EISENHOWER HEALTH

Interdisciplinary Morbidity and Mortality Conference

03/14/2024

Morbidity & Mortality Conference
Thursday, March 14, 2024

Moderator: Adewale Ajumobi, MD, MBA, FACP, FACG, AGAF, FASGE
Presenters: Jaclyn Floyd, MD

Learning Objectives:
- Analyze the relationship of error to poor medical outcomes at an individual, team, and organizational level
- Explore the potential cases of errors
- Develop and implement strategies to avoid preventable errors in the future

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Physicians
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Moderator and Presenters	Education Planning Committee
Drs. Ajumobi and Floyd have no relevant financial relationships to report.	All members of the Education Planning Committee have no relevant financial relationships to report.

Objectives

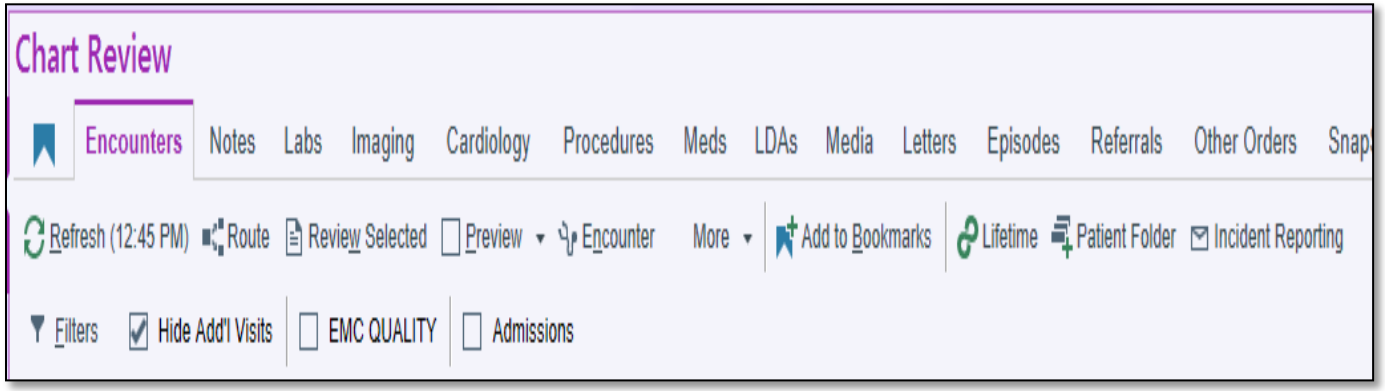
- Understand medical errors, adverse events and harm
- List and understand the different types of cognitive errors
- Create a root cause analysis using a modified fishbone diagram
- Apply ACGME competencies to the problems identified
- Create an action plan based on the root cause analysis and discussion of the adverse events

Reminders

- All information discussed is confidential
- Patient identifiers have been removed
- Medical staff involved in the case will not be identified
- Focus on systems issues rather than individual actions
- Goal is to prevent future adverse events, not to assign blame

Incident (Error) Reporting

- **Phone**: R-I-S-K (#7475)
- **Ikenet**: web services >>>Incident reporting>>> RLDatix Incident Reporting form.
- **EPIC interface**:




HILARY
SWANK
HELENA
BONHAM CARTER
55 STEPS
BASED ON A REMARKABLE TRUE STORY.

Case Presentation

Jaclyn Floyd, MD, PGY-3

Presentation

Chief Complaint

Psychiatric Evaluation

History of Present Illness

Initial history notes: Patient was found at a hotel where she had been reportedly staying for the past week with her daughter, she reports visiting from Scottsdale Arizona however she is a poor historian unable to provide detailed history. BIBA sheriffs on 5150 hold

Past Medical History

Hypertension

Hypothyroidism

B12 deficiency

unclear psychiatric condition with Zyprexa prescribed, which daughter later described as paranoia that manifested after a MVA 20 years ago. daughter also reports possible history of TIA's but never strokes.

Additional History obtained from the daughter later:

Patient is normally on her own with occasional caregiver support and is AAOX4. Patient has a domicile locally and travels between two places. Daughter buys groceries, and other goods as needed for patient. She last spoke to her on the 24th, prior to admission for 5150. She notes that patient is stubborn with medication compliance, for instance not taking levothyroxine on empty stomach.

Social History

Patient denies psychiatric history, she denies suicidal ideation or alcohol or drug use or auditory or visual hallucinations

Home Medication

“BP and Synthroid unknown dosages”

Physical Exam

- Physical Exam
- Vitals and nursing note reviewed.
- Constitutional:
- General: She is not in acute distress.
- Appearance: She is well-developed.
- Comments: disheveled
- HENT:
- Head: Normocephalic and atraumatic.
- Eyes:
- Conjunctiva/sclera: Conjunctivae normal.
- Cardiovascular:
- Rate and Rhythm: Normal rate and regular rhythm.
- Heart sounds: No murmur heard.
- Pulmonary:
- Effort: Pulmonary effort is normal. No respiratory distress.
- Breath sounds: Normal breath sounds.
- Abdominal:
- Palpations: Abdomen is soft.
- Tenderness: There is no abdominal tenderness.
- Musculoskeletal:
- Cervical back: Neck supple.
- Skin:
- General: Skin is warm and dry.
- Neurological:
- Mental Status: She is alert.
- Psychiatric:
- Attention and Perception: She does not perceive auditory or visual hallucinations.
- Mood and Affect: Affect is inappropriate.
- Behavior: Behavior is cooperative.
- Cognition and Memory: Cognition is impaired.

History noted in Social Worker Note

Physical exam:
Appearance: Alert, Unkempt, and wearing excessive make-up
oriented x1 (person). Pt presents confused. Pt also may be experiencing hallucinations/responding to internal stimuli/delusions. Pt believes her daughter is lying in the bed with her. On several occasions, pt asked her daughter to respond to SW questions. At this time, pt is too confused to participate in MSE and unable to provide reliable information.

