# 240 Something machines can’t do

In line with the current Advanced Emergency Nursing Blog (Automated Vital Signs – Who’s the automaton?), here are some things that your VS machine can’t do, but are useful to you.

A conventional aneroid sphygmomanometer can help you start a difficult IV. Very often, the problem in finding a vein is due to an inadequate tourniquet, inadequate filling of the limb, or poor blood pressure.

When there’s no time for hot towels or heel-warmers, invert the cuff on the arm (tubing running straight to the gauge without kinking) so as to leave the entire lower arm free of interference. Inflate the cuff to a pressure between the diastolic and the systolic. Lower the limb below the table or trolley. The cuff (wider and more comfortable) gives better compression and sequestration of venous return, especially in shocky patients (e.g. BP = 46/40; {true case}).

I’ve previously reported using a stethoscope to assess for leg fractures. There is some updating of that in “Tuning fork ultrasound.” Useful for austere conditions, and suggested for occult fracture screening. The study has an ‘n’ of 20 but with MRI control; decrease in amplitude was noted with 80% accuracy.

And, of course, a machine can’t swing a stethoscope head as a substitute reflex hammer.

# 241 Masking Communication in La Grippe of Influenza

This is a hard season of Influenza with possibly harder conditions to follow. It seems that many staff are continuously wearing masks throughout their shifts. Whether this is because they are unvaccinated (I hope not.) or are vaccinated (I hope so.) and are
protecting themselves because of the less-than-desired efficacy of the vaccine, remains a barrier to communication as well as to droplets.

Many cultures pride themselves upon open-faced communications and community. To be open-faced is a synonym for forthright honesty. We look to the animation of expression and clarity of speech, for intimations of perceived character and honest interaction. Being masked in public seems as if there is something to hide, and ordinances often prohibit it.

What is known to be true is that concealing the mouth, and much of the face, deprives the listener of non-verbal clues to speech articulation and nuances of mood upon which we rely more than we think about it. This is worse if task fixation averts gaze so that the eyes are unread, and a somewhat muffled voice is directed away. Think of dramatic operating room scenes in movies or TV, where everything is controlled in an ideal way, yet some quality of communication is lost.

Remind all staff of these things, and how extra measures must be made by them, to ensure clarity.

1. Engage the patient directly with the eyes, as much as possible.
2. Use a slightly louder and more crisp articulation of speech.
3. Discern if possible, even by direct question, of any deficits the patient may have in hearing, seeing, speaking, translation, medical literacy, that will impair interaction.
4. Say to them that masks can make it harder to understand and that it's OK to ask for a repeat or explanation.
5. Draw out feedback that one is clearly understood despite the mask.
6. Assure the other person the mask is used, not from fear, or that the patient is dangerous, but is a neutral protection for everyone in minimizing transmission of disease.

(As one who is required to use a Powered Air Purifying Respirator due to glasses and beard, I am very conscious of people's reaction to it, reminiscent of epidemic thrillers and biologic warfare, and must assure them that it is just the safety equipment that I am required to wear.)

If a PAPR is worn, be aware of the optical and auditory impairment (wild sound from the motor), limited field of vision and difficulty with fine vision or charting, and how some head movements can displace the position of the mask. Battery life, and spare charged battery is critical. Spare headgear is important if there is contamination or scratching of the plastic view plate. Auscultation can be worsened by the additional noise.

# 242 Three "Cs" of Procedural Sedation and Analgesia

When we, as health professionals, must ourselves must be a patient, we can usually compose ourselves with equanimity due to our knowledge base, comprehension, and
rationality. This is not always true for our unprepared patients, stricken with sudden injury, and very real emotional responses (which, in ourselves, we choose not to admit).

In pre-op areas, I've (so far) been able to forego 'pre-meds' intended to tranquilize the anxious. My mantra has been that I am "Comfortable, Calm, and Confident." To my thinking, these three spheres, as in a Venn diagram, comprise the elements of mental/emotional preparation/resuscitation before significant procedures, to which assessment and attention need to be paid before beginning.

Many emergency clinicians most want reliability and pragmatically choose a good dose of Propofol rather than "woo-woo" stuff, such as hypnosis that take time and have variability. Strength in chemicals, as it were, rather than engagement in feelings. Yet the unprepared mind may need more chemicals than it otherwise might, and agitation during induction or emergence may be fear-based apart from pharmacology.

