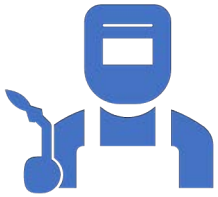
TRACY SANSON MD

Practical Patient Safety

Tracy Sanson MD, FACEP

Disclosure

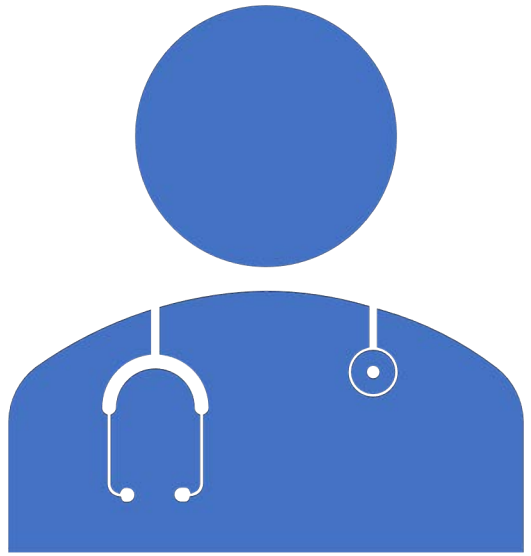
No relevant financial relationships with a commercial interest to disclose



Human factors engineering is about designing the workplace and the equipment in it to accommodate for limitations of human performance

Human Factor Engineering in Patient Safety

Design	Design improvements in the workplace and the equipment to fit human capabilities and limitations
Make	Make it easier for the workers to get the work done the right way
Decrease	Decrease the likelihood of errors occurring



Design accommodations for *the entire range of workers*

- The calm, rested experienced clinician
- The inexperienced clinician who might be stressed, fatigued and rushing

83 yo with hx of COPD, GERD, paroxysmal atrial fibrillation with sick sinus syndrome admitted to Cardiology for initiation of Rx and permanent pacemaker

Placement of pacemaker via left subclavian vein at 2:30 p.m.

Post-op CXR -- no pneumothorax

Sent to recovery unit for overnight monitoring

At 5:00 p.m. states short of breath and requested inhaler

Also c/o new left-sided back pain

Pulse ox drops from 95% to 88%

Supplemental oxygen was started and nurse asked covering physician to see the patient

Patient on the nurse practitioner non-housestaff service

On-call intern covers after NPs leaves.

The intern, who had never met the patient, found him already feeling better on oxygen.

CXR completed within 30 minutes.

An hour later, the nurse asked the covering intern if he had seen it.

The intern states: signing out the x-ray to the night float, who was coming on duty at 8:00 p.m.

The patient continued to feel well, except for mild back pain. The nurse gives acetaminophen and continued to monitor heart rate and respirations.

10:00 p.m. the nurse asks the night resident about the x-ray. Night float had been busy with an emergency but promises to look at x-ray.

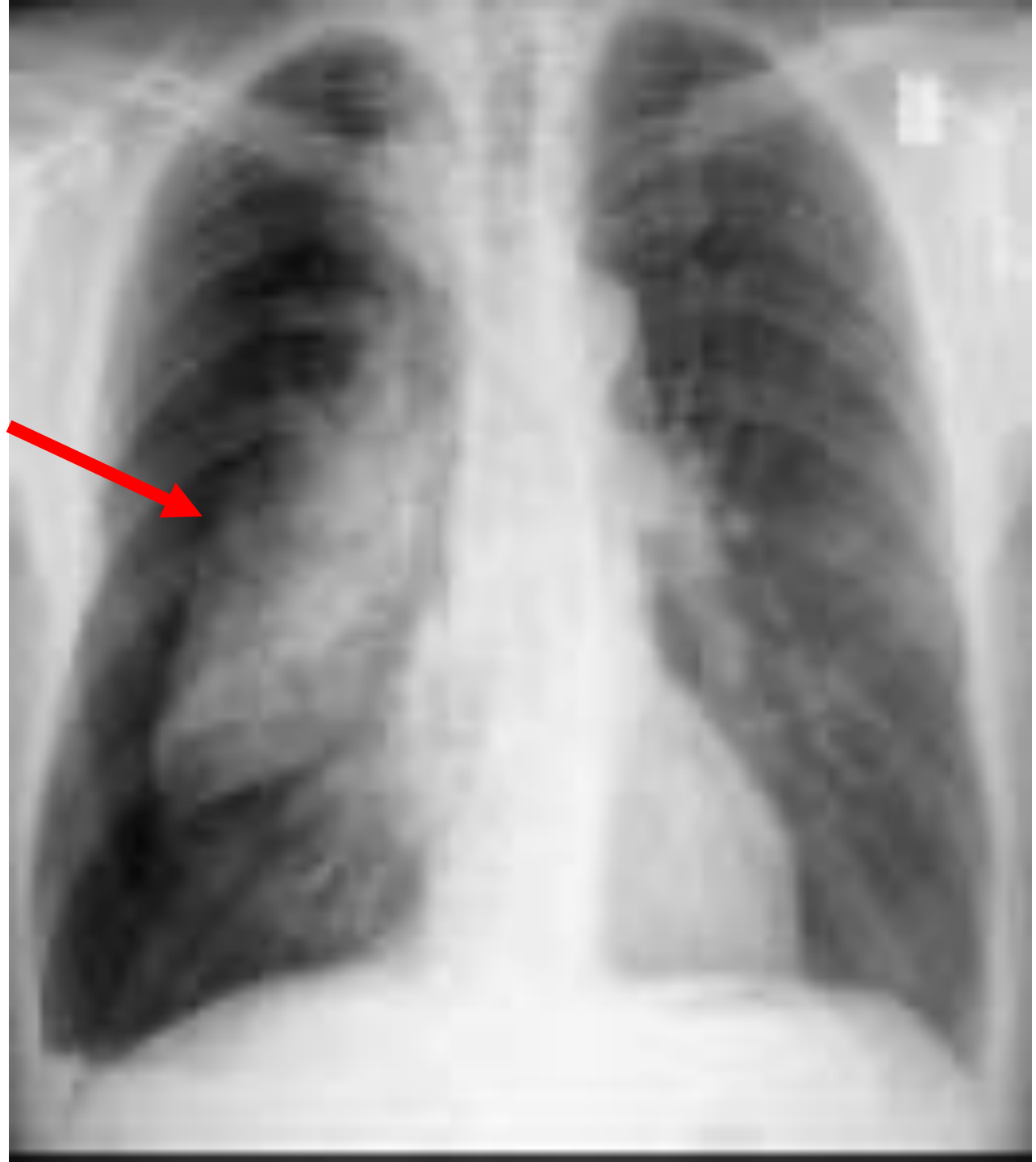
At midnight, nurse signs out to night shift, mentioning the patient's symptoms and that the night float resident had not called with any bad news.

The next morning, NP notified of large left pneumothorax.

Cardiothoracic surgery service places chest tube was placed at 2:30 p.m

23 hours after the x-ray was performed.

The patient ultimately recovered



Triple Handoff

The night float resident examined the radiograph completed immediately post-operatively, rather than the chest x-ray completed at 4:00 p.m.

Did not see the large pneumothorax

Transitions

Patients

Are cared for not by an individual

But by a team,

And team members change regularly

Improving Transitions

Reduce	Reduce transitions when not necessary
Limit	Limit interruptions; if necessary, delay transfer of responsibility
Use	Use written and verbal tools to augment transfer knowledge

Standardized Communication

- Focuses on the patient not the people

- Standardized format allows common expectations

  - What's going to be communicated
  - How the communication is structured
  - Required elements

Communication Check List

- Get the person’s attention
- Make eye contact, face the person
- Use the person’s name
- Express concern
- Use communication technique
- Re-assert as necessary
- Decision reached
- Escalate if necessary

I - SBAR

- I – Introduction
- S - Situation (the current issue)
- B - Background (brief, related to the point)
- A - Assessment (what you found/think)
- R – Recommendation/request (what you want next)

A well-appearing 9-month-old infant weighing 8 kg presented with urinary frequency and white cells in her urine.