Social Worker Conversation with daughter:
SW called daughter to obtain further pt history. Daughter became agitated after SW advised of 5150 and reason for admission. She progressively became angry and not willing to have a conversation or answer questions. **She states pt was hospitalized in the past for psychiatric reasons and given an unknown medication that led to significant medical issues. Dtr was unable to recall name of med or what occurred to pt.** States she is in a child custody battle with their father and has had a difficult time assisting pt. Dtr states pt was living in her own apt prior to the hotel room but lost apt due to non-payment of rent. Dtr shared that there was a "misunderstanding" and the rent was not paid

It appears dtr is not aware enough of pt's disorientation and condition. **Dtr feels pt is fine to be alone and blames healthcare as the primary problem for pt.** SW had to interrupt phone call with dtr due to her refusal to participate in a conversation.

Question:

How often do you call family yourself if a nurse or social worker told you they were able to talk to family?

A. Always
B. Sometimes
C. Rarely

Social work determination

Danger to Self/SI: Not present

Danger to others: Does not meet criteria

Grave Disability: MH symptoms interfere with: Self care, pt's dtr states that she orders Uber Eats for pt regularly. Dtr also stated she purchased one week of food for pt while at the hotel. APS notified RSO after it was determined pt may be gravely disabled. Pt reported to deputy that she had no identification and did not have a phone number for family. Pt was disoriented to place and year per deputy.

Dispo: Transfer to Psych facility

Labs

T3, Free
Final result 05/25 1241

T3, Free	2.4 ↓

C-Reactive protein
Final result 05/25 1241

CRP	<0.1

Urine Grey Top (Culture) Hold
Final result 05/24 2133

Extra Tube	Hold for ad...

Rainbow Draw
Final result 05/24 1745

Extra Tube	Hold for ad...
Extra Tube	Hold for ad...
Extra Tube	Hold for ad...

T4, Free
Final result 05/24 1745

Free T4	0.73

Acetaminophen Quantitative
Final result 05/24 1745

Acetaminop...	0.7

Salicylates Quantitative
Final result 05/24 1745

Salicylate Lvl	<0.2

Folate
Final result 05/25 1241

Folate	22.0

Fentanyl, Urine
Final result 05/24 2134

Fentanyl, Ur...	None Dete...

Urinalysis w/ Microscopic & Reflex to Culture
Final result 05/24 2133

Color of Urine	Light Yellow
Clarity of Uri...	Clear
Glucose, Uri...	Negative
Bilirubin, Urine	Negative
Ketones, Uri...	Negative
Specific Gra...	1.017
Blood, Urine	Negative
pH, Urine	7.5
Protein, Urine	Trace !
Urobilinoge...	<0.2
Nitrite, Urine	Negative
Leukocyte E...	25 !
RBC, Urine	2
WBC, Urine	2
Bacteria, Uri...	Negative
Hyaline Cas...	0

B-Type Natriuretic Peptide
Final result 05/25 1241

BNP	206.0 ↑

Rapid Drug Screen, Urine
Final result 05/24 2134

Benzodiaze...	None Detect
Cannabinoi...	None Detect
Cocaine Scr...	None Detect
Barbiturate ...	None Detect
Opiate Scrn,...	None Detect
PCP Scrn, Ur	None Detect
Methadone ...	None Detect
Amphetami...	None Detect

Vitamin B12
Final result 05/24 1745

Vitamin B12	66 ↓

TSH w/ Reflex to Free T4
Final result 05/24 1745

TSH	15.083 ↑

Comprehen...
Final result 05/24 1745

Sodium	138
Potassium	3.2 ↓

Acetaminophen Quantitative
Final result 05/24 1745

Acetaminop...	0.7

Salicylates Quantitative
Final result 05/24 1745

Salicylate Lvl	<0.2

Ethanol Serum Quantitative
Final result 05/24 1745

Ethanol	<10

Protein, Urine	Trace !
Urobilinoge...	<0.2
Nitrite, Urine	Negative
Leukocyte E...	25 !
RBC, Urine	2
WBC, Urine	2
Bacteria, Uri...	Negative
Hyaline Cas...	0
Squamous ...	0

CBC with Auto Differential
Final result 05/24 1745

WBC	8.1
RBC	4.35
Hemoglobin	15.1
Hematocrit	42.8
MCV	98.4
MCH	34.7 ↑
MCHC	35.3
RDW	11.9
Platelet Count	254.0
MPV	10.3
nRBC %	0.0
IANC	5.7
Neutrophils %	70.3

TSH w/ Reflex to Free T4
Final result 05/24 1745

TSH	15.083 ↑

Comprehen...
Final result 05/24 1745

Sodium	138
Potassium	3.2 ↓
Chloride	103
CO2	28.9
Anion Gap	6
Glucose	106 ↑
BUN	16
Creatinine	0.7
BUN/Creati...	22.9
Osmolality ...	277
Total Protein	6.8
Albumin	4.3
Calcium	9.2
Total Bilirubin	0.8
Alkaline Pho...	68
AST	17
ALT (SGPT)	11
eGFR	83.25

Labs

Respiratory Panel 2.1 - IVD - (Includes COVID-19)

Final result 05/24 1753

Adenovirus	Not Detected
Coronavirus...	Not Detected
Coronavirus...	Not Detected
Coronavirus...	Not Detected
Coronavirus...	Not Detected
Severe Acut...	Not Detected
Human Met...	Not Detected
Human Rhin...	Not Detected
Influenza A	Not Detected
Influenza B	Not Detected
Parainfluenz...	Not Detected
Parainfluenz...	Not Detected
Parainfluenz...	Not Detected
Parainfluenz...	Not Detected
Respiratory ...	Not Detected
Bordetella p...	Not Detected
Bordetella p...	Not Detected
Chlamydia p...	Not Detected
Mycoplasm...	Not Detected

