
2018

EM CASES COURSE

PRE-COURSE WORKBOOK



AM: ENT | Stroke | Ankle

PM: Cardiac Arrest/Shock | Alcohol | EM Literature

Instructions for Getting the Most Out of The EM Cases Course Workbook

The EM Cases Course has been designed around effective adult learning theories. The two most important things that you can do to maximize your learning of the course material are:

1. Reviewing the pre-course material in the handbook
2. Participating in discussions during the course

If you have NO TIME TO PREPARE prior to the course - At a minimum please read the handbook for the modules that you chose. (10 minutes each)

If you want to get MORE out of the course – Read the handbook AND read the written summary of the corresponding podcast(s) -Link available in handbook (20 minutes each)

If you want to get MOST out of the day – Read the handbook, read the written summary of the podcast and listen to the relevant podcast(s) (1-2 hours each)

Morning Modules

1. ENT Emergencies **pg 2**
2. Stroke **pg 6**
3. Ankle Injuries **pg 11**



ENT Emergencies

With Leor Sommer & Maria Ivankovic

PODCAST TO LISTEN TO PRIOR TO THE COURSE

Link to: ENT Emergencies Tips & Tricks

There is a huge variation of practice in the ED management of epistaxis, pharyngitis and otitis externa. In this workshop you we learn best practices to improve outcomes in the most efficient way.

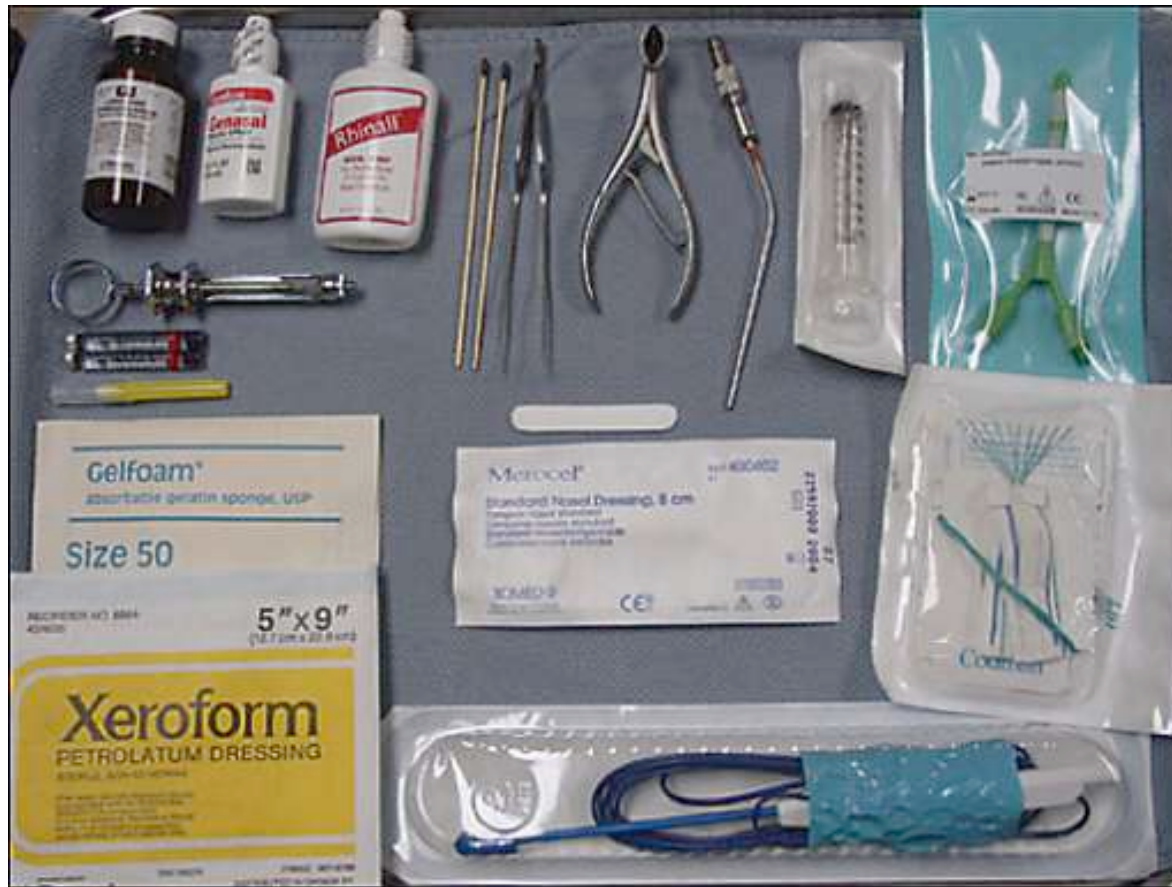
Case 1: The Nose Picker

A 74-year-old male presents to hospital at 3am with a nose bleed. He thinks he may have picked it in his sleep. He tried an ice pack on his forehead and has been pinching his nose, but has been unable to stop the bleeding for the past 2 hours. His wife eventually drives him to the hospital.

At Triage his vital signs are: HR 84, BP 182/103 RR18 O2 Sat 98%. The triage nurse mentions that he is on Apixaban for a history of pulmonary embolism.

Q1: How will you manage this patient in the first 5 minutes?

Q2: What is your stepwise approach to control epistaxis?



Case 2: Another Sore Throat

A 43-year-old female presents to your ED with a 3 day history of a gradually worsening sore throat. She complains of a tactile fever and odynophagia. She's been treated for strep throat 3 times in the past 3 years and thinks she may have it again.

Q1: What is your approach to the diagnosis and treatment of pharyngitis in the age of antimicrobial stewardship?

Q3: How do you identify and treat a patient with a posterior bleed?

Q4: What is the role of anticoagulation reversal in this bleeding patient?

Q5: Should you control the patient's hypertension?

Mclsaac Modification of the Centor Strep Score

Symptom or sign	Points
Temperature >38°C (100.4°F)	1
Absence of cough	1
Tender anterior cervical adenopathy	1
Tonsillar swelling or exudates	1
Age less than 15 years	1
Age at least 45 years	-1

Likelihood:

-1/0 = 1%; 1 = 10%; 2 = 17%; 3 = 35%; 4/5 = 51%

Diagnosing Strep Throat: Are There Reliable Clues? - July 1, 2001 - American Academy of Family Physicians. Available at www.aafp.org/afp/20010701/tips/2.html

Q2: What else is on your differential for the acute sore throat and when would you pursue investigations to diagnose these conditions?

Q3: How would you further investigate?

Q4: What is your strategy if you predict a difficult airway in one of these patients?