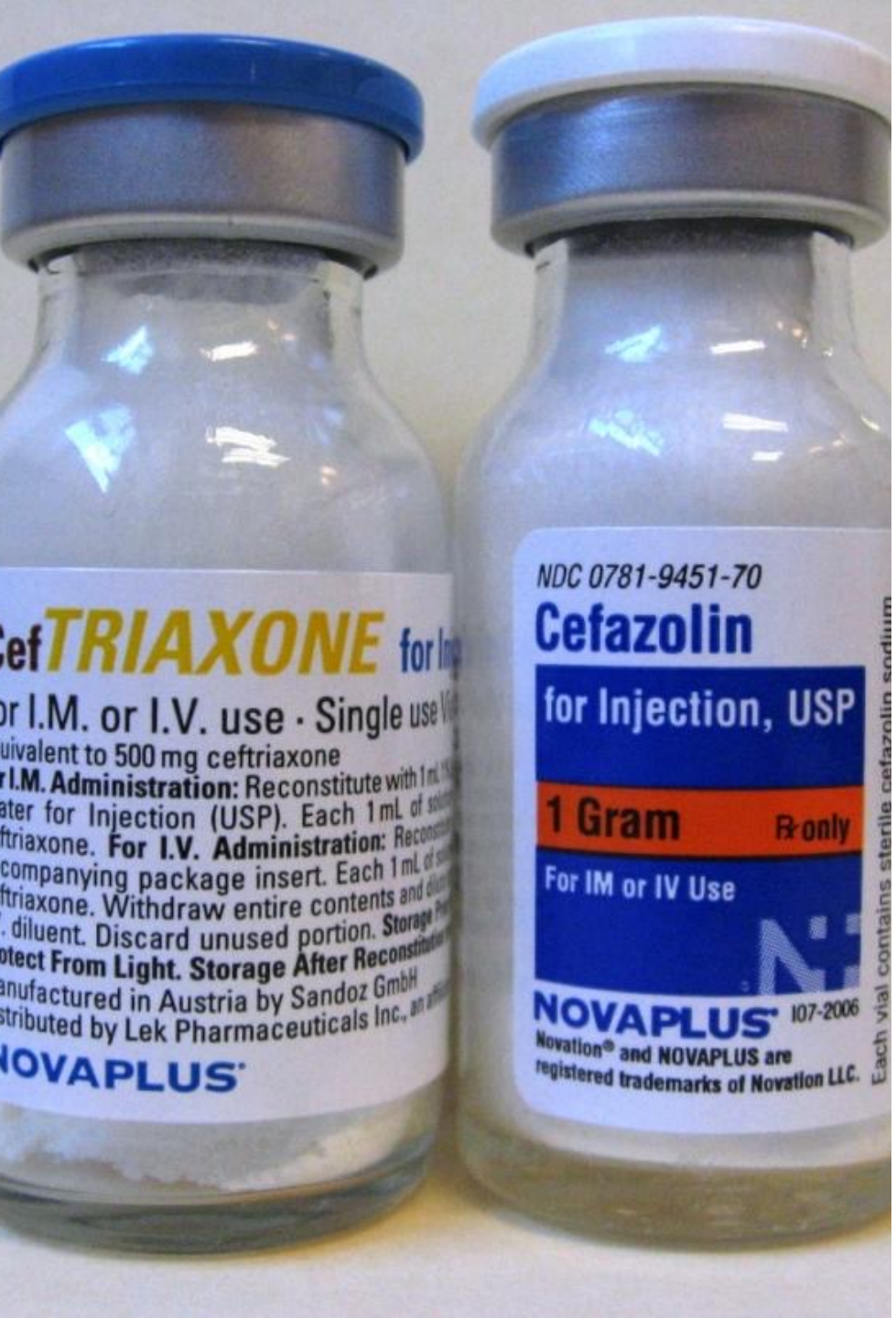
The EP ordered Rocephin 450 mg IM for empiric treatment of a UTI to be given immediately.

Hours later, when removing another vial of ceftriaxone from Pyxis, nurse noted two vials in the drawer instead of the expected one.

In the medicine administration area, nurse found a partially empty vial of cefazolin, a different antibiotic that had not been ordered for any patient that night.

Infant received 450 mg of IM cefazolin instead of the intended 450 mg of ceftriaxone.

What Went Wrong?



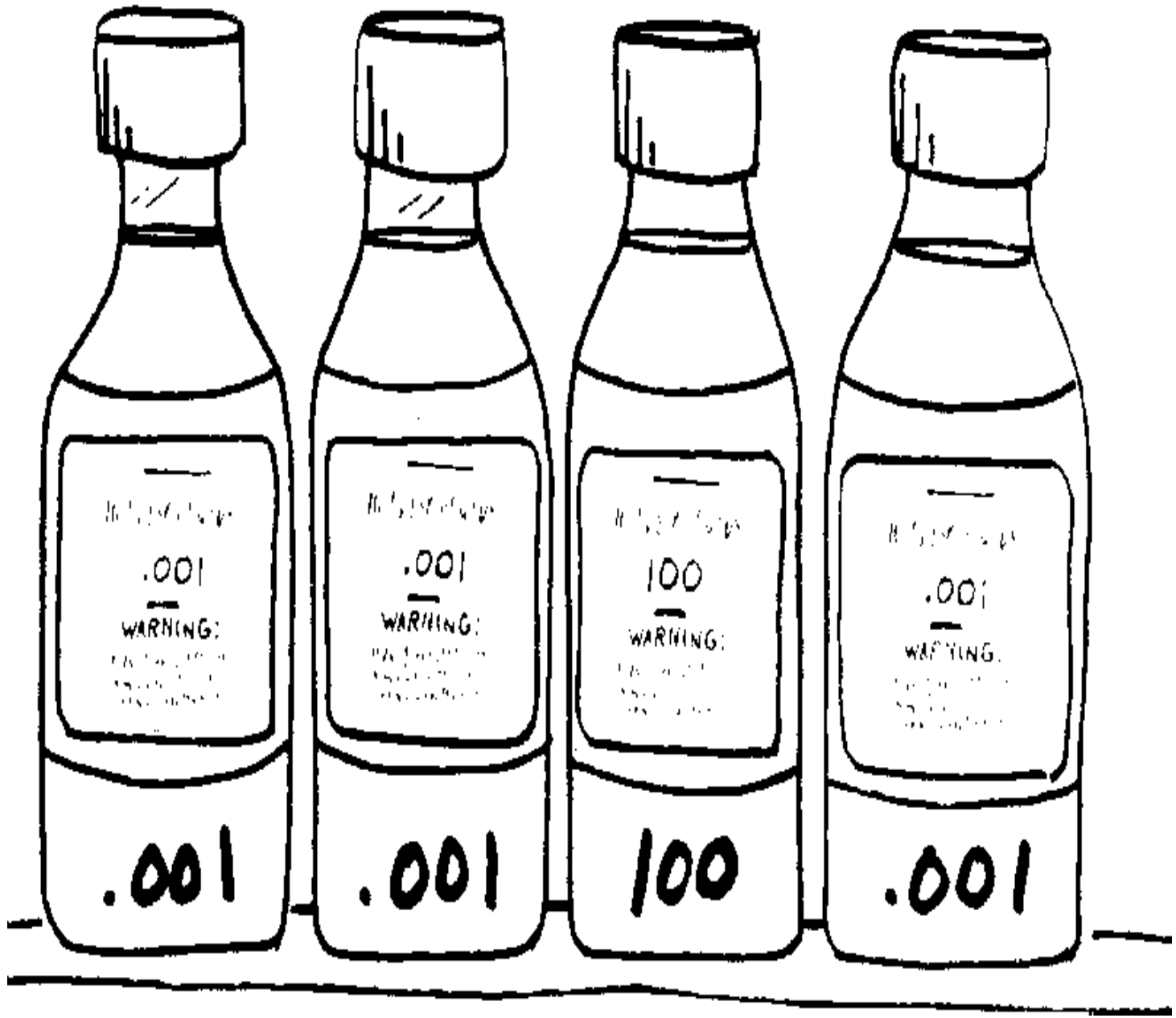
What Went Wrong?

