The Hospitalization Of Mrs. Quincke

ACP Colorado 2014
Jamie Newman MD FACP FSHM
newman.james@mayo.edu

Division of
HOSPITAL
INTERNAL MEDICINE

- No Disclosures
- Goal- To follow one patient from admission to discharge, and review related safety, administrative and clinical issues

MAYO CLINIC

Mrs. Quincke

- 88 year old retired nurse with CAD, CHF (LVEF 35%), HTN, DM, and AF (on warfarin) and mild cognitive impairment.
- She woke up 2 days ago with fever and chills and a productive cough.
- She is up to date with her Pneumovax and Flu shots
- She is brought by ambulance to the Emergency Department

In the Emergency Department

- BP 100/60 Pulse 110 and irregularly irregular
- Temp 38.9 02 sat 91% RR 18
- Blood and sputum cultures obtained
- Hgb 12 g/dL ,WBC 14.2,
- Na 129 K 4.1 Bun 38 Cr 1.7
- Levofloxacin 750 mg IV administered

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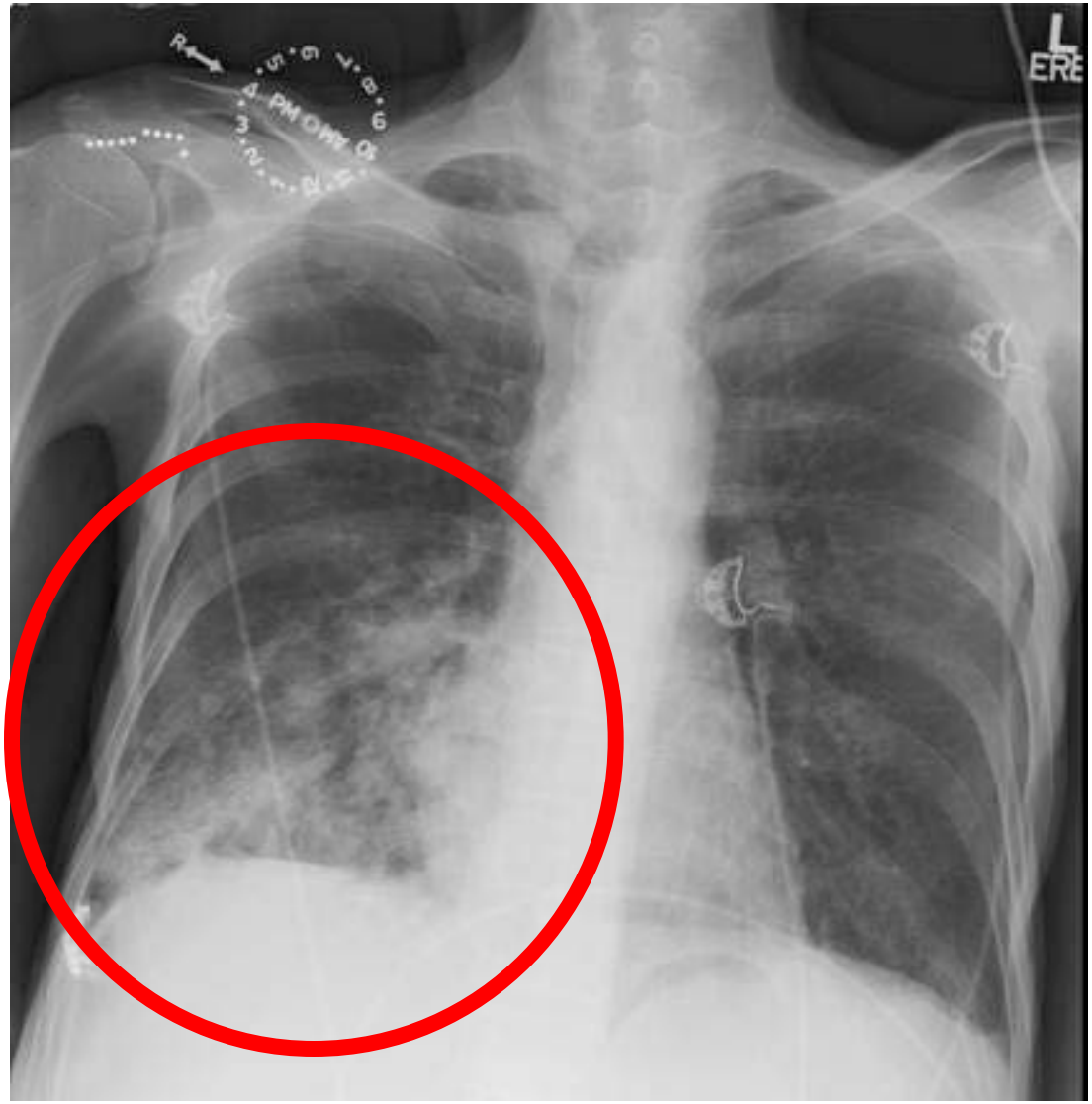
Mrs. Quincke's Chest Xray



Diagnosis Community Acquired Pneumonia

- Are Quality Guidelines being met?

PNEUMONIA NATIONAL HOSPITAL INPATIENT QUALITY MEASURES

Set Measure ID #	Measure Short Name
PN-3a	Blood Cultures Performed Within 24 Hours Prior to or 24 Hours After Hospital Arrival for Patients Who Were Transferred or Admitted to the ICU Within 24 Hours of Hospital Arrival
PN-3b	Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital
PN-6	Initial Antibiotic Selection for CAP in Immunocompetent Patient
PN-6a	Initial Antibiotic Selection for CAP in Immunocompetent – ICU Patient
PN-6b	Initial Antibiotic Selection for CAP Immunocompetent – Non ICU Patient

Patient Type	Antibiotic Recommendation
Non – ICU Patient	**β-lactam (IV or IM)** Table 2.3 + **Macrolide (IV or PO)** Table 2.5 – *Regimen 3a* **Or** **Antipneumococcal Quinolone monotherapy (IV or PO)** Table 2.9 – *Regimen 1a* **Or** **β-lactam (IV or IM)** Table 2.3 + **Doxycycline (IV or PO)** Table 2.10 – *Regimen 3a* **Or** **Tigecycline monotherapy (IV)** Table 2.12 – *Regimen 2a* β-lactam = Ceftriaxone, Cefotaxime, Ampicillin/Sulbactam, Ertapenem,Ceftaroline Macrolide = Erythromycin, Clarithromycin, Azithromycin Antipneumococcal Quinolones = Levofloxacin[1], Moxifloxacin, Gemifloxacin Doxycycline Tigecycline

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The Case Manager Calls You..
Should she be an inpatient not observation?

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Historical Perspective

London 1536

Accepted

- Old people
- Poore women in childbed
- Men sore wounded by great vyolence
- Eaten with pokes and pestylence
- Honest foulks in great poverty
- Maimed soudyours

Denied

- Mylchers
- Hedge Creepers
- Vagabonds

Forsoth yea/we do all suche folke in take
That do aske lodgyng for our lordes sake
And in dede it is our custome and vse
Somtyme to take in/and some to refuse.

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The Pennsylvania Hospital 1752

MAYO CLINIC

The Pennsylvania Hospital- Admit Criteria 1752

- Patient must be deemed “curable” (except Lunatiks)
- No infectious distempers (ie smallpox or itch) unless proper apartments available (isolation beds)
- Women may not bring their children
- Must be resident of the city
- Security deposit to cover discharge costs or burial

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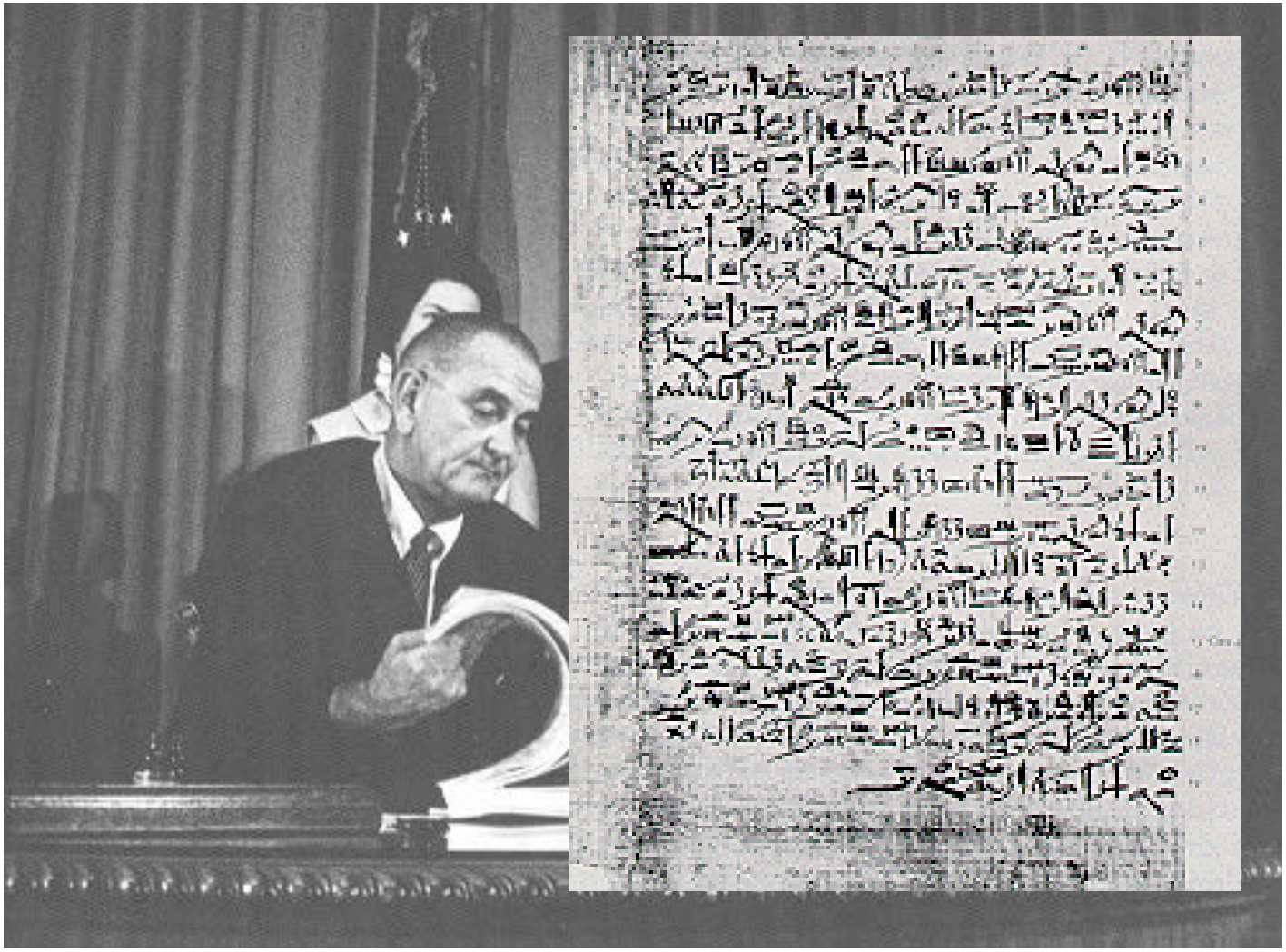
Washington D.C. 1965



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Types of “admissions”

- Bedded outpatient
- Bedded outpatient overnight
- Observation
- Inpatient

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Why do patients dislike OBS?