Case continued:

The patient returns 3 days later with worsening sore throat, a hot potato voice and difficulty managing her own secretions?

Q5: How do you diagnose and treat a peritonsillar abscess?

Case 3: The hot ear

A 47-year-old female comes to your complaining of right ear pain for the past week. She was seen at a walk-in-clinic and was put on Amoxicillin for a presumed otitis, but this has had little to no effect on her symptoms. She denies any fever, or preceding URI symptoms. She has had a small amount of crust form on the outside of her ear. She has a history of hypertension, high cholesterol and Type 2 diabetes.

Her physical exam reveals a swollen erythematous external otic canal. The tympanic membrane is obscured by discharge. The remainder of her head and neck exam is unremarkable.

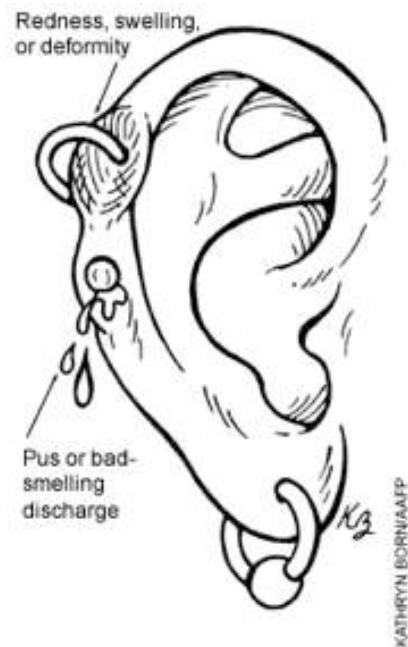
Q1: What is your differential for acute otalgia?

Q2: What exactly is malignant otitis externa, and when should you suspect it?

Q3: What is a reasonable ED strategy to investigate malignant otitis externa and if diagnosed, what is the acute treatment and disposition?

Part 2

The patient's 14-year-old daughter comes in 3 hours later. She recently got a "high ear" piercing and has noticed that her ear is getting increasingly painful and swollen. She was reluctant to come to the ED because she desperately wanted to keep her piercing.



Q4: What is the treatment for this acute auricular infection?

Q5: Which patients need urgent referral?

Q6: What would be an appropriate antimicrobial agent for a child or adult with this condition?

Stroke

With Walter Himmel & Rick Penciner

PODCASTS TO LISTEN TO PRIOR TO THE COURSE

Link to: Emergency Stroke Controversies

Link to: Emergency Management of ICH – The Golden Hour

Link to: Journal Jam 10 Part 2 Endovascular Therapy for Stroke

Link to: Highlights from EMU 2017 (Last section on Vertigo and Acute Vestibular Syndrome)

We can be easily misled to do the wrong thing with devastating sequelae for our patients when it comes to acute neurologic events in the ED. In this module we will discuss the importance of rapid identification and meticulous management of stroke and TIA patients as well as commonly mismanaged and commonly missed strokes.

Case 1: TIA

A normotensive 56 year-old male 20 pack-year smoker presents to your ED after a 10-minute episode of slurred speech. He describes no visual disturbance, no weakness, no paresthesias, no headache, no neck or face pain, no nausea and is feeling well in the ED. His ECG shows atrial fibrillation at 86 bpm.

Q1: Is this patient at high risk for stroke? How useful is the ABCD₂ Score for predicting stroke after TIA? Why should we risk stratify patients with TIA?

The ABCD² Rule

Risk Factor	Points
Age > 60 years	1
Initial BP > 140/90	1
Unilateral Weakness	2
Speech Impairment without Weakness	1
Symptom Duration 10-59 minutes	1
Symptom Duration > 60 minutes	2
History of diabetes	1

Low risk = 0-3 | Moderate risk = 4-5 | High risk ≥ 6

Q2: How would you work-up this patient in the ED? As an outpatient? Inpatient? Which patients require an echo? Admission?

Case 2: Code Stroke?

An 83 year-old woman from home presents to your community ED via EMS at 11pm with speech difficulty and right sided limb weakness. She was well until dinnertime when her husband observed her slump over in her chair at 7pm. Her PMHx includes a TIA 3 months prior for which she was started on ASA, diabetes and hypertension. Her carotid Doppler was considered non-surgical at the time of the TIA. She has no known cardioembolic risk factors. Vital signs are normal except for a BP = 175/100. Finger stick glucose = 7. She appears alert but unable to speak intelligibly, and has an obvious facial droop. She is unable to lift her right arm or leg off the stretcher. ECG shows normal sinus rhythm. It's now 11:15pm.

Q1: Would you call a 'code stroke' and have this patient transported to a stroke centre? Or thrombolyse at your rural hospital? Would this be supported by the evidence on lytics alone? On endovascular therapy?

Q2: The patient is unable to provide consent. How do you explain the options to her husband?

Case 3: About to barf – The Golden Hour

A 75 year-old woman is brought to your ED via ambulance complaining of abrupt onset headache, nausea, right leg weakness and difficulty walking that started 6 hours ago. She has a history of HTN and diabetes and takes hydrochlorothiazide as well as Metformin. She also takes ECASA 325mg daily.

She has no neck pain or stiffness, visual or speech changes. Her GCS is 14, BP 185/100 and Temp is borderline at 38.2. The rest of her vitals are normal. Finger stick glucose = 13. She's lying flat on the stretcher asking for a barf bag.

Q1: What is your differential diagnosis? Based on this differential diagnosis how do you decide to call a 'code stroke' for transport to a stroke centre? Do you do a CT first and then decide or just send? Is there a role for POCUS in helping decide whether or not to call a 'code stroke'?

Q: Would you treat her BP prior to transport or before she leaves the ED for CT?

Q: Would you intubate her prior to leaving your ED?

Q2: You decide not to call a 'code stroke' and get a STAT CT head, which shows a large (35mL by volume) lobar hemorrhage. She returns from CT with a GCS of 9 and she is vomiting. How would you manage the airway at this point?

Q3: The radiologist calls you to tell you that there is intraventricular blood and maybe early signs of transtentorial herniation? How do you manage the assumed elevated ICP in this patient?

Q4: Her platelet count comes back at 90,000. She last took her ECASA 325mg a few hours ago. Would you order a pool of platelets for transfusion?

Q5: What if she was taking Abixiban for stroke prevention for paroxysmal atrial fibrillation? Would you attempt to reverse the effects of Apixiban? How?

Q6: You speak to neurosurgery at your nearby tertiary care centre and decide to transfer the patient. How will you manage the glucose? The temperature? Seizure prophylaxis? BP? How will you ensure that transport is optimized for your patient?