- Similarly named meds in close proximity
  - No separation of look-alike or sound-alike meds in Pyxis
- Failure of safe-guards
  - RN failure to confirm med identity

Distracting environment

Nov 18, 2007 three patients at Cedars-Sinai were given massive doses of heparin

The vials containing a concentration of 10,000 units/ml were used instead of the appropriate 10 units/ml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WARNING:
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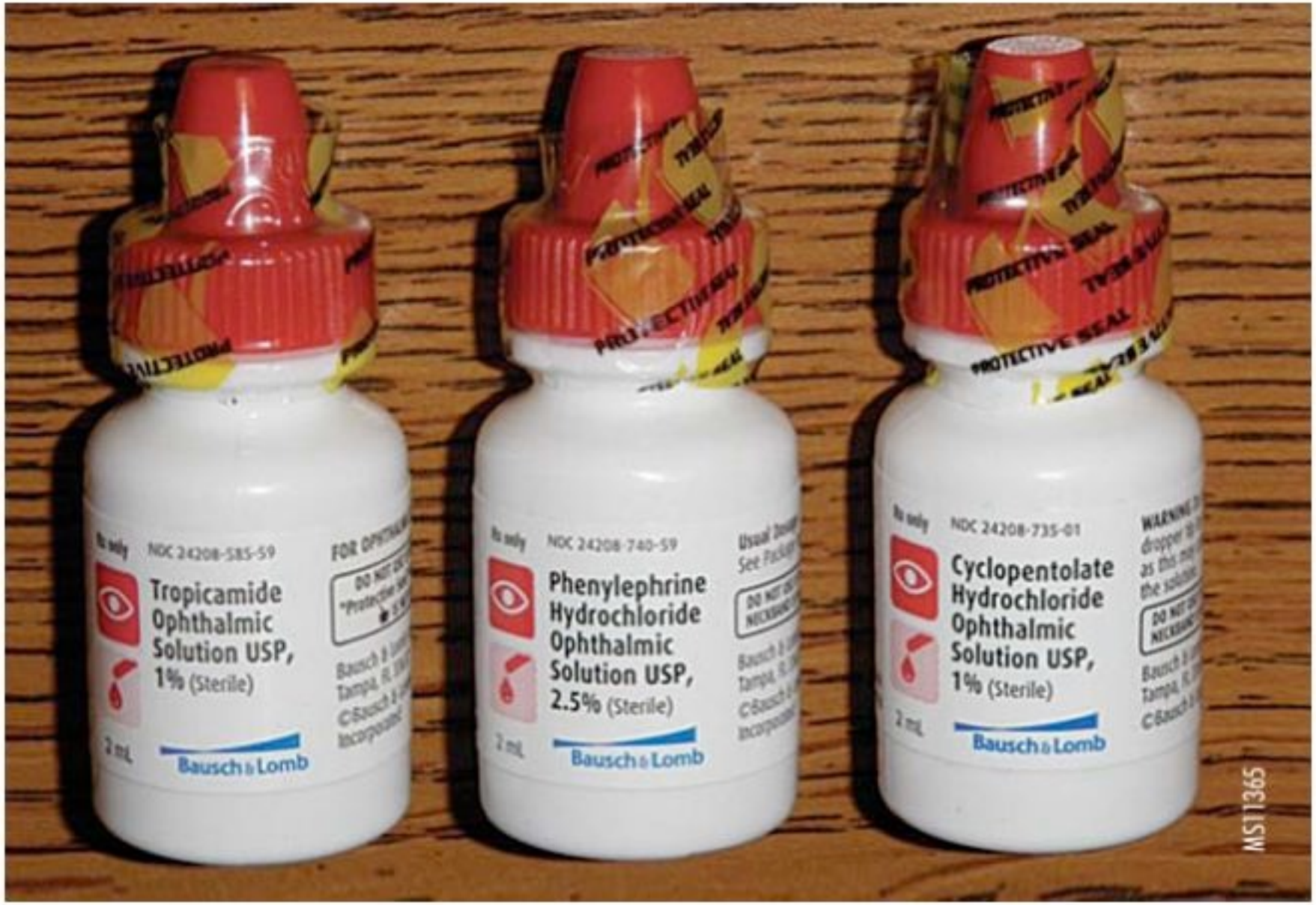
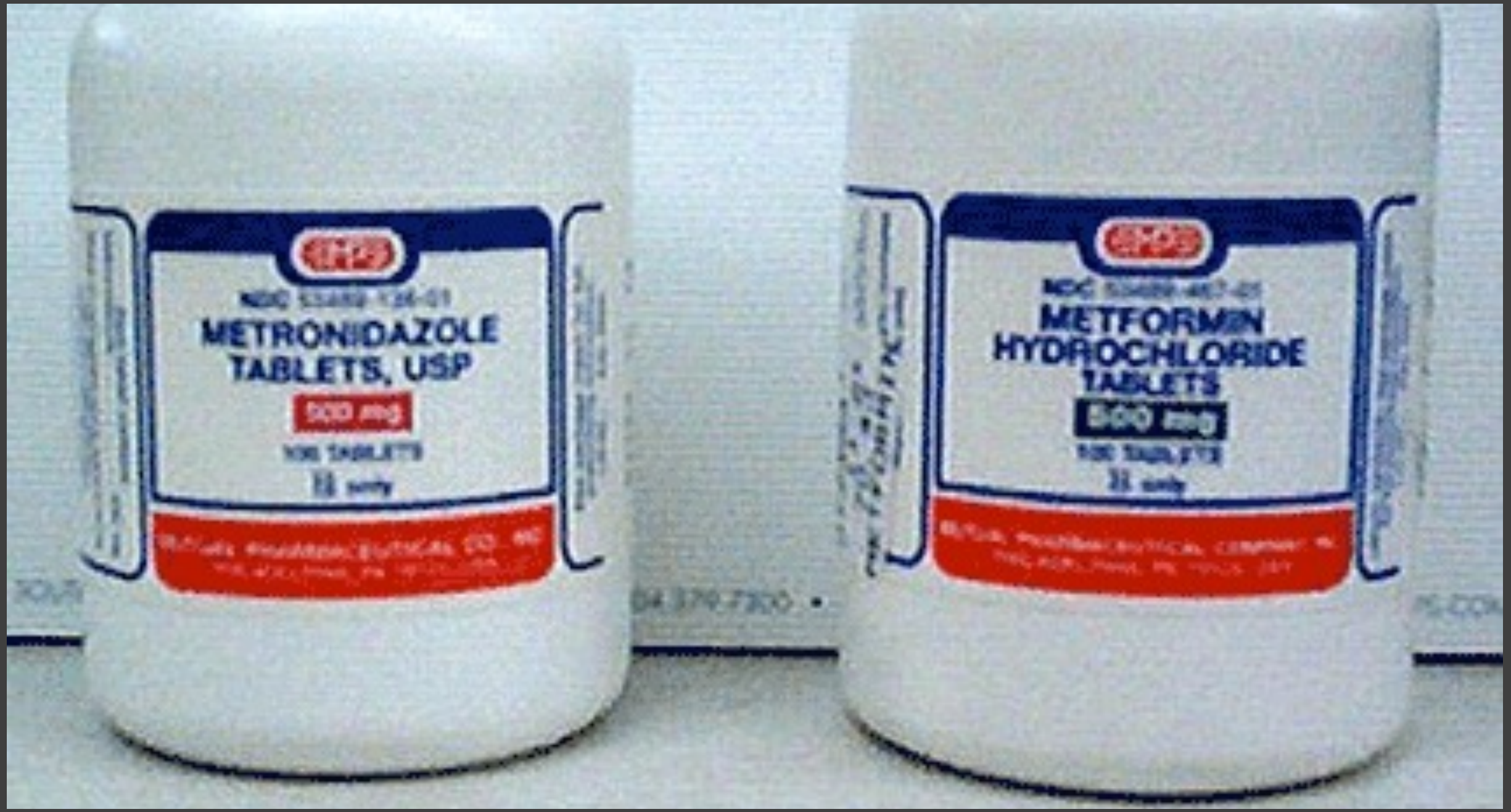
NDC 61314-203-15 Rx Only
FALCON
Pilocarpine Hydrochloride Ophthalmic Solution
1%
NDC 61314-206-15 Rx Only
FALCON
Pilocarpine Hydrochloride Ophthalmic Solution
4%


NDC 24208-806-15
Bausch + Lomb
Rx only
0.5%
15 mL
Pilocarpine Hydrochloride Ophthalmic Solution USP, 0.5% (Sterile)
NDC 24208-683-15
Bausch + Lomb
Rx only
2%
Pilocarpine Hydrochloride Ophthalmic Solution USP, 2% (Sterile)
NDC 24208-686-15
Bausch + Lomb
Rx only
4%
Pilocarpine Hydrochloride Ophthalmic Solution USP, 4% (Sterile)

