The Top 10 EM Articles from 2023

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Disclosure

- My presentation will at times involve comments or discussion concerning unapproved or off label uses of a medical device or pharmaceuticals. When any unapproved or off-label uses of products is discussed, disclosure must be made.
- Sadly, I have no financial relationships or interest with industry or manufacturers represented in the presentation.

Objectives

- Review current literature to outline important advances in emergency medicine.
  - Look at the most important “game changers” (IMHO) from 2023.
- Analyzing the implications and limitations of the studies on the practice of clinical emergency medicine.
  - Take away points for your practice.


ACCORDING TO OUR RESEARCH...
AND BY "RESEARCH", I MEAN GOOGLE

The Articles

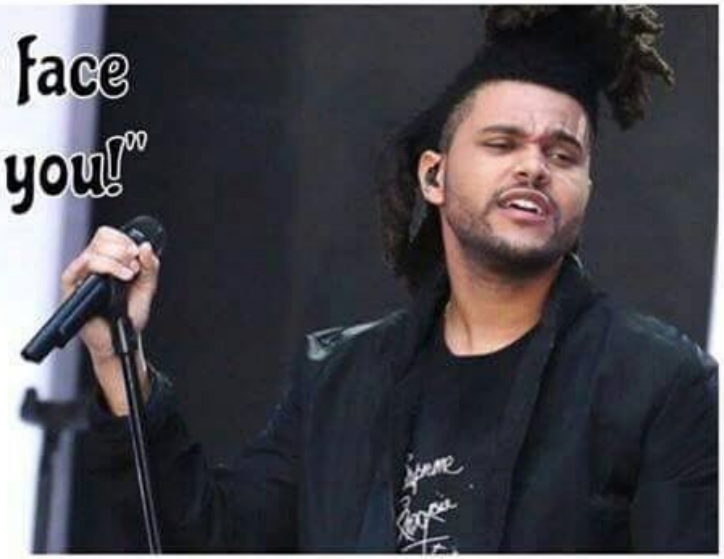
- Large trials that are impactful.
  - Good takeaways for the practicing EMP.
- Represent my opinion as to those that are important.
- From reputable journals.
- Really hard to choose only 10!

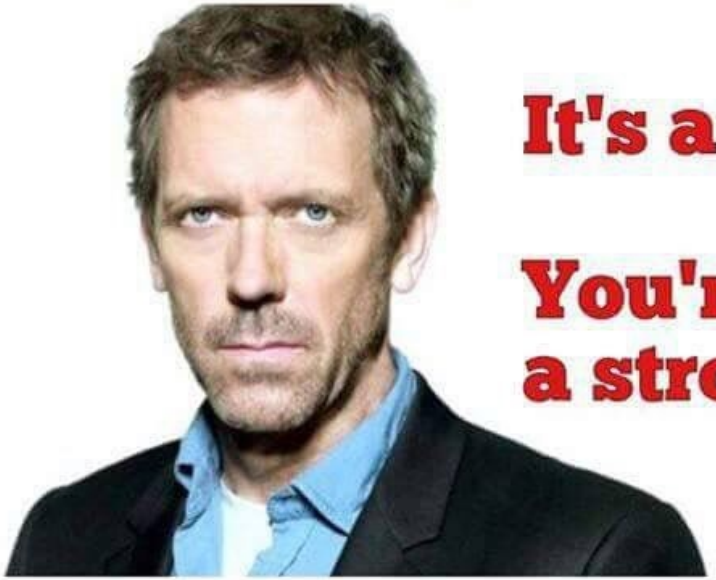
I will improve myself in 2024

Clinical Policy: Critical Issues in the Management of Adult Patients Presenting to the Emergency Department with Acute Ischemic Stroke.

Lo BM, et al. *Annals of Emergency Medicine*.
August 2023; 82(2): e17-e63.

"I can't feel my face when I'm with you!"





It's a stroke.

You're having a stroke.

Stroke Management in the ED

- 800,000 strokes/year in the US.
  - Remains one of the leading causes of death and disability.
- Endovascular thrombectomy (EVT) has been approved for the treatment of strokes from large vessel occlusions (LVO).
  - 30% of all ischemic strokes have an LVO.
- Diagnosis of central vs peripheral dizziness remains challenging.

Stroke Management in the ED

- Systematic review based upon PRISMA-based principals.
  - Each identified study was independently graded by 2 methodologists.
  - Based upon the strength of evidence they gave level based guidelines (A, B, C).

Stroke Management in the ED

Table 1
ACEP literature classification scheme

Design/Class[a]	Therapy[b]	Diagnosis[c]	Prognosis[d]
1	Randomized controlled trial or meta-analyses of randomized trials	Prospective cohort using a criterion standard	Population prospective cohort
2	Nonrandomized trial	Retrospective observational	Retrospective cohort case control
3	Case series Case report Other (eg, consensus, review)	Case series Case report Other (eg, consensus, review)	Case series Case report Other (eg, consensus review)

[a] Some designs (eg, surveys) will not fit this scheme and should be assessed individually.
[b] Objective is to measure therapeutic efficacy comparing two or more interventions.
[c] Objective is to determine the sensitivity and specificity of diagnostic tests.
[d] Objective is to predict outcome, including mortality and morbidity.

Data from Jagoda AS, Bazarian JJ, Bruns JJ, et al. Clinical policy: neuroimaging and decision making in adult mild traumatic brain injury in the acute setting. Ann Emerg Med 2008;52(6):714–48.

Stroke Management in the ED

Strength of recommendations regarding each critical question were made by subcommittee members using results from strength of evidence grading, expert opinion, and consensus among subcommittee members according to the following guidelines:

- LEVEL A RECOMMENDATIONS.
  Generally accepted principles for patient care that reflect a high degree of clinical certainty (eg, based on evidence from one or more Class of Evidence I or multiple Class of Evidence II studies).

- LEVEL B RECOMMENDATIONS.
  Recommendations for patient care that may identify a particular strategy or range of strategies that reflect moderate clinical certainty (eg, based on evidence from one or more Class of Evidence II studies or strong consensus of Class of Evidence III studies).

- LEVEL C RECOMMENDATIONS.
  Recommendations for patient care that are based on evidence from Class of Evidence III studies or, in the absence of any adequate published literature, based on expert consensus. In instances where consensus recommendations were made, "consensus" is placed in parentheses at the end of the recommendation.

Stroke Management in the ED

- In adults with suspected acute ischemic stroke, can a decision instrument be used to identify patients who have an LVO on CTA or MRI.
  - Multiple OOH decision aids exist to delineate high vs. low risk of LVO strokes (Level C recommendation).
    - LAMS and RACE have the largest quantity and highest quality of research to support adoption.
    - The actual impact of these aids remains to be evaluated.

Stroke Management in the ED

Los Angeles Motor Scale (LAMS)

Score ≥ 4
Sensitivity 81%
Specificity 89%

Facial Droop	
Absent	**0**
Present	**1**
Arm Drift	
Absent	**0**
Drifts Down	**1**
Falls Rapidly	**2**
Grip Strength	
Normal	**0**
Weak	**1**
No Grip	**2**
Total	**/5**

Stroke Management in the ED

The Rapid Arterial oCclusion Evaluation (RACE) Scale

Facial palsy	0-2
Arm motor function	0-2
Leg motor function	0-2
Head and gaze deviation	0-2
Aphasia (if right hemiparesis)	0-2
Agnosia (if left hemiparesis)	0-2
Score total	0-9

Pérez de la Ossa N, et al. *Stroke*. 2014;45:87-91.

RACE

Facial Palsy	2 points
Arm Motor Function	2 points
Leg Motor Function	2 points
Gaze Palsy	1 point
Aphasia/ Agnosia	2 points

When ≥5, RACE has:
- 0.85 sensitivity
- 0.68 specificity

for identifying LVO

Stroke Management in the ED

- In adults with suspected acute ischemic stroke, does the addition of perfusion imaging to a CTA or MRA identify patients more likely to benefit from thrombectomy?
  - CTA or MRA perfusion should be obtained in patients with an LVO stroke, especially if the last known normal time was between 6-24 hours before arrival (Level C recommendation).
  - No RCTs, but advanced imaging is associated is associated with better EVT outcomes.

Stroke Management in the ED

- In adults with suspected acute ischemic stroke qualifying for IV thrombolysis, is tenecteplase safe and effective as compared to alteplase?
  - Tenecteplase or alteplase are equally effective and safe for use in patients requiring thrombolysis (Level B recommendation).
    - Tenecteplase may reduce administration errors compared to alteplase.
    - Improved 3-month outcomes in patients with confirmed LVO stroke.

Stroke Management in the ED

- In adults with a possible acute stroke and acute vertigo, is there a history and physical exam findings (i.e. HINTS exam) that can risk stratify them?
  - In addition to the H/P, use of specific findings such as an ABCD2 score, ocular motor examination and the HINTS exam can be used to further risk stratify patients (Level C recommendation).
  - Before using HINTS, providers should be educated on how to perform the technique.

