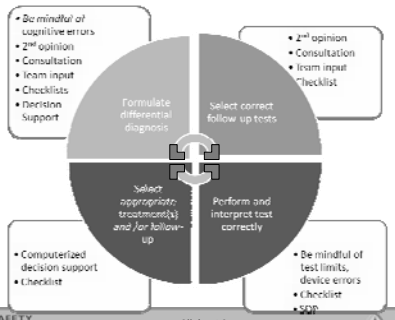
- Unknown, but highly variable, environment-specific, and patient-dependent

Table 1 Counts and percentage of errors in each medication error domain before and after expert review and reconciliation

	Before expert review		After expert review	
	N	%	N	%
Prescribing errors	298	30%	262	29%
Dispensing errors	245	24%	223	25%
Administering errors	410	41%	345	38%
Documentation errors	57	6%	69	8%
Total	1010		899	

From: Qual Saf Health Care. 2006 June; 15(3): 209–213. doi: 10.1136/qshc.2005.016733.

Cycle of diagnosis

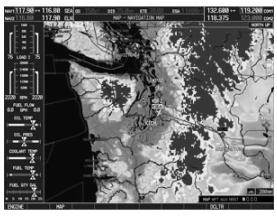


Advance the science of measurement: How do other industries illustrate data?

Entered service in 1980.

The current version.

Advance the science of measurement: How do other industries illustrate data?



Lessons from Ants and Bees


The Economist

Artificial intelligence

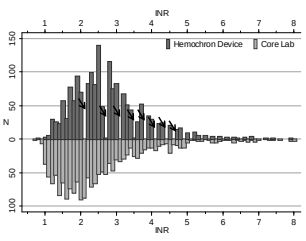
Riders on a swarm

Mimicking the behaviour of ants, bees and birds started as a poor man's version of artificial intelligence. It may, though, be the key to the real thing

Aug 12th 2010 | ROME

What Test to Order

Example of Testing Device Errors - POC INR Devices



- POC INR device simply never reports seven commonly occurring IR values (blue arrows).
- It leads clinicians to the wrong clinical decision in about one out of every three measures (30%).
- Clinicians typically make no change when a dose increase would be suggested by the lab measure as a result of the testing device error.

Clinical Care/Education/Nutrition/Psychosocial Research

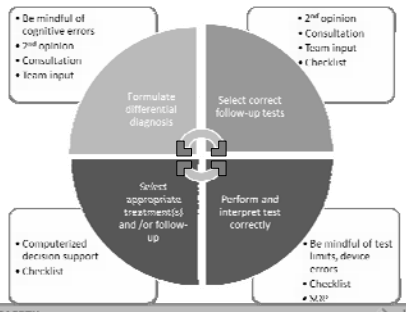
End-Digit Preference and the Quality of Blood Pressure Monitoring in Diabetic Adults

- Tight BP control reduces diabetes-related cardiovascular risk
- Low quality BP data, reflected in end-digit preference (EDP), is common:
  - Taken by non-physicians - 4,333 BPs: 50% of systolic, 50% of diastolic readings ended in zero
  - Taken by physicians - 1,347 BPs: 69% of systolic, 64% of diastolic readings ended in zero
- Rounding down can result in under-diagnosis and under-treatment

Failure to follow up errors

- **Patient notification and follow-up of abnormal test results: A physician survey (Bookhaker, et al)** → Found that up to 33% of physicians did not always notify patients about abnormal test results.
- **Patient safety concerns arising from test results that return after hospital discharge (Roy, et al)** → Of the discharges surveyed, 9.4% of the patients with test results return after discharge were potentially actionable.

Cycle of diagnosis



MALPRACTICE & ERRORS

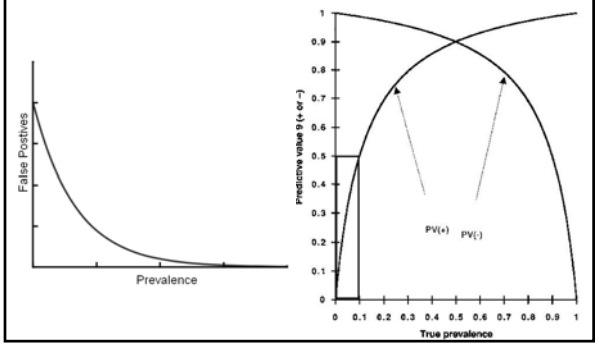
By Emily R. Carrier, James D. Reschovsky, Michelle M. Mello, Ralph C. Mayrell, and David Katz

Physicians' Fears Of Malpractice Lawsuits Are Not Assuaged By Tort Reforms

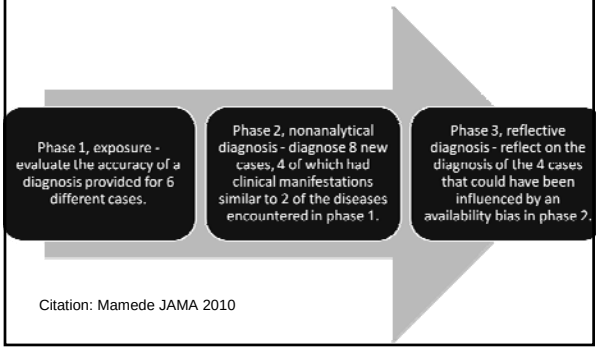
Concern about Malpractice Liability:

- 78% of physicians expressed agreement or strong agreement with the statement that it is becoming increasingly risky to rely on clinical judgment, rather than diagnostic testing...

Cost Benefit per Misdiagnosis



- Effect of Availability Bias and Reflective Reasoning on Diagnostic Accuracy Among Internal Medicine Residents



Citation: Mamede JAMA 2010

Next Steps

Technical work

- Advance the science of measuring dx errors
- Provide national estimates of harm
- Pilot test impact of interventions on measures
- Work in interdisciplinary teams

Adaptive work

- Public discussion about reasonable risk thresholds
- Who decides
- Who pays

Focus and Execute

I will .....