- Paid under Part B, so patient responsible for a percentage of bill
- Routine medications paid for by patient
  (at hospital rates)
- No qualifying days towards post-acute care
- “My doctor says I’m admitted”

IPPS 2014

“Day is night, and night is day”

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The First IPPS
Inpatient Prospective Payment System
1983

- Established the DRG system

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Why New Requirements?

- Reduce long observation stays
  - Patients hate OBS
  - Abuse of OBS
    - Gaming the payment system
    - Avoiding readmission penalty

- Reduce one day inpatient stays
  - Deals with abuse especially in surgery
  - Audit focus

Inpatient Is A Three Legged Stool (Until January 2015….)

- Medical Necessity
- Admit Order
- Certification

When is a one day stay OK?

- Inpatient only list
- Patient expires
- Well documented change in plan
- Unexpected recovery

Condition Code 44

- Patient is inpatient but really should have been Observation
- Can be changed back to OBS with a modifier to bill- Condition Code 44
- Must occur prior to discharge and must be ordered by physician
- UR committee physician must review
- Patient must be notified

And now even more rules

- The latest update, January 2015 certification rules change again
- No initial certification, but certification of outliers and at 20 days will be required

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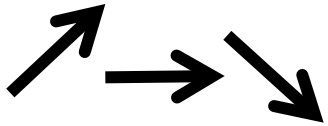
The Nurse Calls to tell you INR is 7.5

Reversal Basics

- Repeat INR to assess trajectory 
- If bleeding reverse…no matter what the INR
- If no bleeding
  - <5 hold one dose and decrease dosage let drift down
  - 5-9 hold 2 doses of Coumadin or one dose and Vit. K 1-2.5 mg po
  - >9 Vit. K, 3 to 5 mg PO and monitor
  - >20 Vit. K slow IV infusion 10 mg
    - +/- FFP or Prothrombin Complex Concentrate

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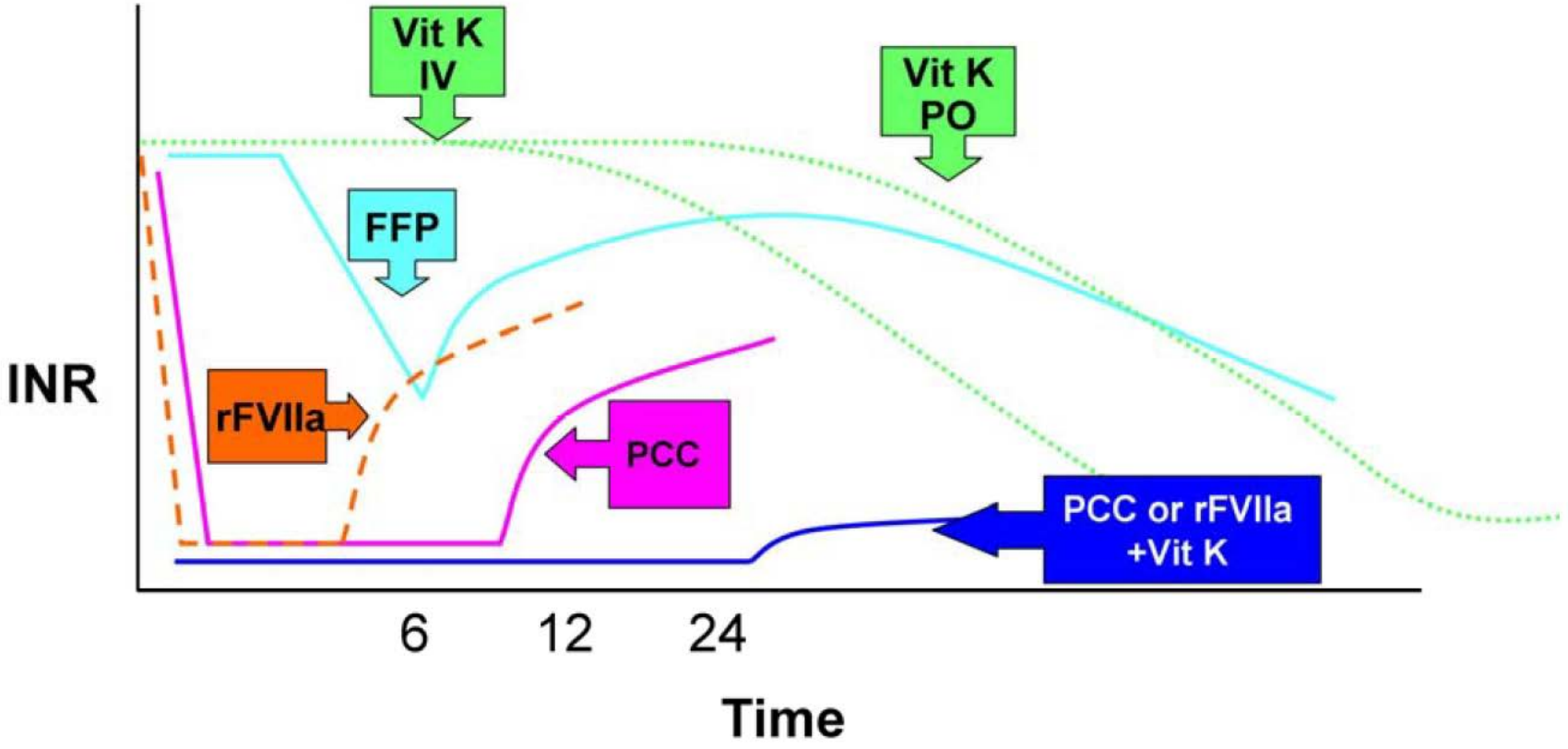
Rebound



http://mayoweb.mayo.edu/neurology/documents/ReversalOfWarfarinInICHSept2011.pdf

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What could possibly go wrong now?

And she is on Coumadin with a high INR!

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Falls

- The most common cause for a fall is **Toileting** related.
- This is also the #1 cause of patient dissatisfaction

Louis XVI Bedside Commode

My Uncle Louis' commode

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Table of Risk Factors for In-Hospital Falls and Prevention

Risk Factor	Assessment	Prevention
Debility	Functional musculoskeletal assessment	Physical Therapy early mobilization
Binders	Routinely assess need for Urinary catheter, O2, IVs	Remove unneeded binders; avoid physical restraints
Delirium	Check medication list	avoid psychotropic and unneeded medications
Inadequate s Record	Obtain fall history	Identify patients at risk
Undereducation	assess patients knowledge of call lights and assistive devices	Education of Patients and families
Inadequate Staff	Monitor staff ratio to falls	Provide adequate staff for high risk patients

Hospital-acquired condition	Cases	Average charge per hospital stay	Total Medicare cost
Stage III & IV pressure ulcers	257,412	$43,180	$11.1 billion
Fall or trauma resulting in serious injury	193,566	$33,894	$6.6 billion
Vascular catheter-associated infection	29,536	$103,027	$3 billion
Catheter-associated urinary tract infection	12,185	$44,043	$536.7 million
Foreign object retained after surgery	750	$63,631	$47.7 million
Surgical site infection -- mediastinitis after coronary artery bypass graft	69	$299,237	$20.6 million
Air embolism	57	$71,636	$4 million
Blood incompatibility	24	$50,455	$1.2 million

Source: Centers for Medicare & Medicaid Services

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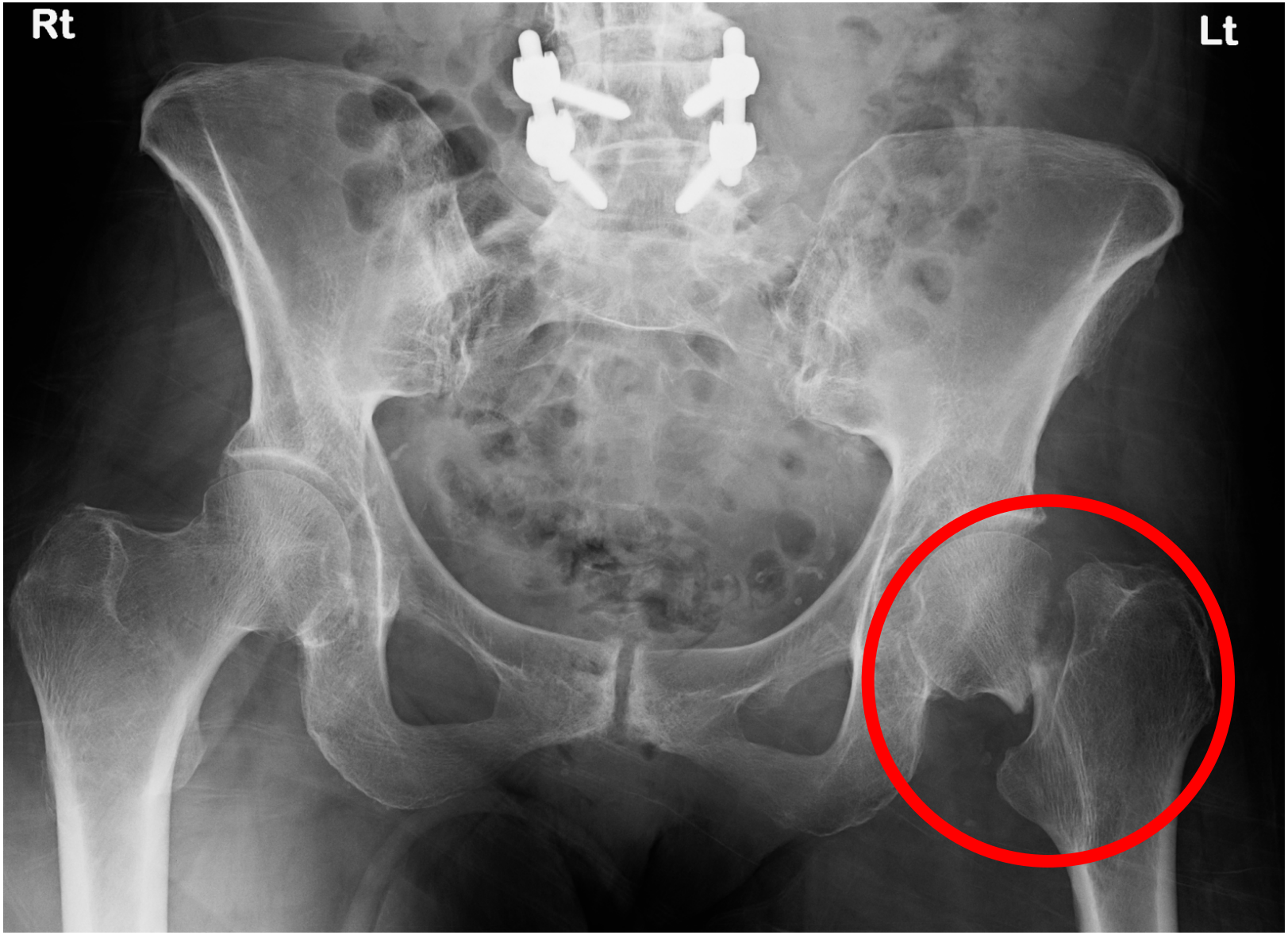