Stroke Management in the ED

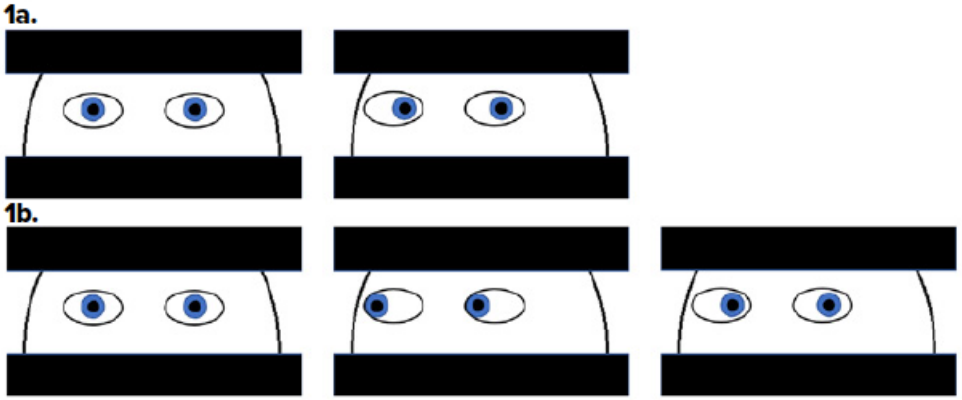


FIGURE 1. A head impulse test where the eyes remain fixed on target (1a), compared to one where the eyes lose fixation, with a corrective saccade (1b).

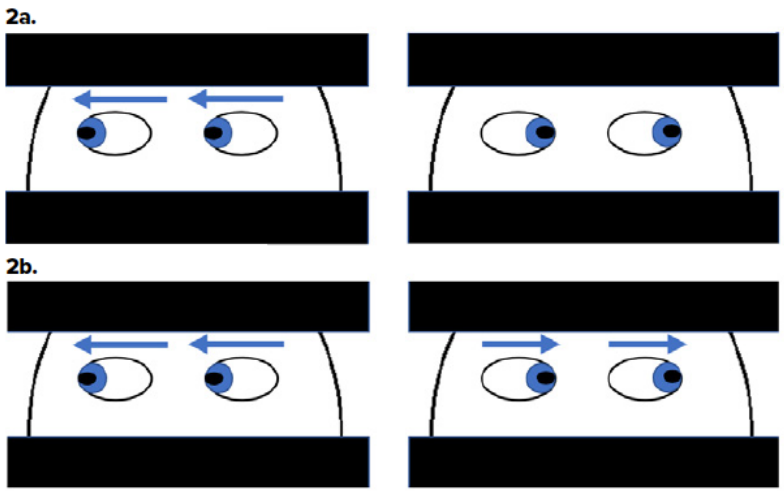


FIGURE 2. Nystagmus that occurs only when looking to the right (2a), compared to nystagmus that changes direction on lateral gaze, a.k.a. bidirectional nystagmus (2b).

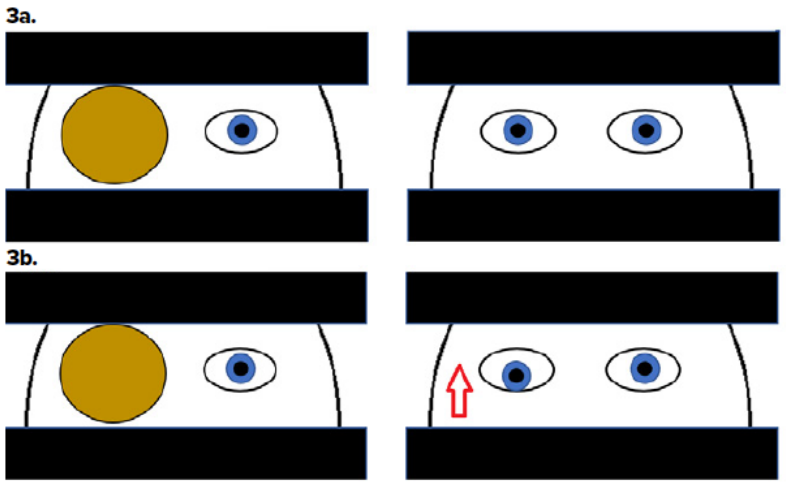


FIGURE 3. A test of skew with no verticla skew (3a) compared to one with a vertical skew that begins to correct when the eye is uncovered (3b).

Diagnostic Errors in the ED

- Recommendations
  - As stated in the prior slides


DARK HUMOR
HEALTHCARE
NOT EVERYONE GETS IT.
imgflip.com

Adverse events from nitrate administration during right ventricular myocardial infarction: a systematic review and meta-analysis.

Wilkinson-Stokes M, et al.

Emerg Med J. 2023 Feb;40(2):108-113.

Nitrates for RV Infarcts

- Evidence to avoid nitrates in right ventricular (RV) infarcts came from one small 1989 study of 40 patients (unknown dose).
- 40-55% of STEMIs involve the inferior wall.
  - Up to 33-40% of these can also have significant involvement of the right ventricle.
  - RV infarcts can have depressed contractility of the RV and are preload dependent.
- Everyone (including the AHA) recommends no nitrates in RV infarcts due to possible hypotension.

Nitrates for RV Infarcts

- Six databases were searched and 2 investigators independently reviewed 1113 studies.
  - Five studies selected.
  - Population included patients diagnosed with an acute MI and a subset had an RV infarct.
  - Assessed for quality and bias.
- Meta analysis performed using hemodynamics, GCS, syncope, cardiac arrest and death as outcomes.
- RR and 95% CIs calculated.

Nitrates for RV Infarcts

- 400 µg SL NTG was more likely to result in AEs when given to inferior MIs with RV MIs as compared to inferior MIs without RV MIs.
  - However, this did not reach statistical significance.
  - 57.9% vs. 37.0% (RR 1.56; p=0.16).
- Hypotension was the main AE noted:
  - Transient in all studies; serum ½ life of NTG is 1-4 minutes.
  - Most studies used a conservative definition of hypotension (SBP <100 mm).
- Risk during other infarcts 9 per 100.
- Risk during RV infarcts 12 per 100.

Nitrates for RV Infarcts

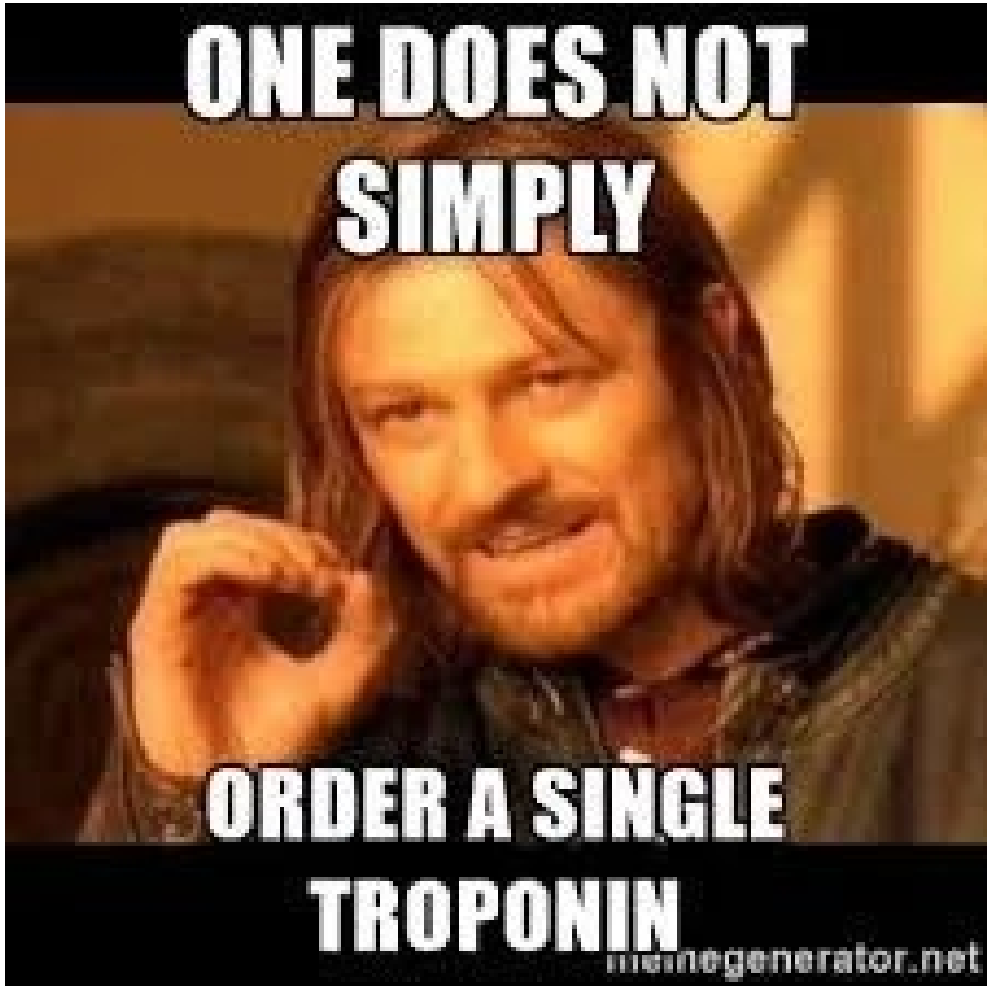
- Recommendations:
  - This study indicates that there may be no significant difference in the rate of hypotension between different infarct regions, caused by nitrates.
    - When occurring, the effects are transient.
    - No deaths or cardiac arrests.
  - Risks of giving nitrates to patients with inferior infarctions, when not performing right ventricular leads, may be safer than we thought.
  - More work to be done.

Patients heart rate: 87....62.....46.....

Me:

Performance of the 0/2-Hour High-Sensitivity Cardiac Troponin Diagnostic Protocol in a Multisite United States Cohort.

Supples MW, et al. *Acad Emerg Med*. 2023 Nov 4. doi: 10.1111/acem.14827. Epub ahead of print. PMID: 37925594.


