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Conquering the Sign-Out Challenge

By Pamela Fry and Alison Haddock
• Statistically, the most dangerous time for an ED patient
• “Communication failures figure in 25–67% of adverse events” (from US studies)
• New providers are not aware of patient’s specific presentation and problems
• Clinical situation / physical exam is dynamic – may worsen
• Balance efficiency with sufficiency – need enough detail to provide optimal care during the next shift
• Most dangerous patient is “everything is fine”
• Difficult to get enough information from fatigued/hurried physician

Dangers of sign-out
#1. Provide information to allow oncoming provider to deliver adequate care to patient during next shift

- Must learn basic essentials on every patient
- Identify sickest patient(s) in department
- Anticipate potential problems with patient care – discuss appropriate interventions
- Discuss pending studies/consults/results

Function of sign-out
#2. Create a to-do list
- Each patient should have planned disposition
- List should include all necessary items before patient can be dispositioned (imaging, consults, family issues, etc)
- Explain reasoning behind each pending item to allow optimal decision-making

Function of sign-out
#3. Opportunity to “phone-a-friend”
- If unsure of the diagnosis or plan, can discuss presentation and results with a colleague
- “Fresh set of eyes” may discover overlooked exam or history points
- Chance to review complete set of available results

Function of sign-out
#4. Point of patient re-evaluation

- Able to reassess patient at bedside
- Repeat most relevant exam points
- Review current vital signs and any trends recorded by nursing staff
- Look for any “red flags” that show current disposition may not be adequate
- Avoid being “locked in” to initial diagnosis

Function of sign-out
#5. Teaching moment

- Time to review interesting physical exam and radiology results
- Opportunity for senior residents to teach and junior residents to learn (peer education)

Function of sign-out
• 68yo F with no sig PMH p/w fever and altered mental status
  • Family reports fever for past three days
  • Denies cough, dysuria, headache, neck pain
• Physical Exam
  • T 37.5, HR 120, BP 90/60, RR 30, SpO2 85% on RA
  • GCS 14/15
  • Crackles in the bases on lung exam
  • Remainder of exam largely unremarkable

Case #1 – History/Exam
• IV in R antecubital fossa
• Placed on 2L O2 via NC → SpO2 to 90%
• 1L of IV NS infused → HR 115, BP 100/70
• Given dose of ceftriaxone for fever, sepsis
• CXR, UA, CBC, chemistries pending
• Foley placed with clear UOP

Case #1 – Initial Management
• 68yo F with fever being treated for pneumonia with ceftriaxone
• Improved after fluids
• Plan admit to medicine

Case #1 – Sign-Out A
68yo F with no sig PMH p/w fever and altered mental status, GCS 14; arrived this AM
- Treating with ceftriaxone due to concern for PNA with crackles on exam and low SpO2
- CXR and UA are pending to look for source of infection
- No headache/neck pain/meningismus so do not anticipate need for LP
- Concern for sepsis due to low BP and elevated HR

Course thus far
- Received 1L IV NS with some improvement in vitals – needs ongoing active resuscitation with IV fluids; could require pressors
- On 2L O2 via NC, may need increasing O2; check SpO2 frequently

Pending actions:
- Review CXR and UA; CBC and chemistries
- Call to Medicine once results return; consider ICU or pressors if persistently hypotensive

Case #1 – Sign-Out B
• CXR with RLL infiltrate
• Urine dip leukocyte negative
• CBC shows Hgb of 6.8
  • Dr. A doesn’t check the labs because unaware of pending labs
  • Dr. B contacts family regarding blood donation
• Electrolytes WNL; Creatinine elevated
• BP drops to 70/40, SpO2 82%
  • Dr. A doesn’t check VS during shift, unaware that patient required such care
  • Dr. B checks every few hours; rapidly provides facemask O2 and repeated IV boluses

Case #1 – Next Shift
#1. Provide information to allow oncoming provider to deliver adequate care to patient during next shift

- Must learn basic essentials on every patient
- Identify sickest patient(s) in department
- Anticipate potential problems with patient care – discuss appropriate interventions
- Discuss pending studies/consults/results

Function of sign-out
• Pt with AMS and seizures
  • hasn’t seized in a few hours
  • anticipate appropriate treatment for seizures next shift
• Pt with DM and pneumonia
  • noted to be hypoglycemic on home regimen, now on adjusted lower doses
  • anticipate treatment for recurrent hyperglycemia
• Pt with decreased respiratory drive after iatrogenic opiate excess
  • improved after first dose of naloxone
  • anticipate possibility of recurrent drowsiness
• Pt with bandaged fractures
  • anticipate need for oncoming resident to know if open and discuss with trauma

Quickie Examples
#2. Create a to-do list

- Each patient should have planned disposition
- List should include all necessary items before patient can be dispositioned (imaging, consults, family issues, etc)
- Explain reasoning behind each pending item to allow optimal decision-making