The Big 6 considerations in medical management of ICH in the ED

1. BP
2. Coagulopathy
3. Glucose
4. Temperature
5. Seizure activity
6. ICP

Avoid hypoxemia at all costs!

Avoid hypotension at all costs!

Best article on ICH Management: De oliveira manael AL, Goffi A, Zampieri FG, et al. The critical care management of spontaneous intracranial hemorrhage: a contemporary review. Crit Care. 2016;20:272.

Full PDF:

<https://ccforum.biomedcentral.com/track/pdf/10.1186/s13054-016-1432-0?site=ccforum.biomedcentral.com>

Case 4: About to barf AND the room is spinning!

A 46-year-old emergency physician and podcaster presents to your ED with an abrupt onset of vertigo and vomiting that came on while he was doing his daily yoga routine. On exam his vitals are normal but he looks pale and is holding on to the bed rail with both hands.

Q: What features on history would make you reassured that the diagnosis was benign one vs. a stroke? On physical?

VIDEO LINK for HINTS

exam: <http://emcrit.org/misc/posterior-stroke-video/>

Q: Which patients with vertigo require imaging in the ED?

Q: Which patients with vertigo require referral to a stroke clinic or neurologist? Admission?

Dr. Himmel's detailed handout on vertigo

<https://emergencymedicinecases.com/wp-content/uploads/2017/08/Himmel-Vertigo-Summary-2017.pdf>

Vertigo References

1. Clinical practice guideline: Benign paroxysmal positional vertigo. Bhattacharyya, n et al. Otolaryngology-Head and Neck Surgery 2008; 139: 47-81.
2. Does my dizzy patient have a stroke? A systematic review of bedside diagnosis in acute vestibular syndrome. Tarnutzer, MD et al. CMAJ 2011; 183(9):571-592.
3. HINTS to diagnose stroke in the Acute Vestibular Syndrome: Three-step beside oculomotor examination more sensitive than early MRI diffusion-weighted imaging. Kattah, JC et al. Stroke 2009; 40: 3504-3510.

Ankle Injuries

With Arun Sayal

PODCAST TO LISTEN TO PRIOR TO THE COURSE

Link to: [Commonly Missed Ankle Injuries](#)

(Available January 9th)

Ankle injuries in the ED are much more than fractures and simple ankle sprains. Occult ankle injuries can cause serious morbidity if missed. Knowing the subtleties in diagnosis and management will make a real difference to our patients' future function. If you can remember one thing from this session: eversion/external rotation mechanism of injury is always a red flag for serious injury.

Case 1: Stable or Unstable – That is the question!

A 45-year-old man was running to catch a bus. He 'rolled' his ankle and fell to the ground. He comes in complaining of pain in the lateral ankle. He has difficulty weight bearing in the ED. His lateral malleolus is tender and swollen on exam. And maybe he has a bit of tenderness at the medial ankle as well.

Q1: In general, what do you ask for on history for patients who present to the ED with ankle injury?

Q2: What are some physical examination clues that a patient has more than just an ankle sprain?

Case 1 continued:

His x-ray comes back showing a Weber B ankle fracture.



Q3: How can the Ring Classification of ankle injuries help us decide whether an ankle injury is stable or not?



Q4: What do you look for on X-ray to determine if an ankle injury is stable or not?



Normal talar
tilt



Abnormal talar
tilt

Q5: How would you manage this patient who has a stable appearing Weber B with some medial tenderness?

Case 2: Boot injuries are never simple lateral ankle sprains

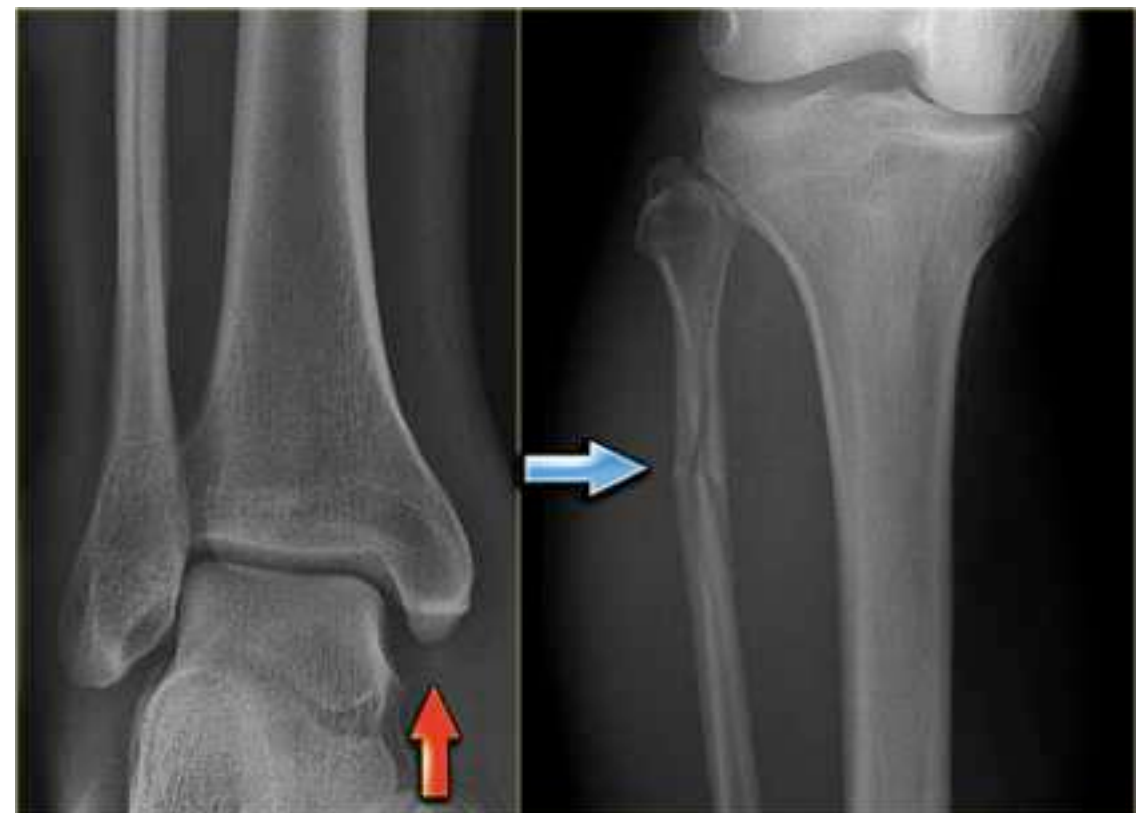
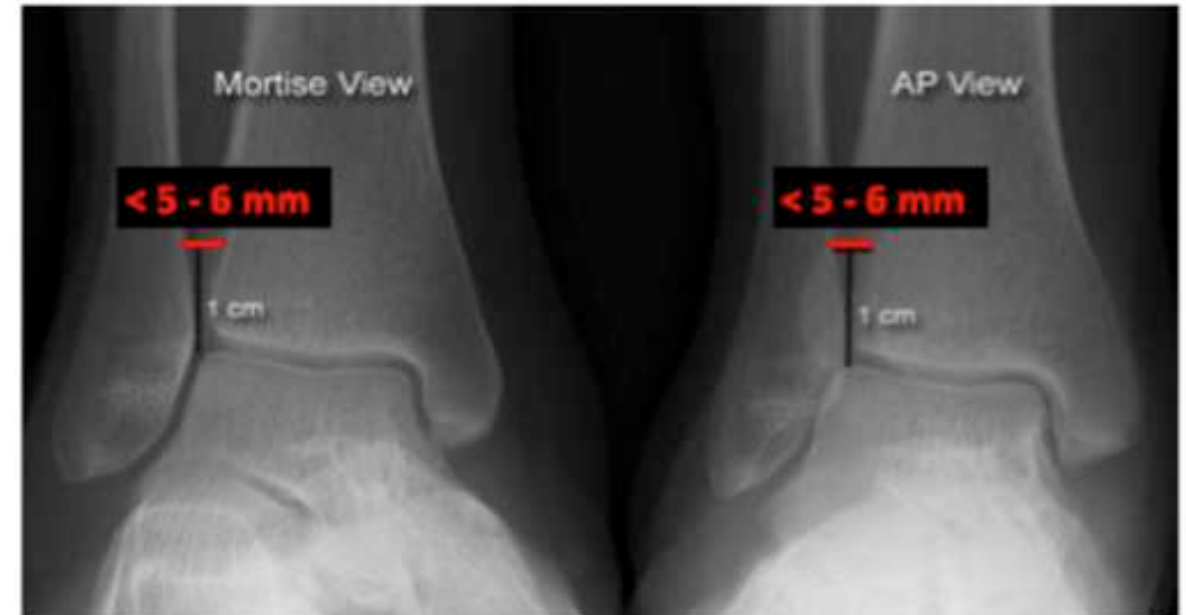
A 30-year-old hockey player gets slammed into the boards and falls to the ice. He comes in unable to weight bear complaining of a painful swollen ankle. Your resident sees the patient, orders an x-ray that appears normal and diagnosis him with a simple lateral ankle sprain and wants to send him home with “RICE” instructions. You go to examine the patient and he is tender in the anterior ankle.