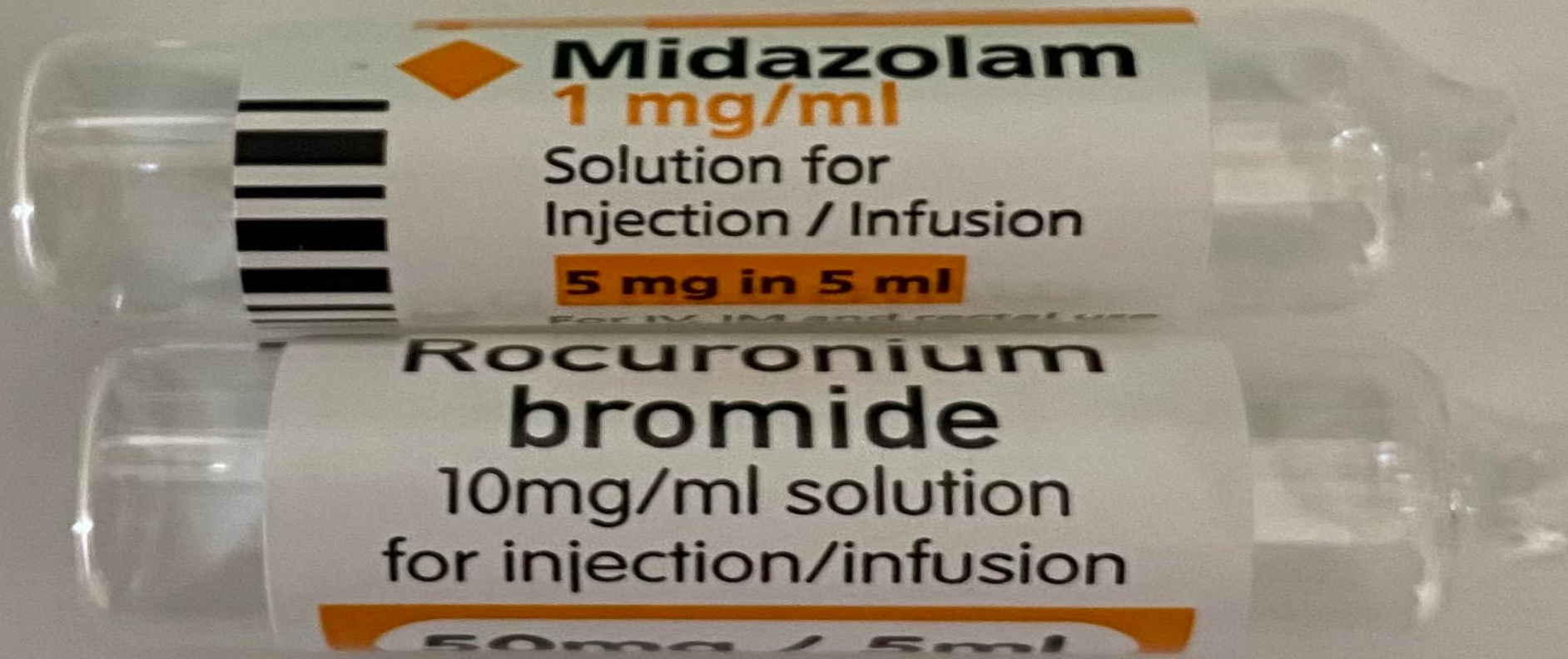
Figure. Look-Alike Eye Drop Bottles



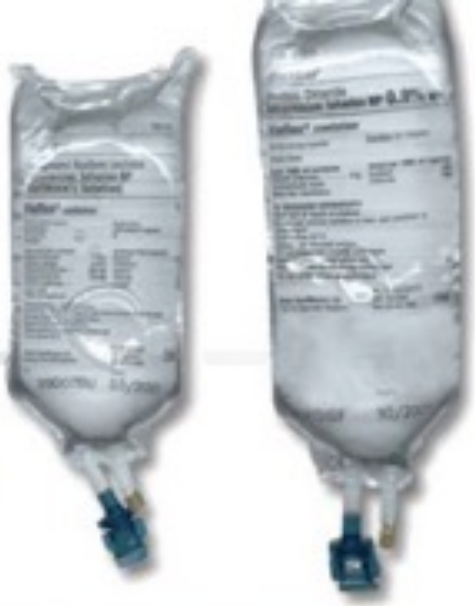
Reprinted with permission from the Institute for Safe Medication Practices, Horsham, Pennsylvania.


METRONIDAZOLE
TABLETS, USP
METFORMIN
HYDROCHLORIDE
TABLETS

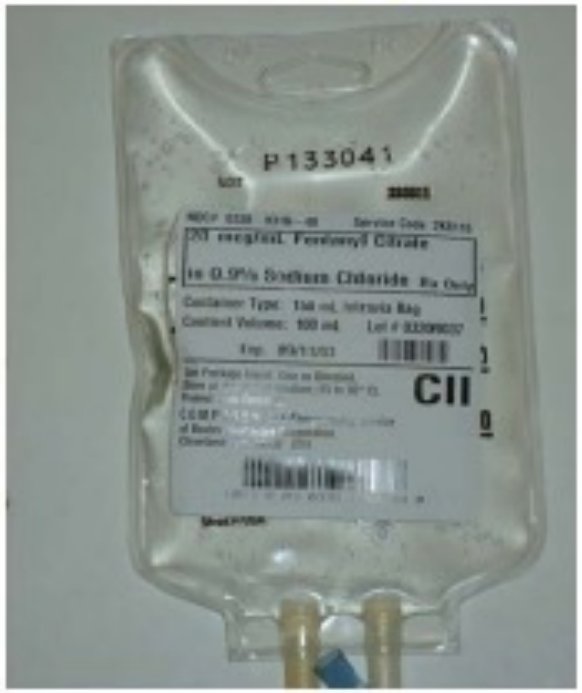

P76022 1/15
equate®
Allergy Relief
equate®
Women's

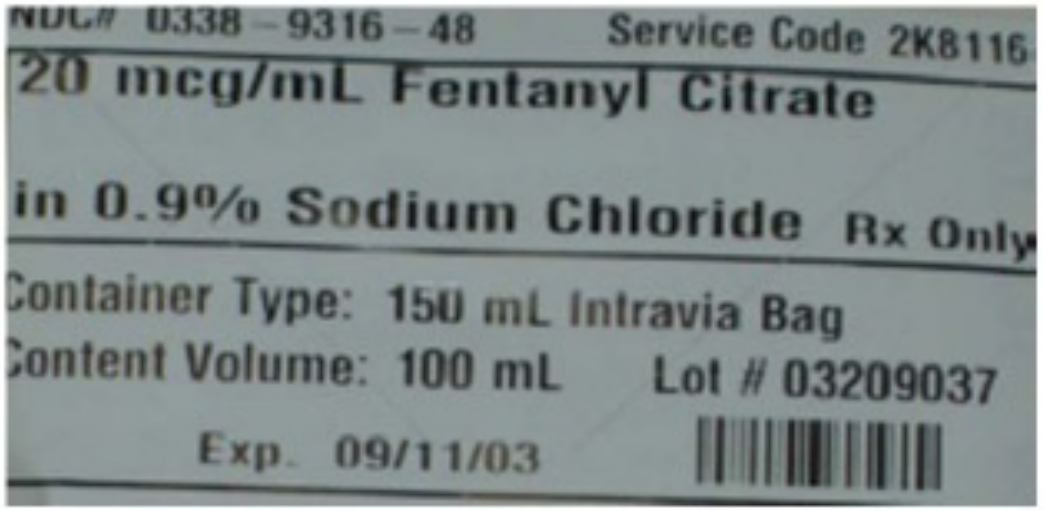

Midazolam
1 mg/ml
Solution for
Injection / Infusion
5 mg in 5 ml
Rocuronium
bromide
10mg/ml solution
for injection/infusion

The Fentanyl Case



"20 mcg Fentanyl IV Bolus"





Rollin J. (Terry) Fairbanks, MD, MS, FACEP

Medications

Reconciliation

- ✓ Double checks
- ✓ Verbal confirmations
- ✓ Check look alike, sound-alike medications
- ✓ 1-2 Drawers


ARMSTRONG MEDICAL
A-SMART CART SYSTEM
G
WARNING

Doing it right

- Pause for the cause
- Correct procedures, correct body site

Doing it right

- Pause for the cause
- Correct procedures, correct body site
- Tubing misconnection

- Trace all lines back to their point of origin
- Recheck connections, trace all lines to point of origin after arrival to a new care area or as part of handoff
- Don’t force connections
- Only use adapters clearly indicated for a specific application
- An adapter may mean the connection shouldn’t be made
- Label certain high-risk catheters : epidural, intrathecal, arterial
- Identify and manage conditions that contribute to fatigue

Your last chance to get it right!