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Mrs. Quincke has mild cognitive impairment. She wants her hip fixed.

A MMSE exam done by a medical student leads to a score of 22.

Can she consent to the procedure?

Informed Consent

Adequate information (risks, benefits, alternatives)

Lack of coercion

Possession of decision-making capacity

Capacity

Understand the relevant information

Appreciate the situation

Reason throught he information

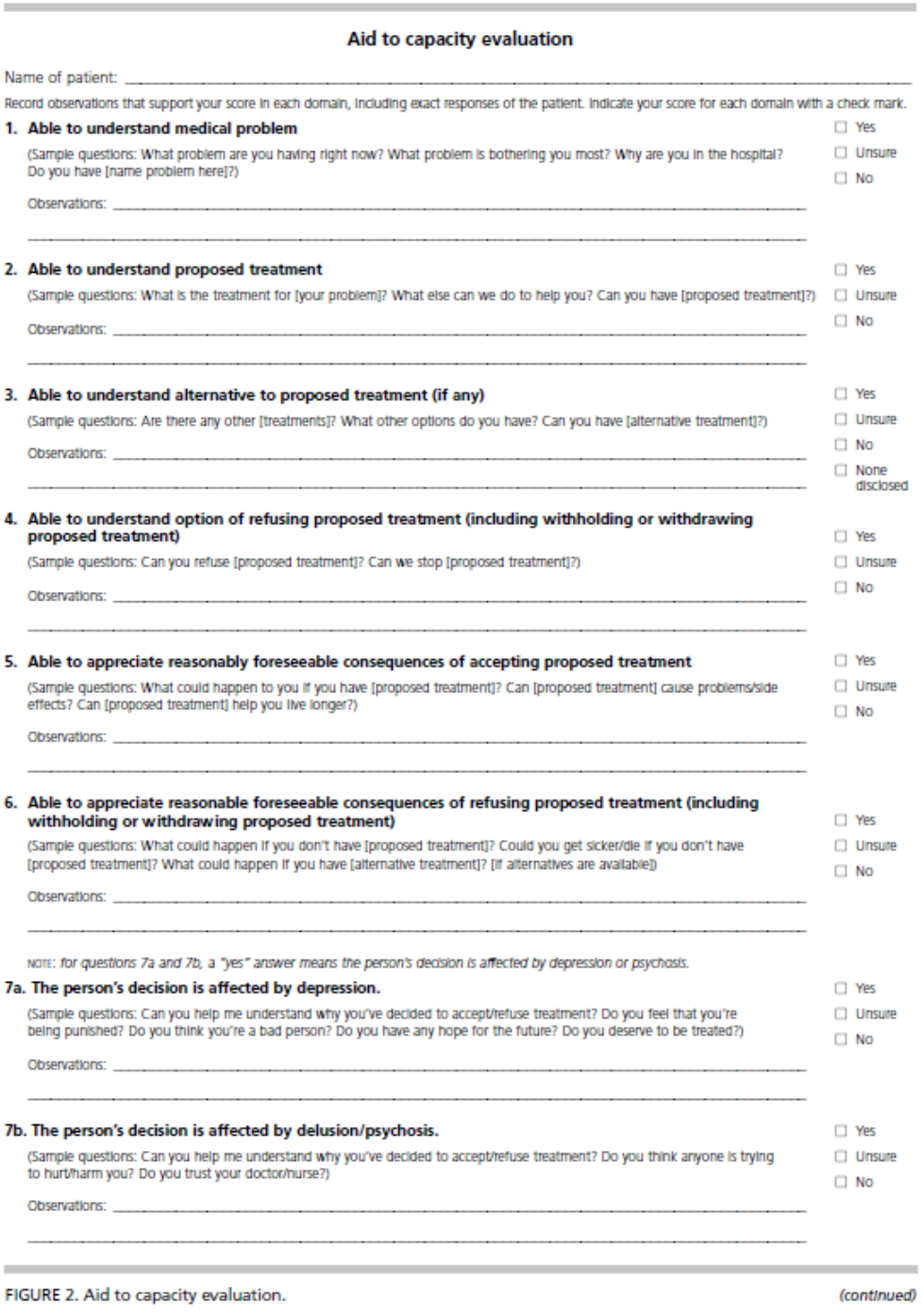
Communicate their choice

Able to understand

medical problem
proposed treatment
alternatives
option of refusal
consequence of treatment
consequence of refusal

plus

exclude depression/delirium



Aid to capacity evaluation

Name of patient: _____

Record observations that support your score in each domain, including exact responses of the patient. Indicate your score for each domain with a check mark.

1. Able to understand medical problem ☐ Yes ☐ Unsure ☐ No

(Sample questions: What problem are you having right now? What problem is bothering you most? Why are you in the hospital? Do you have [name problem here]?)

Observations: _____

2. Able to understand proposed treatment ☐ Yes ☐ Unsure ☐ No

(Sample questions: What is the treatment for [your problem]? What else can we do to help you? Can you have [proposed treatment]?)

Observations: _____

3. Able to understand alternative to proposed treatment (if any) ☐ Yes ☐ Unsure ☐ No ☐ None disclosed

(Sample questions: Are there any other [treatments]? What other options do you have? Can you have [alternative treatment]?)

Observations: _____

4. Able to understand option of refusing proposed treatment (including withholding or withdrawing proposed treatment) ☐ Yes ☐ Unsure ☐ No

(Sample questions: Can you refuse [proposed treatment]? Can we stop [proposed treatment]?)

Observations: _____

5. Able to appreciate reasonably foreseeable consequences of accepting proposed treatment ☐ Yes ☐ Unsure ☐ No

(Sample questions: What could happen to you if you have [proposed treatment]? Can [proposed treatment] cause problems/side effects? Can [proposed treatment] help you live longer?)

Observations: _____

6. Able to appreciate reasonable foreseeable consequences of refusing proposed treatment (including withholding or withdrawing proposed treatment) ☐ Yes ☐ Unsure ☐ No

(Sample questions: What could happen if you don't have [proposed treatment]? Could you get sicker/die if you don't have [proposed treatment]? What could happen if you have [alternative treatment]? [if alternatives are available])

Observations: _____

NOTE: *for questions 7a and 7b, a "yes" answer means the person's decision is affected by depression or psychosis.*

7a. The person's decision is affected by depression. ☐ Yes ☐ Unsure ☐ No

(Sample questions: Can you help me understand why you've decided to accept/refuse treatment? Do you feel that you're being punished? Do you think you're a bad person? Do you have any hope for the future? Do you deserve to be treated?)

Observations: _____

7b. The person's decision is affected by delusion/psychosis. ☐ Yes ☐ Unsure ☐ No

(Sample questions: Can you help me understand why you've decided to accept/refuse treatment? Do you think anyone is trying to hurt/harm you? Do you trust your doctor/nurse?)

