433 Teams

OBSTETRICS & GYNECOLOGY

Patient Safety
Ethics and attitude in Ob/Gyn practice

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Medical Error Theory

First, Do No Harm

“ Medicine used to be simple, ineffective & relatively safe. Now it is complex, effective & potentially dangerous”

Scope of Problem & History of Patient Safety

1999: IOM > To Err is Human: Building a Safer Health Care System

44,000 - 98,000 Americans die each year from medical errors

Four factors contributing to medical error

1)Human fallibility

2)Complexity

3)System deficiencies

4)Vulnerability of defensive barriers

1) Human fallibility

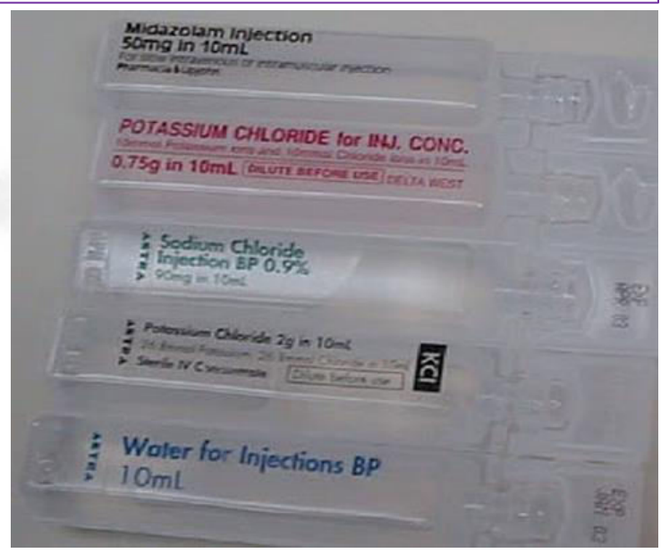
" To err is human": mistakes are part of the human condition.

System changes to make it harder to do the wrong & easy to do the right thing

A- Forcing functions

physical or process constraints that make errors difficult if not impossible.

Example: in the past , the couplings connecting the various gases to the anesthesia machine were universal. The oxygen could be connected to the nitrous oxide port and vice versa.



B- Reminders at the point of care

keeping a checklist to help ensure the steps are performed in the proper sequence.

Checklist similar to a cockpit flight crew.

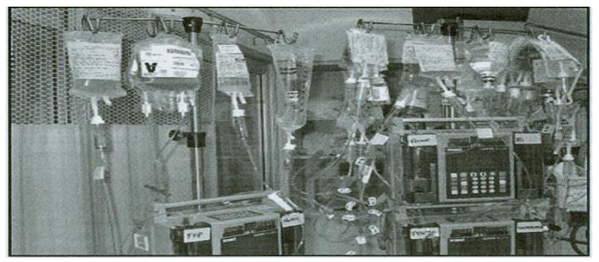
Thermachoice Endometrial Ablation System (Gynecare):

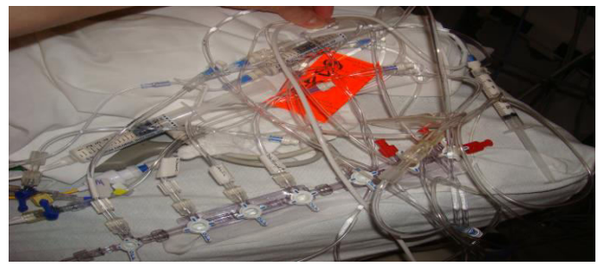
-Checklist attached to machine that lists the sequence for the nurse to properly attach the connections.

-Machine itself prompts the physician on the order of the steps and monitors the completion of one step before proceeding to the next.

2- Complexity

Modern health care is the most complex activity ever undertaken by human beings





A-Inpatient medication system

Table 1
Inpatient medication system

Prescribe ⟶	Transcribe ⟶	Dispensing ⟶	Administer ⟶	Monitor
Clinical decision	Receive order	Data entry	Receive from pharmacy	Assess therapy effect
Choose drug	Verify correct	Prepare, mix, compound	Prepare to administer	Assess side effects
Determine dose	Check allergy	Check Accuracy	Verify order and allergy	Review labs
Med record document		Check allergy	Administer drug	Treat side effects
Order		Dispense to unit	Document in MAR	Document

Abbreviation: MAR, medication administration record.
Adapted from Aspden P, Wolcott J, Bootman, JL, et al. Preventing medication errors. Washington, DC: The National Academies Press; 2006. p. 60; with permission.

-It shows the major steps in this process.

-Each of these major steps has several components , all potential sources for error.

-This system is complex and disjointed.

-Strategy to improve medication safety would include simplifying and standardizing the process by using tools e.g., electronic prescribing.