Hospital Course

Day 1

- Arrived at the ED at 1658
- First provider time clicked at 1805
- Nurse triage note says “Pt BIB RSO for gravely disabled on a hold. Pt presents calm and cooperative, confused, flight of ideas, and disheveled . Hx of hypothyroidism, denies HTN”
- Attending orders psychiatric panel (ethanol, salicylates, cmp, cbc, acetaminophen, RVP, UA, urine drug screen&fentanyl) adds B12 and TSH, EKG
- noted hypertensive, 212/119, orders 10 of hydralazine and noted concern for possible hypertensive encephalopathy in note
- Labs result, potassium and synthroid ordered, GI cocktail and tylenol.

Hospital Course

Day 2

- New provider is assigned to patient at 0712 am
- ED PA is assigned at 0801 and comes in and sees the patient
- 0939 Psych files their note that they've seen the patient, recommends treating reversible causes and head CT
- 1031 am ED PA signs their note and head CT is ordered
- RN note at 1633 says patient is still refusing their head CT, refusing meds or vitals, daughter is on the way to convince her
- Head CT done at 2006
- 2018 new attending takes over case
- Head CT results at 2020 showing moderate area of parenchymal hypodensity in the posterior left parieto-occipital region, concerning for subacute infarct
- Admitted for observation, MRI ordered
- Transfers upstairs at 2338 day 2

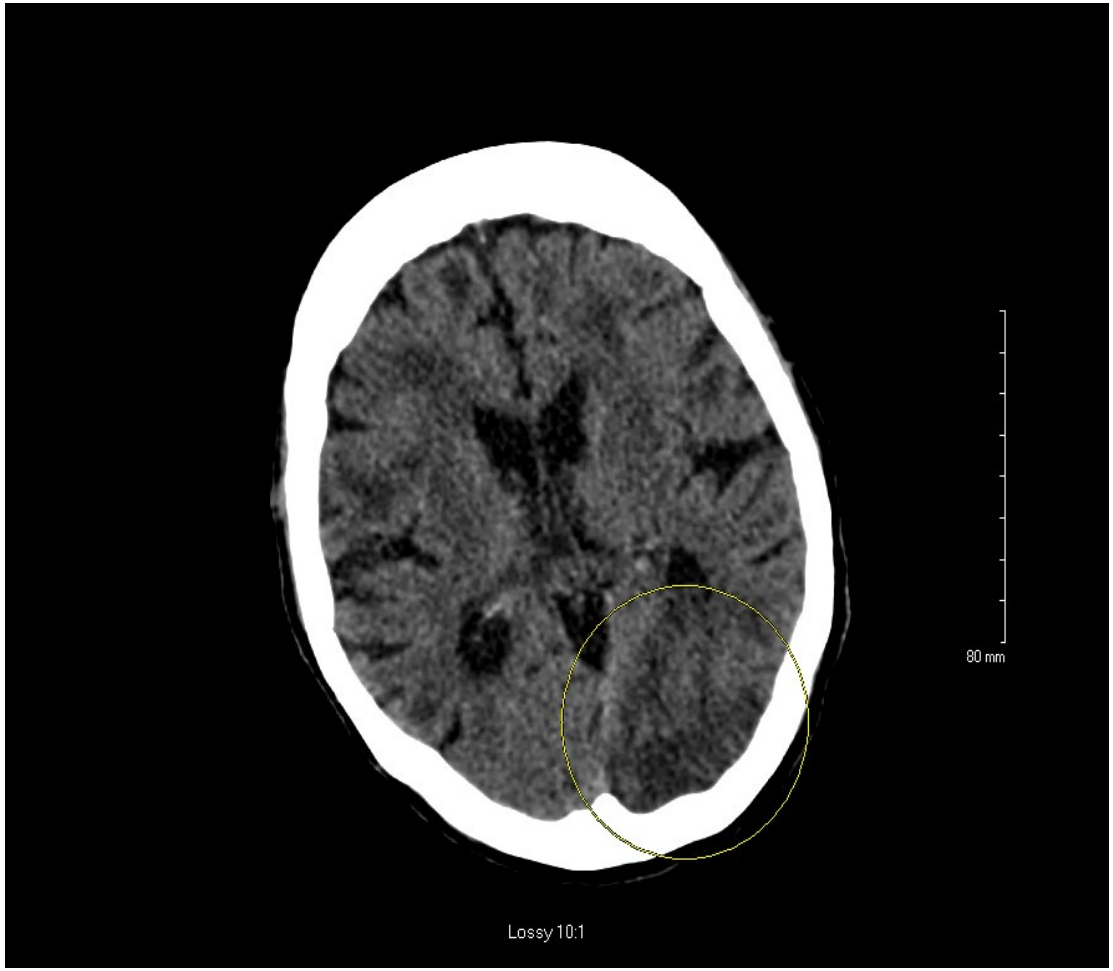
Hospital Course

Day 3

- MRI returns and shows

  "MRA: moderate stenosis of P2 segment. MRA neck was unremarkable. MRI Brain: moderate area of restricted diffusion in left posterior temporo-occipital region, compatible with subacute left PCA infarct which corresponds to CTH. Blooming artifact seen medially within infarct bed compatible with sequelae of prior hemorrhage. Multiple acattered foci of signal suggestinble amyloid angiopathy."
- BP control measures put into place given concern for hemorrhagic conversion with BP goal 140-160 with IV antihypertensives , IM B12, thiamine ordered
- Stroke neurology sees patient in the AM and notes decreased sensation on right arm and right leg, recommends aspirin 81 mg daily, statin daily, follow TTE, OT/PT
- progress note from medicine team same day notes patient says she is feeling better, remains aox0, sensation intact