The upshot of the chemical approach is that often, for something that is painful, 'sedated' procedures are not really 'conscious' sedation, 'moderate' sedation, but "brief general anesthetics without paralysis". There, it's said; —what couldn't be said for legal and billing reasons. If it weren't for prowess at airway management and resuscitation, and attention to guidelines, there might have been some unfortunate incidents.

This doesn't mean that attending to the three C's removes all risk, but one may be able to use less sedation, or help someone through a moment with an encouraging word, rather than another bolus.

- **Comfortable**: Ease pain. Good local or regional block. Warmth. Positioning. Family concerns met. Assurance of less or controllable pain afterwards. The patient should seem 'snug'.

- **Calm**: Anxieties addressed. Teaching done. Expectations explained. "And, when you wake, the cast will hold the bones steady so that there is less pain." (A suggestion of a new possibility and expectation.) Listen for voice changes and look for anxious mannerisms.

- **Confidence**: "And, so you're ready now to fix it to heal quickly and well?"

We're good at making sure the 'just in case' equipment is ready; let's make sure that the patient is mentally ready in every way.

# 243 Professional Growth and Development

**N.B.** Please check "Upcoming Conferences," below, for new AAENP gatherings and in conjunction with ENA and ACEP. Direct links and brochures! Don't pass it up!

Would you like staff nurses to be able to know or do 'a little more'? Use the immediate teachable moment, of course, but consider checking with the Educator or CNS as to
plans [verify, also, permitted scope, etc.], and contribute to a newsletter, or ideally co-opt the nurse with whom the issue arose to prepare an in-service with your assistance and backing, tag-teaming the presentation. *The best form of learning is preparing the subject matter for teaching.* Stepping out of the “providers’ charting room,” in this way, promotes unity with staff and breaks down walls. *Everything we do is collaborative.*

Better care. Better unity. Goals shared in a better way. Encouragement of staff development. Staff may decide to prepare for an extended role or qualify as ENPs, themselves!

**# 244 Is Trouble BRUEing?**

There is nothing more frightening to a caring parent than the sudden helpless fear that the infant suddenly died or is dying. If moments later, the child seems recovered: “What was that? Is it going to happen again? What should I do? Could he die?” Finding good answers puts us on the spot. Historically, increased awareness of ‘Cot Deaths’ led to the term Sudden Infant Death Syndrome. Babies who had strange spells colloquially were thought to be “Near- SIDS.” To lessen confusion, the term became ALTE (Apparent Life-Threatening Event). For clearer definition and guidelines, the AAP replaced it with BRUE (Brief Resolved Unexplained Event) “intended to better reflect the transient nature and lack of clear cause and removes the ‘life-threatening’ label.” Tieder, q.v.

The value of the new definition and the evidence for it is as a RISK STRATIFICATION TOOL to determine which child is Low-Risk who may, after history and physical, some observation and monitoring, be safely discharged. It is a diagnosis of exclusion; outliers will be at higher-risk requiring further focused evaluation. It is a springboard for discussion with parents of an otherwise healthy child as to risks/perils of extensive/expensive work-up which evidence suggests is unlikely to be fruitful. The parent is a sensitive monitor, of greater benefit, and should further help be needed —it is available. Sensitive and practical suggestions may be included (first aid and CPR training) in a general sense to give confidence and immediate rescue, which nonetheless does not suggest an imminent crisis.


Chow, Jessica, MD; Bin, Steven, MD. *PEM Pearls: Brief Resolved Unexplained Events (BRUE).* ALIEM: Academic Life in Emergency Medicine. February 1st, 2017. **Nice precis of definitions, inclusions and exclusions, and approach.


**# 245 Stomach Contents; Not In The Airway**

Airway managers give great attention to preventing aspiration into the lungs. Success isn’t guaranteed. Unlike elective surgery, we cannot fast the patient, medicate him overnight, or do studies. Sonography, in other anesthetic settings, is in early studies to estimate the volume of gastric contents. Someday, this may help inform our approach to the unprepared patient.

Point-of-care sonography is rapidly evolving. These are initial studies, and not ready for clinical decisions in emergency care. Studies in our arena may yield future utility and minimize surprises.