3- System deficiencies & defensive Barriers

2 major components: Sharp & Blunt Ends

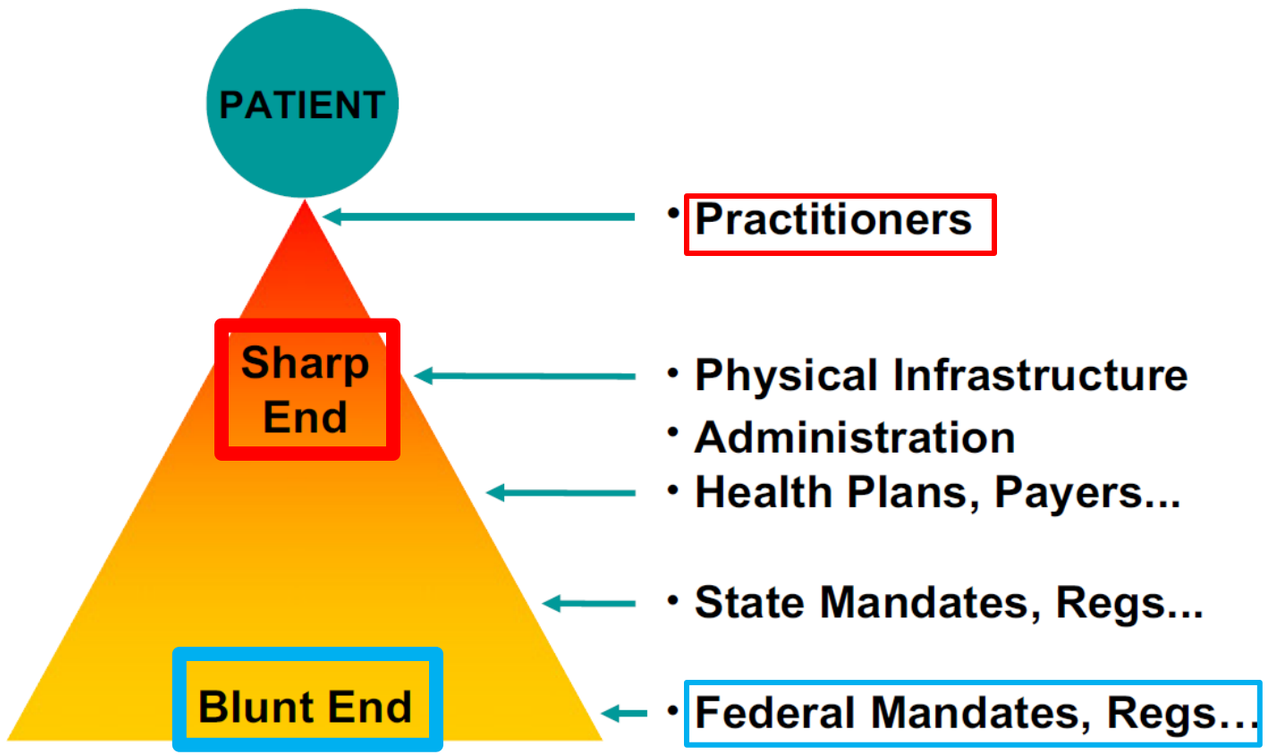


Fig. 1. Components of health systems.

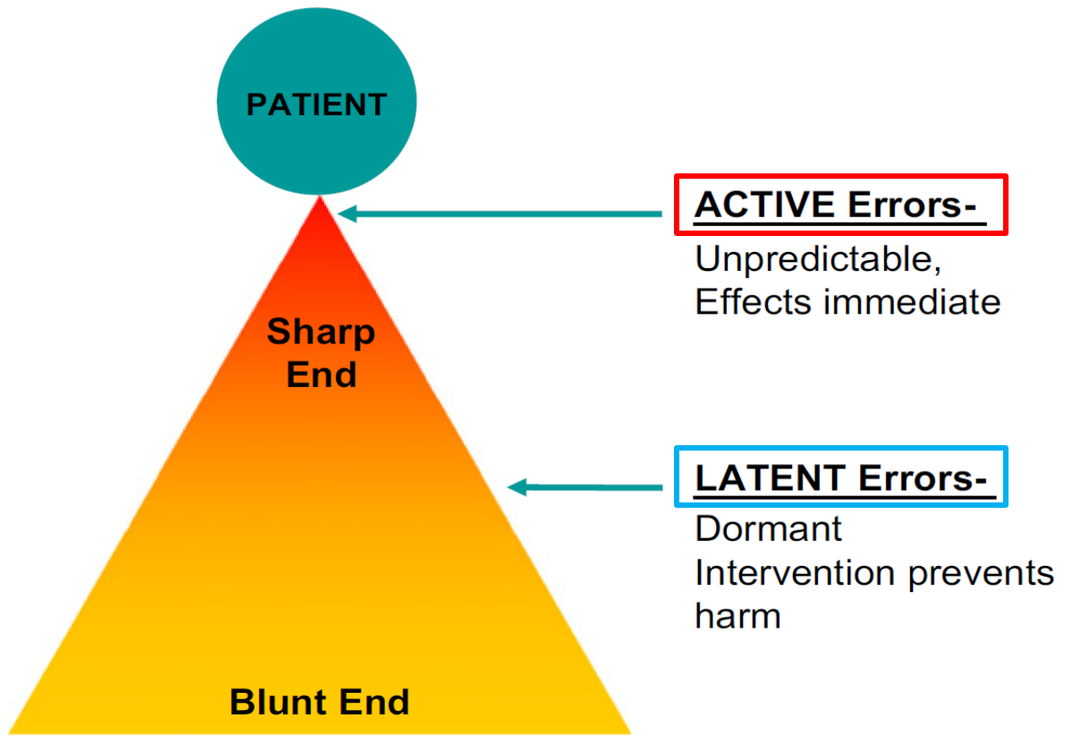


Fig. 2. Types of errors in health systems.