“Unanticipated Death After Discharge From the Emergency Department”

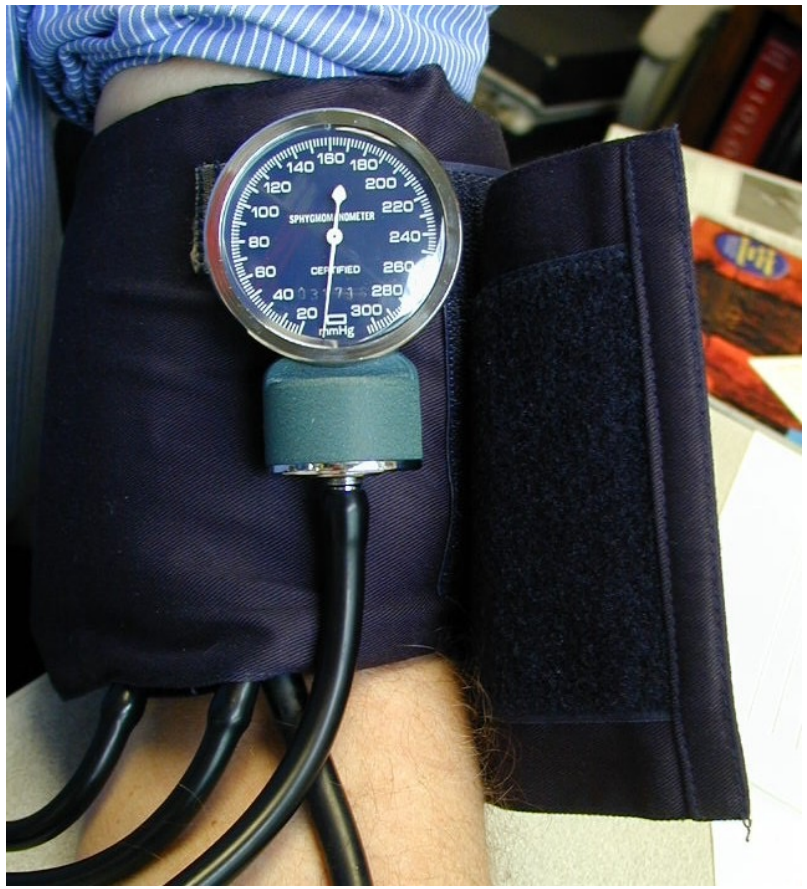
Sklar, et. Al; Annals of EM Jan 2007

- 400,000 ED visits
- Unexpected death rate = 30/100,000
- 18/100,000 had identifiable *error*
- 80% could have been identified by focusing on

Discharge V/S

Hypotension in Emergency Department Patients Predicts Unexpected Death

Jones, et al, Chest 2006; 130: 933, 941-946

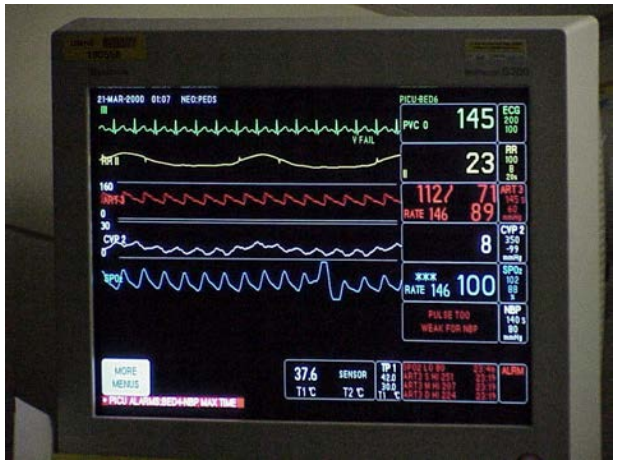


Unexpected death rate was 10-fold higher in patients experiencing a drop in the SBP < 100 in the ED

(2% vs. 0.2%)

900 charts from 3 institutions of patients discharged with “high risk” complaints

- ***Chest Pain***
- ***Abdominal Pain***
- ***Dyspnea***
- ***Syncope***



12% abnormal VS at discharge

4% documentation by physician

5% notification of abnormal VS by RN

Multitasking, Interruptions, Distractions

- Humans are poor multi-taskers
- Drivers on cell phones have 50% more accidents
- 5% of traffic accidents are “distracted drivers”
- Interruptions and distractions increase error rates
- Humans need very formal cues to get back on task when interrupted and distracted

Leonard, Michael MD. (Nov 2005). *Safer Healthcare Now Presentation*

Human Factors

“Health care is the only industry that does not believe that fatigue diminishes performance.”

Lucian Leape

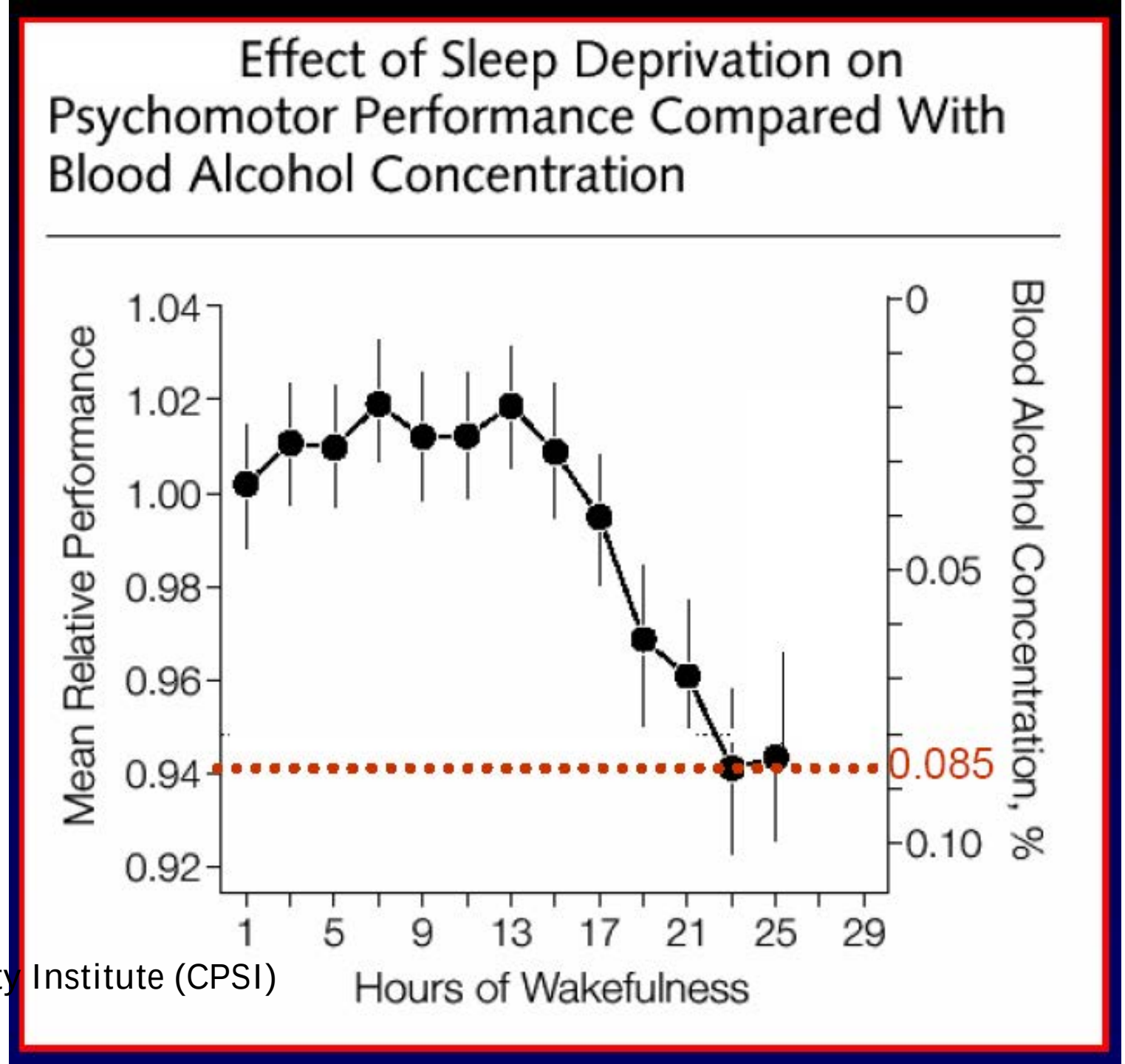
Fatigue

- 24 hours without sleep = BAL of 0.10

  30% decrease in cognitive processing
- Nurses 3 x more likely to make mistakes after 12 hours on the job
- Interns made 30% more errors in ICU when on 24 hour call schedules