ONE DOES NOT
SIMPLY
ORDER A SINGLE
TROPONIN
memegenerator.net

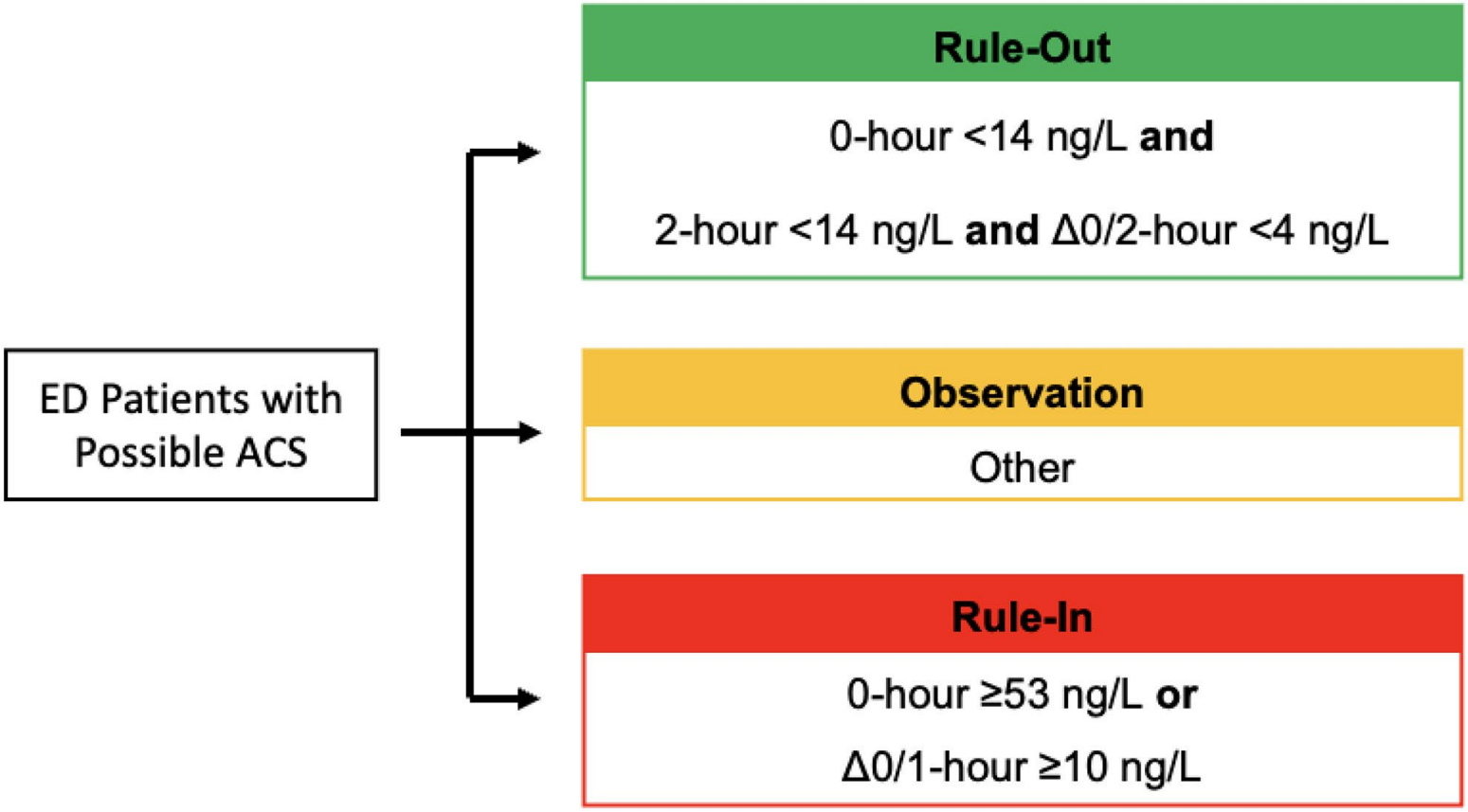
0/2 High Sensitive Troponin

- 6.5 million annual ED visits in the US for chest pain.
- Accelerated diagnostic protocols (ADPs) are used to risk stratify patients for ACS and guide disposition.
- The hs-cTnT 0/2-h algorithm is an ADP that relies solely on hs-TnT measure, first tested in Europe and Australia.
- Primary objective was to evaluate the diagnostic performance of the hs-TnT 0/2-h algorithm within a US cohort.
  - Used the Optimize Chest Pain Risk Stratification (STOP-CP) cohort.

0/2 High Sensitive Troponin

- Pre-planned secondary analysis of the STOP-CP cohort:
  - Enrolled >21 y.o. with serial troponins for possible ACS at 8 US EDs 2017-2018.
  - Excluded STEMIs, SBP <90 mm Hg, non-cardiac illness requiring admission, life expectancy <90 days and inability to provide consent.
  - Gen 5 STAT assay (Roche Diagnostics); physicians blinded to the results.
  - Stratified into rule out, observation, and rule-in zones.
  - Primary outcome was 30-day CDMI (cardiac death or MI).

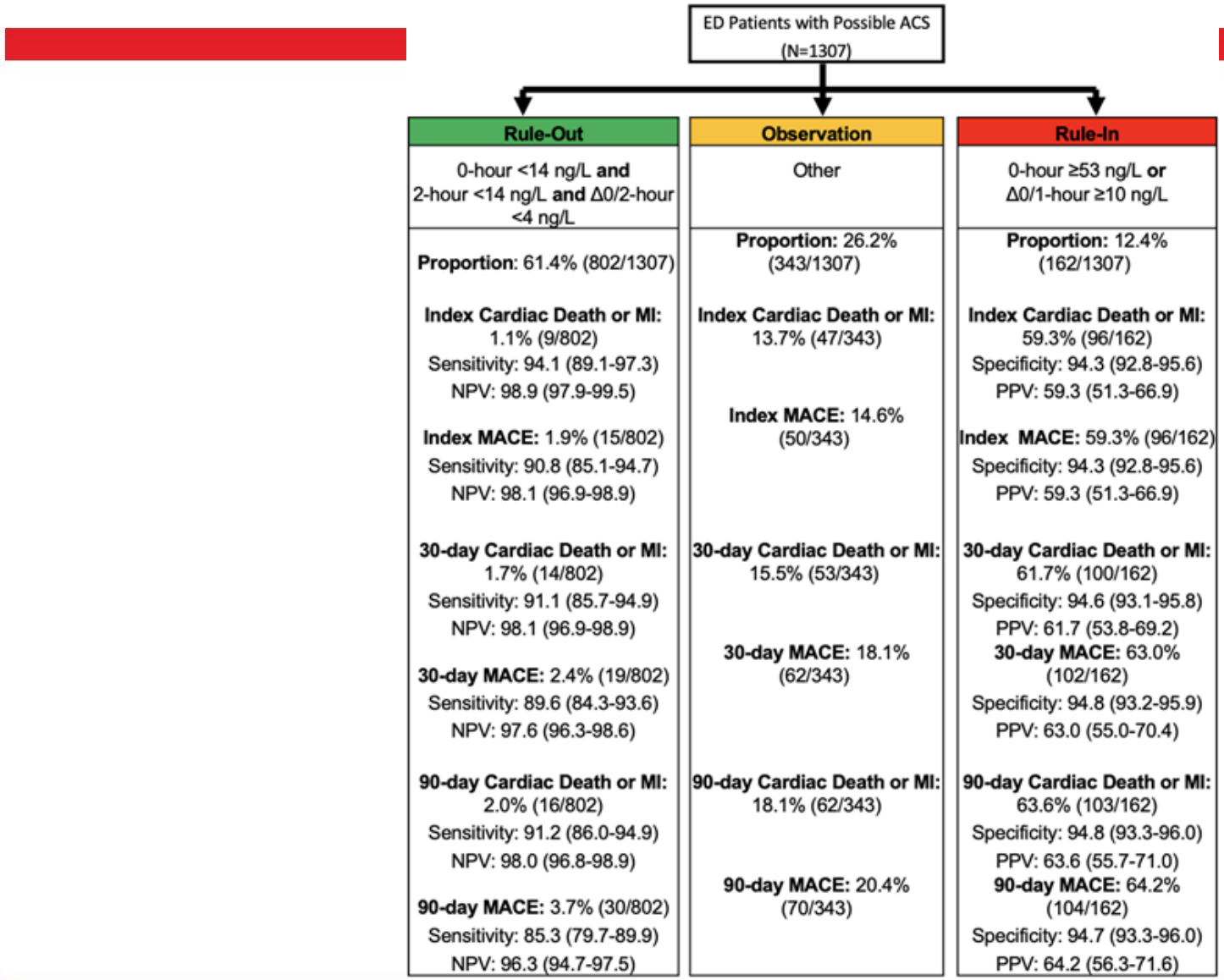
0/2 High Sensitive Troponin



0/2 High Sensitive Troponin

- 1307 patients accrued, 53.6% male, mean age 57.5 years.
  - CDMI occurred in 12.9% of patients at 30 days.
  - 0/2-h algorithm ruled out 61.4% of patients:
    - 1.9% had a CDMI at 30 days.
    - Sensitivity of 91.1% (95% CI 85.7-94.9%; NPV of 98.1%).
  - 0/2-h algorithm ruled in out 12.4% of patients:
    - 61.7% had a CDMI at 30 days.
    - Specificity was 94.6% (95% CI 93.1-95.8%; PPV was 61.7%).
  - Combined the HEAR score, the algorithm ruled out 30.7% of patients:
    - Sensitivity of 98.2% (95% CI 94.9-99.6%; NPV 99.3%).