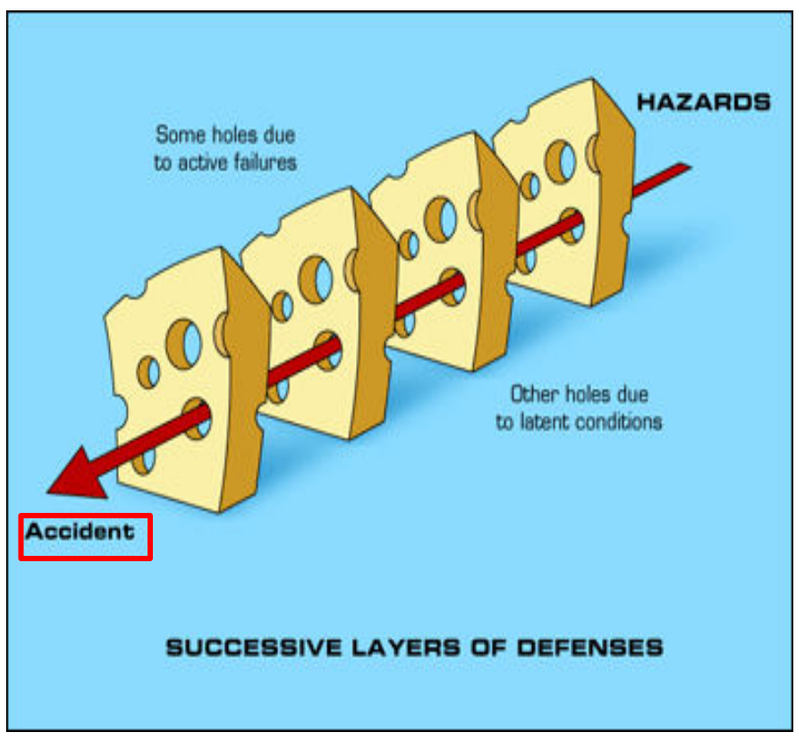
Cont…System deficiencies & defensive Barriers

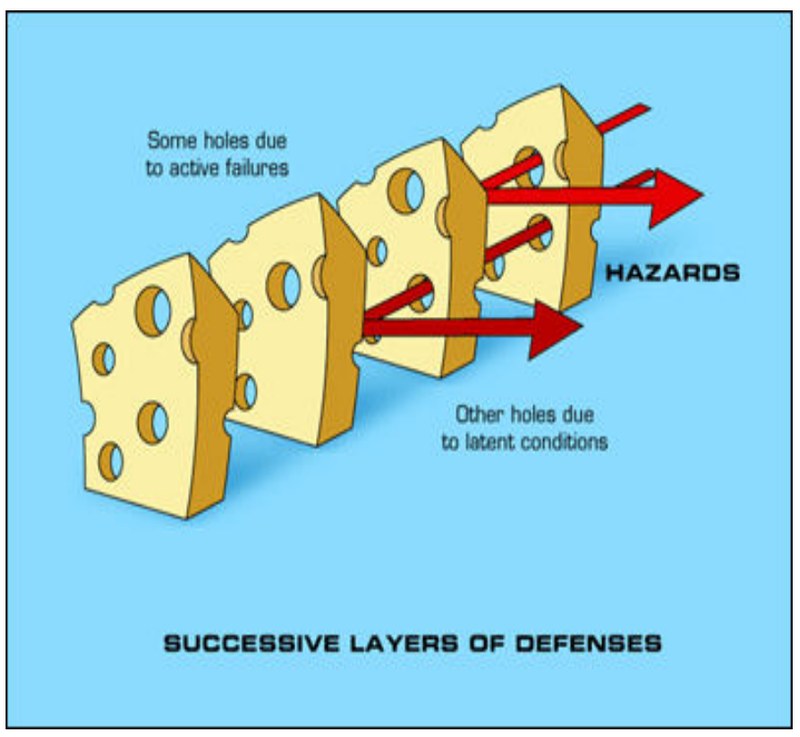
Active Errors	Latent Errors
-At the sharp end of care. -Immediate effects. -Generally unpredictable & unpreventable. There is no " system" that would prevent this injury	-System deficiencies hidden in the blunt end of care. -we work around these risks until the wrong set of circumstances occur → Patient injury.
Example: Inadvertent bladder injury during a hysterectomy for endometriosis with multiple adhesions.	**Examples:** understaffing, engineering defects.
	" An Accident Waiting To Happen " 

Human Error

- *We cannot change the human condition, but we can change the conditions under which humans work*
- *Blaming individuals is emotionally more satisfying than targeting institutions.*