Function of sign-out
55yo F with hx of COPD p/w difficulty breathing
  • Worsening cough and SOB over past three days
  • Not improving with inhalers at home
  • Has hx of anxiety and feels anxious now

Exam
  • HR 125, BP 118/79, T 37, RR 22, SpO2 86% on RA
  • Thin, older F in mild resp distress
  • Diffuse expiratory wheezes on lung exam, tight
  • HR tachycardic and regular, strong pulses
  • Remainder of exam unremarkable

Case #2 –History/Exam
• Placed on O2 via NRB
• Started on albuterol nebulized treatments q20min x3 with improved air entry
• Pt states feeling slightly better but not at baseline
• CXR without evidence of PTX or PNA
• EKG shows sinus tachycardia
• Given 1L IV NS for tachycardia, BP WNL

Case #2 – Initial Management
• 55yo F with hx of COPD p/w SOB, presumed COPD exacerbation
  • Air entry improving after NMTs, persistent wheezes
  • CXR benign
  • Tachycardia noted – differential discussed
    • EKG WNL
    • Pt has seen pulmonary and cardiac specialists as an oupt within past 3 weeks and been tachycardic from 100-120
  • Normal BP
  • Normovolemic on exam
  • No significant risk factors for PE and exam c/w COPD
    • Likely secondary to repeated albuterol doses
  • Anticipate admission to medicine

Case #2 – Sign-Out
• Peer resident receiving sign-out: “Let’s go look at her.”
• Notes thin woman with fine hair and anxious appearance
• Fine tremor also noted (pt states “albuterol always makes me feel shaky”)
• Asks if she has received a workup for hyperthyroidism….

• TSH and free T4 added on to ED labs
• Pt found to be in thyroid storm

Case #2 – Sign-Out
#3. Opportunity to “phone-a-friend”
- If unsure of the diagnosis or plan, can discuss presentation and results with a colleague
- “Fresh set of eyes” may discover overlooked exam or history points
- Chance to review complete set of available results

Function of sign-out
• 69 yo man 5 weeks s/p craniotomy for subdural hematoma presents from his nursing home with fever and AMS that started this morning.
• PMH: TBI with expressive aphasia and subdural hematoma
• Physical Exam:
  – T 37.5, HR 99, RR 16, BP 105/67, O2 98%
  – General: Pt lying on stretcher, occasionally answering yes/no questions
  – Heart: RRR, no m/r/g
  – Lungs: CTAB, no w/r/r
  – Abdomen: Soft, NT/ND, no masses, no organomegaly
  – Neurologic: A/O x0, evidence of expressive aphasia, per old records appears to be at baseline

Case #3 – History & Exam
• Fever work-up initiated
  – UA negative, culture pending
  – CXR with no infiltrate
  – Blood cultures pending
  – No indwelling lines/ports, no immunosuppresants
• Non-contrast Head CT shows no change from post-op head CT done 5 weeks ago
  – No new findings, but also no improvement
• Neurosurgery consulted
  – State that head CT results would not account for AMS/fever

Case #3 – Initial Management
• 69 YO man with fever/AMS 5-weeks s/p craniotomy presents from NH
  • No fever in ER (checked orally only)
  • Mental status appears at baseline per chart
  • UA, CXR negative
  • Blood and urine cultures pending
  • No change on head CT
  • Cleared by neurosurgery
• Plan: discharge patient back to NH with no antibiotics since no source of fever and not febrile here, will notify NH if cultures positive, pt likely has a viral illness

Case #3 – Sign-Out
• On-coming resident questions absence of LP for fever and AMS patient with recent brain surgery
• Out-going resident explains that they think pt is at baseline MS, and no fever in ER, so no further work-up done
• On-coming resident still feels uneasy and goes to evaluate pt after rounds
  • Wife at bedside saying pt not at baseline
  • Rectal temperature: pt febrile
• LP performed and + for bacterial meningitis
  • Pt started on IV antibiotics and admitted to ICU
  • Pt survives to discharge

Case #3 Sign out
#4. **Point of patient re-evaluation**

- Able to reassess patient at bedside
- Repeat most relevant exam points
- Review current vital signs and any trends recorded by nursing staff
- Look for any “red flags” that show current disposition may not be adequate
- Avoid being “locked in” to initial diagnosis

**Function of sign-out**
Teaching Moment
Teaching Moment
#5. Teaching moment

- Time to review interesting physical exam and radiology results
- Opportunity for senior residents to teach and junior residents to learn (peer education)

Function of sign-out
Round at the bedside

How to Optimize your Sign-Out
Anticipate

How to Optimize your Sign-Out
Prepare for the end of your shift

How to Optimize your Sign-Out
Be on-time

How to Optimize your Sign-Out
Take effective notes for yourself

How to Optimize your Sign-Out
Don’t be afraid to ask questions

How to Optimize your Sign-Out
Thank You!
Slide 28: Anonymous KATH patient

Slide 29: X-rays of an anonymous KATH patient

Slide 37: Photo by Pamela Fry and Alison Haddock