Observations: _____

FIGURE 2. Aid to capacity evaluation. *(continued)*

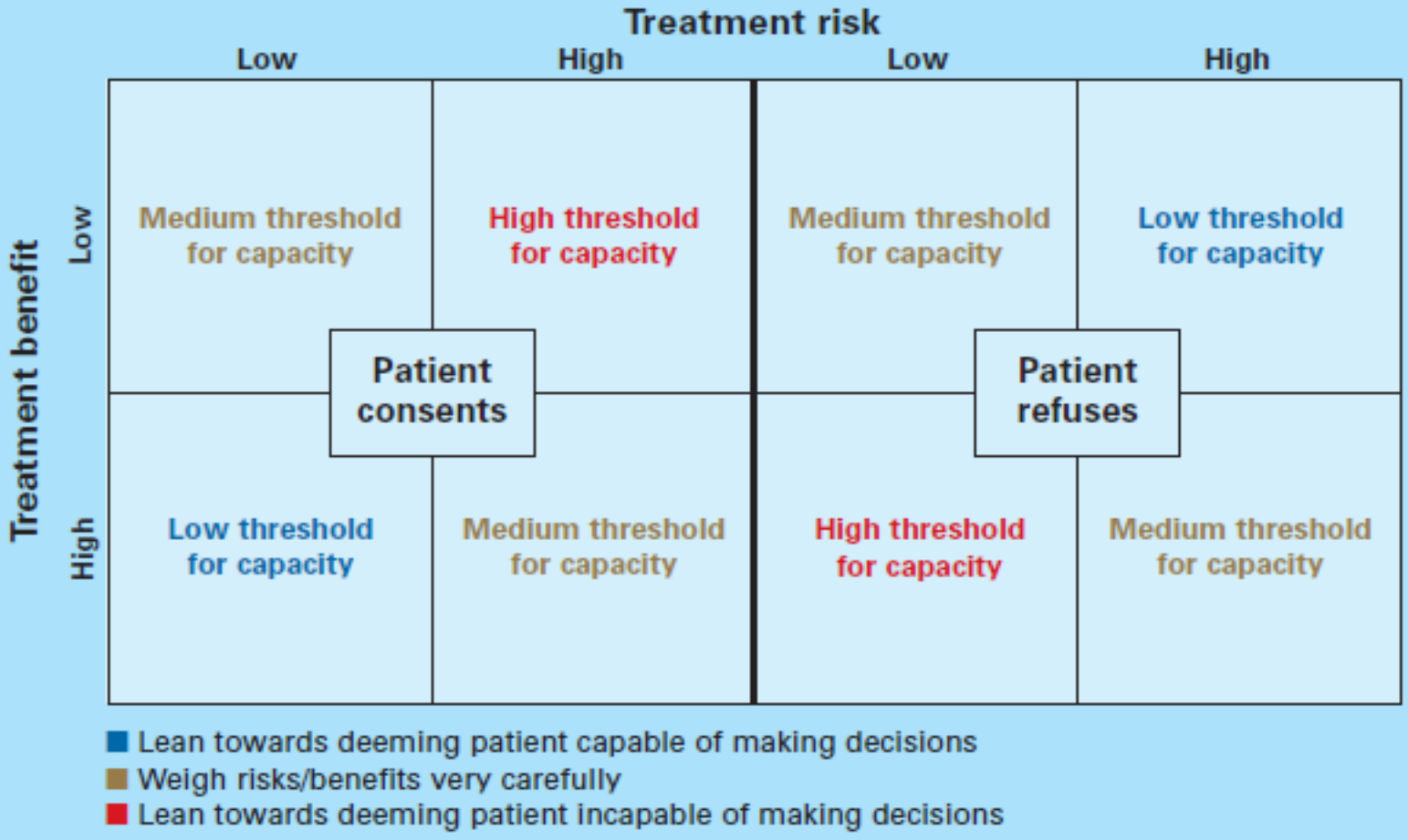
Capacity vs Competence

- Capacity
  - *Capacity* is defined as an individual's ability to make an informed decision. A licensed provider may determine. Psychiatrists, assess a person's mental status and its potential for interfering with specific areas of functioning, and if found lacking capacity can support a competency hearing or need to have a guardian appointed.
- Competency
  - *A* legal state, not a medical one. The degree of mental soundness necessary to make decisions about a specific issue or to carry out a specific act. All adults are presumed to be competent unless adjudicated otherwise by a court. *Incompetence* is defined by one's functional deficits (e.g., due to mental illness, mental retardation or other mental condition), which are judged to be sufficiently great that the person cannot meet the demands of a specific decision

Figure

3-dimension model for evaluating capacity

Does the patient have the capacity to consent to or refuse a particular medical treatment? To formulate an opinion, weigh 3 dimensions: the patient's decision, the treatment's benefit, and the treatment's risk.



http://mayoweb.mayo.edu/neurology-documents/How%20to%20Assess%20Capacity.pdf

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Capacity and MMSE score

Table 6. Comparison Between Combination of Aid to Capacity Evaluation and Mini-Mental Status Examination and Expert Assessments Including the Adjudication Panel (n = 98)*

Combined ACE and SMMSE Result†	Expert Assessment			
	Incapable	Capable	Probability of Incapacity, %	Likelihood Ratio (95% CI)
ACE: DI or PI and SMMSE: 16 or less	22	1	96	40 (7.3, 230)
Other combinations	12	27	31	0.80 (0.46, 1.3)
ACE: PC or DC and SMMSE: 24–30	1	35	3	0.05 (0.01, 0.27)
Totals	35	63	36	

**Two of the 100 participants refused the SMMSE.*

†*ACE indicates Aid to Capacity Evaluation; SMMSE, Standardized Mini-Mental Status Examination; DI, definitely incapable; PI, probably incapable; PC, probably capable; DC, definitely capable.*

Assessment of Patient Capacity to Consent to Treatment JGIM 1999 January; 14(1): 27–34.

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Mrs. Quincke undergoes uneventful left hip replacement.

Left Bipolar Hemiarthroplasty

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Warfarin is stopped before surgery.

FFP and Vit. K were given

When should bridging heparin start?

(Her CHADS2 score is 6.)

	Condition	Points
C	Congestive heart failure	1
H	Hypertension: blood pressure consistently above 140/90 mmHg (or treated hypertension on medication)	1
A	Age ≥75 years	1
D	Diabetes mellitus	1
S_2	Prior Stroke or TIA or Thromboembolism	2

Score	Risk	Anticoagulation Therapy	Considerations
0	Low	None or Aspirin	Aspirin daily
1	Moderate	Aspirin or Warfarin	Aspirin daily or raise INR to 2.0-3.0, depending on patient preference
2 or greater	Moderate or High	Warfarin	Raise INR to 2.0-3.0, unless contraindicated

	Condition	Points
C	Congestive heart failure (or Left ventricular systolic dysfunction)	1
H	Hypertension: blood pressure consistently above 140/90 mmHg (or treated hypertension on medication)	1
A_2	Age ≥75 years	2
D	Diabetes Mellitus	1
S_2	Prior Stroke or TIA or thromboembolism	2
V	Vascular disease (e.g. peripheral artery disease, myocardial infarction, aortic plaque)	1
A	Age 65–74 years	1
Sc	Sex category (i.e. female gender)	1

Score	Risk	Anticoagulation Therapy	Considerations
0	Low	No antithrombotic therapy (or Aspirin)	No antithrombotic therapy (or Aspirin 75–325 mg daily)
1	Moderate	Oral anticoagulant (or Aspirin)	Oral anticoagulant, either new oral anticoagulant drug e.g. dabigatran or well controlled warfarin at INR 2.0-3.0 (or Aspirin 75–325 mg daily, depending on factors such as patient preference)
2 or greater	High	Oral anticoagulant	Oral anticoagulant, using either a new oral anticoagulant drug (apixaban, rivaroxaban or dabigatran) or well controlled warfarin at INR 2.0-3.0

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International Society on Thrombosis and Haemostasis

Predictors of Major Bleeding in Peri-Procedural Anticoagulation Management

- Tafur AJ, McBane II R, Wysokinski WE, Litin S, Daniels P, et al.
- *J Thromb Haemost* 2012;10:261-267.

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3. Spyropoulos AC, et al. J Thromb Haemost 2006;4(6):1246-1252

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Findings

- *All post-procedure major bleeding events occurred in patients who resumed heparin within 24 hours*
- No difference in thrombosis rates.
- Independent predictors of major bleeding:
  - Mitral mechanical heart valve
  - Active cancer
  - Prior bleeding history

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She tells you her best friend had a heart attack after she had her knee replaced. She wonders if she'll have one too.

Journal of HOSPITAL MEDICINE

Clinical Presentation and Outcome of Perioperative Myocardial Infarction in the Very Elderly Following Hip Fracture Surgery

- Gupta BP, Huddleston JM, Kirkland LL, Huddleston PM, Larson DR, et al.
- *J Hosp Med* 2012;7(9):713–716.

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Findings (All $p<0.001$)

- Compared with 334 matched controls, MI patients had
  - Higher inpatient mortality (14.4% vs 1.2%).
  - Higher 30-day mortality (17.4% vs 4.2%).
  - Higher 1-year mortality (39.5 % vs 23%).
  - Higher median LOS (11.6 vs 7.4 days).
  - Lower Hgb (8.9 vs 9.4 g/dL [89 vs 94 g/L]).
- Overall inpatient mortality was 5.6%.

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The Bottom Line

- Elderly patients undergoing hip fracture repair have a higher incidence of perioperative MI than is currently thought and they are generally asymptomatic.
- If they do have a peri-operative MI there are significant effects on the outcome of the hospitalization

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Mrs. Quincke Becomes Delirious

This is an image from the Mayo Simulation Center. Arlene Newman PhD has given permission for the use of this image
And this is not a real urinary catheter she is chewing on!

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The first postoperative night she becomes confused. She wants to get her horse out of the stable and speak with her mother…You should do which of the following

A. Haldoperidol 10 mg IM
B. Lorazepam 5 mg IV
C. Mirtazapine 60 mg PO
D. Restraints
E. All of the above

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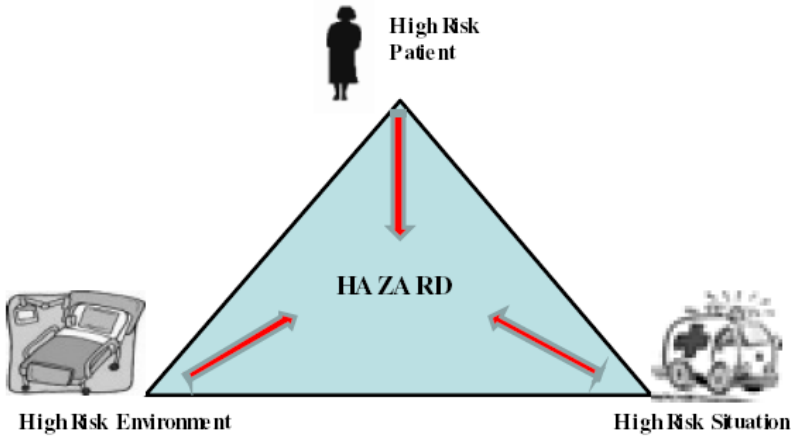
Impact of delirium

- Affects 15-50% of hospitalized patients.
- Affects 37% of post-operative patients.
- The condition is unrecognized in 70% of patients with delirium.
- Increased length-of-stay (5 extra days/patient).
- Loss of independence, often requiring institutionalization.
- Increased mortality.
- Worse physical and cognitive recovery at 6 and 12 months post-hospitalization compared with age-matched controls.

Hazard of Hospitalization

- Unrelated to admitting diagnosis.
- May occur despite treatment of underlying medical illness.
- May result in functional decline independent of admitting medical diagnosis.
- Preventable by improving the hospital/bedside environment.