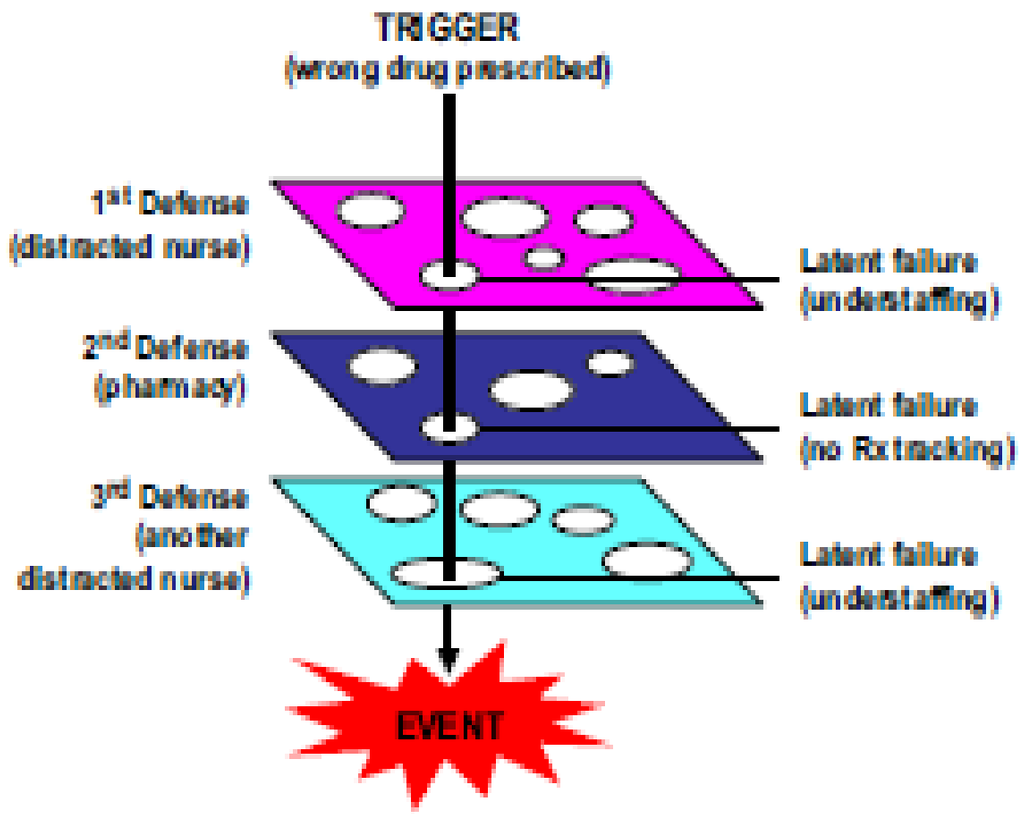
Defensive Barriers: Swiss cheese Model

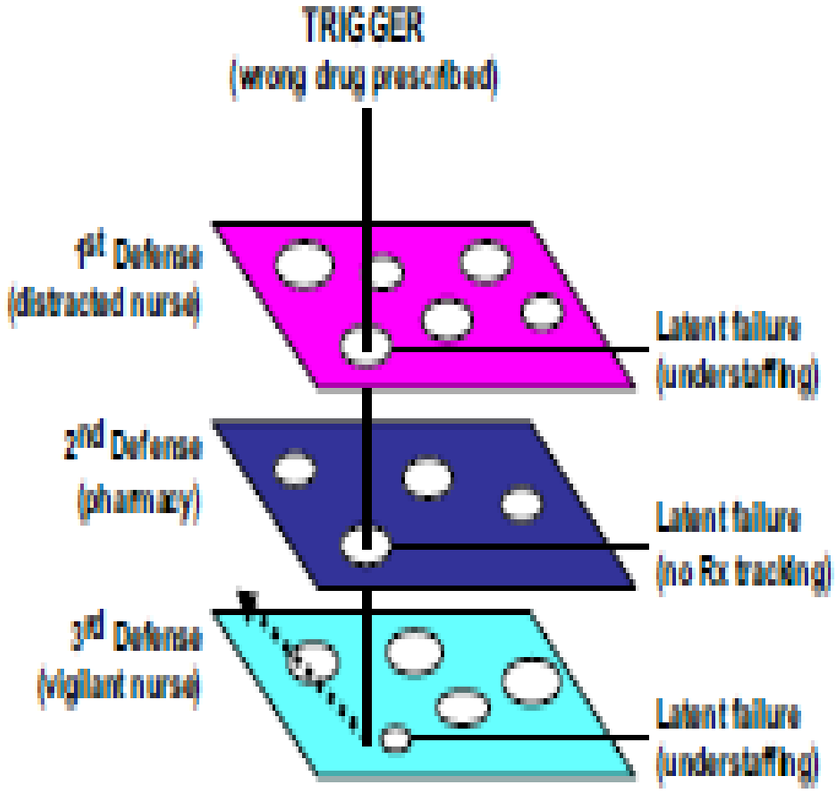




Trajectory of Error & Defensive Barriers

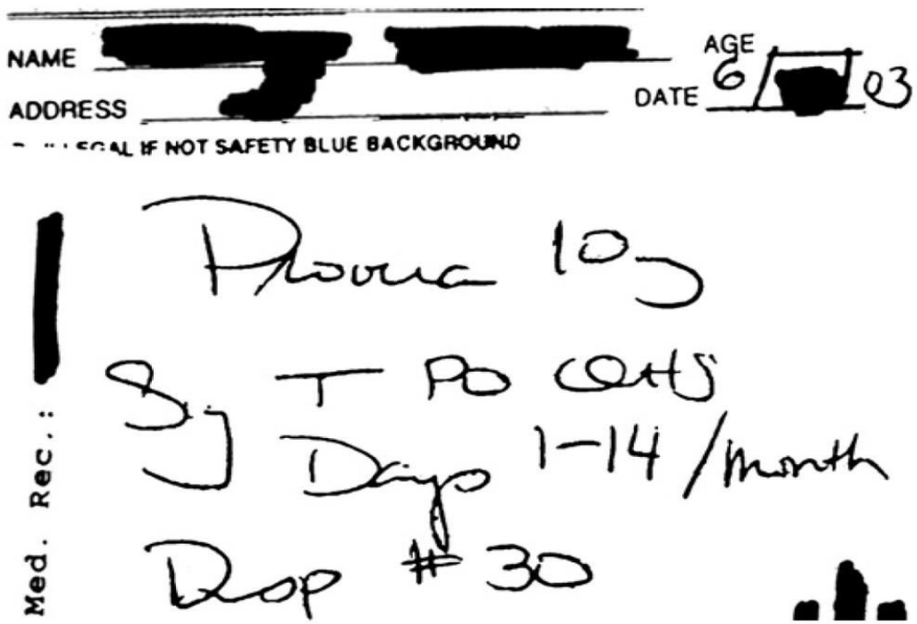
- No defensive barrier is perfect, each has inherent vulnerabilities (holes) that **under the wrong circumstances**, can be pierced by the trajectory of error.
- Complex medical processes often have multiple layers of such barriers.
- When the potential defects in each of these barriers align in just the wrong way , the error will not be deflected and patient injury or death will result.
- **Preventing harm:** By interposing another piece of " Swiss cheese" between the hazard and the potential injury.