- Canadian Patient Safety Institute (CPSI)

Leonard, Michael MD. (Nov 2005). *Safer Healthcare Now Presentation*

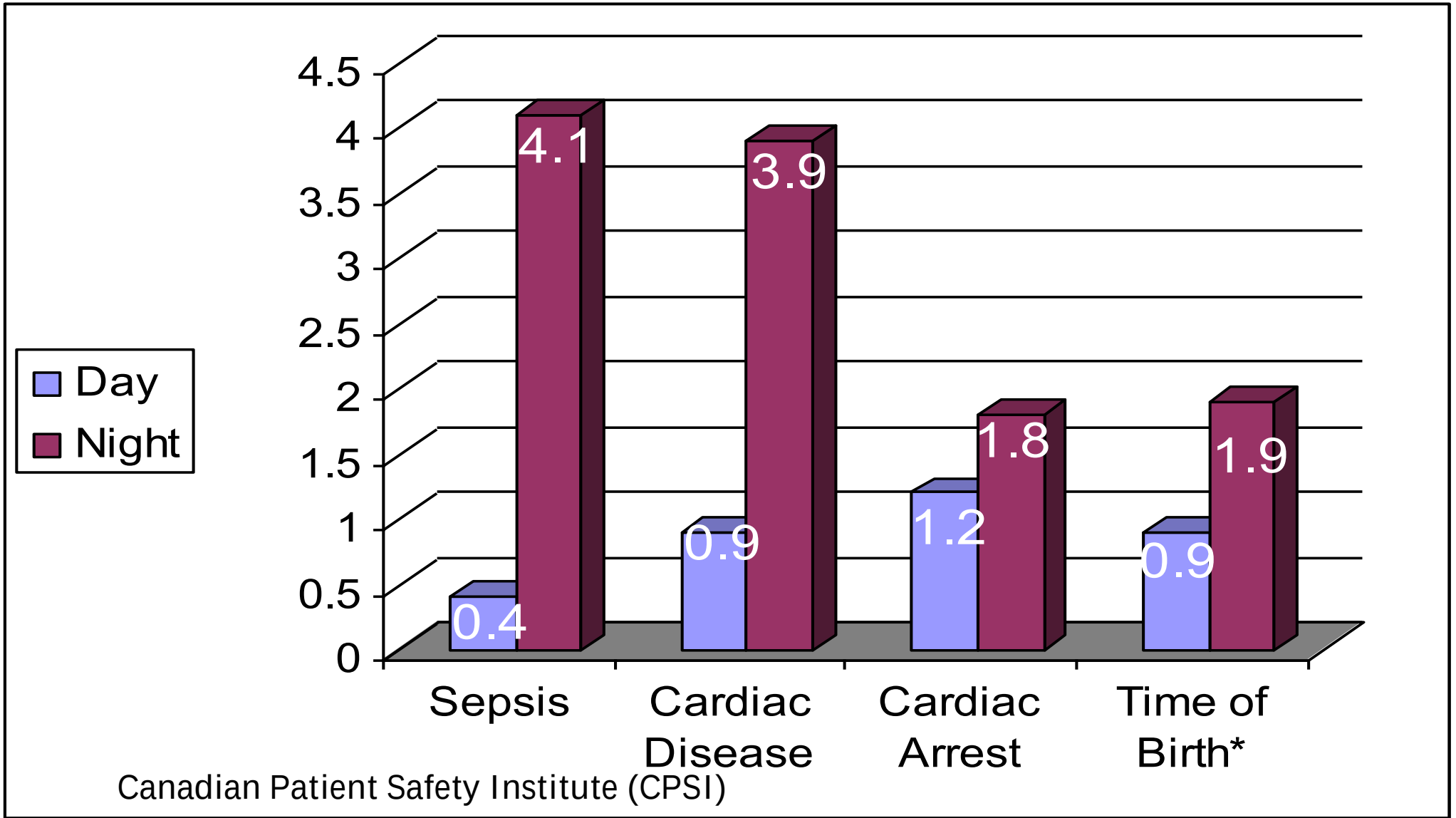


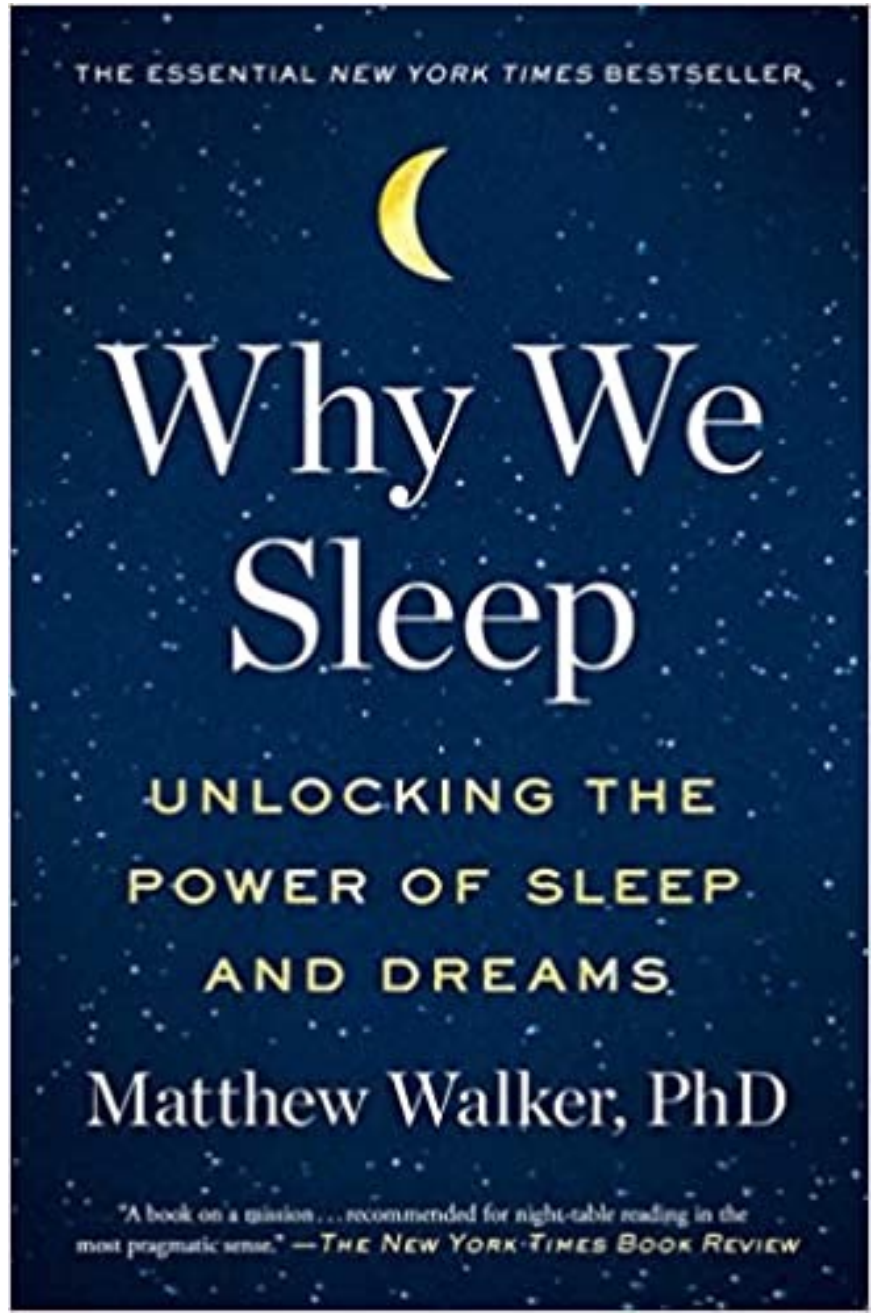
Canadian Patient Safety Institute (CPSI)