Risk factors for delirium: High risk patient

- Age > 65
- Dementia
- Functional dependence or immobility
- Multiple comorbidities
- Multiple medications
- Chronic renal disease
- Visual or hearing impairment

Risk factors for delirium: High risk situation

- Infection at hospital admission
- Electrolyte abnormalities
- Hypoxia, hypoglycemia
- Medications
- Neurologic disorder (stroke, seizures)
- Untreated pain
- Dehydration

Risk factors for delirium: High risk environment

- Excessive noise
- Interrupted sleep
- Unnecessary stimuli
- Urinary catheter
- Physical restraints

Risk factors for delirium: Medications

- Anticholinergics
- Anticonvulsants
- Antidepressants
- Antihistamines
- Antiparkinsonian agents
- Benzodiazepines
- Lithium
- Opiates
- Steroids
- Sleep meds

Confusion assessment method (CAM)

I. Acute change and fluctuation in mental status from patient's baseline

II. Inattention: difficulty focusing attention

III. Disorganized thinking

IV. Altered level of consciousness (hyperalert, lethargic, stupor, etc.)

(+) CAM = presence of delirium

I and II, AND either III or IV

QI: Prevent delirium

- Yale Hospital Elder Life Program (HELP)
- Inouye, S. NEJM 1999; 340: 669.

Modifiable risk factor	Prospective intervention
Cognitive impairment	Orienting communication
Immobility	Remove restraints, early mobilization
Visual impairment	Visual aids
Hearing impairment	Hearing aids, adaptive equipment
Dehydration	Prevent and correct dehydration
Sleep deprivation	Uninterrupted sleep

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Managing Delirium: Prevention

Patients In Revolving Hospital Have Sunny Rooms All Day

SUNLIGHT exposure during the entire course of the day is provided patients in a revolving hospital ward at the Institute of Actinology in Vallauris-Le-Cannet, France.

Patients afflicted with diseases requiring ample dosages of sunlight are treated at this hospital, declared to be the most up-to-date in France. As the sun rises in the morning, all rooms face the east, and then as the sun crosses the sky, the ward revolves on its axis to follow its course.

The most up-to-date hospital in France is this weird-looking structure near Cannes. The upper half revolves to face the sun all day long to give patients the benefit of the rays.

MAYO CLINIC

Despite conservative management Mrs. Quincke pulls out her IV's and starts screaming.

What should you do?

(A) Restraints
(B) 2-mg dose of intravenous lorazepam
(C) 5-mg dose of oral haloperidol
(D) 0.5-mg dose of oral haloperidol and electrocardiography
(E) 5-mg dose of intravenous or IM haloperidol and electrocardiography

Delirium management: Haloperidol versus atypical anti-psychotics

Cochrane Collaboration, three RCT trails

Haloperidol versus Atypical antipsychotics (Risperidone, olanzapine, quetiapine

- Low dose haloperidol (<3 mg/day) did not have higher incidence of adverse effects , similar decrease in delirium scores
- Higher doses of haloperidol (>4.5 mg/d) had higher incidence of extrapyramidal effects compared with Olanzapine
- Low dose haloperidol decreases severity and duration of delirium

Cochrane Database of Systematic Reviews 2007, Issue 2. Art. No.:CD005594.
DOI:10.1002/14651858.CD005594.pub2

shm Journal of HOSPITAL MEDICINE www.journalofhospitalmedicine.com

REVIEW-SYSTEMATIC

The FDA Extended Warning for Intravenous Haloperidol and Torsades de Pointes: How Should Institutions Respond?

Carla Meyer-Massetti, MSc[1]
Christine M Cheng, PharmD[1]
Bradley A Sharpe, MD[2]
Christoph R Meier, PhD[3]
B. Joseph Guglielmo, PharmD[4]

[1] Medication Outcomes Center, Department of Clinical Pharmacy, School of Pharmacy, University of California San Francisco (UCSF), San Francisco, California.

[2] Department of Medicine, Division of Hospital Medicine, University of California San Francisco, San Francisco, California.

[3] Basel Pharmacoepidemiology Unit, Clinical Pharmacology and Toxicology, University Hospital Basel, Switzerland.

[4] Department of Clinical Pharmacy, School of Pharmacy, University of California San Francisco, San Francisco, California.

Disclosure: Nothing to report.

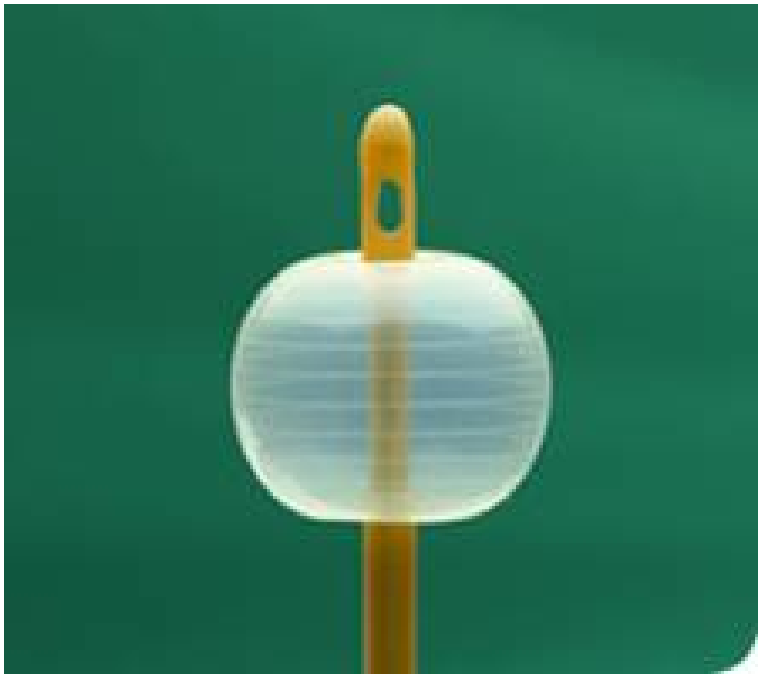
BACKGROUND: In September 2007, the Food and Drug Administration (FDA) strengthened label warnings for intravenous (IV) haloperidol regarding QT prolongation (QTP) and torsades de pointes (TdP) in response to adverse event reports. Considering the widespread use of IV haloperidol in the management of acute delirium, the specific FDA recommendation of continuous electrocardiogram (ECG) monitoring in this setting has been associated with some controversy. We reviewed the evidence for the FDA warning and provide a potential medical center response to this warning.

METHODS: Cases of intravenous haloperidol-related QTP/TdP were identified by searching PubMed, EMBASE, and Scopus databases (January 1823 to April 2009) and all FDA MedWatch reports of haloperidol-associated adverse events (November 1997 to April 2008).

RESULTS: A total of 70 of IV haloperidol-associated QTP and/or TdP were identified. There were 54 reports of TdP; 42 of these events were reportedly preceded by QTP. When post-event QTc data were reported, QTc was prolonged >450 msec in 96% of cases. Three patients experienced sudden cardiac arrest. Sixty-eight patients (97%) had additional risk factors for TdP/prolonged QT, most commonly receipt of concomitant proarrhythmic agents. Patients experiencing TdP received a cumulative dose of 5 mg to 645 mg, patients with QTP alone received a cumulative dose of 2 mg to 1540 mg.

CONCLUSIONS: While administration of IV haloperidol can be associated with QTP/TdP, this complication most often took place in the setting of concomitant risk factors. Importantly, the available data suggest that a total cumulative dose of IV haloperidol of <2 mg can safely be administered without ongoing electrocardiographic monitoring in patients without concomitant risk factors. *Journal of Hospital Medicine* 2010;5:E8–E16.

The nurse on service wonders why Mrs. Quincke still needs a urinary catheter?



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Preventing CAUTIs

- Why should you care about CAUTIs?
- They are bad for patients (#1 reason!)
- Also a “no-pay”event

Hospital-acquired condition	Cases	Average charge per hospital stay	Total Medicare cost
Stage III & IV pressure ulcers	257,412	$43,180	$11.1 billion
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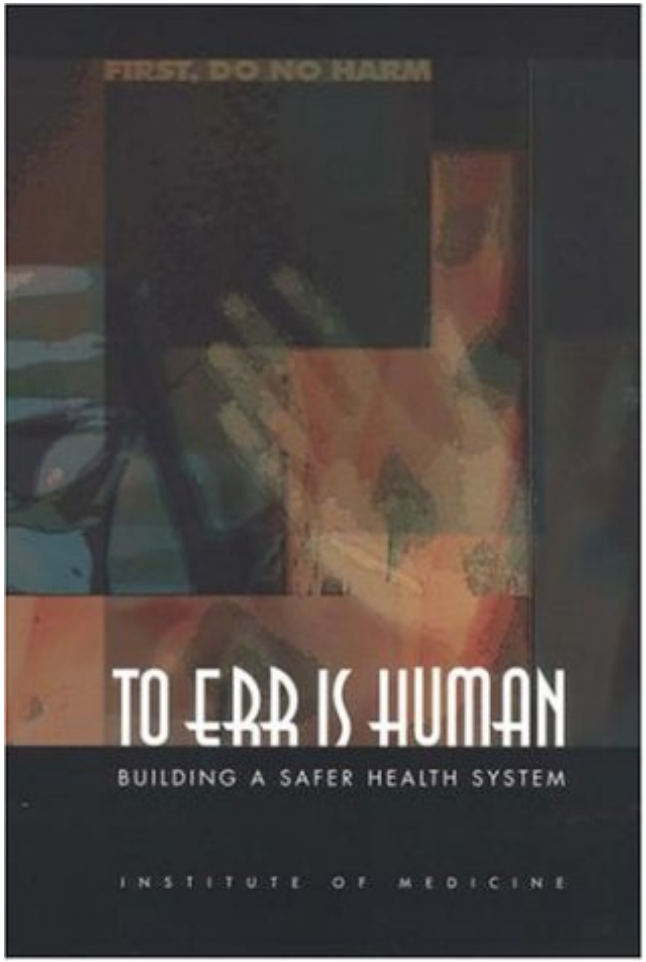
Air embolism	57	$71,636	$4 million
Blood incompatibility	24	$50,455	$1.2 million

Source: Centers for Medicare & Medicaid Services

1999 Institute of Medicine Report

- 44-98 k deaths/year
- $17-29 billion/year
- 1-5%of hospitalizations will have amajor injury due to error



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What would you do if 30% of all your patients died?