0/2 High Sensitive Troponin

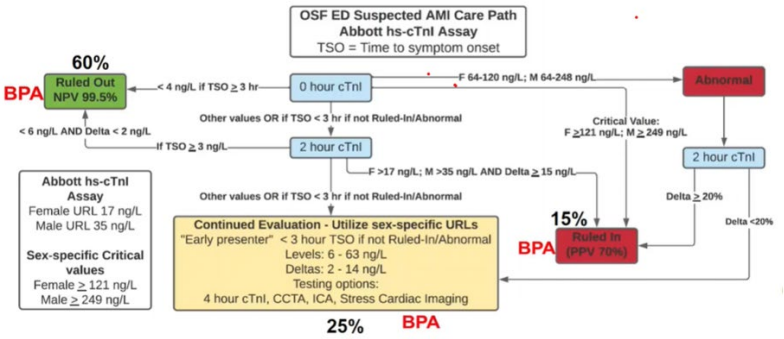


0/2 High Sensitive Troponin

OSF/Abbott hs-cTnI 0/2 Protocol

		CPCP	MI[3] [1]	99th Percentile
Rule-Out	N (%) Sensitivity (95% CI) NPV (95% CI)	4475 (49%) 97.6% (95.7%, 98.8%) 99.8% (99.5%, 99.9%)	6661 (73%) 95.9% (93.6%, 97.5%) 99.7% (99.5%, 99.8%)	7810 (86%) 72.3% (67.9%, 76.2%) 98.3% (98.0%, 98.6%)
Intermediate	N (%) Number of Myocardial Infarctions (%)	4015 (44%) 137 (3.4%)	1908 (21%) 155 (8.1%)	N/A N/A
Rule-In	N (%) Specificity (95% CI) PPV (95% CI)	638 (7%) 96.3% (95.9%, 96.7%) 49.7% (45.7%, 53.6%)	559 (6%) 96.9% (96.5%, 97.3%) 52.1% (47.8%, 56.3%)	1318 (14%) 88.7% (88.0%, 89.3%) 25.5% (23.2%, 28.0%)

[1] Than, M.P., et al. (2019). Machine Learning to Predict the Likelihood of Acute Myocardial Infarction. *Circulation, 140*(11), 899–909.



0/2 High Sensitive Troponin

- Recommendations
  - The hs-cTnT 0/2-h algorithm did not achieve a NPV of 99% for 30-day CDMI or MACE.
  - However, when combined with the HEAR score, a 99% NPV was obtained.
  - Hs-cTnT and hs-cTnI assays and algorithms continue to evolve and are now moving towards 0/1-h protocols.
  - Important to risk stratify and use clinical judgement.


EMERGENCY ROOMS
This is why we have them
VERY DEMOTIVATIONAL .com

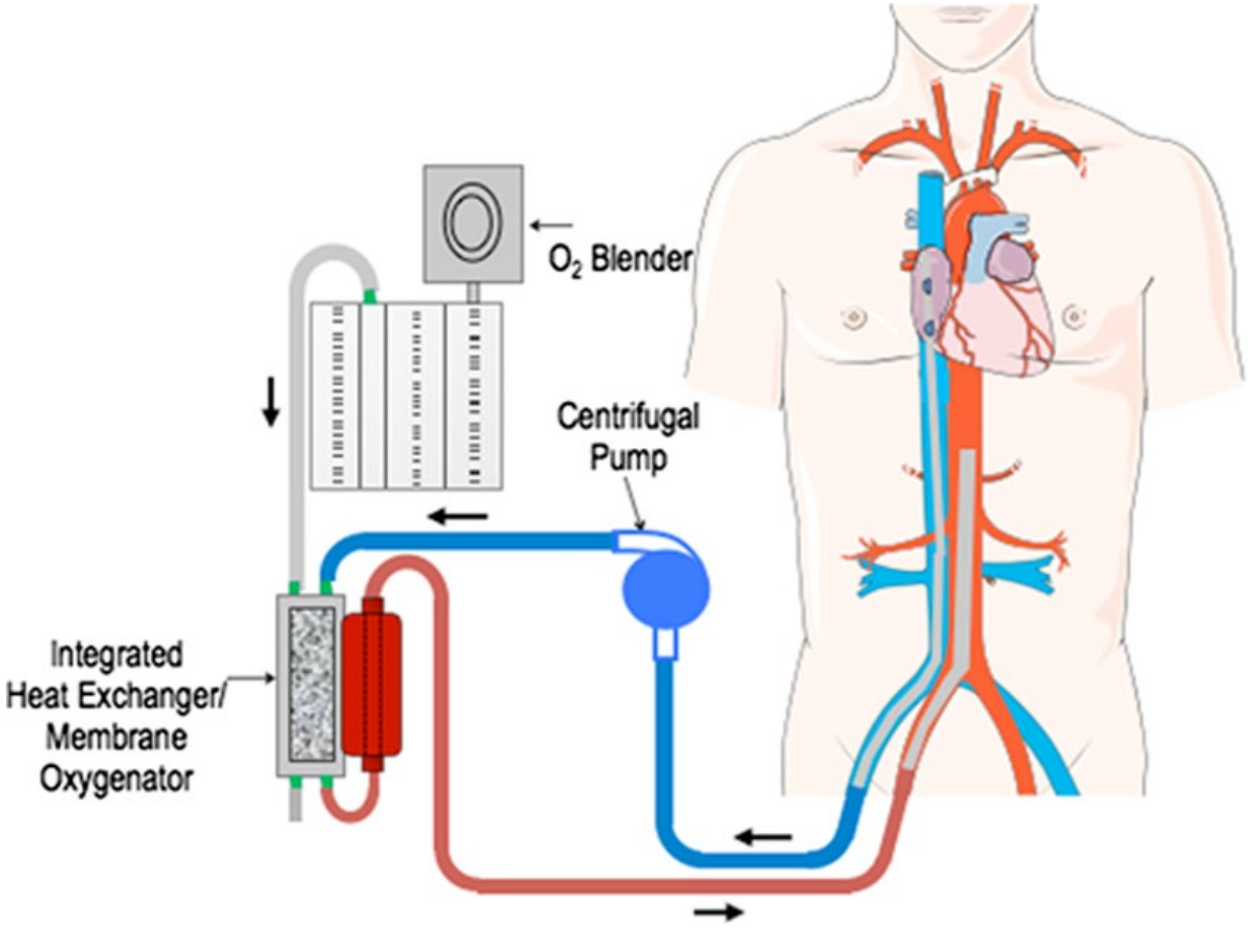
Early Extracorporeal CPR for Refractory Out-of- Hospital Cardiac Arrest

Suverein MM, et al. *New Engl J Med.* January 26, 2023; 388:299-309.

E-CPR for OOHCA

- Refractory out-of-hospital cardiac arrest (OOHCA) survival declines rapidly as time progresses.
- The addition of extracorporeal membrane oxygenation (ECMO) to standard ACLS can be used during cardiac arrest to limit hypoxic brain injury and treat the underlying cause of the cardiac arrest (e-CPR).
- However, most evidence of the effect of e-CPR on survival and neurologic outcomes has been based upon observational studies.
- Two recent RCT studies have had mixed results.

VA ECMO


O_2 Blender
Centrifugal Pump
Integrated Heat Exchanger/ Membrane Oxygenator

E-CPR

E-CPR for OOHCA

- INCEPTION Trial was a multicenter, randomized controlled trial conducted in the Netherlands:
  - The trial assessed e-CPR as compared to standard-CPR for refractory OOHCA from an initial ventricular dysrhythmia.
  - Enrolled at 10 centers with 12 different EMS agencies.
  - 18-70 years old, witnessed cardiac arrest victims with an initial ventricular dysrhythmia, unresponsive to 15 minutes of ACLS.
  - Intraarrest transport was initiated after 15 minutes and patient randomized enroute.
  - ECMO was initiated in a 1:1 ratio, with intention to treat analysis.
  - The primary outcome was 30-day survival with a favorable neurologic outcome (CPC score 1-2).

E-CPR for OOHCA

- 160 patients were randomized to receive treatment:
  - 26 did not meet inclusion criteria and were removed from analysis.
  - 70 patients in the e-CPR group.
  - 64 patients in the standard-CPR group.
  - Demographic factors were well balanced between the groups.
- Some treatment changes:
  - 18 patients in the e-CPR group didn't not receive cannulation (13 ROSC prior, 3 logistic failures, 2 cease efforts).
  - 3 standard-CPR group patients crossed over to e-CPR.
- 46/50 (88%) of e-CPR patients had successful cannulation and circulation success (66% of total e-CPR group).

E-CPR for OOHCA

- Primary outcome data was available for 97% of standard-CPR patients and 100% of e-CPR patients.
- 30-day survival with a CPC score of 1-2 occurred in 14/70 (20%) in the e-CPR group and 10/62 (16%) in the standard-CPR group (OR 1.4; 95% CI 0.5-3.5; p=0.52).
  - E-CPR had a higher proportion of patients surviving to the ICU.
  - Both groups had a similar percentage that survived to hospital discharge.
  - Survival with a favorable neurological outcome at 6 months was similar between groups.

E-CPR for OOHCA

- Recommendations:
  - In patients with refractory OOHCA caused by a ventricular dysrhythmia, e-CPR as compared to standard- CPR had similar effects on survival with favorable neurologic outcome at 30 days.

Some days, I just want to reply to emails with ‘ok’ and this photo

Early Restrictive or Liberal Fluid Management for Sepsis Induced Hypotension

Shapiro NI, on behalf of The National Heart, Lung, and Blood Institute Prevention and Early Treatment of Acute Lung Injury Clinical Trails Network. *New Engl J Med. January* 21, 2023; 388:499-510.