Association Between Evening Admissions & Higher Mortality Rates in PICU

Yeseli Arias, Doublas S. Taylor, and James P. Marcin

Pediatrics 2004; 113: 530-534




THE ESSENTIAL NEW YORK TIMES BESTSELLER
Why We Sleep
UNLOCKING THE POWER OF SLEEP AND DREAMS
Matthew Walker, PhD
"A book on a mission . . . recommended for night-table reading in the most pragmatic sense." —THE NEW YORK TIMES BOOK REVIEW

Root Cause Analysis

Sufficient Sleep Opportunity

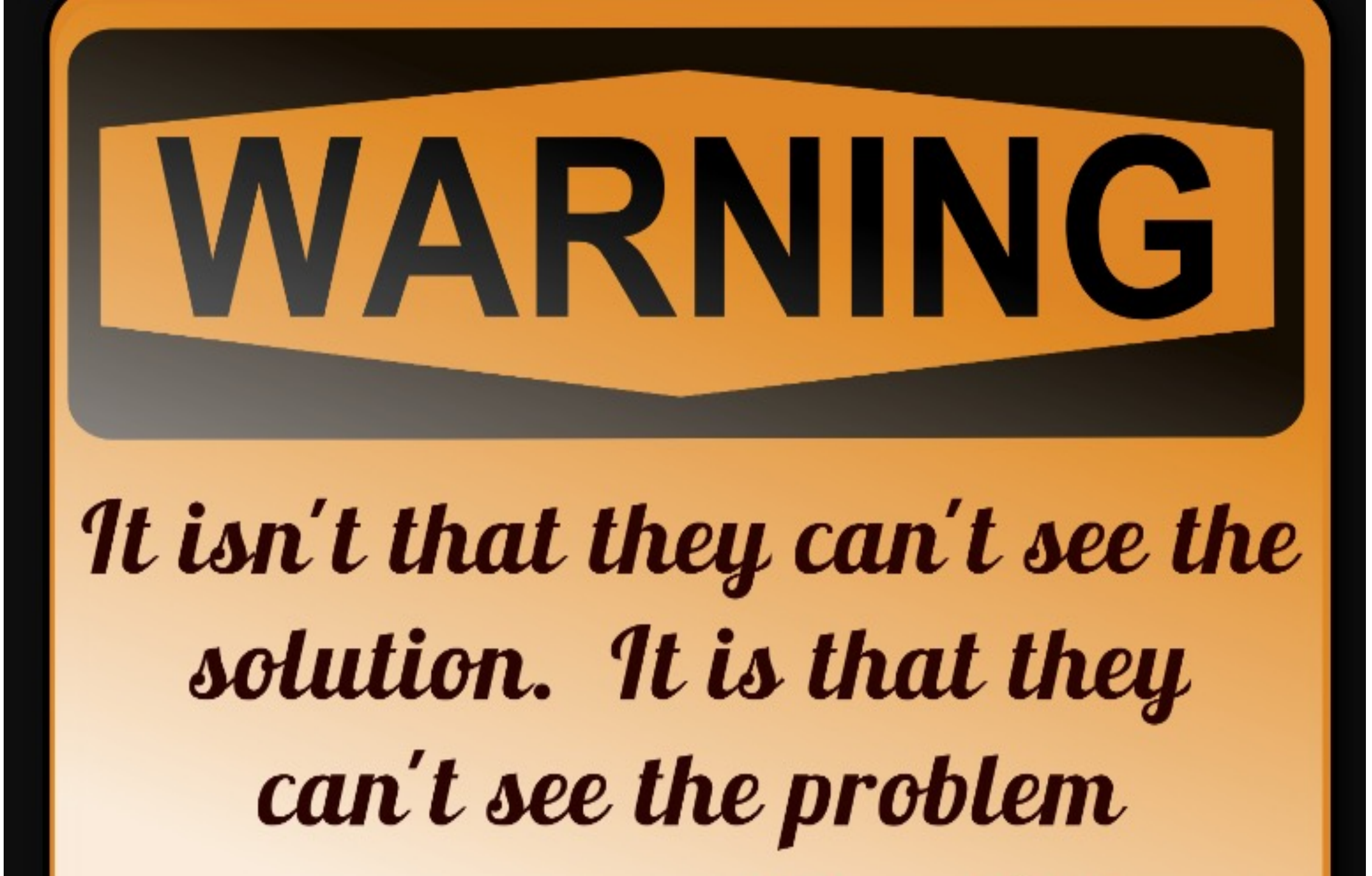
- Length and timing of shifts
- Length and timing of breaks
- Number of shifts worked in a row
- Number of days off between shifts

System Techniques

- Simplify or reduce handoffs
- Reduce reliance on memory
- Standardize procedures
- Improve information access
- Use constraining or forcing functions
- Design for errors

- Adjust work schedules
- Adjust the environment
- Improve communication and teamwork
- Decrease reliance on vigilance
- Provide adequate safety training
- **Choose the right staff for the job**

Patient Safety in Surgical Care: A Systems Approach 2007


WARNING
It isn't that they can't see the solution. It is that they can't see the problem