Practical solutions to improve safety in OB & GYN

Exam Question → **Medication errors** account for the largest number of errors in health care


NAME [redacted] AGE
ADDRESS [redacted] DATE 6/[redacted]03
ILLEGAL IF NOT SAFETY BLUE BACKGROUND

Med. Rec.:

℞ Provera 10 mg

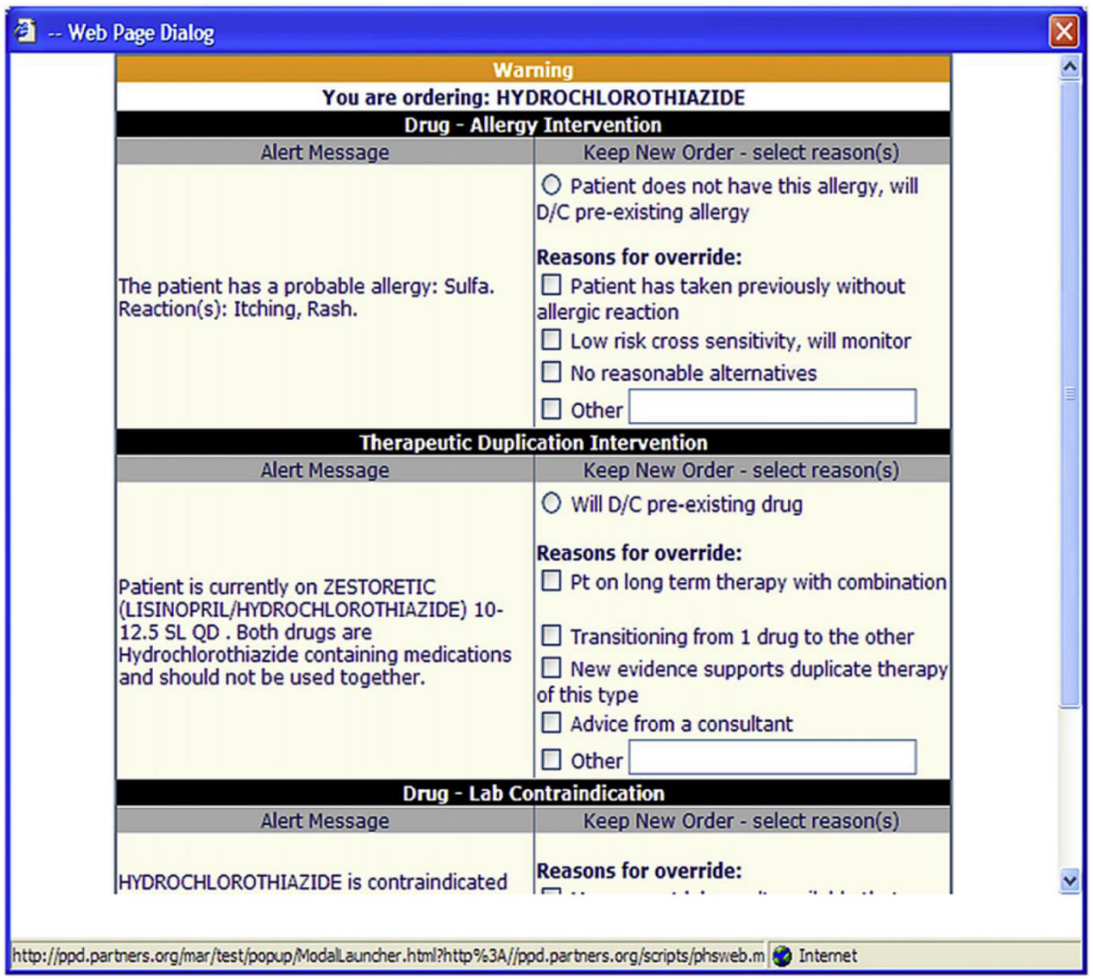
Sig: 1 T PO QDay

Days 1-14 / month

Disp #30

The patient was given **Prozac** (instead of the intended **Provera**)