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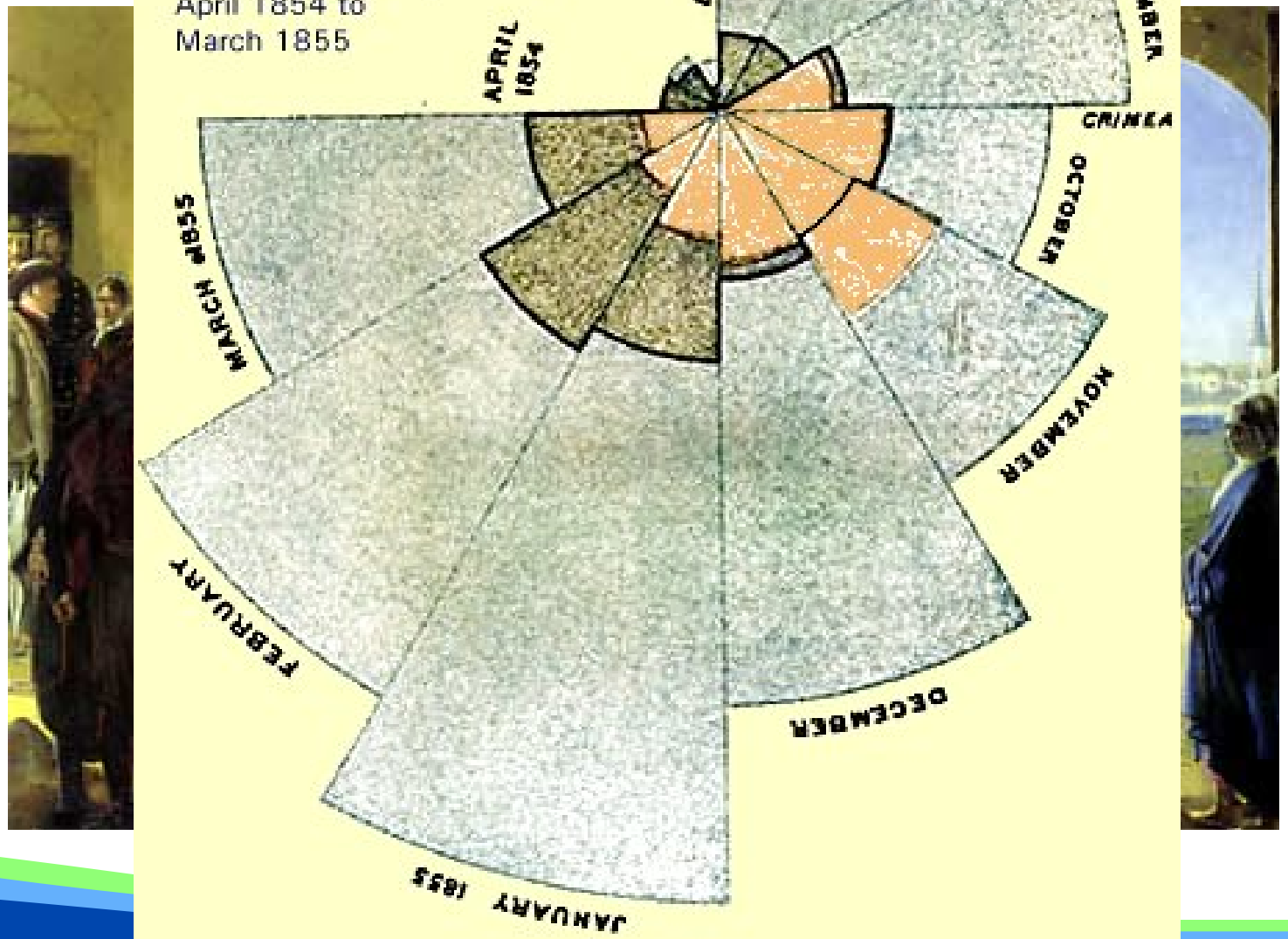
Ignaz Semmelweis **1818-1865**


Death from wounds in battle
Death from other causes
Death from disease
April 1854 to
March 1855
APRIL 1854
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY 1855
FEBRUARY
MARCH 1855
BULGARIA
CRIMEA


BATTLE OF WATERLOO.

Environmental Complications

- Falls
- Pressure Ulcers
- Debility and functional decline
- Malnutrition
- Aspiration
- Delirium
- Thrombosis
- Catheter associated infections (intravenous and urinary)

Pharmacologic Complications

- Drug reactions
- Drug interactions
- Medication Errors
- HIT
- Contrast reactions
- Steroid reactions
- Microbiologic –VRE, MRSA, C.Dif
- Delirium (note on both lists)
- Urinary retention
- Ileus

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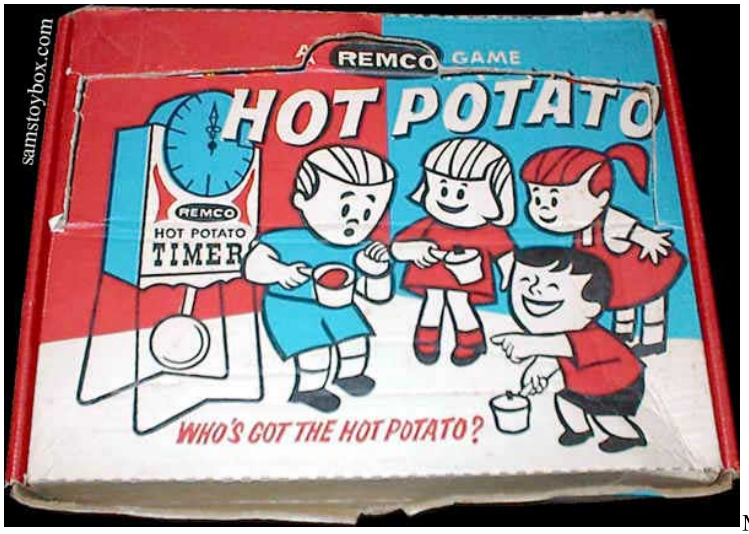
Communication Errors

- Hand offs and Hot Potatoes
- Patient's Not Educated
- Medication Mis-Reconciliation
- Dysfunctional Discharge Summaries
- Cultural "Incompetency"



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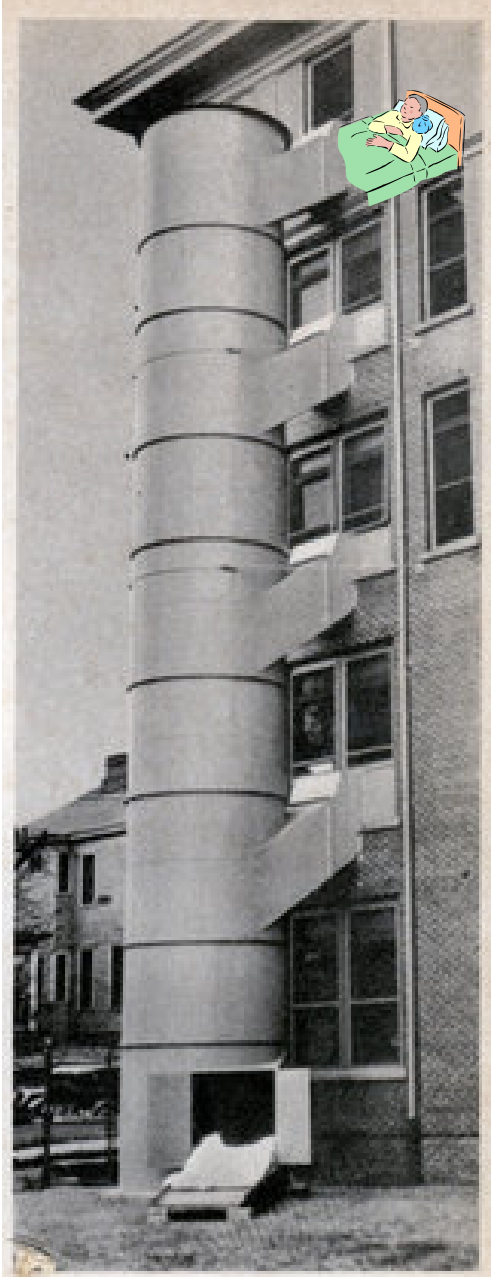
What is Safe?

Freedom from accidental or preventable injury



Hospital Boasts Safety Chute

The Piedmont Hospital in Atlanta, Ga., is equipped with a spiral chute by means of which bed-ridden patients can reach the ground quickly in the event of fire. On each floor of the hospital there is an entrance to the chute and in an emergency the patients are slid down it on a mattress.

- Improve acute myocardial infarction care
- Prevent ventilator associated pneumonia
- Deploy rapid response teams
- Prevent central line associated infections
- Prevent adverse drug events
- Prevent surgical site infections

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- **Prevent Harm from High-Alert Medications**
- **Reduce Surgical Complications**
- **Prevent Pressure Ulcers**
- **Reduce MRSA infection**
- **Deliver Reliable, Evidence-Based Care for Congestive Heart Failure**
- **Get Boards on Board**

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Back to Mrs. Quincke…

You walk in the room only to witness an acute episode of Hematemesis

She is given IV PPI and EGD planned

What to do about her Coumadin and DVT prophylaxis?

Archives of
Internal Medicine

Risk of Thromboembolism, Recurrent Hemorrhage, and Death After Warfarin Therapy Interruption for Gastrointestinal Tract Bleeding

- Witt DM, Delate T, Garcia DA, Clark NP, Hylek EM, et al.
- *Arch Intern Med* 2012;172(19):1484-1491.

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Background

- 4.5% of patients on warfarin have a GI bleed each year.
- Warfarin is frequently interrupted or discontinued.
- Patients are at risk for thromboembolism.
- Should warfarin be resumed? If so, when?
- Study objective to determine incidence of thrombosis, recurrent GI bleed, death, and time to resume warfarin.

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Findings

- 90-day outcomes: compared with those who did not resume warfarin, those who did had
  - ↓ risk for thrombosis,.
  - ↓ risk of death,
  - No significant ↑ in bleeding,
  - No recurrent GI bleeds resulted in death.
- No thromboses among patients who either continued on warfarin or had it held <14 days.
- 11 patients had thrombotic events when warfarin was discontinued, including 3 with AF who had fatal strokes.