Q1: What injuries are you worried about in this patient, and how would you test for them on physical exam?

Q: What X-ray views would you order and what would you look for on X-ray in particular?

Q: How would you manage this patient in the ED?

Q: What if this patient was 12 years old? What injury would you look for and how would you manage it?



Case 3: Skiing moguls

A 60-year-old emergency physician is skiing moguls at Whistler and as he goes over a mogul he feels a sudden onset of pain in his left ankle. On exam you notice that his left ankle is more dorsiflexed than the right when dangling over the side of the stretcher. You immediately suspect an Achilles tendon rupture, do a Thompson test which is positive and feel a gap where his Achilles should meet the bone on exam. His x-ray is normal except for a bit of fluid around the area of the Achilles.

Q1: How would you manage this patient in the ED and what would you tell him about prognosis?

Q2: What if this patient had antero-lateral ankle pain? What fractures would you look for on X-ray?

Q2: What are the limitations of the Ottawa Ankle Rules?

Important Ankle Sprain Mimics

1. Syndesmosis injuries
2. Achilles tendon rupture
3. Talus fractures (snowboarder's and talar dome)

Instructions for Getting the Most Out of The EM Cases Course Workbook

The EM Cases Course has been designed around effective adult learning theories. The two most important things that you can do to maximize your learning of the course material are:

1. Reviewing the pre-course material in the handbook
2. Participating in discussions during the course

If you have NO TIME TO PREPARE prior to the course - At a minimum please read the handbook for the modules that you chose. (10 minutes each)

If you want to get MORE out of the course – Read the handbook AND read the written summary of the corresponding podcast(s) -Link available in handbook (20 minutes each)

If you want to get MOST out of the day – Read the handbook, read the written summary of the podcast and listen to the relevant podcast(s) (1-2 hours each)

Afternoon Modules

1. Cardiac Arrest **pg 16**
2. Alcohol **pg 20**
3. EM Literature **pg 25**



Cardiac Arrest & Resuscitation POCUS

With Jordan Chenkin & Rob Simard

PODCASTS TO LISTEN TO PRIOR TO THE COURSE

Link to: [ACLS Guidelines 2015 – Cardiac Arrest Controversies Part 1](#)

Link to: [Beyond ACLS Cardiac Arrest](#)

The management and aftercare of the adult cardiac arrest patient remains one of the most adrenaline-inducing and logistically challenging scenarios that Emergency Physicians face. A lot has changed over the years when it comes to managing the adult in cardiac arrest. In this module, Dr. Chenkin and Dr. Simard will guide you deeper into the controversies and subtleties of optimally managing the arresting adult; they will explore the incorporation and utilization of POCUS to improve resuscitative efforts.

Case 1: PEA Arrest

A 48y/o obese woman, with factor V Leiden, 6-weeks post-partum was found down and pulseless by EMS in the parking lot of your hospital. Immediately before collapsing, she complained to her husband, who witnessed the episode, that she had sudden onset chest pain and SOB. The husband immediately phoned 911 and EMS arrived within 5 minutes. You are the ED physician covering Resus as you receive notification of the patient en route, and as she and the EMS team roll into your resuscitation bay, CPR ongoing.

Q1: How will you prepare your team in the 5 minutes you have before the patient arrives?