Meanwhile, consider risk and practice caution. Decompression may have value. A smooth RSI may conquer. Positioning may help; be ready to instantly turn the patient to drain emesis. Know how to rapidly lower the table to Trendelenburg’s position so fluids puddle (for suctioning) below the glottis. Two suctioning! Two Sources! (DuCanto Catheter™; HI-D® “Big Stick®”)


# 246 Do I need to be worried?

There may be times when you are uncertain as to the intentions of ‘visitors’ to an injured ‘perpetrator’ or other combatant receiving care. Absent a skilled security service in your ED, this is a time for “I’m sorry, there are no visitors allowed right now” and getting hold of security, police, and administration before doing anything. These should be instantly available. Most active EDs need continuous on-site security service.

Security service, in this sense, means skilled professionals with training, powers, and authority similar to those of police. It does not mean overaged overweight chairwarmers who sometimes patrol with a clock-recorder, and who clearly never would qualify for ‘real’ law enforcement. When security services are needed, more is needed than just a flashlight, radio, and a “policy of ‘observe and report.’”

Many ED staff have pretty good judgment as to who might be a trouble-maker. Remember, of course, that appearances can be deceiving. We also are trained in ‘pre-violence indicators.’ Presence of pre-violence indicators should be reasonable grounds to exclude someone from a patient care area. Behaviors that might be furtive or shifty are less easy to define but should be reason to call for security presence.

In most North American jurisdictions, searches may only be done by properly constituted authorities, and then upon “probable cause.” Clues that might give rise towards an officer’s probable cause, among other requirements, include: visibility or familiar bulge of a weapon; the familiar sound of it clunking against furniture or the floor; an unnatural gait due to its weight or manner of concealment (boot or ankle; concealed in pants leg); ‘reassurance pats or checks’ to hold it in place or adjust position in waistband; fiddling with waistband or inside of garments. Pre-violence indicators may be darting or hovering the hand over the object.

Viewers of TV/Hollywood dramas have seen emulations of murders by ‘shank’ attacks in prisons with sharpened plastic toothbrushes hidden in scrubs, must realize that there are covert means and when there is murderous will, a way will be found, even in ultimate ‘Gun-Free Zones.’ Weapons may be hidden in hair, between fingers, in folded-back hoodies, or carried by a confederate.

Notwithstanding, there are many lawfully armed citizens, who may be carrying when needing emergency care. These people will not be your problem, being lawful in their...
lives, but may feel awkward or embarrassed under the circumstances. It may be necessary, e.g., sedated procedures, to offer them safekeeping of their sidearm until appropriately returned.

This information is provided for perspective by emergency care professionals and is not legal advice, nor does it authorize any action by any person not trained, qualified, and empowered to do so. Be sure of your local laws, policies, and restrictions.

# 247 A Fishy Reaction

EMS calls you while en route from a seafood restaurant with a patient who is described as distressed. His companion, a passenger in the ambulance, initially symptom-free, is now, ~30 minutes after the first patient’s onset, developing similar, but milder symptoms.

#1 has a florid flat red rash of the chest (no edema), including hot, peppery sensations of the skin, mouth, and throat. He is anxious, tachycardic, tachypneic and ‘short of breath’ with diminished, slightly wheezy breath sounds throughout. He denies any drug or food allergies.

#2 appears flushed, itchy, has palpitations, some abdominal discomfort, and mild headache. She, too, denies drug or food allergies. Both, and the remainder of their party, ate tuna in their meal. The others are well, but will bring samples of the tuna to the hospital for assay.

You decide to continue supportive treatment, with H1 and H2 antihistamines, nebulized bronchodilator combined with Ipratropium Hcl, observation and monitoring ± corticosteroid or epinephrine/adrenaline if there is grave worsening, but you anticipate an unremarkable recovery.

What happened in this case? Despite lack of allergic history, the symptoms seem histamine mediated; >1 victim further suggests this. Non-victims are probably due to not sampling the spoiled or contaminated portion. Naturally occurring Histadine in the muscles of dark-meat oily fish, typically from the Scombroid family (e.g., tuna, skipjack, or bonito; but not always, as cases have occurred with Mahi-Mahi or sardines) if not properly chilled or have bacterial contamination leads to conversion of Histadine to Histamine. Even if subsequently cooked, which may kill the bacteria, the Histamine that has evolved is not destroyed and causes adverse effects.