Medication Error: Advance Decision Support Alert



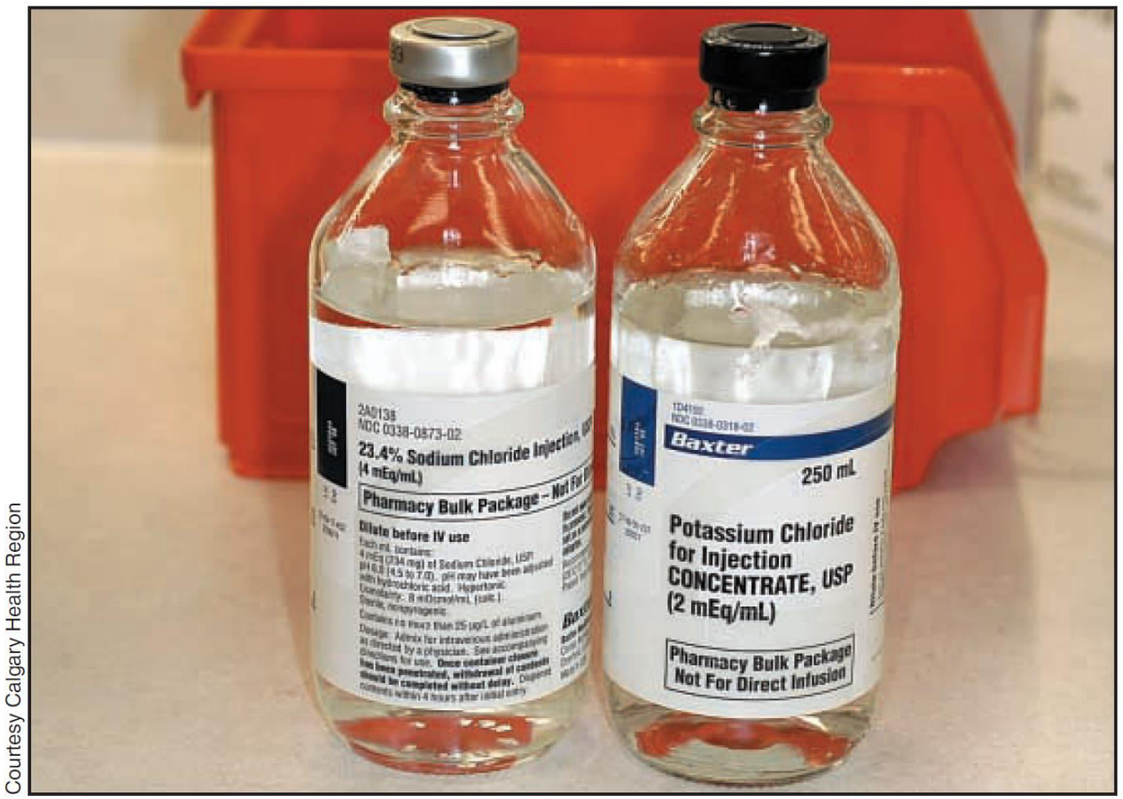
Medication errors

MEDICAL ERROR

Responding to tragic error: lessons from Foothills Medical Centre

The Calgary Health Region, with its approximately 22 000 employees and showed that the error had occurred in our Central Production Pharmacy. Within the

Once the immediate safety issue has been addressed, the challenge was to respond appro-



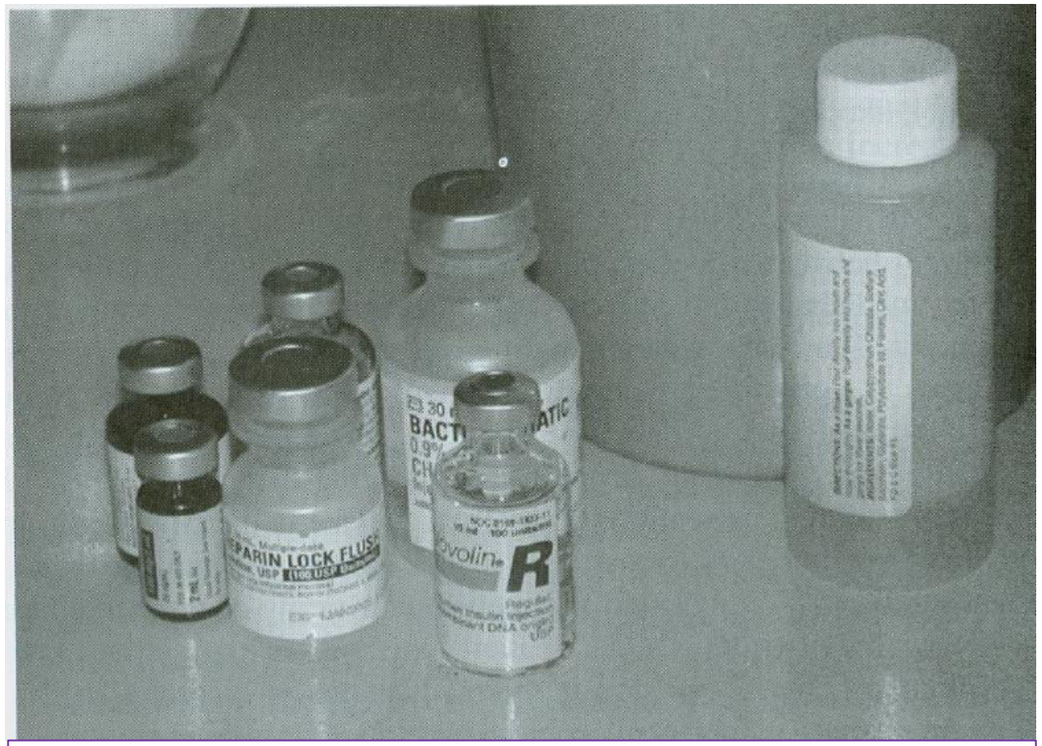
Courtesy Calgary Health Region

Sodium chloride and potassium chloride bottles: a dangerous similarity

March 2004 : Unexplained hyperkalemia in an elderly patient undergoing continuous renal replacement therapy in the ICU at Foothills Medical Centre led to an analysis of the dialysate solution.

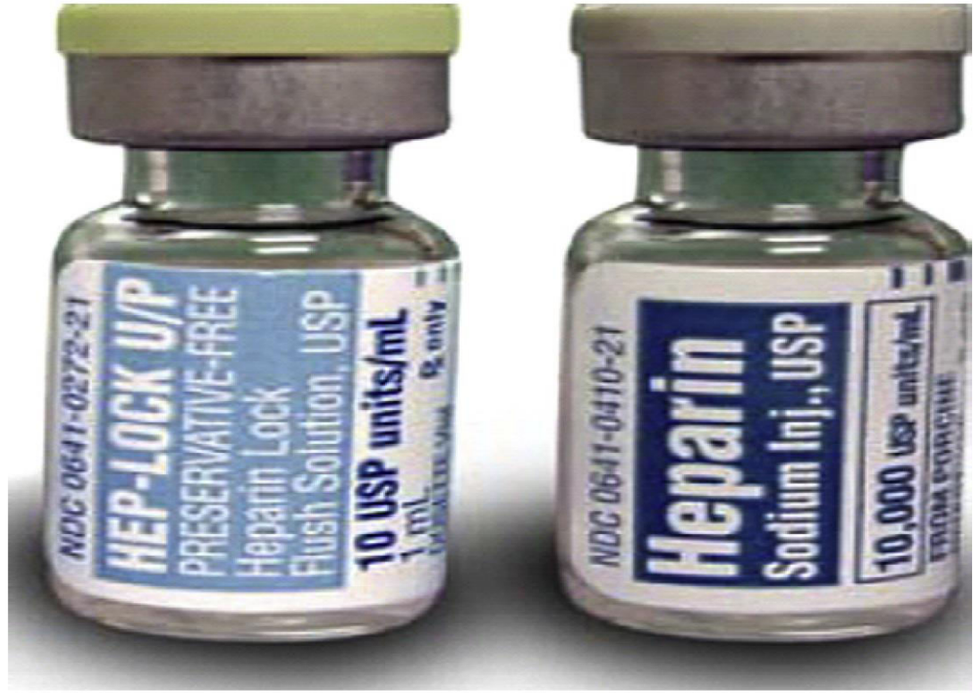
-The solution was found to contain 6 mmol/L **sodium** (should have been 110 mmol/L) and 60 mmol/L **potassium** (should have been zero).

