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Conquering the Sign-Out Challenge

By Pamela Fry and Alison Haddock

Dangers of sign-out

- 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

#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

Case #1 – Initial Management

- 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

- 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

Case #2 –History/Exam

- 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

- 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 – InitialManagement

Case #2 – Sign-Out

- 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

#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

Case #3 – History & Exam

- 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

- 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

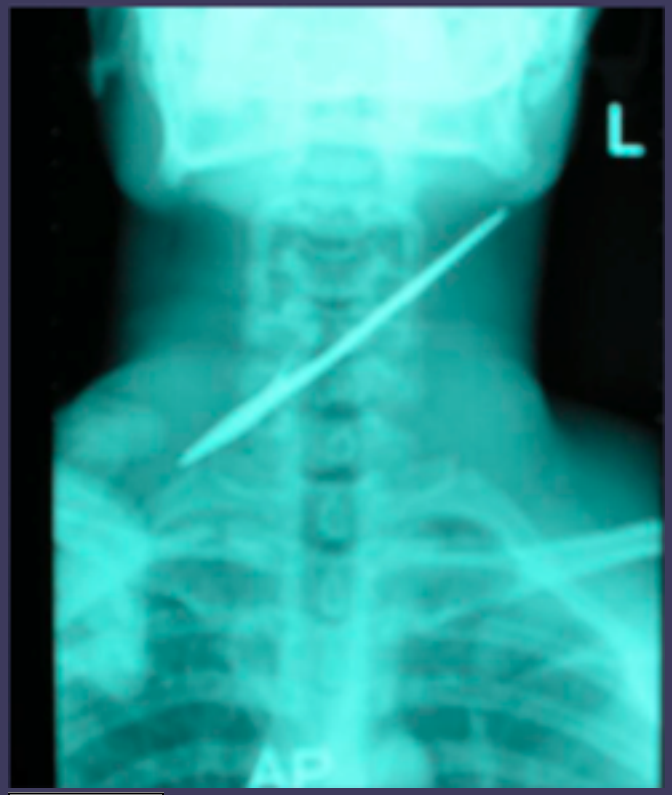
#4. Point of patient re-evaluation

- 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

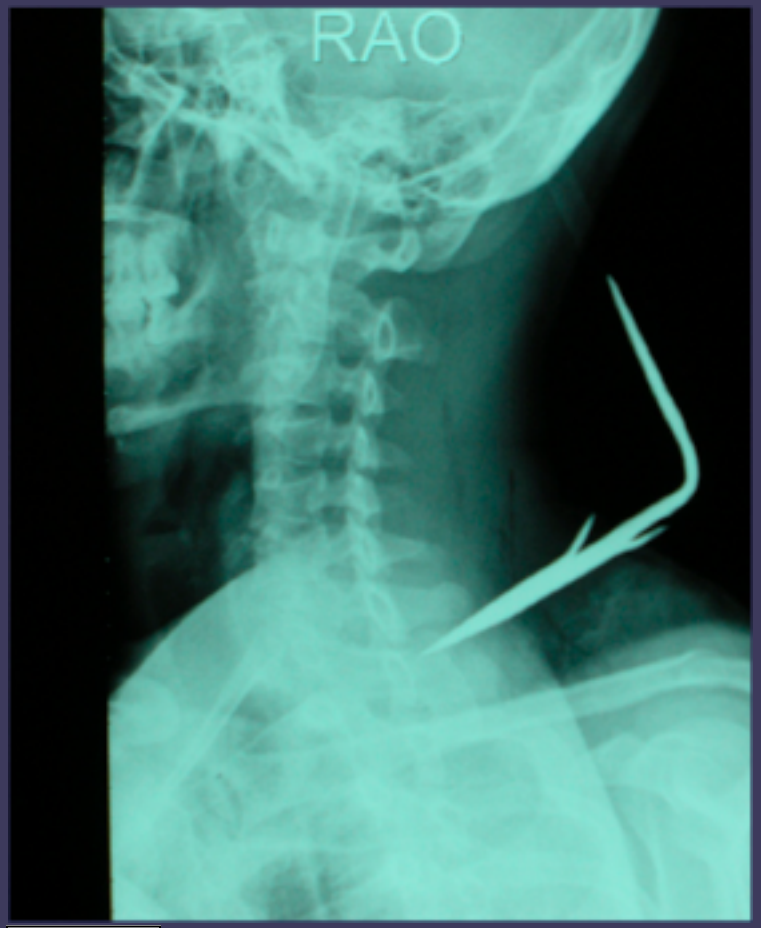
Function of sign-out

PD-INEL Anonymous KATH patient

Teaching Moment



PD-INEL Anonymous KATH patient



PD-INEL Anonymous KATH patient

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!

Additional Source Information

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Slide 28: Anonymous KATH patient

Slide 29: X-rays of an anonymous KATH patient

Slide 37: Photo by Pamela Fry and Alison Haddock