This is a notifiable public health illness. Histamine levels in the fish can confirm the source, and histamine or tryptase levels in the human can confirm the etiology. Standard antihistaminic treatment and support should suffice, although fatal cases are known. This episode will not create an allergy, and correctly stored and prepared fish in the future should be no problem. Histamine Fish Poisoning may be a better term, as non-scombroid fishes have been implicated also.


PMCID: [PMC2564266](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2564266/)

PMCID: [PMC4273511](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4273511/)


Schroeder, George, MD MS FACEP FAAUCM. **Pathophysiology, Diagnosis & Treatment of Scombroid Fish Poisoning.** *Journal of Free-Standing Emergency Medicine*. 10 August 2015.


# 248 The knife-point of necessity

We have all wondered how we would perform if crisis necessity compelled us to do a rescue Front-Of-Neck-Access. Especially if it was out of one’s Scope of Practice or authorized procedures. As I’ve heard it described, “If it was successful, one **might** be a hero; if **not** successful, one would then be the schmuck who used to work here!”

Nonetheless, the possibility of encountering a critical airway emergency always exists, and with a likelihood that higher personnel or resources are not there. It is best to have documented official training of appropriate standard. In any emergency, to paraphrase Louis Pasteur, “success favors the prepared mind.” Emergency Professionals live their convictions and prepare their minds diligently for all circumstances, even the uncommon.

Read, below, the experience of a New Zealand Midwife who acted when needed and saved a life. Additional useful links to prepare your mind are also listed.


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**Surgical Airway (Cricothyrotomy) Performed by Ram Parekh** from Scott from EMCrit. Cited in “Ketaminh” Minh Le Cong, MBBS, FRACGP, FACRRM, FARGP, FACAsM(Assoc), GDRGP, GEM, CertVTAA, PGDAeroRT. Real Surgical Airway Video Here. PHARM: Prehospital and Retrieval Medicine. April 19, 2015.

### # 249 Personal Survival Kit for *those* shifts!

Many emergency professionals make a habit of ‘Every Day Carry’ of practical items for unexpected needs. In EDs (and other emergency missions), the most important person to save is *our self*; to bear up longer under adverse conditions, see that next patient *now*, and to recover as quickly and completely if brief respite comes.

I imagine that you already bring your ‘Peripheral Brain’ of reference data on cards or smart phone. At least one spare pen that you like. Spare batteries or charging cord? Music/Video player. Grooming aids and cosmetics. PRN meds for one’s allergies or pain.

Small kits in an ‘Altoids®-type tin or a pouch are popular. Consider:

- Menthol Inhaler to mask unpleasant odors.
- Small toothbrush & paste, breath freshener.
- Lip Balm.
- Hand Sanitizer & Lotion.
- Body wipes.
- Safety pins for clothing repair.
- Gum, candy, or protein bars.
- Spare Contact Lenses, etc., or spare glasses.
- Preloaded card for fancy coffee, food.
- Caffeine tablets (when you really can’t slow down).
- Earplugs & sleep mask, if there’s a safe place to nap.
- 24-hour supply of regularly taken medicines.
- Preloaded card for sudden money needs (not tied to your accounts).
- $50-$100 emergency cash (taxi home, car tow, plastic ‘declined’).
- Reminder how to find/lock/delete your cellphone data, if stolen.

If you have the luxury of a locker: spare shoes, clothing change, outer garment for unexpected weather. Remember a ‘disaster’ (not a drill) *is when you come to work and don’t leave until three days later --still in the same clothes.*
# 250 Do you really need that line?

A best clinical poster at Australian College of Emergency Medicine presents an intervention to reduce those “just in case” IV starts that don’t actually get used. Practice, before and after, was studied; fewer IVs were started, those that were started were more likely to be used in the ED or upstairs, savings in costs and staff time were found.

This is a promising field for study and change. There are cultural practices to question. We tend to assume that patients are sicker than they look. Busy EDs develop workarounds to hasten flow that drive costs and complexity upwards. Protocol-driven EMS crews and nurses may tend to over-treat, and to ‘CYA’ with the IV that may not be absolutely needed, or to send tests that may be reasonable but discretionary. It’s possible to increase the patient’s bill, through good intentions, by large amounts.

Front-end triage by providers is said to focus initial care efforts with time and cost savings compared with conventional triage and nurse actions before exam by a provider.