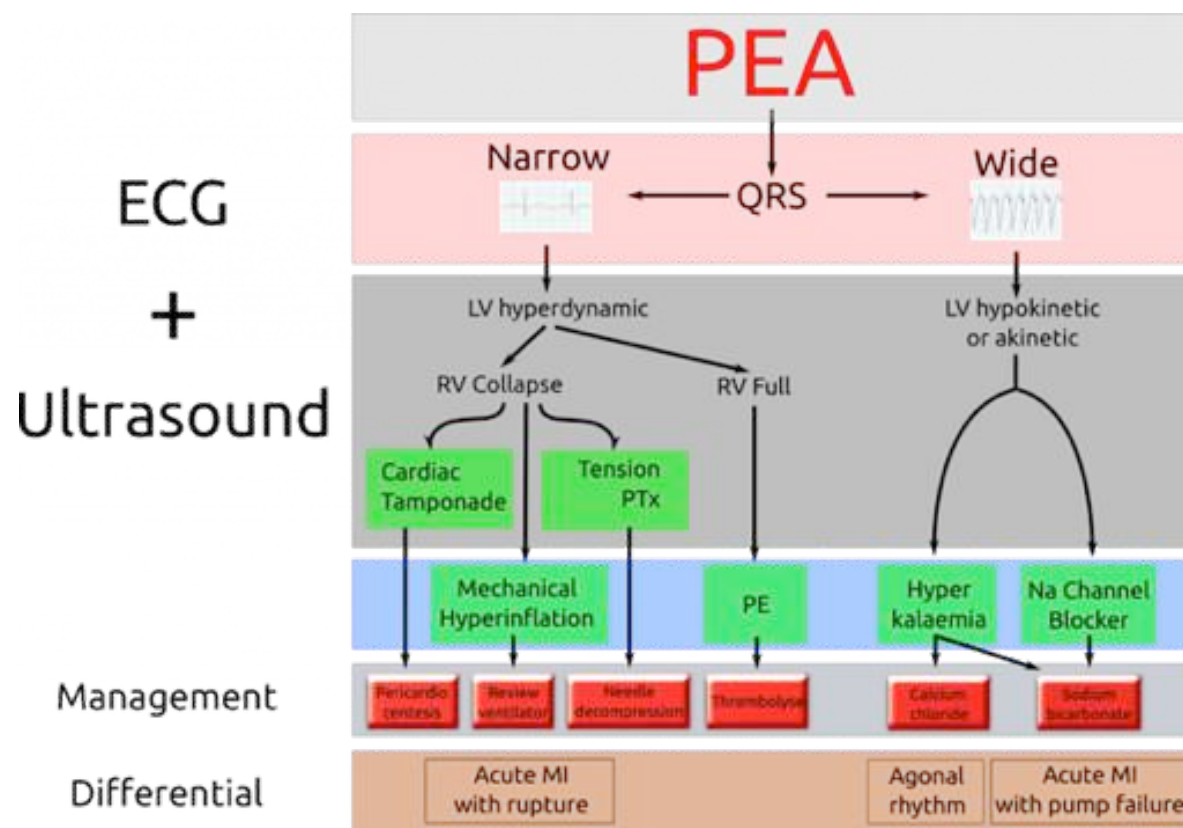
Q2: How will you minimize chest compression interruptions?

Q3: How will you know that you are achieving the best chest compression rate of 100-120/min and the recommended chest compression depth of 5-6cm?

Case continued

Your team is performing, ongoing high-quality CPR. EMS informs you that the patient has never been in a shockable rhythm. At the first rhythm check, you identify PEA.

Q4: How do you approach PEA?



This new way of thinking about PEA combines initial ECG morphology with the clinical scenario to guide the clinician to

the most likely causes, and offer further diagnostic certainty using point of care ultrasound (POCUS). The first key step is to distinguish between narrow complex and wide complex PEA, with POCUS being used to help differentiate the causes of narrow complex PEA in particular.

Case continued

During ongoing resuscitative efforts, your resident managing the airway successfully intubates the patient.

Q5: How will you use end-tidal CO₂ to help you finesse your resuscitation for 1. Chest compression quality 2. Confirmation of tracheal intubation 3. Determination of ROSC?

Q6: How can you use POCUS to confirm tube placement and help “call a code”?

Q7: How can you optimize epinephrine during cardiac arrest?

Case 2: Refractory VT

A 55y/o male experiences chest pain and collapses; quick arrival of EMS and countershock in the field yields no ROSC. EMS and the patient arrive in your ED with CPR in progress. When you see the patient, three 200J defibrillations, three 1mg epi doses, and 300mg amiodarone have already been given. The total arrest time is 10 minutes.

Q1: How would you prepare your team?

Q2: How can you minimize interruptions to chest compressions?

Q3: Would you continue with defibrillation? And if so, at the current set-up/dose?

Q4: Would you continue to administer IV epinephrine q3-5 mins if the patient remained pulseless?

Q5: Are there any other medications that may be beneficial in this circumstance?

Q6: Are there any mechanical supports that can be considered if the above interventions fail?

Case 3: Undifferentiated Shock

A 70 year-old male presents to the emergency department with syncope. He has a history of renal colic. He developed some back pain and shortness of breath while gardening and had a syncopal event. His BP is 68/30, HR 110, Sat 92% and T38.1. He appears unwell.

Q1: What is your differential diagnosis for undifferentiated shock in this patient?

Q2: How can you use POCUS to help determine the cause of shock in this patient?

Q3: If the patient has a hyperdynamic heart and a flat IVC, what would your next steps be?

Q4: If the patient has a dilated IVC, what are some potential causes of shock?

References

Littmann L, Bustin DJ, Haley MW. A simplified and structured teaching tool for the evaluation and management of pulseless electrical activity. *Med Princ Pract*. 2014;23(1):1-6.

Eckstein M, Hatch L, Malleck J, Mcclung C, Henderson SO. End-tidal CO₂ as a predictor of survival in out-of-hospital cardiac arrest. *Prehosp Disaster Med*. 2011;26(3):148-50.

Bardy GH, Ivey TD, Allen MD, Johnson G, Greene HL. Prospective comparison of sequential pulse and single pulse defibrillation with use of two different clinically available systems. *J Am Coll Cardiol*. 1989;14(1):165-71.

Kudenchuk PJ, Brown SP, Daya M, et al. Amiodarone, Lidocaine, or Placebo in Out-of-Hospital Cardiac Arrest. *N Engl J Med*. 2016;374(18):1711-22. Abstract

Lee YH, Lee KJ, Min YH, et al. Refractory ventricular fibrillation treated with esmolol. *Resuscitation*. 2016;107:150-5.

Alcohol Emergencies

With Bjug Borgundvaag & Emily Austin

PODCASTS TO LISTEN TO PRIOR TO THE COURSE

Link to: [Alcohol Withdrawal & Delirium Tremens](#)

Link to: [Toxic Alcohols](#) (Available January 30th)

Alcohol related emergencies are exceedingly common, potentially lethal and often present a challenge in the ED. Alcohol withdrawal and toxic alcohol ingestions are missed more often than we'd like to admit. This module will help you increase your pick up rate of these entities and manage them like a pro.

Case 1: Alcohol Withdrawal and Delirium Tremens

A 52 year-old man known to the ED for chronic alcohol use presents to the ED asking for help detoxing. He usually drinks 750ml of vodka daily. His last drink was yesterday. Physical exam reveals a heart rate of 140bpm, BP 170/85. He is diaphoretic and tremulous.