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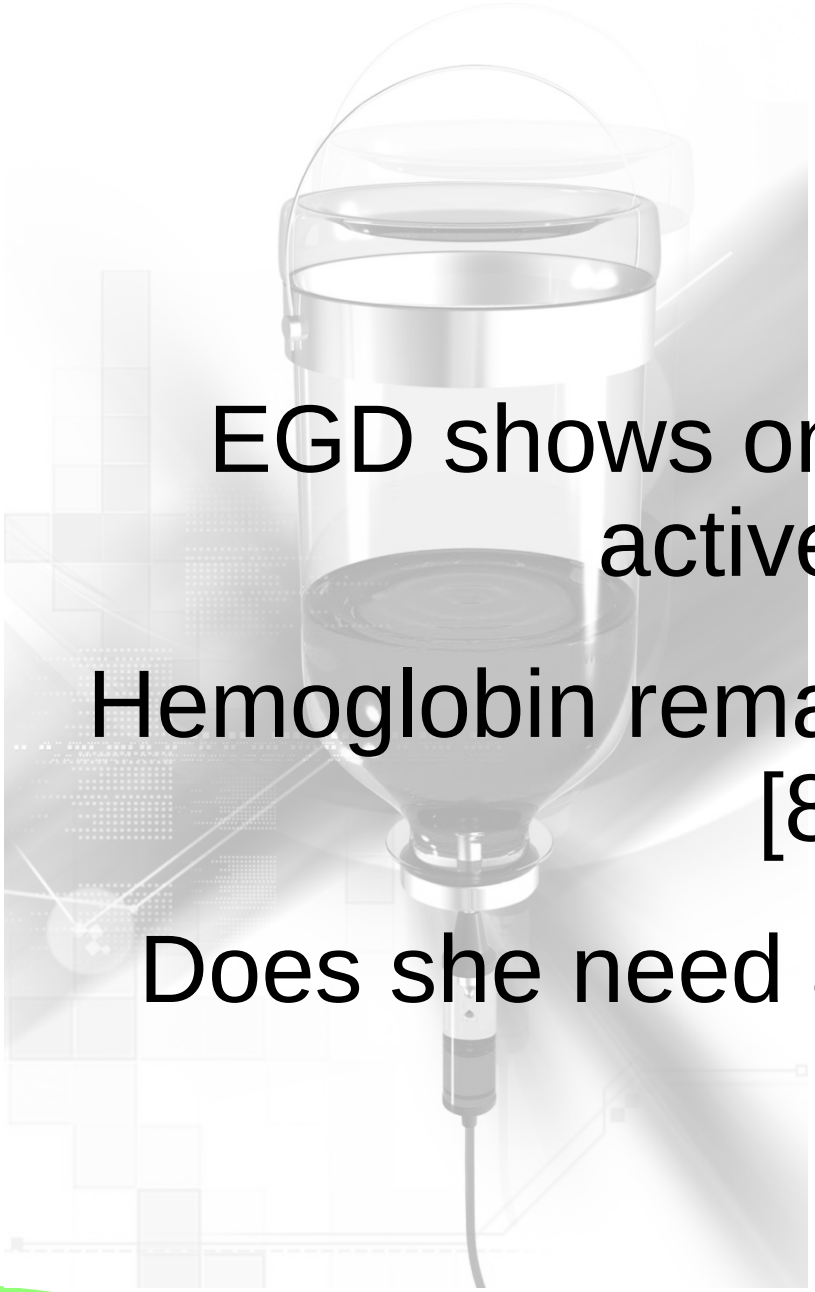
The Bottom Line

- Not resuming warfarin within 90 days of GI bleed is associated with increased thrombosis and death. Likely; 4 days appears to be the ideal interval



EGD shows only gastritis with no active bleeding.

Hemoglobin remains stable at 8.5 g/dL [85 g/L].

Does she need a blood transfusion?

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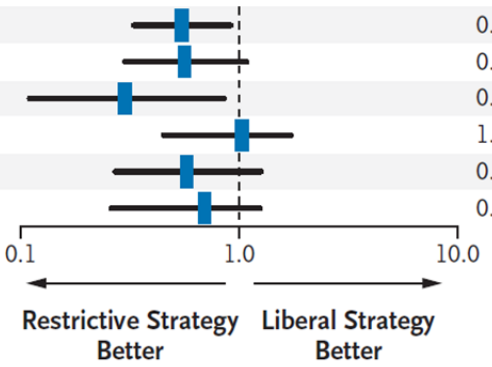
Transfusion post acute UGI bleed

Transfusion Strategies for Acute Upper Gastrointestinal Bleeding

B Death by 6 Weeks, According to Subgroup

Subgroup	Restrictive Strategy	Liberal Strategy	Hazard Ratio (95% CI)	P Value
	no. of patients/total no. (%)			
Overall	23/444 (5)	41/445 (9)	0.55 (0.33–0.92)	0.02
Patients with cirrhosis	15/139 (11)	25/138 (18)	0.57 (0.30–1.08)	0.08
Child–Pugh class A or B	5/113 (4)	13/109 (12)	0.30 (0.11–0.85)	0.02
Child–Pugh class C	10/26 (38)	12/29 (41)	1.04 (0.45–2.37)	0.91
Bleeding from varices	10/93 (11)	17/97 (18)	0.58 (0.27–1.27)	0.18
Bleeding from peptic ulcer	7/228 (3)	11/209 (5)	0.70 (0.26–1.25)	0.26



Further bleeding occurred in 10% of the patients in the restrictive-strategy group as compared with 16% of the patients in the liberal-strategy group (P = 0.01)

CONCLUSIONS

As compared with a liberal transfusion strategy, a restrictive strategy significantly improved outcomes in patients with acute upper gastrointestinal bleeding. (Funded by Fundació Investigació Sant Pau; ClinicalTrials.gov number, NCT00414713.)

Choosing Wisely®

An initiative of the ABIM Foundation

Society of Hospital Medicine – **Adult Hospital Medicine**

shm
Society of Hospital Medicine

Five Things Physicians and Patients Should Question

3

Avoid transfusions of red blood cells for arbitrary hemoglobin or hematocrit thresholds and in the absence of symptoms of active coronary disease, heart failure or stroke.

The AABB recommends adhering to a restrictive transfusion strategy (7 to 8 g/dL) in hospitalized, stable patients. The AABB suggests that transfusion decisions be influenced by symptoms as well as hemoglobin concentration. According to a National Institutes of Health Consensus Conference, no single criterion should be used as an indication for red cell component therapy. Instead, multiple factors related to the patient's clinical status and oxygen delivery should be considered.

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The NEW ENGLAND JOURNAL of MEDICINE

Liberal or Restrictive Transfusion in High-Risk Patients after Hip Surgery

- JL Carson, ML Terrin, H Noveck, et al.
- *N Engl J Med* 2011;365:2453-62.

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Mrs. Quincke has
10 bowel movements in 6 hours

Temp 38.7
Albumen 3.1
WBC 13.8

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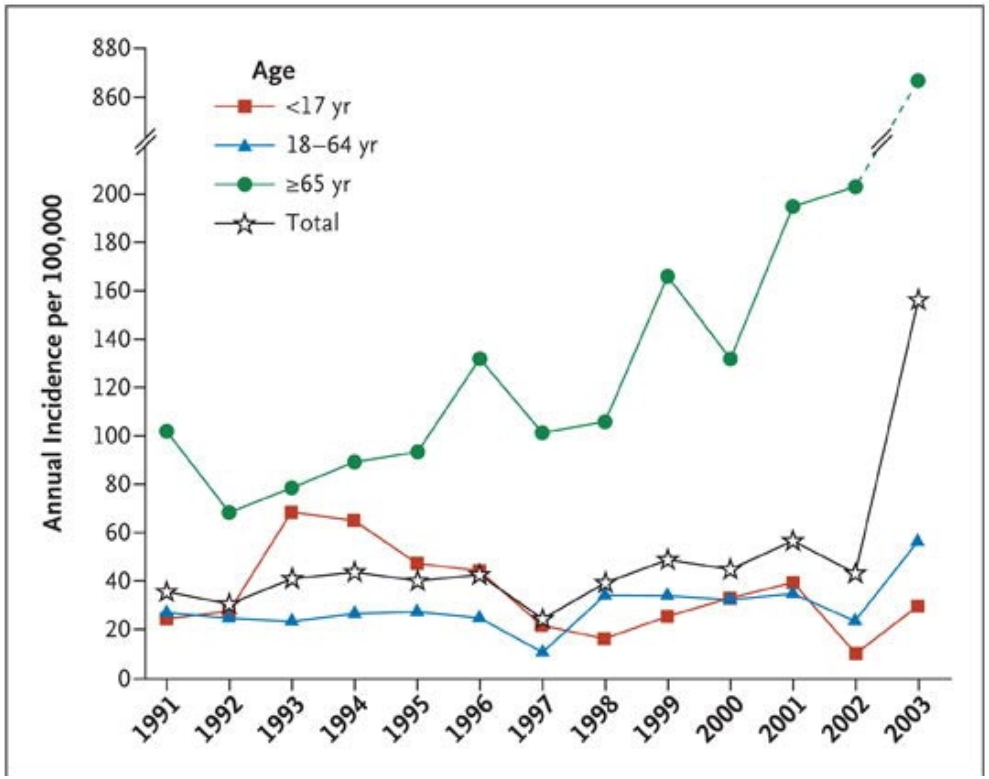
C. Dif endospores. Difficile because its hard to grow, not because its hard to treat

Increasing Incidence in Elderly



Clostridium difficile — More Difficult Than Ever

Ciarán P. Kelly, M.D., and J. Thomas LaMont, M.D.