So, let’s look at what we do, and why we do it, and see if some efficiencies and economies can be effected. It may be worthwhile.

The review of the study, from an evidence-based and skeptical viewpoint, is from “The Skeptic’s Guide to Emergency Medicine.”


# 251 Gastric Rupture & Tension Pneumoperitoneum

Though you may rarely, or never, see this complication (I truly hope so), it can progress from inklings of “what, the hell?” to massive astonishment!

One cause of Tension Pneumoperitoneum is Gastric Rupture which can occur from esophageal intubation, usually (but not always) along the lesser curvature of the stomach. Other iatrogenic causes are bag-valve-mask ventilation, difficult intubation, perforations due to instrumentation especially with insufflation during endoscopy, during surgery; by blunt trauma, or spontaneously through diseased or damaged tissues, including perforation of a hollow viscus, or carcinomatosis. Pneumomediastinum can leak to the abdomen.

If not detected quickly, the hugely distended abdomen can push the diaphragm up impeding ventilation and alter cardiac output by mediastinal shift. The high tension becomes an abdominal compartment syndrome, and may threaten distal circulation to the lower extremities.

If a non-endotracheal advanced airway has been placed in the field, and function is satisfactory, do not hasten to intubate ‘around it’ as this an awkward circumstance that can lead to esophageal intubation past the other device. Consider waiting until ‘Return
Of Spontaneous Circulation' is stable, when the procedure can be done in calmer fashion, possibly augmented by video or flexible laryngoscopy.

This is a clinical diagnosis. The patient may be too unstable for a scan. Cross-table portable X-ray may be all that can be done initially. Emergency Needle Decompression or a pigtail catheter may temporize. Do other imaging when feasible. Surgical repair is needed.


Sharma, Rohit, Dr. & Jones, Jeremy, Dr., et al. Pneumoperitoneum. Radiopaedia.org. (Blog). No Date. Accessed 04/02/2018. “Revision 1 created almost 9 years ago by Dr Jeremy Jones.” “Current revision created 5 days ago by Dr Rohit Sharma.”
# 252 'Tactical Tampons'

For some two or more decades, there have been unverifiable assertions that ordinary vaginal tampons have utility as 'wound plugs' for gunshot wounds, for epistaxis, that frequent use has been for such by military medics, and thus is a bona fide recommendation for those who prepare for such emergencies. I have always considered such comments as 'not proven', unlikely, unverifiable without documentary evidence or testimony, and likely not an official policy.

A Canadian web blog on tactical medicine includes it in its list of "Myths of Tactical Medicine" (its most popular download). Many tactical medicine writers support an evidence based medicine approach, using military "lessons learned", and keeping care relevant in reality – rather than uncritical acceptance of past dogma.

Modern terror attacks increase the likelihood of life-threatening bleeding, and strong efforts are being made to update the civilian approach to stopping bleeding. Tampons are not effective, and, despite the attractive novelty imputed, should not be used. They are not perfect in their original purpose. Major bleeding must be dealt with first, fast, and effectively. Pressure must be applied to the source of bleeding. Shutting off flow proximally may be needed. The bleeding point should be accessed, and wound packing with pressure, until definitive control and repair is done.

Unlike a tampon, the dressing in shape should resemble a champagne cork with its base at the bleeding point, complete filling of the wound, and a 'mushroom cap' on top to allow circumferential bandage pressure. Hemostatic agents may be used, but gauze works as well if correctly used.

Official responders need to be well-trained and equipped. Hospital workers need, likewise, to be prepared for a disaster that comes to them, or occurs within. Exsanguination is rapid. Without blood, life will not be supported. Death by every drop.


Harris, Bill. 5 myths about Tourniquets. TraumaMonkeys.com. 2014.

# 253 Penetrating Trauma … That Sucks!

A gunshot victim suddenly arrives “WBEMS” (Without Benefit of EMS (Emergency Medical Services), at your ‘quiet’ Emergency Department. Looks awful. Pale. Gasping. Funny asymmetric chest movement. Not much blood. As you lift the shirt, a pencil-sized wound is revealed. What to do? Immediately, you apply (gloved) hand pressure to the wound. You’re “not a trauma center” so chest tubes and seals are in another room.