Imaging



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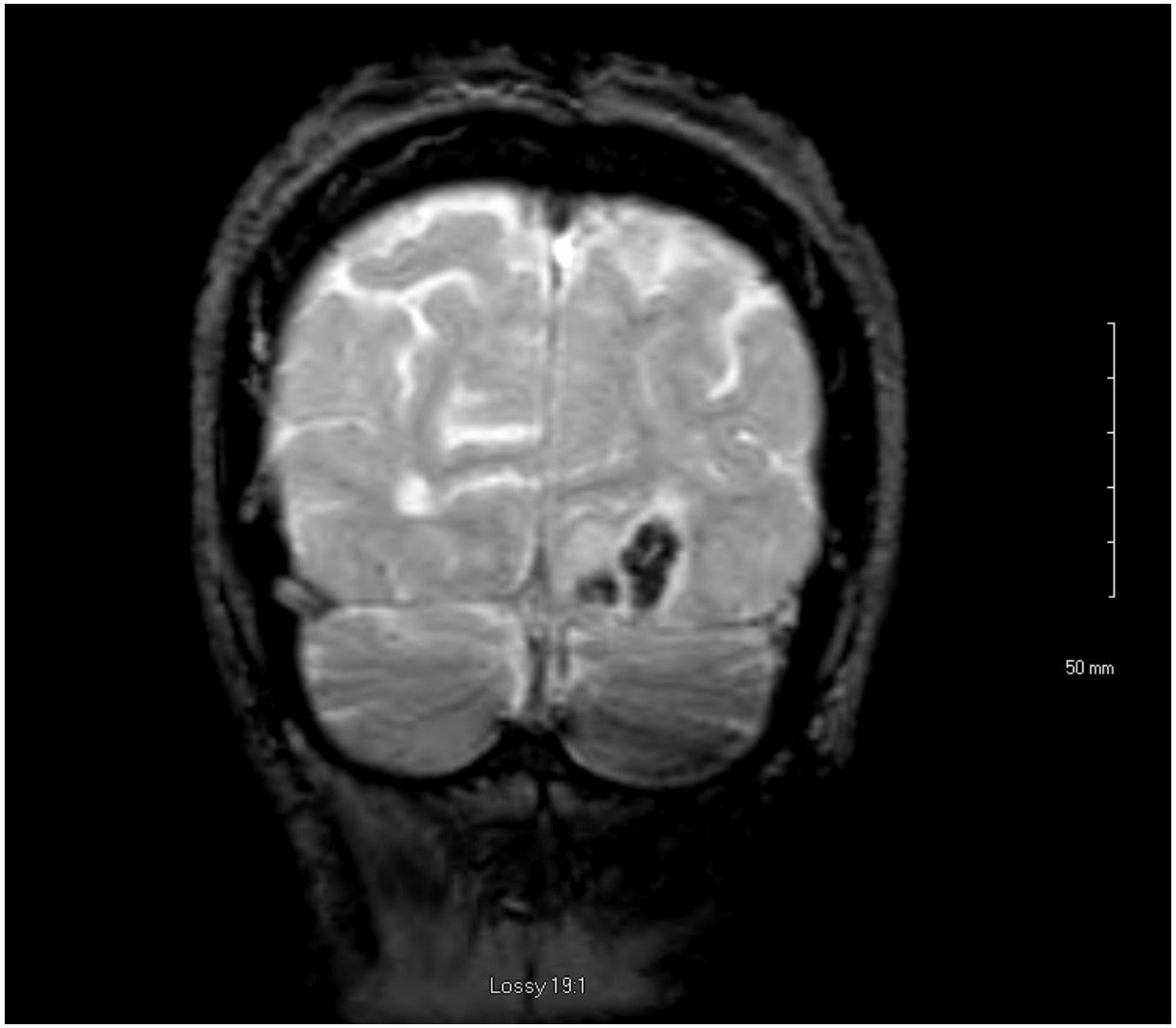


Hospital Course

Day 4

- Neuro sees patient again, notes intact sensation , AOX1
- Patient goes into Afib w RVR, given IVF and 5 mg lopressor, is started on metoprolol and anti-coagulation is held with concern for bleed.
- Repeat head CT obtained and shows:

  Interval increase in size of the amorphous hyperdensity within prior unchanged size of early subacute ischemic infarction in left occipital lobe, compatible with hemorrhage within the infarction

Day 5

- Bubble study shows no intra-atrial shunt, shows diastolic heart failure
- Stroke team recommends another repeat head CT in 3 days, at that time switching to DOAC and placement

Day 6 and 7 unremarkable

- Day 8 repeat head CT shows stable, started on anticoagulation on day 9
- Day 14 patient discharged to SNF close to daughter’s house

Timeline

05/25 1648: RN documents patient has been refusing head CT, vitals, meds

05/24 1658

ED for psychiatric evaluation BP 212/119

05/24 1805

Evaluated by ED attending psych panel ordered, TSH, B12 orders 10 mg hydralazine with concern for hypertensive encephalopathy

05/25 0706

new attending assigned, no signout note or workup documentation noted. Psych evaluates, recommends head CT. Head CT ordered by ED PA

05/25 2020

head CT results, radiology calls new attending to report subacute moderate infarct, patient admitted, MRI ordered

05/25 2322

MRI result confirming stroke but with concern for hemorrhagic conversion, stroke neurology sees patient in AM

05/27

Goes into Afib with RVR, given lopressor and fluids

05/31

Repeat head CT ordered and appears stable, is started on anti-coagulation on 06/01