Q: What more information would you like on history?

Q: What is the timing of alcohol withdrawal and delirium tremens relative to ingestion?

Q: How can you tell the difference between a true alcohol withdrawal tremor and a malingerer?

<https://youtu.be/JgJsRHHMJoo>

Q: How do you assess severity of alcohol withdrawal?

***Sweating**

Hallucinations: "Are you feeling, seeing, or hearing anything that is disturbing to you? Are you seeing or hearing things you know are not there?"

Orientation: "What is the date, month, and year? Where are you? Who am I?"

Tremor: Arms extended. Reach for object. Optional: walk across hall

- 0 - No sweating visible
- 1 - Palms moderately moist
- 2 - Beads of sweat visible on forehead
- 0 - No hallucinations
- 1 - Tactile hallucinations only
- 2 - Visual and/or auditory hallucinations
- 0 - Oriented
- 1 - Disoriented for date by 1 month or more
- 2 - Disoriented to place or person
- 0 - No tremor
- 1 - Minimally visible tremor
- 2 - Mild
- 3 - Moderate
- 4 - Severe

Q: Is a blood alcohol level helpful in the management of alcohol withdrawal patients?

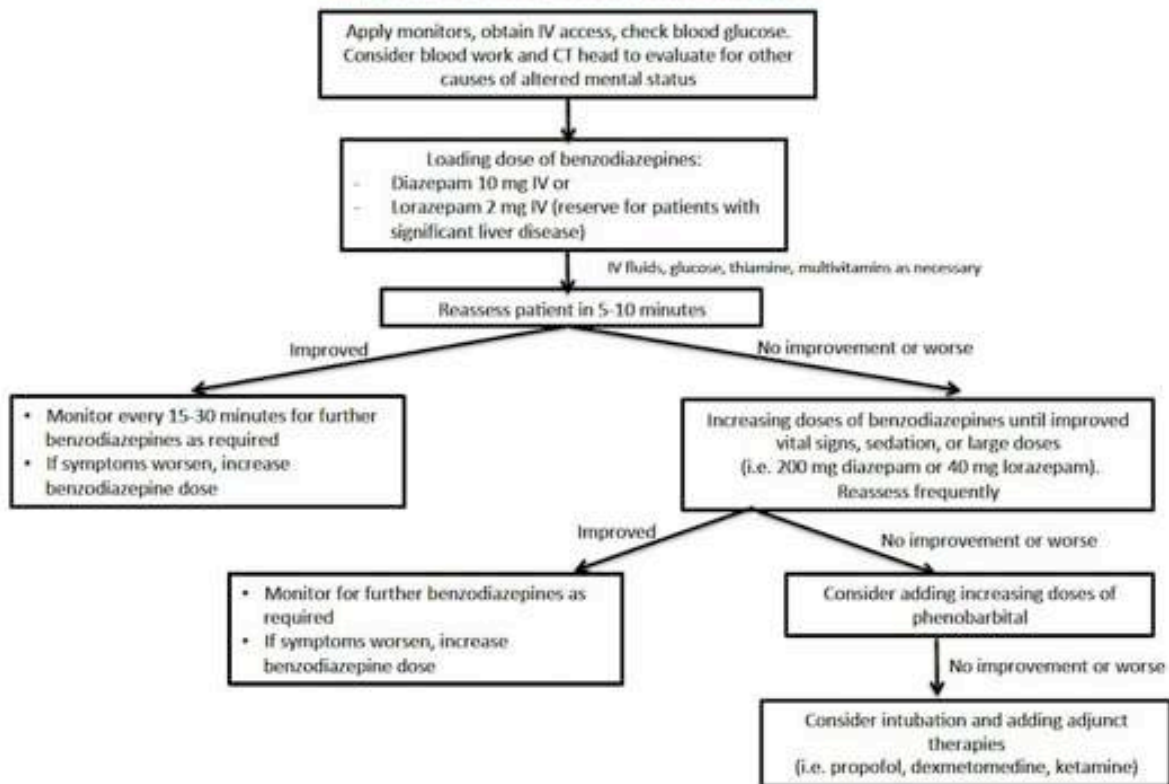
Q: What's the first line agent you will use for the ED management of alcohol withdrawal? What if the patient in in overt liver failure? 2nd line? What if the patient has delirium tremens – how will that change your management?

Q: When are patients safe to be discharged from the ED who present in alcohol withdrawal? Which patients in alcohol withdrawal, if any, are safe to discharge home with an outpatient prescription for benzodiazepines? Are there alternative effective medications?

Q: How will you counsel the patient upon discharge?

1. You need help for your serious alcohol problem
2. You can't do it on your own
3. There are effective treatments available to you
4. With treatment the way you feel, your mood, social relationships and work will be profoundly better

Approach to the Patient with Severe Alcohol Withdrawal



References for Alcohol Withdrawal

Stehman CR, Mycyk MB. A rational approach to the treatment of alcohol withdrawal in the ED. *Am J Emerg Med.* 2013;31(4):734-42.

Schuckit MA. Recognition and management of withdrawal delirium (delirium tremens). *N Engl J Med.* 2014 November 371;22:2109-2113.

Sullivan JT, Sykora K, Schneiderman J, et al. Assessment of alcohol withdrawal: the revised clinical institute withdrawal assessment for alcohol scale (CIWA-Ar). *Br J Addict*

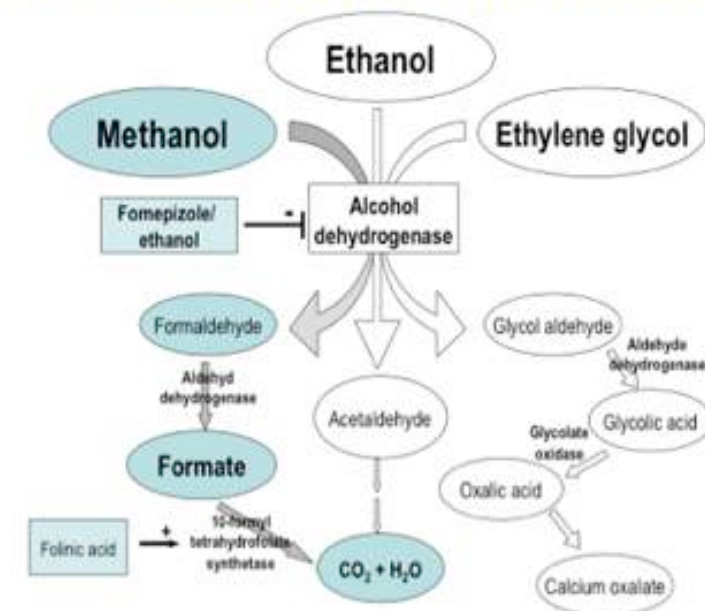
Saitz R, Mayo-Smith MF, Roberts MS, et al. Individualized treatment for alcohol withdrawal. A randomized double-blind controlled trial. *Jama* 1994;272(7):519-23.