Tolerance and Indifference

Fear of retaliation

Financial and Legal

Fear of confrontation and conflict

Professional and social stigma

Inadvertent and Indirect

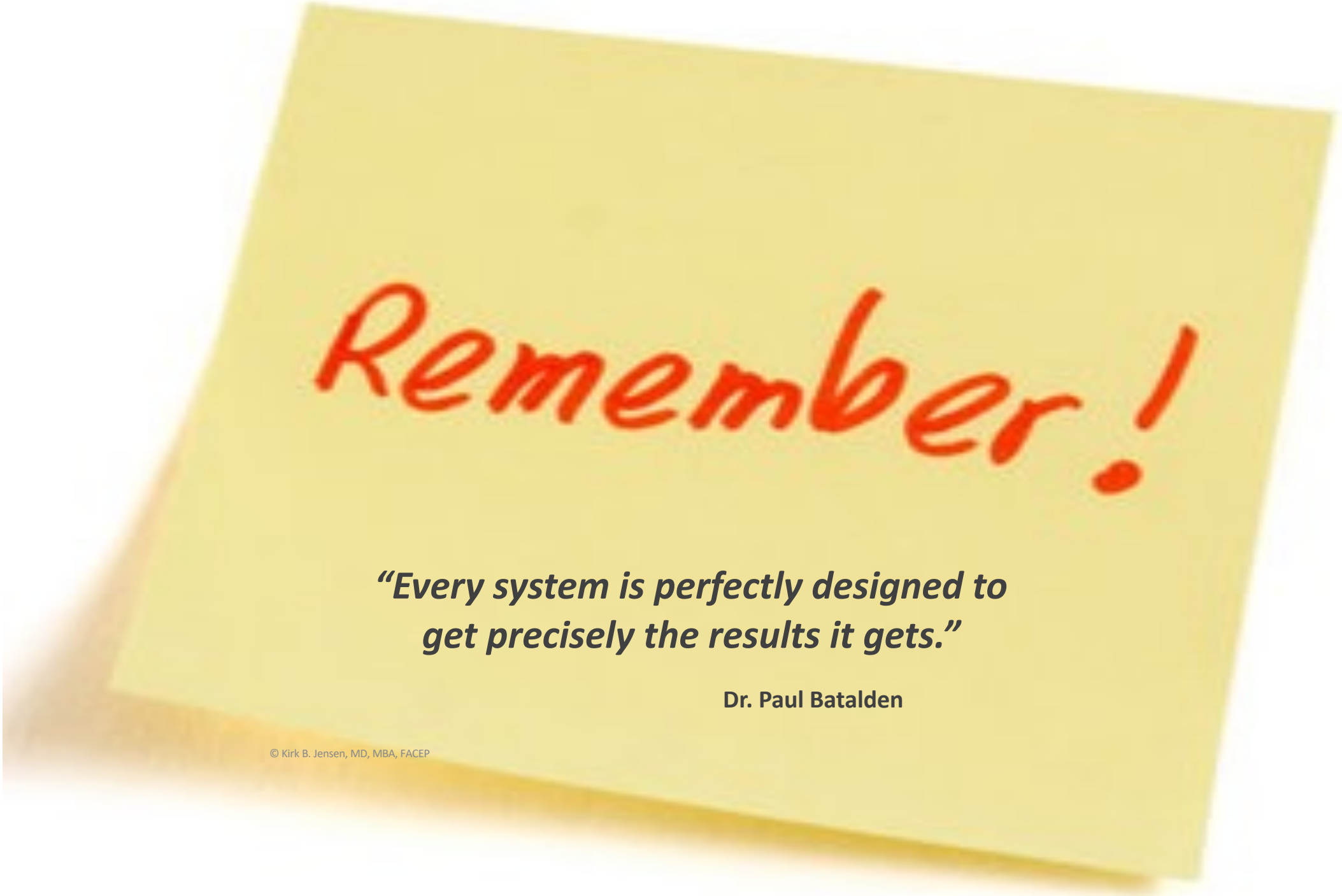
Inadvertent and Indirect

Promotion


What we tolerate
won't change!

ENABLER


impact



"Every system is perfectly designed to get precisely the results it gets."

Dr. Paul Batalden

Social Isolation

Sleep Deprivation

Pressure to excel

Self Neglect

Exhaustion

Cynicism


VALUES

80% of negative people claim:

- Didn’t know they were behaving in a negative manner
- Didn’t realize their behaviors were having a negative impact on others
- No one had attempted to point out their negativity in the past

75% of supervisors avoid confronting negative employees


SCHOOL BUS
Bus
STOP
SCHOOL BUS


EXPECTATIONS


PERFORMANCE
1
2
3
4
5
6
7
8


Feedback


Poor
Average
Excellent

Every Professional has the right to know

- What there are expected to do
- How well they are doing it
- When they are not meeting expectations
- Where they can make a difference
- How they can enhance their career


N
W
E
S


Revisit


YOU'RE FIRED AND YOU'RE FIRED
EVERYONE'S GETTING FIRED.


LOW
HIGH
MAXIMUM
AWARENESS
Level


3.14159265358979323846264338327


Discipline


Liability
Negligence
Apology
Medical
Apology
Mistakes
Medical
Quality
Error
Quality
Malpractice
Negligence
Disclosure
Shame
Blame
Error
Quality
Blame
Malpractice
Safety
Injury
Negligence
Injury
Safety
Malpractice
Apology
Claims
Legal
Liability
Shame
Tort
Risk
Tort
Disclosure
Claims
Claims
Legal
Risk
Legal
Mistakes
Medical
Settlements
Risk
Settlements

Find a balance between the “system” and personal behavior

Help rise above a "difficult" phase in their professional life


Hang in there!
It gets better!
Thank you.

Anna Parini


145
140
135
130
125
120
123.74
Pct. chg.
Day
1.2%
Chg.
1.64
Tues.
142.78
1.98


STRESS


TED
Staying Alive
Social Integration
Close Relationships
Quit Smoking
Quit Boozing
Flu Vaccine
Cardiac Rehab
Exercise
Lean vs. Overweight
Hypertension Rx
Clean Air
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8


support


feminem
#FIX18
SUPERWOMEN of EM


COUNSELING

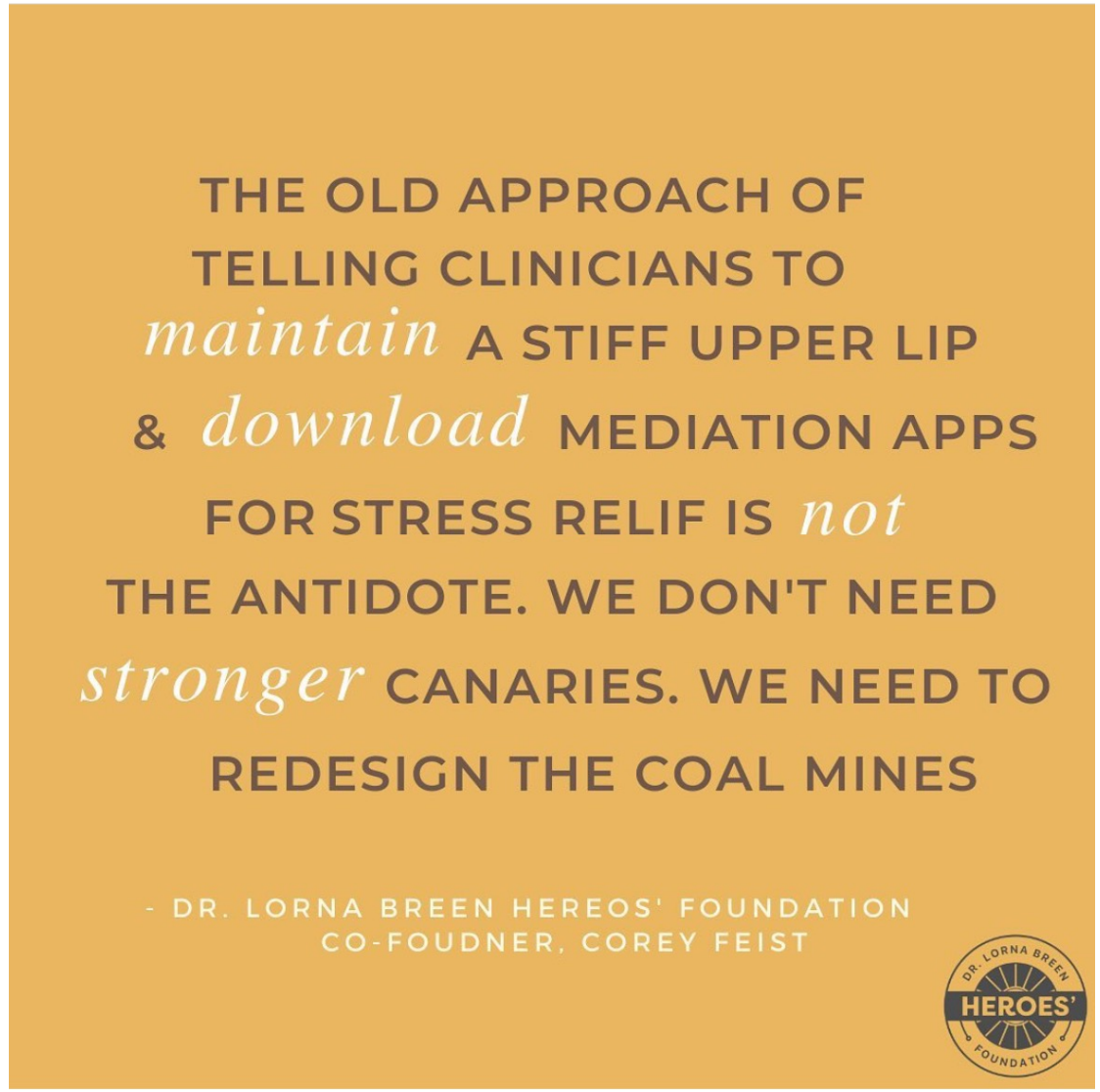

coaching


Counseling
Learning from mistakes without fear of punishment
Discussing mistakes with others
Focusing on the system versus the individual
Emphasizing wellness


Physician Support Line
Free Confidential Peer Support Line by
Volunteer Psychiatrists Helping our US Physician Colleagues
Navigate the Many Intersections of Our Personal and
Professional Lives
1-888-409-0141
7 days a week
8am - 1am ET
www.physiciansupportline.com
Physician Support Line
@PhysicianLine


@PeacefulMindPeacefulLife
Shame dies when stories
are told in safe places.
- ANN VOSKAMP

drlornabreenheroesfoundation



Caring for those called to care.

Thank You!

DrTracy@TracySansonMD.com

TracySansonMD.com

@TracySansonMD

TRACY SANSON MD

Some material from:

- Prevention of Medical Errors CME Risk Management Course for Florida Practices The Doctors Company Patient Safety Department
- Richard Smith Editor, BMJ
- American College of Emergency Physicians: A Primer for Emergency Medicine Residents and Practicing Emergency Physicians