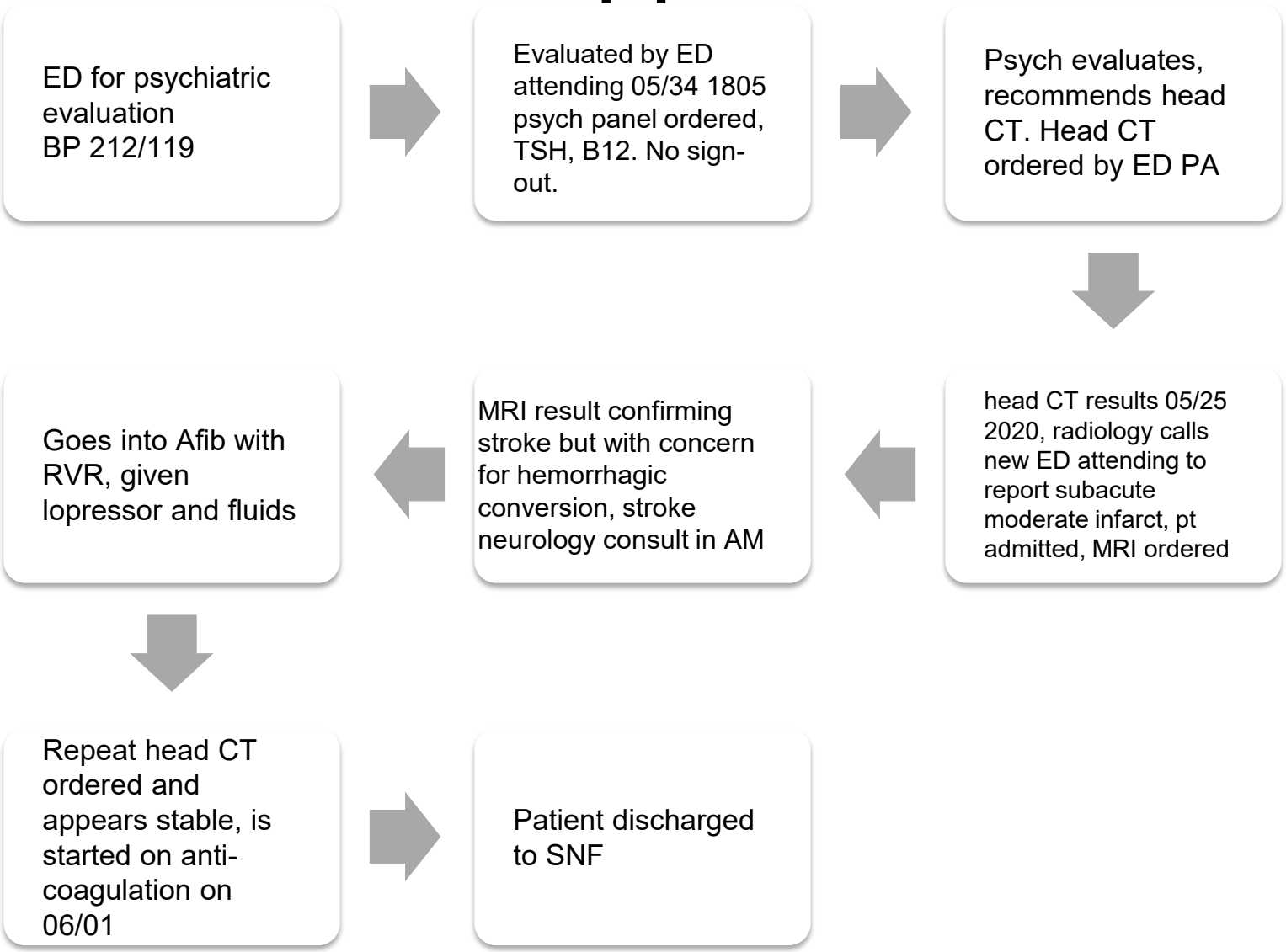
06/01-06/07

PT/OT eval, finding placement

06/08

Patient discharged to SNF

What Happened?



Problems Identified

- Initial triage complaint notes “Psychiatric Evaluation”
- Head CT not initially ordered by ED provider
- Lack of documented sign-out by staff in the ED
- Lack of provider to family discussion at time of arrival
- B12 not given in ED

Group Activity 1
Medical Errors

Moderator

Agency for Healthcare Research and Quality (AHRQ) Definitions

- Adverse Event (AE): harm from medical care rather than an underlying disease. Negative patient outcome as a result of interaction with the healthcare system

- Error: any act of commission or omission that exposes patients to a potentially hazardous situation

- Near Miss: an unsafe situation indistinguishable from a preventable AE except for the outcome. A patient is exposed to a hazardous situation, but does not experience harm either through luck or early detection

Case Summary

- Presenting Symptom:
  -confusion
  -hallucinations
- Diagnosis: CVA
- Adverse Outcome:Temporary vs. permanent harm

AHRQ Harm Scale.
https://www.qmo.amedd.army.mil/riskmgt/2010Conf/AHRQ_HarmScales.pdf.

Group Activity 1

- Was there a medical error?
- What type of medical error?
- Was there an adverse event?
- Did the medical error cause the adverse event?

Types of Medical Errors

Diagnostic

- Error or delay in diagnosis
- Failure to employ indicated tests
- Use of outdated tests or therapy
- Failure to act on results of monitoring or testing

Preventive

- Failure to provide prophylactic therapy
- Inadequate monitoring or follow up of treatment

Treatment

- Error in performance of an operation, procedure or test
- Error in administering the treatment
- Error in the dose or method of using a drug
- Avoidable delay in treatment or in responding to an abnormal test
- Inappropriate treatment

Others

- Failure of communication
- Equipment failure
- Other system failure

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- Equipment failure
- Other system failure

Group Activity 2
(Decision Heuristics or Cognitive Biases)

Moderator

Cognitive Biases

- **Cognitive bias**

-unconscious errors of reasoning that distorts our judgement.