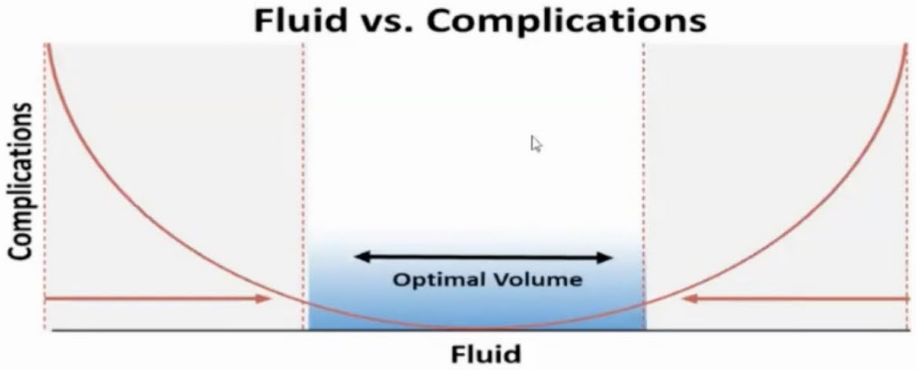
Fluid Amount for Septic Shock

- IV fluid resuscitation is a cornerstone in the initial treatment of septic shock and sepsis induced hypotension.
  - Goal is to replace depleted or functionally reduced intravascular volume that results from vasodilation.
- However, intravenous fluid resuscitation can create dilutional coagulopathy, fluid overload and pulmonary edema.

Fluid Balance

Too Little Fluid [Hypovolemia]

Tissue Hypoperfusion
Tissue Hypoxia
Organ Failure
Insufficient Perfusion



Too Much Fluid [Hypervolemia]

Tissue Edema
Organ Failure
Increased ICU/ Ventilator Days
Increased Mortality

Fluid Amount for Septic Shock

- Administration of large volumes of IV fluids early in sepsis resuscitation (liberal fluid strategy) is a common practice.
  - Based on low quality evidence.
- Other approaches involve a lower volumes of IV fluid and earlier initiation of vasopressor agents (restrictive fluid strategy).
- Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis (CLOVERS) trial:
  - Hypothesized that a restrictive fluid strategy used during the first 24-hours of resuscitation for sepsis-induced hypotension would lead to a lower 90-day mortality, as compared to a liberal fluid strategy.

Fluid Amount for Septic Shock

- Unblinded, randomized superiority trial taking place in 60 US hospitals.
  - Adults (>18) with suspected and confirmed infection and sepsis induced hypotension (SBP <100 mm Hg after admin of 1000 mL of IV fluid).
  - Randomly assigned to 1:1 to either restrictive or liberal.
  - The restrictive protocol used vasopressors as the primary treatment for hypotension with "rescue fluids".
  - The liberal protocol used 2000 mL IV fluid boluses followed by further fluid boluses based upon triggers, with "rescue vasopressors".
- Primary outcome: all-cause mortality before discharge <90 days.

Fluid Amount for Septic Shock

- Halted for futility after enrollment of the first 1563 patients.
  - 782 assigned to the restrictive fluid group and 781 to the liberal fluid group.
  - Patients in each group had similar baseline characteristics and treatments before randomization.
- Death before discharge home by day 90 occurred in 109 (14%) of the restrictive fluid group and 116 (14.9%) in the liberal fluid group (difference 0.9%; 95% CI –4.4 to 2.6; p=0.61).

Fluid Amount for Septic Shock

- Statistically significant treatment effects were not observed in any prespecified subgroups.
- However, in 73 patients with end-stage renal disease, mortality was 47.5% in the liberal fluid group and 27.3% in the restrictive fluid group (difference 20.2%; 95% CI -41.9 to 1.5%).

Fluid Amount for Septic Shock

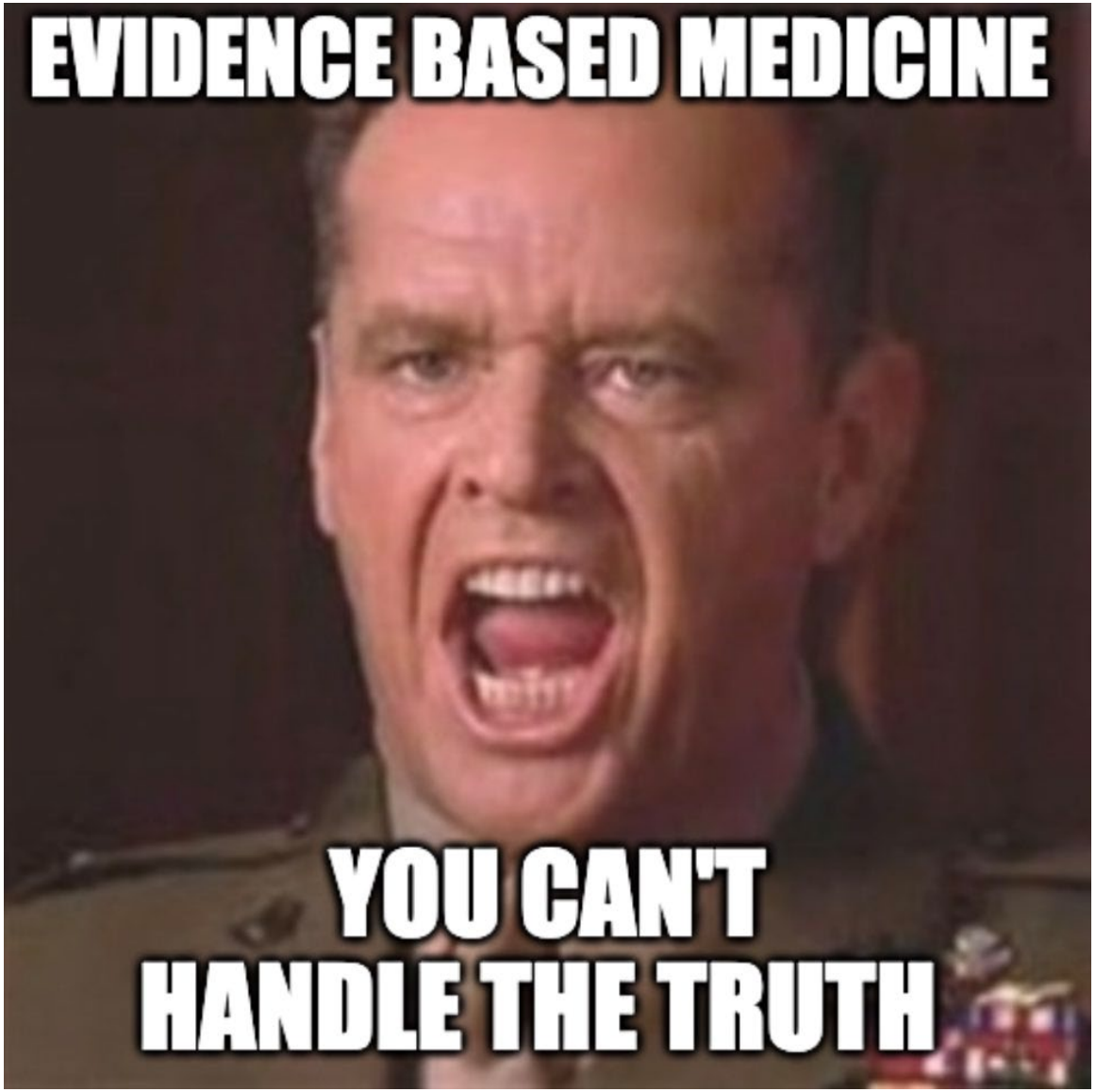
- A letter was sent to OHRP by Public Citizen describing the study as "deeply flawed and exposes subjects to unacceptable dangers".
  - Story carried by the NYT.
  - Authors suggested neither arm of the trial reflected a management strategy used clinically in usual care.
    - Liberal fluid arm allowed for up to 5L of fluid before vasopressors.
    - Restrictive arm limited fluid in the initial phase of care.
- As a result, multiple amendments to the protocol were implemented.
  - Required assessment of the appropriateness of ongoing fluid resuscitation following 1st L of IVF in the liberal fluid group.

Fluid Amount for Septic Shock

- Revisions to the protocol allowed for more personalized approach to fluid adminsitration in patients randomized to the liberal fluid group.
  - Post-ammendment, 13.5% of the liberal fluid group had their fluids restricted.
- The ammended clinical trial protocol allowed for patients to be excluded if the treating physician was unwilling to keep the patient in their assigned group
  - Allowed for selection bias by the treating physician.

Fluid Amount in Septic Shock

- Recommendations:
  - In this trial, no differences in 90-day all-cause mortality was seen in patients with liberal or restrictive fluid administration.
    - Mean fluid: 3300 vs 5400 mL.
  - Perhaps a better conclusion is that after the intial bolus, a range of individualized treatment decisions can be made. No single single protocol is a clear universal strategy.


EVIDENCE BASED MEDICINE
YOU CAN'T
HANDLE THE TRUTH

Effectiveness of Nail Bed Repair in Children With or Without Replacing the Fingernail: NINJA Multicentre Randomized Controlled Trial

Jain A, et al. *BJS*. 2023; 110:432-438.

