Emergency Medicine Pearls

1. If in doubt or you have a sick patient

I. **Call the FACEM on their direct line. Tweed 07 5506 7739.**

II. **Use a protocol - not your memory.**

Before starting your shift

a. Locate the adult and paediatric s protocols (egg. severe asthma, status epilepticus, severe sepsis, RSI, STEMI etc.)

b. 2.Familiarise yourself with airway equipment, resus trolley, resus medications and their location.

c. 3. An ED doctor must be able to do most tasks as if he or she were alone- reliance in inexperienced staff can be your downfall.

2. Secure and constantly recheck the ABC's and Vital Signs

Securing the patients' **ABCs** should be the priority the moment you walk in the room. Is the patient able to speak full sentences? Do they make sense? How is their colour, work of breathing, pulse, etc.? If you find a problem, fix it first.

Foetal Heart /CTG: a needed vital sign in pregnant patients

3. Any slightly unwell patient get a VBG - it checks Na, K, Glucose, Lactate, PH and CO2 instantly. If the lactate is 4 or above its sepsis/ ischemic gut till proven otherwise

If you miss DKA and send the patient home with gastro (ketones cause abdominal pain)- they could die.

If you miss hyperkalaemia its the same.

Any patient with altered mental status or a new neurologic deficit deserves a BSL and VBG. Almost every one of us has forgotten this truism once. The embarrassment experienced by performing the stroke workup only to get the critical glucose or Na level back from the lab is never forgotten.

4. **Get a pregnancy test-(urine first then blood to double check if concerned)**

Any female, age **10-55 years,** deserves this quick test. You'll lose count of how often your workup will be changed by the results of this test.

5. Assume the worst - whatever can kill the patient we rule out first

"When emergency physicians hear hooves running, we think lions, and tigers, and bears." **We aren't after the zebras**. Only then do we move on less severe and more likely conditions. Check your attitude at the door. Don't get hung up on the 20/10 pain while the patient sits eating a bag of chips. Take them at their word, do your best exam, and give them the benefit of the doubt. You will be humbled time and time again by the seemingly stable patient who tries to die, sometimes successfully, in front of you.

6. Look for common red flags - The Vital Signs

Vital are more than just Sats, BP, PR,RR- also colour, cap refill, LOC,VBG , level of pain.

The point is simple: **look at the vitals and explain them**.

Your history will gain you more than an entire battery of blood tests.

Ask about comorbidities. Ask about risk factors; that patient with an IV drug addiction who has back pain and a low grade fever isn't looking to score narcotics.

Remember the extremes of age.

Pay particular attention to revisits. These patients are giving you a second or third chance to make the correct diagnosis.

And remember, before anyone goes home, they must be able to eat, walk and have had a final set of vital signs just prior to discharge.

7. Trust no one, believe nothing (not even yourself)

Anything that any tells you, in person, or in writing, might be false. The "frequent flier" may be in the department often, but also might have real disease. Always start with a open mind, talk to the patient, examine the patient fully, and look at every image and study yourself. Remember, the cardiologist and radiologist aren't seeing the patient and can miss significant findings.

The same advice applies to your teachers, and to this post. **Be sceptical but not cynical**. Take the time to check the facts, read the literature yourself, and try both old and new techniques.

8. Learn from your mistakes

I've learned far more from my mistakes than my successes. We all make mistakes. The important part is to learn from them. Possibly even more important is learning *OF* them. Emergency medicine

is particularly prone to an absence of feedback about our mistakes. Did you have an uncertain diagnosis? Look into the case and follow up on the patient after discharge. Learning about our errors is essential to improving our practice.

9. Do unto others as you would do to your family (and that includes co-workers)

10. When in doubt, always err on the side of the patient

We see the patients that society and even healthcare tend to forget: the homeless, the addicted, the psychiatric, etc. We need to be the ultimate patient advocate. We strive to relieve suffering. To do what is right for the patient, we need to consider the course of action that would minimize their suffering and keep the patient safe. This will unfortunately put us at odds with our administrators, and at times, our peers, **but if we fail to take care of our patients, then no one else will either.**

11. Do not fear pulmonary oedema - it can be treated. The majority of sick patients are initially under resuscitated (i.e. not enough IV fluids) Shock, acidosis, and renal failure are much more difficult to treat once established

Start at 1 litre stat then reassess. Sick septic patients may require 3 litres initially. Kids start at 20ml per kg then reassess and repeat by 3 before considering inotropes.