Dr. Borgundvaag's [alcohol withdrawal post course handout](#)

Case 2: Anti Freeze

A 30-year-old woman with a history of bipolar disorder presents to your ED with her family. She reportedly ingested a bottle of brandy followed by “Dex-Cool Antifreeze” that was in her parent’s garage. She is acting somewhat belligerent, and is agitated. Her vital signs, including a capillary blood glucose, are stable.

Methanol and metabolism



Adjusted from Hovda KE, PhD thesis 2005.

Oslo universitetssykehus

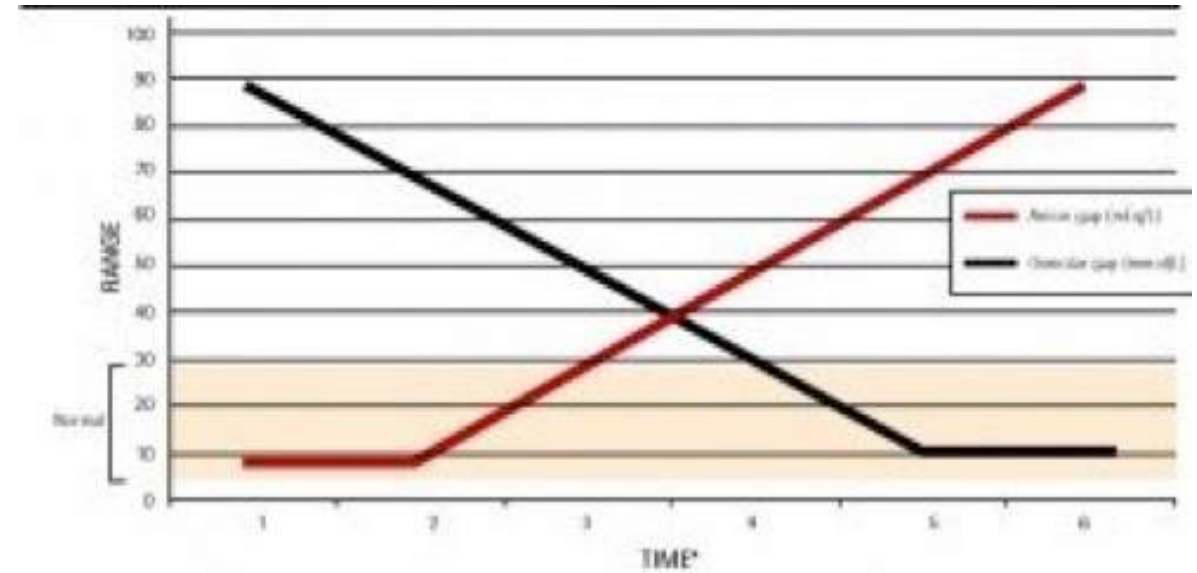


Q: What are the “toxic alcohols”? Sometimes isopropanol is considered a toxic alcohol, but other times it’s not. Why is this? What’s different about isopropanol?

Q: Are there meaningful clinical differences in the presentation of a methanol vs ethylene glycol poisoned patient?

Q: What is the appropriate initial blood work that needs to be sent off to confirm your suspicion? Are there any clues to a toxic ingestion in your patient from routinely available blood work?

Q: The osmolar gap can be tricky but useful in the right setting. What's an osmolar gap? How do you calculate it? What are some limitations to the osmolar gap?



Q: How do you decide when to administer fomepizole to your patient? Is there any role for ethanol as a treatment for a toxic alcohol poisoned patient? How would you go about administering ethanol?

Q: What's the role for dialysis in the toxic alcohol poisoned patient? When is it appropriate to dialyze a patient?

Q: Your patient's serum ethanol level was 42.5 mmol/L. Does this affect how you will manage your patient?

EM Literature

With Joel Yaphe & Justin Morgenstern

PODCAST TO LISTEN TO PRIOR TO THE COURSE

Link to: [EM Literature Review from EMU & Whistler](#)

And for EBM resources: [First10EM](#)

Learning to interpret all the EM literature out there can be daunting. In this workshop Dr. Yaphe and Dr. Morgentstern will drive home some simple EBM concepts while covering some of the most interesting EM literature of the past few years. By the end of this module you'll not only have a good understanding of some of the most important EM literature, but some practice changing pearls to boot.

A 45-year-old woman with no past medical history is referred to the emergency department for assessment and possible I+D of an abscess on her thigh. She has normal vital signs and looks well. There is a 5cm abscess with minimal surrounding erythema.

Target papers:

1. Talan DA, Mower WR, Krishnadasan A. Trimethoprim-Sulfamethoxazole versus Placebo for Uncomplicated Skin Abscess. The New England journal of medicine. 374(9):823-32. 2016. PMID: 26962903 [Full Article](#)
2. Daum RS, Miller LG, Immergluck L. A Placebo-Controlled Trial of Antibiotics for Smaller Skin Abscesses. The New England journal of medicine. 2017; 376(26):2545-2555. PMID: 28657870 [Full Article](#)

Q1: What role do antibiotics play in the management of emergency department patients after incision and drainage of an abscess?

Q2: These two trials both demonstrate an increase rate in clinical cure in patients given antibiotics (NNT 10-14). What other information would you want before routinely using antibiotics in your practice?

Q3: These trials both compared antibiotics to placebo. Is placebo always the most appropriate comparator in clinical trials?

Case 2: The really, really sore throat

A healthy 22-year-old female presents complaining of a sore throat and fever. There is no change in her voice. She has no trouble breathing. She can swallow, “but it really hurts”. She looks well, has full range of motion of her neck, and there are no signs of abscess on exam.

Target papers:

1. Sadeghirad B, Siemieniuk RAC, Brignardello-Petersen R. Corticosteroids for treatment of sore throat: systematic review and meta-analysis of randomised trials. *BMJ (Clinical research ed.)*. 2017; 358:j3887. PMID: 28931508 [Full Article](#)
2. Hayward GN, Hay AD, Moore MV. Effect of Oral Dexamethasone Without Immediate Antibiotics vs Placebo on Acute Sore Throat in Adults: A Randomized Clinical Trial. *JAMA*. 2017; 317(15):1535-1543. PMID: 28418482 [Full Article](#)

Q1: Should steroids be used in the outpatient management of pharyngitis?