NIJNJA Nailbed Repair

- Nailbed injuries are the most common hand injury in children, typically caused by a finger crushed in a closing door.
- In the UK - 96% of hand surgeons remove the nail, suture the nailbed laceration, and replace the nail.
- Presumed advantages of nail replacement include protection of the repair, reduction of infection, less pain at dressing changes, and splinting of the nailfold to reduce synechiae.
- No randomized trials published on nailbed repair type.
- The Nailbed Injury Analysis (NINJA) trial was performed to assess the clinical and cost effectiveness of nail bed repair with nail replacement/substitution compared with repair without nail replacement.

NIJNJA Nailbed Repair

- Multicenter pragmatic two-arm, parallel-group superiority RCT.
- Included participants were <16 y.o., a nailbed injury occurring within 48 hours of presentation, ability to consent and come to follow-up. Distal phalanx fractures and infections excluded.
- For one group – the nail bed was debrided and sutured, the fingernail was replaced and secured using a figure-of-eight suture using Vicryl suture. A substitute nail could be used.
- For another group – the same procedure except the nail was discarded and a low adherent dressing was placed.
- Primary outcomes were infection at 7-10 days and cosmetic appearance of the fingernail at 4-12 months.

NIJNJA Nailbed Repair

- 451 patients were recruited to the study:
  - 224 patients were randomized to the nail-discarded arm (ND) and 227 to the nail-replaced arm (NR).
  - 440 patients available for primary outcome analysis (218 ND and 222 NR).
- 5 early post-op surgical infections noted in the ND group and 5 noted in the NR group (p=0.218).
- There was no significant difference in cosmetic appearance between groups (p=0.118).
- No differences in post-op pain.
- Replacing the nail was associated with a longer operative time and cost.

VF Defib Strategies

- Recommendations:
  - After nailbed repair, discarding the fingernail was associated with similar rates of infection and cosmesis ratings as replacing/substituting the fingernail.
  - Discarding the nail saved costs.
  - Should we even be repairing nailbeds (or which ones)?


NIGHT SHIFT WORKERS
ON VACATION BE LIKE
OMBRA
ULTRA SPORT
50

Effect Outdoor Cold Air Versus Room Temperature Exposure for Croup Symptoms: A Randomized Controlled Trial.

Siebert JN, et al. *Pediatrics*.
September, 2023; 152(3):e2023061365.

Outdoor Cold Air for Croup

- Croup, or acute laryngotracheobronchitis, is the most common cause of upper airway obstruction in children between 6 months – 3 years.
- Most cases are mild, but are a common source of emergency department visits – representing 3-5% of peds ED visits annually.
- Although used for decades, cool mist therapy is no longer recommended as no evidence supports its use. A single-dose oral dexamethasone is the mainstay of treatment.
- This study compares the fficacy of a 30-minute exposure to cold, atmospheric, outdoor air vs. Ambient indoor room air during seasonal peaks of croup in children.

Outdoor Cold Air for Croup

- Prospective, open-label, single center, randomized controlled trial conducted at a teritiary PED.
- Took place during cold days and night sbetween late fall and spring when the outdoor temperature was <10 C.
- All patients received WCS and dose of oral dexamethadsone.
- Randomly assigned to either wait outside the PED for 30 mintutes (intervention group) or wait inside the PED for 30 minutes (control group).
- Primary outcome was the proportion of patients showing clinical improvement (defined as a decrease in their WCS ≥2 from baseline) at 30 minutes.
- Follow-up interviews were conducted at 7 days.

Outdoor Cold Air for Croup

- 118 children were randomly assigned to either outdoor air (n=59) or indoor room temperature air (n=59).
  - Mean age was 32 months, 31% were female.
  - A total of 108/118 children completed the follow-up at 7 days.
  - Baseline chartacterisitics were comparable bewtween the two groups.
- 29/59 of children (49.2%) in the outdoor group vs. 14/59 (23.7%) of children in the indoor group showed a decrease of their WCS ≥2 points from baseline (risk difference 25.4%; 95% CI 7.0-43.9; p=0.007).
- Patients with moderate croup benefited the most from the intervention (46.1%; 95% CI 20.6-71.5; p<0.001).
- By day 7, the number of children with no persistent symptoms was slightly higher in the intervention group.

Outdoor Cold Air for Croup

- Recommendations:
  - A 30-minute exposure to cold air (<10 C) as an adjunct to oral dexamethasone, is beneficial to reduce symptoms in children with croup, especially when moderate.


WHEN YOU MANAGE TO BUILD
A RAPPORT WITH THE PATIENT WHO
HATES EVERYONE...
boredpanda.com

Overnight Stay in the Emergency Department and Mortality in Older Patients.

Roussel M, et al. *JAMA Intern Med*. 2023; 183(12):1378-1385.

ED Boarder Mortality

- In the US 90% of EDs were regularly reporting overcrowding before the COVID 19 pandemic.
- Retrospective studies have suggested that ED crowding and increased ED length of stay may be associated with increased mortality at 24 hours and at 30 days.
- Older patients represent 25% of the ED population and have a higher rate of adverse events and mortality.
- The morbidity and mortlaity of older patients boarding in the ED is unknown.
- The purpose of this study was to compare differences between morbidity and mortality of older patients boarding in the ED vs. those not boarding in the ED.

ED Boarder Mortality

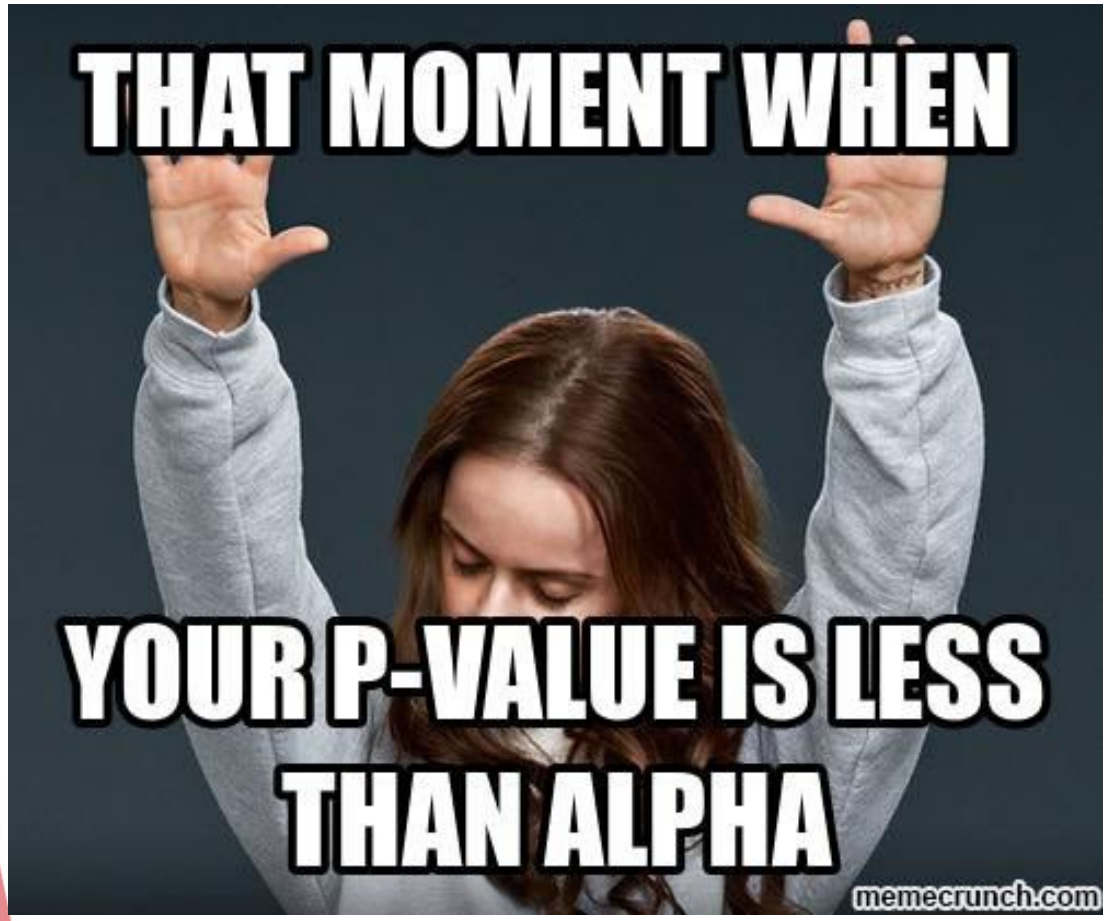
- Multcenter retrospective cohort cohort trial using 97 EDs across France.
- Patients were included if they were ≥75 years old and were admitted after an ED visit.
- Patients were dichotomized into those that boarded in the ED before midnight to 0800. Patients were followed to hospital discharge or 30 days.
- This cohort was compared to patients admitted from the ED to a bed before midnight.
- The priomary outcome was all-cause in-hospital mortality. Secondary outcomes included inpatient length of stay and in-hospital adverse events.

ED Boarder Mortality

- 1598 patients (median age 86 years, 55% female) were included.
  - 707 (44%) had ED boarding.
  - 891 (56%) without ED boarding.
  - No difference in groups baseline characteristics.
- There was a higher in-hospital mortality rate among the ED-boarder group (15.7%) compared with the non-ED boarder group (11.1%) (aRR 1.39 (95% CI 1.07-1.81)).
- Even higher mortality for those with limited autonomy (aRR 1.81 (95% CI 1.24-2.61)).
- There was a higher in-hospital adverse event rate among the ED-boarder group for nosocomial infection 15.8 vs 10.8%; (aRR 1.42 (95% CI 1.09-1.85)) and falls 6.4 vs. 3.0%; (aRR 2.23 (95% CI 1.38-3.59)) compared with the non-ED boarder group.