12. Any back pain in an IVDU or recent LP/Spinal anaesthetic is an epidural abscess till proven otherwise. It can only be excluded with an MRI

13. The most objective way to rule out cauda equina syndrome is to measure a post void bladder residual volume. If it is greater than 200ml be concerned. It is less subjective than anal tone especially in the elderly

14. Fitting within 6 weeks after delivery is post partum preeclampsia until proven otherwise- treat with magnesium IV as per guideline

15. In hyperkalaemia especially with ECG changes- your first 2 drugs are 3 by 5mg nebs of salbutamol, nebulized and 1 ampoule of calcium gluconate IV. Make sure they are not on digoxin or dig toxic. If they are they need Digi bind

16. For the aggressive or intoxicated or psychotic patient the first line IV medication is droperidol. It comes in 2.5mg ampoules, given IV up to 20mg. IM medication—ketamine 4mg/kg—senior support and check protocol

17. Every child gets a BGL- if high DKA , if low sepsis and can seize

18. Every pregnant PV bleeder is an ectopic till proven otherwise

19. If there is a guideline or protocol- USE IT!

For example Canadian C spine, NSW Paediatric head injury, RSI, PERC, ARC ALS algorithm, status epilepticus, Surviving Sepsis, antibiotic guidelines, Paediatric resus equipment sizes and doses.

Use the local guides, and a broslow tape and an iPhone app such as medcalc or pedistat.

You should not rely on memory and no one expects you to. The best doctors use all their resources of which guidelines/protocols are one of your most important.

20. Every time you diagnose gastroenteritis or GORD or exacerbation of COPD- slap yourself and ask could this be something more sinister such as DKA, appendicitis, ACS, aortic dissection or PE for example

21. Rule of 2's- most ECG's need a second ECG, most troponins need a second trop, all BC need 2 sets (4 bottles) from 2 sites.

UTI is the great imitator- confusion, vomiting, sepsis. At extremes of age- always check the urine-dip and if in doubt urgent micro .

22. In Paeds- if the parents are concerned- be concerned and ask for a second opinion- get the Facem or Paeds Reg/consultant on the phone.

23. In all kids 3 months or younger - touch base with the paeds team or the FACEM and after hours they almost always warrant an admission.

24. In trauma think of the pelvic binder (ie.Sam Sling) like a cervical collar- if in doubt put it on. Pelvic fractures causing hypotension in rural hospitals have up to a 50% mortality and they only thing you have to stop it is a binder. Ref Trauma.org

25. In adult Advanced Life Support only early defibrillation and uninterrupted good quality compressions have been shown to improve survival to hospital discharge with intact neurological function. Adrenaline and amiodarone have not. Early intubation has been shown to worsen survival as initially adult cardiac patients are not hypoxic and intubation interrupts CPR and defibrillation. Ref Current Ilcor guidelines

26. There is no indication for CPR and adrenaline in a traumatic (i.e. non medical cardiac arrest). Treat the 4 causes- hypoxia, hypovolaemia, tension pneumothorax and pericardial tamponade. Ref trauma.org

27. Every hour antibiotics are delayed in septic shock increases patient mortality by 9%. Do not delay for IV access or LP or "the correct antibiotic" from another hospital. Just use an Ezy IO, takes cultures from it, put another one in on the other side, culture from that and give Abs as per the guidelines which for undifferentiated sepsis (meningitis not excluded) is ceftriaxone, gentamycin and flucloxacillin- all present in rural hospitals

28. The first dose of gentamycin in sepsis is not related to renal function and starts at 4mg/kg increasing to 7mg/kg depending on age. Only chart one dose and leave next dose and levels to the inpatient team

29. Lactate is a marker of tissue ischemia - hence ischaemic gut and sepsis. 4 and above should ring alarm bells as it equates with roughly a 40% mortality if left untreated. A lactate of 5 equals 50%, 6 equals 60% mortality etc.

30. All hypotensive, anaemic, syncope patients need a PR- the fastest simplest way to rule out a GI bleed

31. All renal colic's over 50 are a AAA until proven otherwise. (An AAA can call haematuria and be unilateral especially when a renal artery is involved)

32. Renal colic with fever-(or worse rigors) , is an urological emergency- infected kidney stones need to removed or drained urgently

33. Fever and jaundice is a surgical/ERCP emergency until proven otherwise. (Ascending Cholangitis- pus in the gall bladder)

34. Tachyarrhythmia's and hypotension- if in doubt shock. Synchronized biphasic 200J, (4J per KG for kids). Call for advise prior unless unconscious

35. If its toxicological- poison, OD or bite- call poisons 131126- put it in your phone under P

36. If the GCS is low consider Naloxone

As for naloxone, consider it, but give it in smaller doses to start with- more likely to give 0.2 to 0.4 mg. Thiamine is safe . While we still give it to the patient with alcoholism, the population that seems to need it the most these days are the post-gastric bypass population.