Q2: In the same year we have a large RCT published with a negative primary outcome, and a meta-analysis of the same topic that is positive. Which should we believe?

Q3: Are RCTs a reliable source of information about harms or adverse events?

Case 3: Stable V. Tach

A 54-year-old man presents with palpitations. He has a history of coronary artery disease with a PCI a few years ago, and is on ASA and a statin. His vital signs are a blood pressure of 110/65, HR 170, RR 20, and SaO₂ 100%. His ECG shows Ventricular Tachycardia.

Target papers:

1. Ortiz M, Martín A, Arribas F. Randomized comparison of intravenous procainamide vs. intravenous amiodarone for the acute treatment of tolerated wide QRS tachycardia: the PROCAMIO study. *European heart journal*. 2016. PMID: 27354046 [Full Article](#)

Q1: How do you manage patients with stable ventricular tachycardia?

Q2: What sources influence your decision making in medicine?

Q3: When should/can a single paper change decision-making?

Case 4: But was it a PE?

A 72-year-old female presented to the emergency department with 2 syncopal episodes in the last 48 hours. There was no prodrome, but she had some palpitations upon waking up. She feels fine between episodes. She has no signs, symptoms, or risk factors for VTE. When speaking to the hospitalist about admission, the topic of a PE workup is raised.

Target papers:

1. Prandoni P, Lensing AW, Prins MH et al. Prevalence of Pulmonary Embolism among Patients Hospitalized for Syncope. *N Engl J Med.* 375(16):1524-1531. 2016. PMID: 27797317 [Full Article](#)
2. Oqab Z, Ganshorn H, Sheldon R. Prevalence of pulmonary embolism in patients presenting with syncope. A systematic review and meta-analysis. *The American journal of emergency medicine.* 2017. PMID: 28947223

Q1: Which syncopal patients should be worked up for pulmonary embolism?

Q2: The PESIT trial reported a 17% prevalence of PE in syncope patients. What other factors are important to consider when interpreting this number?

Q3: What is over-diagnosis? How does over-diagnosis affect our patients?

Case 5: Would you like 'roids with that?

Patient 1: A 30-year-old presents with sudden onset of wheezing with development of an itchy rash after being stung by a wasp. BP is 85/50 and his heart rate is 120. His SaO₂ is 88%. He is treated with oxygen and epinephrine, among other agents, improves quickly, and within the hour is asymptomatic with normal vital signs on room air.

Patient 2: A 30-year-old presents with an itchy rash after eating some food in a restaurant and also complains of some nausea, vague abdominal discomfort and some tightness in the throat. There has been a history of similar reactions. Vital signs are: BP 110/70, HR 80, RR 18, SaO₂ 100%. The patient has an urticarial rash and the remainder of the physical exam is normal. The patient is treated in the ED and is asymptomatic within the hour.

Target papers:

1. Grunau BE, Wiens MO, Rowe BH. Emergency Department Corticosteroid Use for Allergy or Anaphylaxis Is Not Associated With Decreased Relapses. *Annals of emergency medicine.* 2015; 66(4):381-9. PMID: 25820033 [Abstract](#)
2. Grunau BE, Li J, Yi TW. Incidence of clinically important biphasic reactions in emergency department patients with allergic reactions or anaphylaxis. *Annals of emergency medicine.* 2014; 63(6):736-44.e2. PMID: 24239340 [Abstract](#)

3. Campbell RL, Li JT, Nicklas RA, Sadosty AT. Emergency department diagnosis and treatment of anaphylaxis: a practice parameter. *Annals of allergy, asthma & immunology*. 2014; 113(6):599-608. PMID: 25466802 [Full Article](#)

Q1: What medications would you suggest on discharge for each of these patients?

Q2: What role should “Practice Parameters” play in directing clinical practice?

Case 6: But Tylenol never works for me

A 35-year-old woman presents after inverting her ankle playing volleyball. She has a lot of pain over the lateral malleolus and an x-ray is ordered. She asks for something for the pain.

Target papers:

1. Chang AK, Bijur PE, Esses D, Barnaby DP, Baer J. Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial. *JAMA*. 2017; 318(17):1661-1667. PMID: 29114833 [Full Article](#)

Q1: What factors would you take into consideration in your decisions around pain management?

Q2: What outcomes are most important to you when considering emergency medicine pain research?

Case 7: Blood Pressure Control in ICH

You are plagued with a recurring dream (or maybe nightmare): A 73-year-old presents with a dense hemiparesis, and has had a quick CT scan that shows an intracranial hemorrhage. His BP is 160/100 and at least one other member of the health care team is very concerned that you need to lower his blood pressure. You have this same dream April 20th 2012, 2014, 2016, and 2017.

Target papers:

1. INTERACT trial: Anderson CS, Huang Y, Wang JG. Intensive blood pressure reduction in acute cerebral haemorrhage trial (INTERACT): a randomised pilot trial. *The Lancet. Neurology.* 2008; 7(5):391-9. 18396107
2. INTERACT-2 trial: Anderson CS, Heeley E, Huang Y. Rapid blood pressure lowering in patients with acute intracerebral hemorrhage. *The New England journal of medicine.* 2013; 368(25):2355-65. PMID: 23713578 [Full Article](#)
3. ATACH-2 trial: Qureshi AI, Palesch YY, Barsan WG. Intensive Blood-Pressure Lowering in Patients with Acute Cerebral Hemorrhage. *The New England journal of medicine.* 2016. PMID: 27276234 [Full Article](#)
4. Hemphill JC, Greenberg SM, Anderson CS. Guidelines for the Management of Spontaneous Intracerebral Hemorrhage: A Guideline for Healthcare Professionals From

the American Heart Association/American Stroke Association. *Stroke.* 2015; 46(7):2032-60. PMID: 26022637
[Download PDF here](#)

Consider how you would answer the following questions in the many different years you have had this same dream:

Q1: What should you do about the blood pressure?

Q2: How would you justify your decision?

Q3: How are guidelines used and what are their limitations?

Case 8: Platelet Use in ICH

You are still managing the same 73-year-old patient you met in case 1. Reviewing the patient's medication list, you notice they he takes both aspirin and clopidogrel.

Target papers:

1. Baharoglu MI, Cordonnier C, Al-Shahi Salman R. Platelet transfusion versus standard care after acute stroke due to spontaneous cerebral haemorrhage associated with antiplatelet therapy (PATCH): a randomised, open-label, phase 3 trial. *Lancet*. 387(10038):2605-13. 2016. PMID 27178479 [Abstract](#)

Q1: How does the presence of antiplatelet agents alter your management of a patient with ICH? (Has your management changed in the last 2 years?)

Q2: Should our practice have changed in the last 2 years?