-systematic patten of deviation from norm or rationality in judgment.

- **Types**

-anchoring, optimistic, halo effect, authority, status quo, framing/loss aversion, ostrich, availability heuristic, bandwagon effect, choice supportive, outcome, overconfidence, placebo, survivorship, selective perception, blind spot

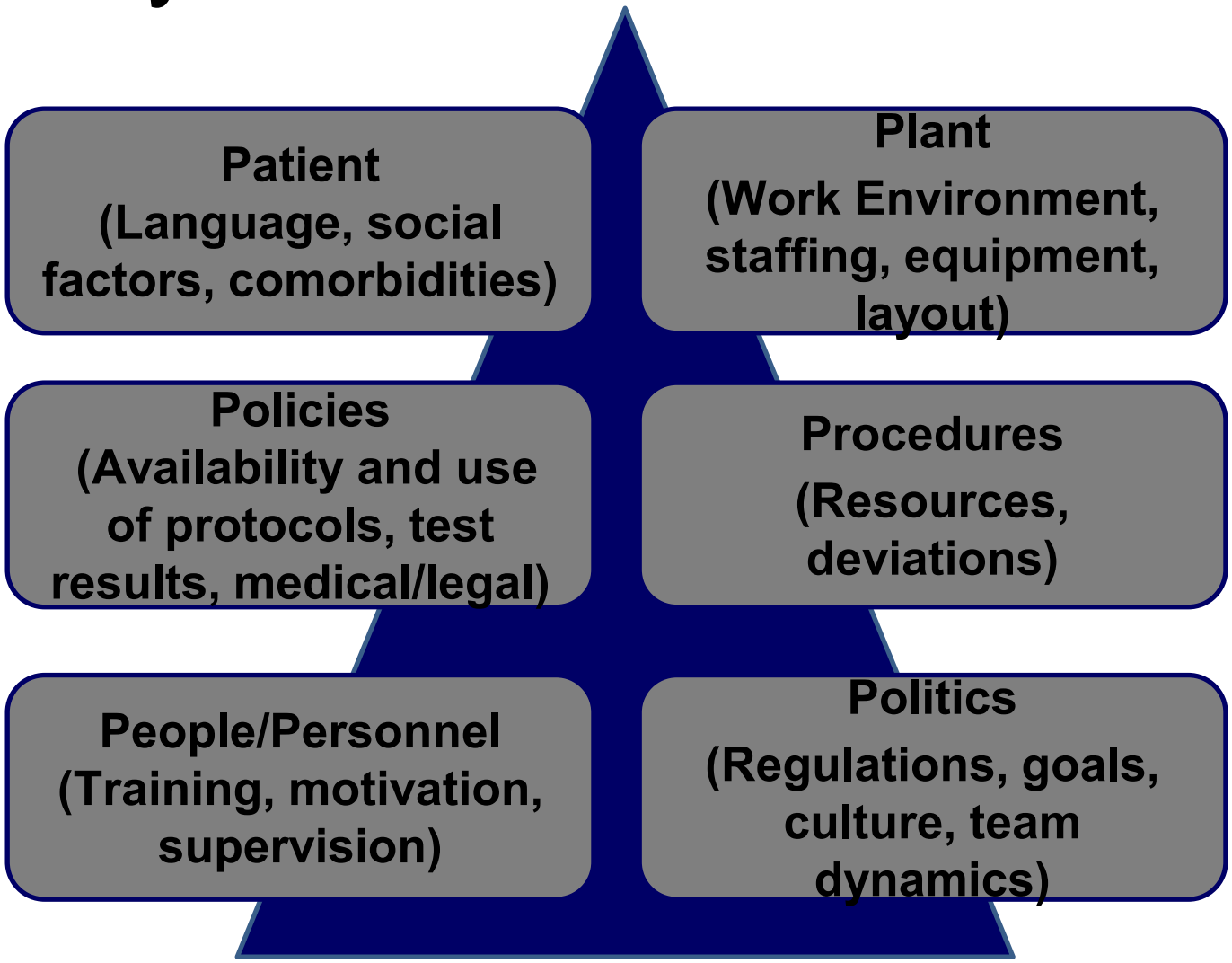
Common Cognitive Biases

Cognitive Bias	Definition
Authority bias	Towards opinion of an authority figure
Halo effect	If good in one area, must be good in others
Default/Status Quo bias	Staying with what is known; fear of change
Anchoring bias	Lock unto features of initial presentation/data
Framing/loss aversion	Presentation as loss or gain
Ambiguity aversion	Preference for known
Availability heuristic	Overestimate events with greater availability
Confirmation bias	Interpret new info to confirm prior belief
Optimism bias	Undervalue situation when the person is ignorant
False consensus effect	Overestimate the degree to which others agree