N Engl J Med 2008; 359:1932-1940 | October 30, 2008

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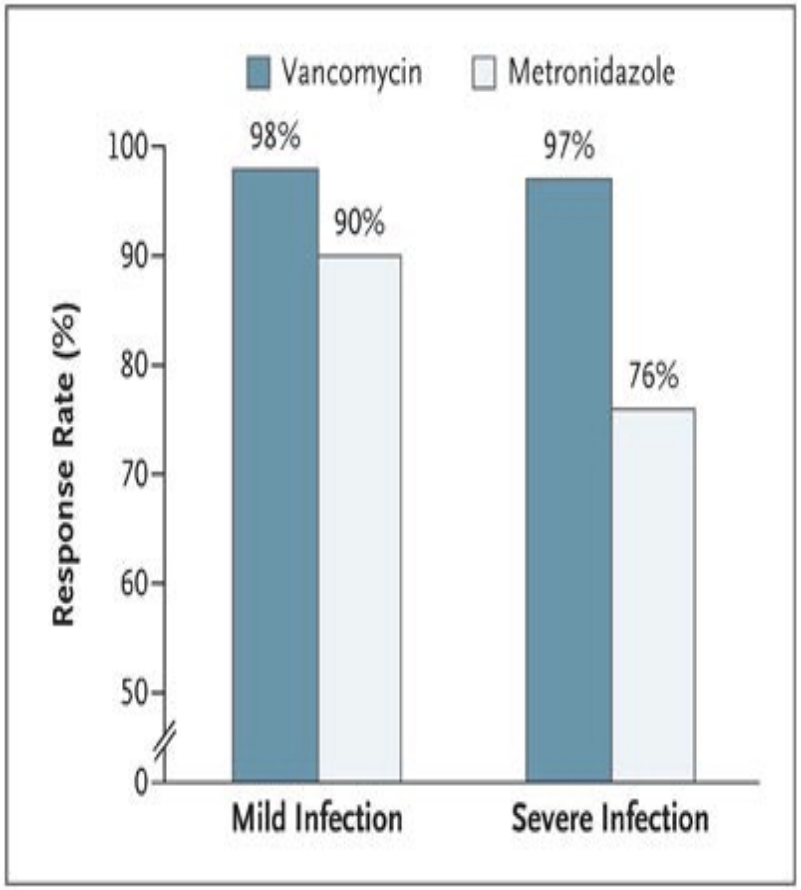

Severe infection

- Pseudomembranous colitis
- ICU admit
- Any two of the following
  - Temp>101 (38.3)
  - Albumen <2.5
  - WBC >15

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Table 2. Suggested Approaches to Therapy.*

Initial episode
Mild-to-moderate infection
Metronidazole at a dose of 500 mg orally 3 times daily for 10 to 14 days
Severe infection or unresponsiveness to or intolerance of metronidazole
Vancomycin at a dose of 125 mg orally 4 times daily for 10 to 14 days
First recurrence
Mild-to-moderate infection
Metronidazole at a dose of 500 mg orally 3 times daily for 10 to 14 days
Severe infection or unresponsiveness to or intolerance of metronidazole
Vancomycin at a dose of 125 mg orally 4 times daily for 10 to 14 days
Second recurrence†
Vancomycin in tapered and pulsed doses
125 mg 4 times daily for 14 days
125 mg 2 times daily for 7 days
125 mg once daily for 7 days
125 mg once every 2 days for 8 days (4 doses)
125 mg once every 3 days for 15 days (5 doses)
Third recurrence
Vancomycin at a dose of 125 mg orally 4 times daily for 14 days, followed by rifaximin at a dose of 400 mg twice daily for 14 days
Other options for recurrent infection
Intravenous immune globulin at a dose of 400 mg per kilogram of body weight once every 3 weeks for a total of 2 or 3 doses
Therapy with other microorganisms, including "fecal transplantation"

* Data are from Kelly and LaMont.[36]

† A probiotic such as *Saccharomyces boulardii* or lactobacillus species may be added during the final 2 weeks of the vancomycin taper and for at least 4 weeks thereafter (preferably 8 weeks). However, the efficacy of probiotics in preventing recurrent *C. difficile* infection is unclear because of inconsistent study results. Bacteremia or fungemia may rarely complicate the use of probiotics in immunocompromised, critically ill patients.

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On rounds the nurse notes skin changes on her sacrum.
As you head to her room, you envision a stage 3 or 4 decubitus that you some how missed.

Hospital-acquired condition	Cases	Average charge per hospital stay	Total Medicare cost
Stage III & IV pressure ulcers	257,412	$43,180	$11.1 billion
Fall or trauma resulting in serious injury	193,566	$33,894	$6.6 billion
Vascular catheter-associated infection	29,536	$103,027	$3 billion
Catheter-associated urinary tract infection	12,185	$44,043	$536.7 million
Foreign object retained after surgery	750	$63,631	$47.7 million
Surgical site infection -- mediastinitis after coronary artery bypass graft	69	$299,237	$20.6 million
Air embolism	57	$71,636	$4 million
Blood incompatibility	24	$50,455	$1.2 million

Source: Centers for Medicare & Medicaid Services

Annals of Internal Medicine 15 Oct 2013

- Article and Editorial on Hospital Report Cards and Hospital-acquired Pressure Ulcers (HAPU)
- Observed HAPU rates much higher then reported 0.20 for CMS patient reported, actual 10X higher
- Significant knowledge gaps in providers, MD worse then RN

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Pathogenesis

External Factors

- Shearing Forces
- Friction
- Pressure
- Moisture

Host Factors

- Immobility
- Incontinence
- Nutrition
- Perfusion
- Neurologic disease

BRADEN SCALE FOR PREDICTING PRESSURE SORE RISK

Patient's Name _____ Evaluator's Name _____ Date of Assessment

SENSORY PERCEPTION ability to respond meaningfully to pressure-related discomfort	**1. Completely Limited** Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation. OR limited ability to feel pain over most of body	**2. Very Limited** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness OR has a sensory impairment which limits the ability to feel pain or discomfort over ½ of body.	**3. Slightly Limited** Responds to verbal commands, but cannot always communicate discomfort or the need to be turned. OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	**4. No Impairment** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort..				
MOISTURE degree to which skin is exposed to moisture	**1. Constantly Moist** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Very Moist** Skin is often, but not always moist. Linen must be changed at least once a shift.	**3. Occasionally Moist:** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**4. Rarely Moist** Skin is usually dry, linen only requires changing at routine intervals.				
ACTIVITY degree of physical activity	**1. Bedfast** Confined to bed.	**2. Chairfast** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	**3. Walks Occasionally** Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair	**4. Walks Frequently** Walks outside room at least twice a day and inside room at least once every two hours during waking hours				
MOBILITY ability to change and control body position	**1. Completely Immobile** Does not make even slight changes in body or extremity position without assistance	**2. Very Limited** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitation** Makes major and frequent changes in position without assistance.				
NUTRITION usual food intake pattern	**1. Very Poor** Never eats a complete meal. Rarely eats more than ⅓ of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement OR is NPO and/or maintained on clear liquids or IV's for more than 5 days.	**2. Probably Inadequate** Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. OR receives less than optimum amount of liquid diet or tube feeding	**3. Adequate** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products per day. Occasionally will refuse a meal, but will usually take a supplement when offered OR is on a tube feeding or TPN regimen which probably meets most of nutritional needs	**4. Excellent** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.				
FRICTION & SHEAR	**1. Problem** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation leads to almost constant friction	**2. Potential Problem** Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair, restraints or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**3. No Apparent Problem** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair.					

Total Score

Figure 1. *The Braden Scale for Predicting Pressure Sore Risk.*

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Prevention

Pressure relief

- Postioning, turning, wedges to ankles and knees
- Heel protectors (20% of all pressure ulcers)
- Limit shear forces

Pressure reducing devices

- Mattress pads
- Dynamic support devices

General

- Medication adjustment
- Skin care
- Nutrition
- Early mobility
- Incontinence control

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MANAGEMENT: METHODS OF DEBRIDEMENT

Type	Methods	Comments
Mechanical	Wet-to-dry irrigation, hydrotherapy	May remove both dead & live tissue; may be painful
Surgical, sharp	Scalpel, scissor to remove dead tissue; laser debridement	Quick, effective; use for infection; pain management needed
Enzymatic	Topical agent to dissolve dead tissue	Use if no infection; may damage skin
Autolytic	Allows dead tissue to self-digest	Use if other methods not tolerated & no infection; effect delayed
Biosurgery	Larvae to digest dead tissue	Quick, effective, good option when surgical debridement not an option

Surgical Maggots Lederle ready for shipment.

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Luckily its just candida…..

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Mrs. Quincke is really tired of being in the Hospital and wants to leave AMA!

THE AMERICAN JOURNAL of MEDICINE®
Official Journal of the Association of Professors of Medicine

Increased Risk of Mortality and Readmission Among Patients Discharged Against Medical Advice

- Southern WN, Nahvi A, Arnsten JH.
- *Am J Med* 2012: 125, 594-602.
- AMA high risk
- May not get medications or F/U appts.

Mrs. Quincke has no cardiac events, stroke, or further GI bleeding.

She resumes warfarin (with only prophylactic dose heparin) and completes her antibiotics.

She walks independently on POD 6.

She transfers to rehab on POD 12.

Another satisfied customer

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But will she be readmitted?

Key interventions to reduce readmissions

Readmission Risk Score Elements

Element	Risk Score
Medicare, Medicaid, or Self Pay =	+4
Poor Health Literacy =	+1
Lack of Social Support or inability to do self care =	+1
Prior Admits:	
> 52 weeks =	+1
Between 30 days and 52 weeks =	+2
< 30 days =	+3
> 7 Medications =	+2
Emergent Admission =	+3
History of Diabetes, Mellitus, Myocardial Infarction, Cerebral Vascular Accident, Peripheral Vascular Disease =	+1 each
History of Congestive Heart Failure, Chronic Obstructive Pulmonary Disease, Substance Abuse, or Depression =	+2 each
Altered Cognition, Dialysis =	+3 each
History of Cancer, General Cancer =	+1
History of End Stage Liver Disease, Human Immunodeficiency Virus or AIDS =	+4 each
History of Metastatic Cancer, Active Hematologic Cancers =	+6
Current Length of Stay =	+1 / day starting #5 (max=+5)

Readmission Risk:

- Low = 0 - 9
- Medium = 10 - 14
- High = ≥15

- Mrs. Quincke 22

Thank you for your attention!
Newman.James@mayo.edu

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Modified LACE Tool

Attribute	Value	Points	Prior Admit	Present Admit
Length of Stay	Less 1 day	0		
	1 day	1		
	2 days	2		
	3 days	3		
	4-6 days	4		
	7-13 days	5		
	14 or more days	6		
Acute admission	Inpatient	3		
	Observation	0		
Comorbidity: (Comorbidity points are cumulative to maximum of 6 points)	No prior history	0		
	DM no complications, Cerebrovascular disease, Hx of MI, PVD, PUD,	1		
	Mild liver disease, DM with end organ damage, CHF, COPD, Cancer, Leukemia, lymphoma, any tumor, cancer, moderate to severe renal dz	2		
	Dementia or connective tissue disease	3		
	Moderate or severe liver disease or HIV infection	4		
	Metastatic cancer	6		
Emergency Room visits during previous 6 months	0 visits	0		
	1 visits	1		
	2 visits	2		
	3 visits	3		
	4 or more visits	4		
	Take the sum of the points and enter the total →			