Cont…Medication Errors



Heparin and insulin vials on a bedside tray

Indiana Hospital: September 2006



-Similar vials of heparin involved in fatal dispensing error in neonatal setting
(the doses for adults and infants were similarly packaged).
-3 preterm infants died as a result of lethal overdoses of IV heparin.

Medication Safety & Errors

- Clear handwriting
- Distinguishing between look-alike and sound-alike drugs
- Avoid using abbreviations/ non-standard abbrev.
- Electronic system for generating & transmitting Rxs
- All prescriptions should include detailed instructions to pt for using the medications
- Comprehensive recommendations/guidelines published by ACOG, ACS & Joint Commission

Let our Residents Rest!

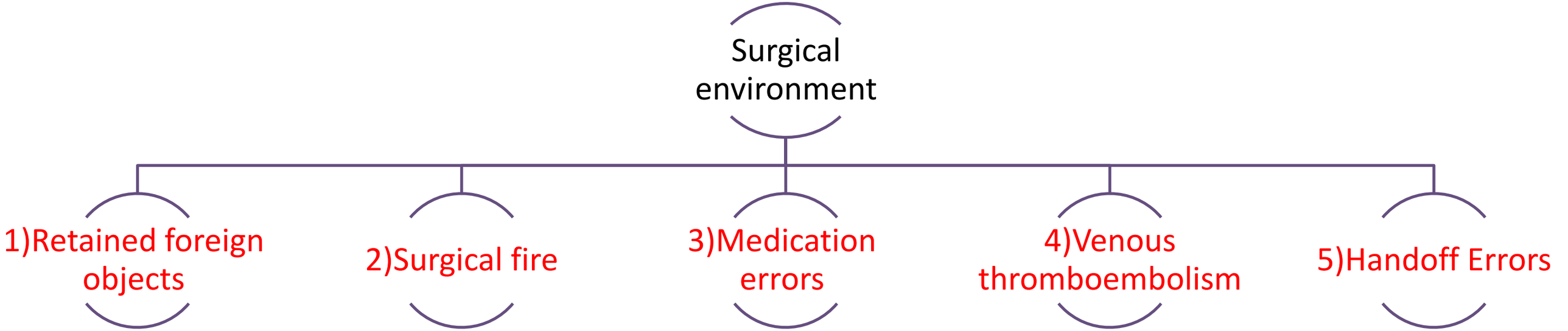
2003: work-hour limitations promulgated by the ACGME
2010: new standards

US National Traffic Safety Administration
-sleepy drivers are responsible for at least **100,000**
-automobile accidents, **40,000** injuries and **1500** deaths annually
-**Sleep deprivation** increases errors in performing <u>even</u> simple familiar tasks:
- needle sticks
- puncture wounds
- lacerations
- medical errors
- motor vehicle

- **Sleep deprivation** affects human cognitive and physical function(**Active error**).
- It has long been recognized that fatigue can affect human cognitive and physical function.
- There is increasing awareness within the patient safety movement that fatigue, even partial sleep deprivation, impairs performance.

Surgical Environment

In **O & G.** , the risks of surgical error may have increased:
- ↑C.S
- ↑MIS
- Robot-assisted laparoscopy
- Pressure for shorter lengths of stay postop
- More outpt procedures



1- Retained Foreign Objects

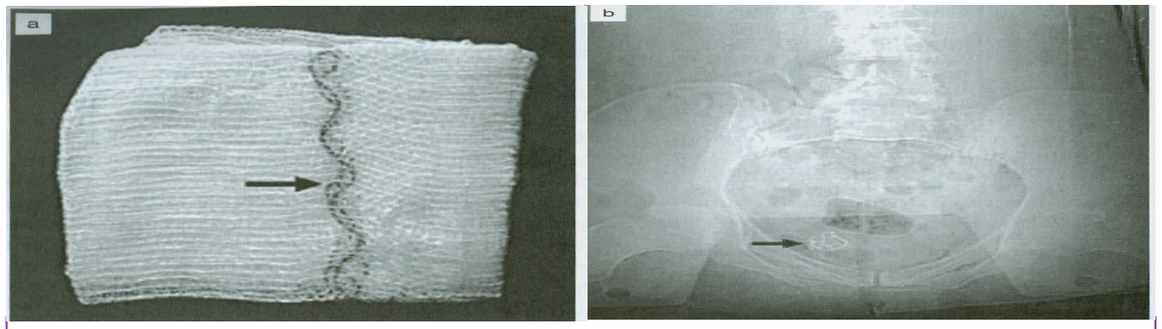
Sponges, surgical instruments

Indefensible!

"Correct sponge count" does **not** exonerate the surgeon.