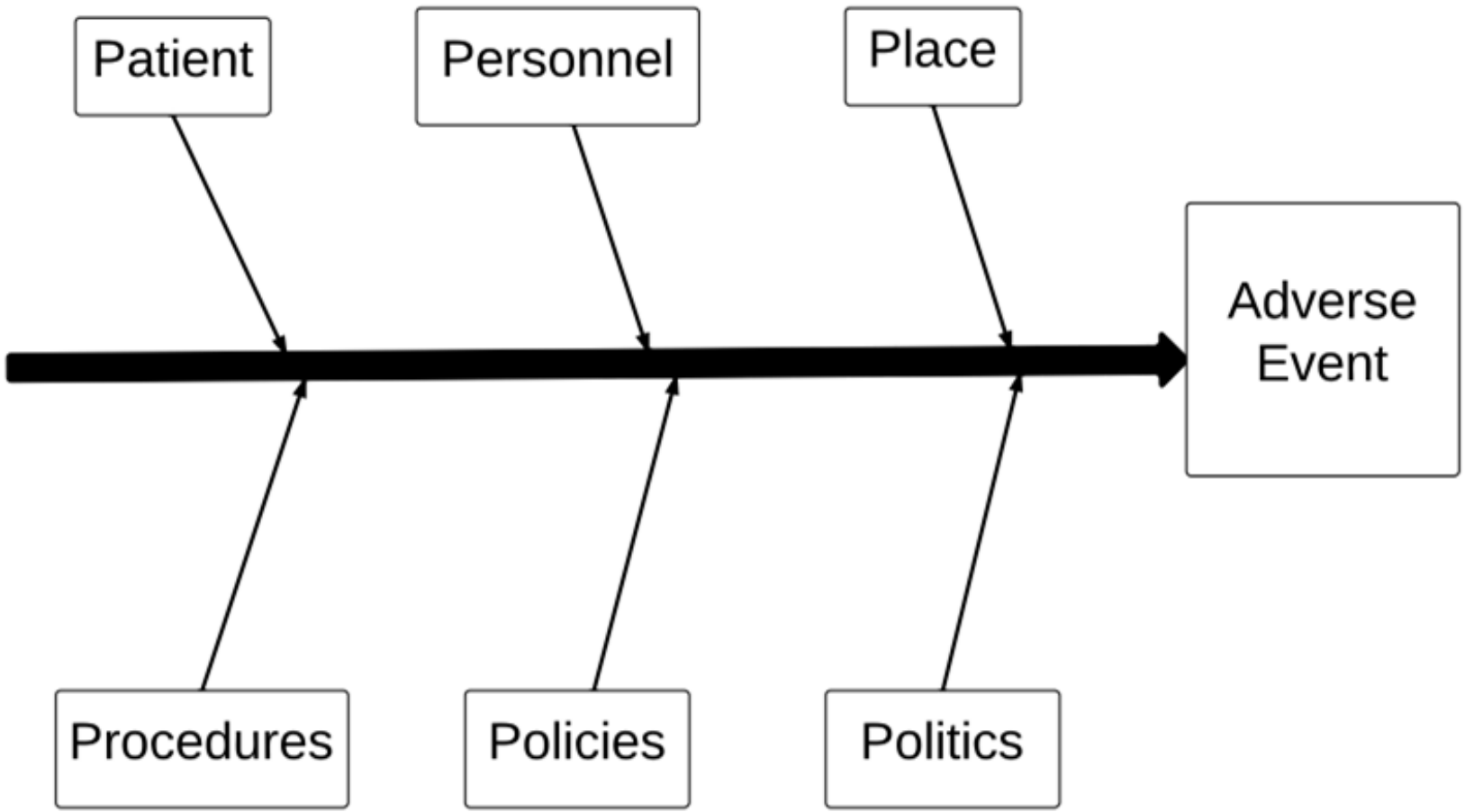
Group Activity 3
Root Cause Analysis (RCA)

Moderator

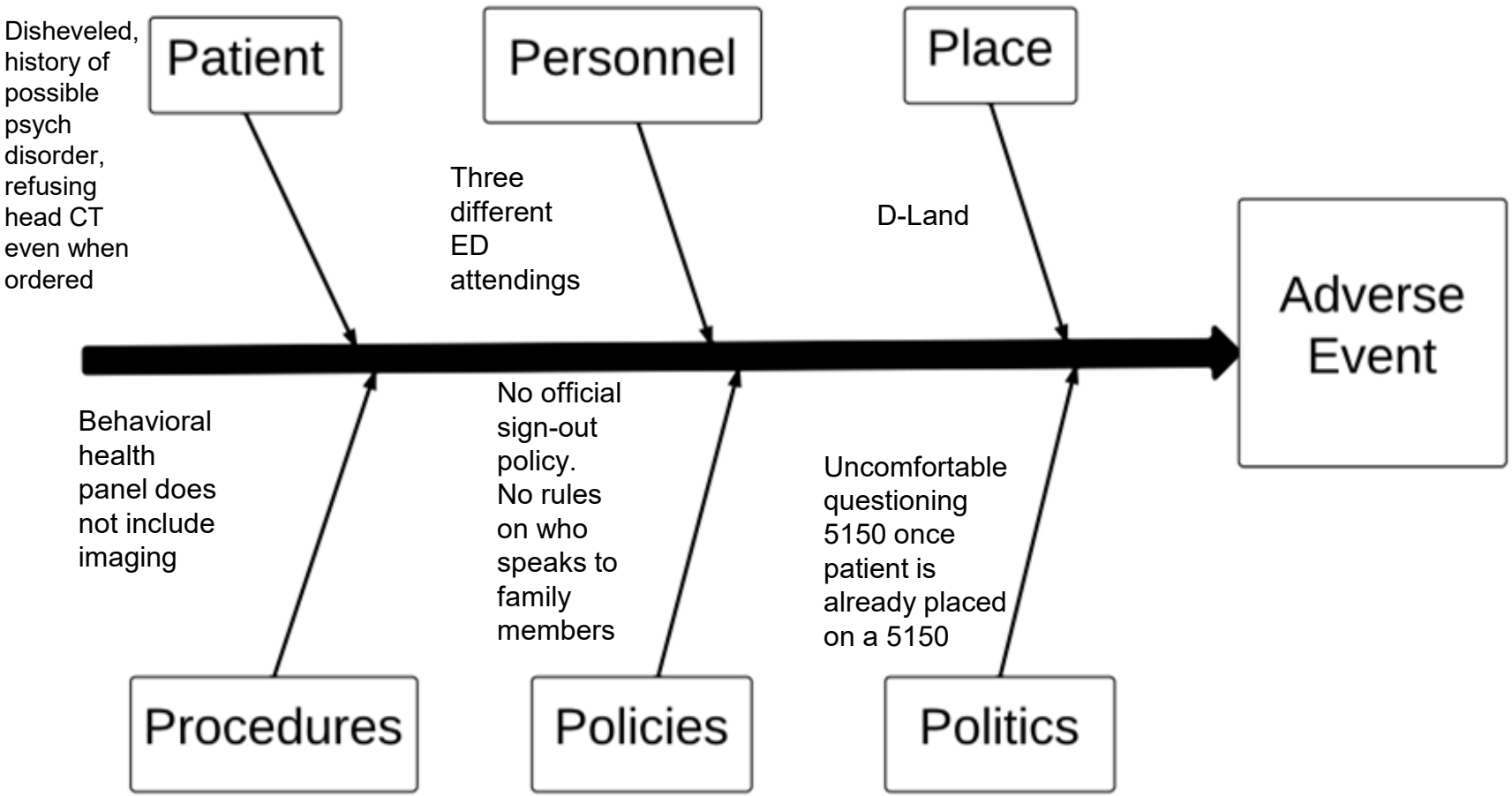
Examples of Contributing Factors in Systems that Lead to Errors