ED Boarder Mortality

- Recommendations-
  - Older patients boarding in the ED for admission had higher in-patient mortality and morbidity, particularly those with limited autonomy.
  - Study was French – should be replicated in the US.


THAT MOMENT WHEN
YOUR P-VALUE IS LESS THAN ALPHA
memecrunch.com

Video versus Direct Laryngoscopy for Tracheal Intubation of Critically Ill Adults.

Prekker ME, et al. *New Engl J Med.* August 3, 2023;389:418-29.

Video vs. Direct Laryngoscopy

- Failure to intubate on the first attempt occurs in 20-30% of tracheal intubations in the ED or ICU.
- 80% of the intubations in the ED/ICU are performed using a direct laryngoscope, video laryngoscope usage is increasing.
- Several single-center trials and one moderate-sized multicenter trial have been conducted to compare outcomes between video and direct laryngoscopy, with mixed outcomes.
- This study hypothesized the use of video laryngoscope will result in a higher incidence of first attempt intubation success.

Video vs. Direct Laryngoscopy

- Pragmatic, multicenter, unblinded, randomized, parallel-group trial for direct vs. video laryngoscopy for tracheal intubation in critically ill adults.
  - Conducted at 17 sites, including 7 EDs and 10 ICUs in 11 US medical centers.
- Critical ill adults (>18 y.o.) requiring intubation were eligible.
- No specific video laryngoscope or direct blade were required but had to intubate using the assigned technique.
- Trained observers collected the data including the Cormack-Lehane grade of the laryngeal view.
- The primary outcome was successful intubation on the first attempt Secondary outcomes were the occurrence of severe complications between induction and 2 minutes post-intubation.

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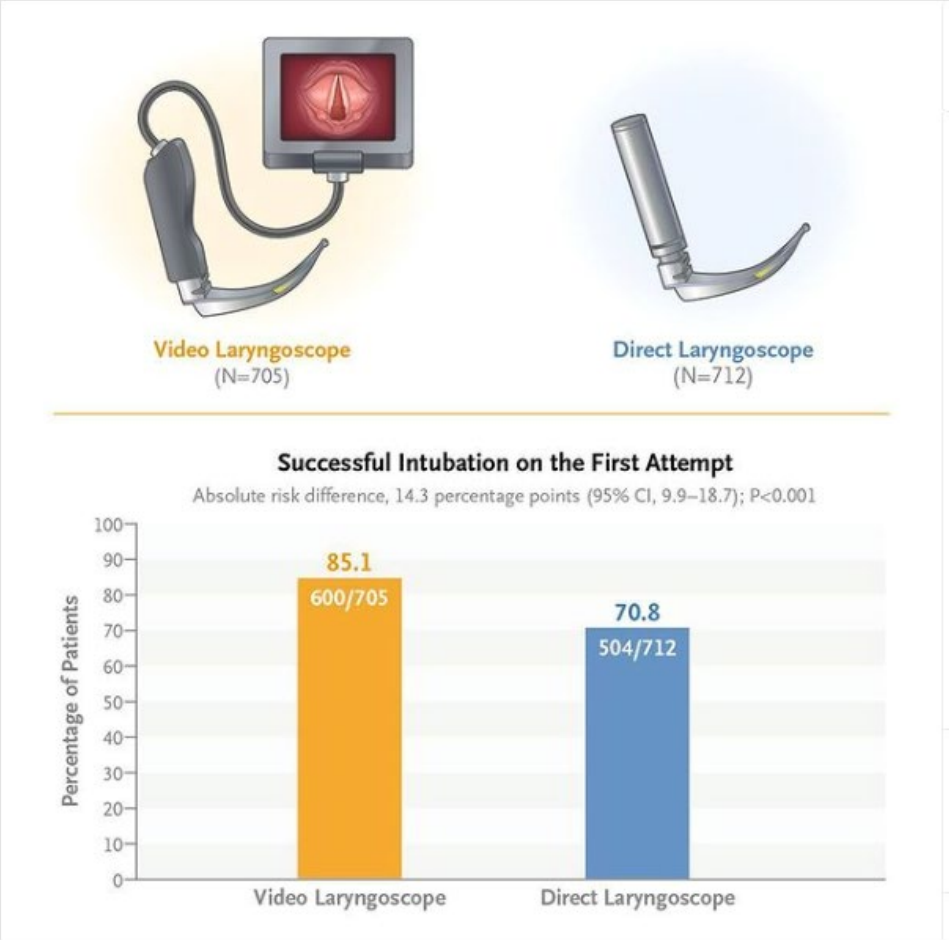

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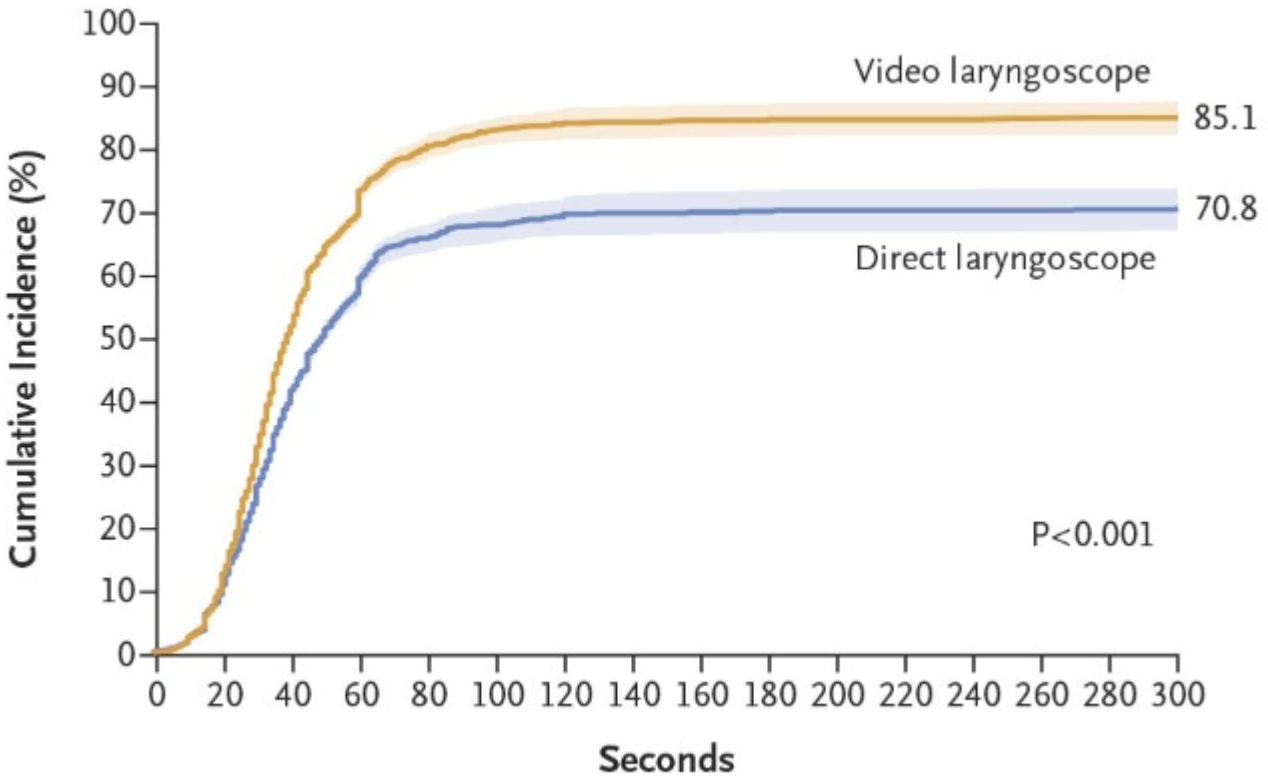

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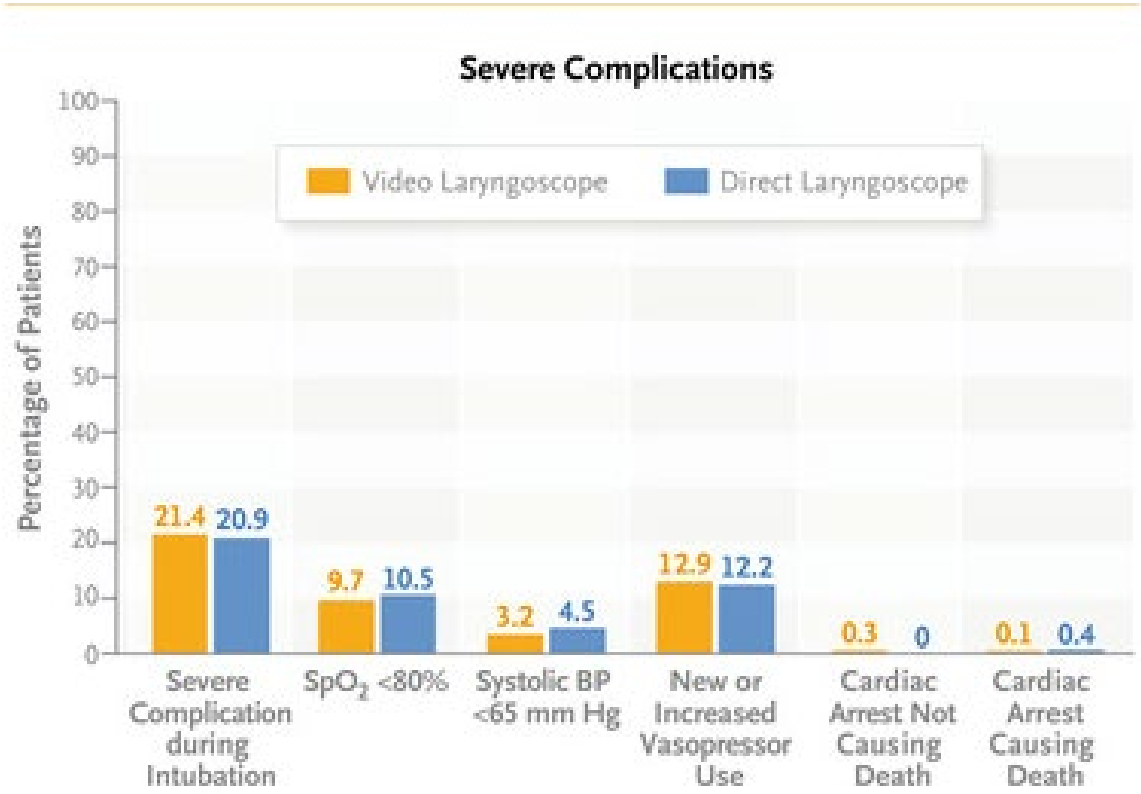
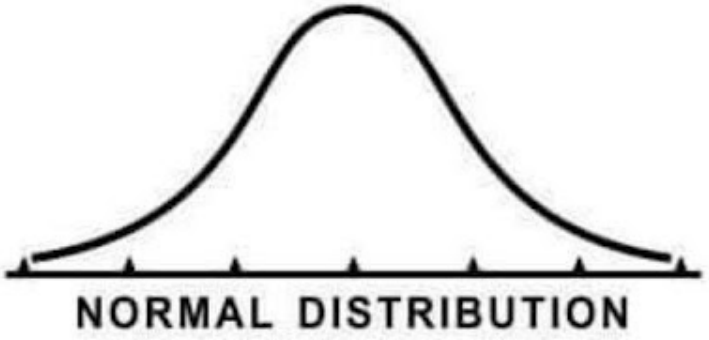