Table 3. Risk Factors for Retention of a Foreign Body after Surgery.*

Characteristic	Risk Ratio (95% CI)	P Value
Operation performed on an emergency basis	8.8 (2.4–31.9)	<0.001
Unexpected change in operation	4.1 (1.4–12.4)	0.01
>1 Surgical team involved	3.4 (0.8–14.1)	0.10
Change in nursing staff during procedure	1.9 (0.7–5.4)	0.24
Body-mass index (per 1-unit increment)	1.1 (1.0–1.2)	0.01
Estimated volume of blood lost (per 100-ml increment)	1.0 (1.0–1.0)	0.19
Counts of sponges and instruments performed	0.6 (0.03–13.9)	0.76
Female sex	0.4 (0.1–1.3)	0.13



surgical sponge with an embedded radiopaque thread on X-ray

Table 1. Characteristics of 54 Cases of a Retained Foreign Body after Surgery.

Characteristic	No. of Cases (%)
Type of foreign body retained	
Sponge	37 (69)
>1 Sponge	4 (7)
Clamp	4 (7)
Other (e.g., retractor or electrode)	13 (24)
Cavity in which foreign body was left	
Abdomen or pelvis	29 (54)
Vagina	12 (22)
Thorax	4 (7)
Other	9 (17)
Outcomes	
Death	1 (2)
Readmission to hospital or prolonged hospital stay	32 (59)
Sepsis or infection	23 (43)
Reoperation	37 (69)
Fistula or small-bowel obstruction	8 (15)
Visceral perforation	4 (7)

2- Surgical Fire

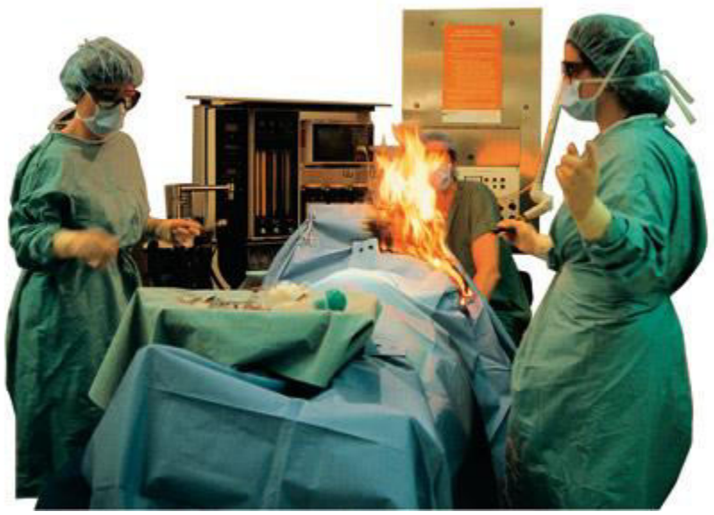
- rare

-We in O & G have all the 3 elements necessary to start/support fires:

1- oxidizers: supplies of oxygen gas.

2- ignition sources: electrocautary, fiberoptic light cables, lasers.

3- flammable fuels: surgical drapes, alcohol-based prepping agents, anesthetic gases.



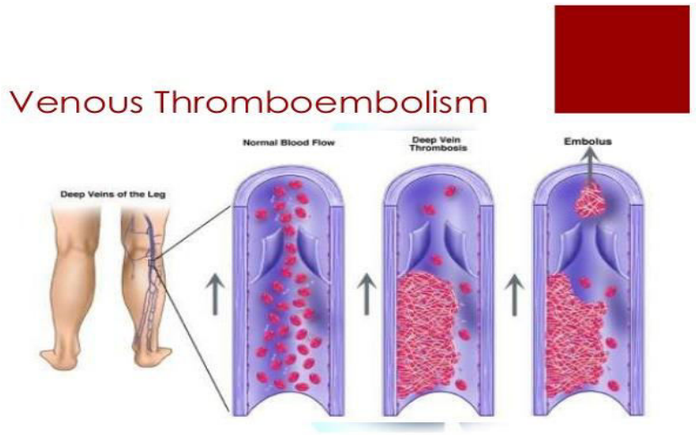
3- Medication errors

- Prophylactic ABX: demonstrated effectiveness in reducing surgical morbidity.
- Failure to use them when appropriate is a medication error.
  - inappropriate choice of agent
  - ineffective start of administration
  - incorrect duration of exposure

4- Venous thromboembolism

Failure to use accepted surgical thromboprophylaxis is another class of surgical error in patient safety.
Without effective thromboprophylaxis, major gynecologic surgery is associated with a prevalence of DVT 15 - 40%.
ACOG recommends:

- Low
- Medium
- High
- Highest



5- Handoff Errors

" **Care transition** " , " **Hand over** "or " **shift change**"
-Risky time:
1- Provider handoff.
2- Patient handoff.
-Involves breakage of the continuity of care.
-Breakdowns and inconsistencies in the handoff process contribute to medical errors.

Ethics , Behavior & Attitude in O & G Practice

4 Ethical principles:

1- Nonmaleficence: " first, Do No Harm"

- any action towards patient is not likely to cause more harm than benefit.

2- Beneficence:

- the promotion of the well-being of patients

3- Autonomy:

- the right of self-determination.
- The concept of informed consent.
- must be genuinely voluntary and made after adequate disclosure of info.
- PREPARED system.

4- Justice:

- the way in which the benefits and burdens of society are distributed
- balance between individual and society

Confidentiality:

-Cornerstone of the relationship between physician and patient

-In obstetrics: potential for unique maternal-fetal relationship

Respectful and collegial relationship with other professionals:

-other MDs involved in health care have a right to participate in any decision-making.

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