Fishbone Diagram



Fishbone Diagram



Group Activity 4
Apply ACGME competencies to the problems identified

ACGME competency	Yes	No	Describe
Medical Knowledge	X		Eval of altered patient
Patient care provided	X		Mgt of CVA, HypoT, B12 def
Communication & Interpersonal skills	X		Communication within & between teams
Professionalism	X		Accountability; ownership of system outcomes.
Practice-based learning & Improvement	X		Appraise Lit; SWOT, QI
Systems-based practice	X		Identify errors; TEAMS, quality care, safety

Challenges in Physician Transfer of Care

Trainee

Challenges

"**Clinically pertinent findings reported in ED physician handoff often differ from findings reported in physician documentation**. These errors and omissions are associated with handoff time per patient, ED length of stay, and use of support materials"

" Currently, there is no standardly agreed upon format for TOC in the ED: a study by Sinha et al. found that **89.5% of polled academic EDs have no formalized sign-out process**, despite the fact that 72.3% of program directors affirm that a more formalized sign-out process would improve patient care and reduce medical error"

Maughan et al. (2011)
Schwartz et al. (2022)

Consequences

"Transfers of care can precipitate a wide variety of problems, including **errors in prescribing medication, evaluation, and follow-up.** Frequent transfers also produce less-efficient care, such as longer length of stay and increased use of laboratory tests. Retrospective interviews and case reports suggest that communication failure during sign-out is a key factor in adverse events related to transfers"

In a study specifically looking at residents and interns they found "Most adverse events experienced by patients or their health care providers were **delays, inefficiencies, and duplication of effort.**"

Horwitz et al. (2008)

Proposed Solutions

- For ED to inpatient, SBAR and IPASS are two standardized methods of handing off care.
- Consider group sign-out, one study showed “the total number of non-emergent interruptions (38 vs. 67, $P = 0.005$), and total number of in-person interruptions (14 vs 44, $P < 0.001$) was less in the group sign-out compared with the individual sign-out totals”
- Closed loop sign-out, meaning as someone who is receiving sign-out make it your standard to repeat key things back.
- Clear hospital sign-out policies which are enforced may assist in standardizing both verbal sign-out and documentation of sign-out

Vidyarthi et al. (2006)
Chladek et al. (2021)
Lin et al. (2024)

I-PASS

BETTER HANDOFFS. SAFER CARE.

I	Illness Severity	• Stable, "watcher," unstable
P	Patient Summary	• Summary statement • Events leading up to admission • Hospital course • Ongoing assessment • Plan
A	Action List	• To do list • Time line and ownership
S	Situation Awareness and Contingency Planning	• Know what's going on • Plan for what might happen
S	Synthesis by Receiver	• Receiver summarizes what was heard • Asks questions • Restates key action/to do items

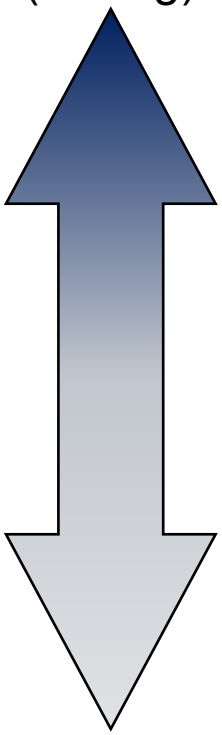
Group Activity 5
Action Plan

How do we prevent this from happening again?

Moderator

Ranking the Effectiveness of Error Reduction Strategies

Most Effective
(Strong)



Least Effective
(Weak)

- Physical Plant Changes
- Forcing functions and constraints
- Simplifying processes and removing unnecessary steps
- Standardization of equipment

- Increase in staffing/decrease in workload
- Automation and computerization
- Checklists and cognitive aids
- Eliminate/reduce distractions
- Read back
- Eliminate redundancy

- Warnings
- Development of new policies
- Training
- Double checks

Gosbee JW, Gosbee LL, eds. Human Factors Engineering to Improve Patient Safety. Oakbrook IL: Joint Commission Resources 2005

Take Home Points

- Anchoring biases can lead to delay in appropriate diagnosis and consequences.
- Provider to family direct communication is key.
- Provider sign-out should be standard, documented, and closed-loop.
- There is a crucial need for establishing sign-out procedures in hospitals and programs nationwide and this is a large area for quality improvement projects.

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Thank You!

Questions?