Video vs. Direct Laryngoscopy

- Recommendations:
  - Among critically ill adults undergoing tracheal intubation in an emergency department or ICU, the use of a video laryngoscope resulted in a higher incidence of successful intubation on the first attempt than the use of a direct laryngoscope.


NORMAL DISTRIBUTION


PARANORMAL DISTRIBUTION

Association Between Emergency Physician's Age and Mortality of Medicare Patients Aged 65 to 89 Years After Emergency Department Visit

Miyawaki A, et al. *Annals of Emergency Medicine*. September 2023; 301-312.


SO
HOW OLD ARE YOU, DOCTOR?
makeameme.org

EP Age and Patient Mortality

- Emergency care requires rapid decision making with limited information and under high stress.
  - The ED is high-risk site for errors and adverse events.
- Patterns and quality of care can differ between EPs in the same ED.
- With the aging of the physician workforce, growing attention is being paid to physician's performance according to their age and experience.
- This study examines the association between EP age and patient mortality rates after discharge from an ED visit in an Medicare population.

EP Age and Patient Mortality

- Retrospective, observational study using 2 unique databases:
  - 20% sample of Medicare claims data in 2016-2017.
  - Medicare Data on Physician Practice and Specialty.
- Restricted analysis to Medicare beneficiaries between 65 and 89 years and excluded hospice patients and AMA patients.
- EP defined by billing not by emergency medicine board certification.
- Primary outcome was mortality withing 7 days of the initial ED visit.

EP Age and Patient Mortality

- 2,629,464 ED visits involving Medicare patients 65-89 years of age, seen by 32,570 EPs.
  - A manual audit of 50 randomly selected emergency physicians confirmed all physicians actively practiced emergency medicine (88% completed an EM residency and 12% another residency).
- Adjusted for age, race, indications of 27 chronic conditions, median income level, day of the week of the ED visit, MD/DO, rank of the physician's medical school they attended and illness severity.
- Also stratified by years of practice rather than age of the EP.

Table 2. Association between emergency physician age and 7-day mortality after ED visit.

Emergency Physician Age (y)	No of ED Visits (No of Emergency Physicians)*	Unadjusted 7-Day Mortality, % (95%CI)	Unadjusted Difference, % (95%CI)	Adjusted 7-Day Mortality†, % (95%CI)	Adjusted Difference†, % (95%CI)
Continuous:					
For every 10 y	2,629,464 (32,570)	1.36 (1.35 to 1.38)	0.05 (0.04 to 0.07)		0.04 (0.03 to 0.05)
Categorical:					
< 40	980,185 (14,153)	1.33 (1.31 to 1.36)	Reference	1.33 (1.31 to 1.35)	Reference
40-49	860,374 (11,463)	1.33 (1.30 to 1.35)	-0.01 (-0.04 to 0.03)	1.36 (1.34 to 1.38)	0.03 (-0.001 to 0.06)
50-59	514,375 (6,936)	1.42 (1.38 to 1.45)	0.08 (0.04 to 0.13)	1.40 (1.37 to 1.43)	0.08 (0.04 to 0.12)
≥ 60	274,530 (3,970)	1.49 (1.44 to 1.54)	0.16 (0.10 to 0.21)	1.43 (1.39 to 1.48)	0.11 (0.06 to 0.16)

*Total number of physicians varies between continuous and categorical analyses because some emergency physicians moved to a higher age category during the study period.
†Adjusted for patient characteristics (age, gender, race/ethnicity, indicators of 27 chronic conditions, number of chronic conditions, an indicator for dual eligibility for Medicaid and Medicare coverage, median income level of residence, the primary diagnosis for the ED visit, day of the week of the ED visit date, and indicators of year and month), physician characteristics (sex, credentials, and rank of the medical school attended), and hospital fixed effects.

EP Age and Patient Mortality

- Recommendations:
  - ED Medicare patients treated by EPs under age 40 years had a lower 7-day mortality rate than those physicians 50-59 years and 60 years or older within the same hospital.
  - Older docs were found to have lower admission rates, and were more likely to practice in rural, small, for-profit, non-teaching hospitals. Also, may have potential declines in working memory capacity, stamina, and cognitive skills.


Who said, emergency medicine was stressful?
I'm 27 and I feel great
meme-arsenal.ru

Summary

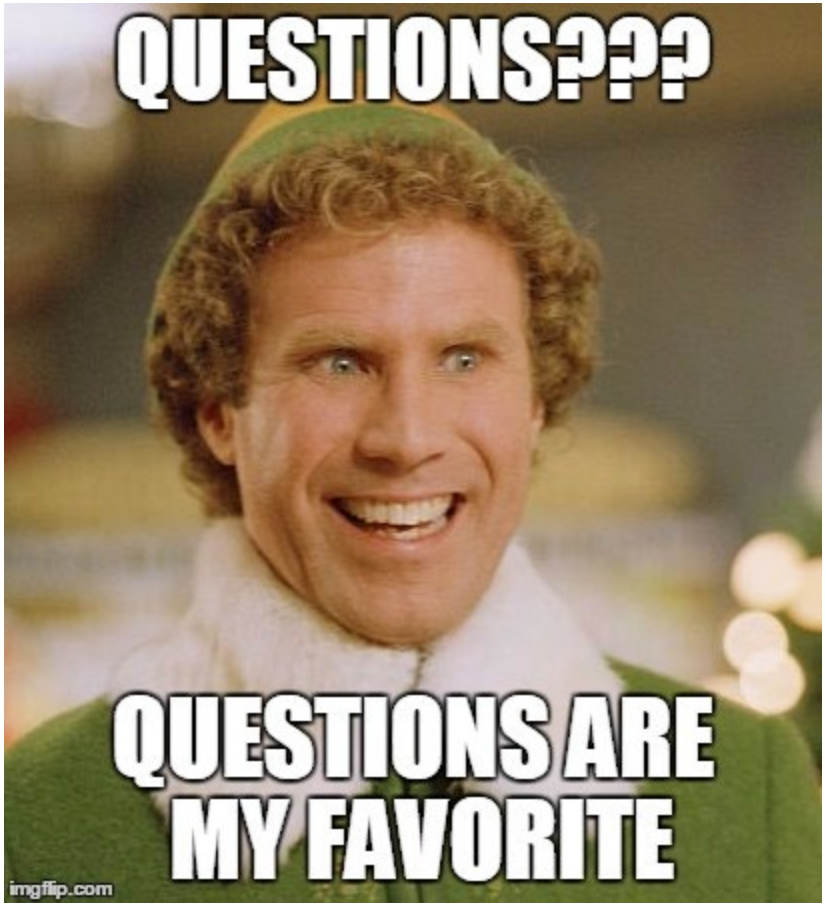
- ✓ Lots of new stroke recommendations: LVO decision aids; CTA perfusion studies for LVO strokes; tenecteplase or alteplase are equally effective; effectiveness of HINTS.
- ✓ Nitrates in RV infarcts may be safer than previously thought.
- ✓ 0/2 hs-cTnT protocols show promise but continue to evolve.

Summary

- ✓ e-CPR was no better than standard- CPR for OOHCA survival.
- ✓ No difference in 90-day all-cause mortality with liberal or restrictive fluid administration in septic hypotension; lots of issues with the study.
- ✓ Discarding the fingernail had no effect on infection and cosmesis for nail bed laceration repair.
- ✓ Cold air exposure for croup kids works!

Summary

- ✓ Older ED boarders have a higher morbidity and mortality.
- ✓ Video laryngoscopy has a higher first-pass success rate than direct laryngoscopy in ED/ICU patients.
- ✓ Older ED docs admit more patients to the eternal care unit.


QUESTIONS???
QUESTIONS ARE MY FAVORITE
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