What now? Your hand must stay there until the wound is sealed. Scan the room. “Of course!” “Give me the Defibrillator Pads!” Eh, voila! Nice sticky defibrillator pads to cover the wound, and a companion wound, say, an exit, if there is one.

As your institution is “not a trauma center”, you usually ‘expect’ cardiac, so the pads are there. If the chest is bloody, grab one of the intubation towels and wipe the chest to improve adhesion.

ATLS no longer specifies a “three-sided occlusive dressing” for which evidence is lacking. However, whichever dressing you use, it is vital to monitor the chest for progressive pneumothorax which might achieve a ‘tension’. Survival is a balance between air (or ventilator breaths) coming in vs the rate of escape, if any. Tissue may interpose a barrier to escape of what otherwise would be an ‘open’ pneumothorax, or ‘minute volume’ of ventilations may exceed ‘minute volume’ of escape. In the ventilated patient, pneumothorax is more likely to achieve tension and to shift the mediastinum impairing cardiac output, whereas the spontaneously breathing patient is less likely to have a ‘shift’. Leigh-Smith, S., & Harris, T.

If there is great trauma, it may be wiser to do a ‘finger thoracostomy which would be more effective, especially if there is hemopneumothorax; bilateral ‘finger thoracostomies’ can be converted to a ‘clamshell thoracotomy,’ if need be.


**Tactical Combat Casualty Care Quick Reference Guide First Edition 2017.**
©2017 Montgomery, HR MSG (Ret) US Army, Editor. [books.allogy.com](http://books.allogy.com) [Free PDF].

Littlejohn, L. F. (2017). *Treatment of Thoracic Trauma: Lessons From the Battlefield Adapted to All Austere Environments*. Wilderness & environmental medicine, 28(2), S69-S73. [PDF]


# 254 Odd rashes, itching, scratching

Don’t forget a very useful ED tool is the (typically) illuminating magnifying glass with a Wood’s (long-wave ultraviolet A) Lamp. There’s usually one, sometimes in a supply room, or in a pediatric room.

Frequently used to check for ringworm (tinea capitis), with the UV lamp, or for sexual assault exams (wounds & fluorescence of semen; however, more specific light frequencies and filters are now recommended), it’s useful to detect Ethylene Glycol (“anti-freeze intoxication) in urine by its fluorescence.

The unexplained ‘fingernail cellulitis’ from scratching the itch may be explained by finding the bites that caused it. Using magnification with good light, or UV when indicate, makes inspection easier and more detailed.

Patients with “invisible” bites and lesions (”Don’t you see them? They’re going in and out of my skin.”) can be assured of your carefulness by a conspicuous exam with the lighted magnifier and Wood’s Lamp. (“No, I can’t see them, even with this special light, but I do believe that what you’re feeling is bothering you. I’d like you to follow up with someone who can help more.”)

Dogs, cats, and birds have long been pets. More exotic pets (reptiles, rodents) are joined now by increasing numbers “backyard chickens” and other animals who share
their owners' lives as pets, more than livestock. Infestations of mites and other ‘critters’, now enter the differential of bites, skin irritations, or worse, lung infections from avian dander, and allergens that exacerbate asthma, and other less urban substances. Remember to ask about 'other' animals, as a generic ‘pets’ question may only elicit the household animals.

Worms in some animals, can be acquired by humans also, and should be sought where indicated. Modern suburban practice is truly a blend of urban and semi-rural concerns.


# 255 Shoulder Reduction

Dislocated shoulders are painful. Reduction of it is painful, too; Prompt reduction is beneficial.

A quick, but careful, neurovascular exam, followed by point of care ultrasound may eliminate some of the slow-downs if X-ray is swamped.

Technics are numerous; some require sedation and recovery; some can be done with intraarticular anesthesia; some with talking (or hypnosis) and manipulation only. Learn several methods and become adept at those which work best for you and are simplest, if possible.

The more ‘fresh’ the injury, generally, the reduction is easier due to less spasm. It’s useful to keep talking with the patient to distract his attention away from the injury. Your best cheerful, confident, and engaging ‘bedside manner’ will lesson anxiety, tension, and therefore, pain. If you are able to achieve sedation-free reduction, the burden on the department is less and discharge can be done without ‘recovery’.

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Mellick, Larry, MD. **Breaking News: M2E Too! Davos Technique Gains Traction for Shoulder Dislocations**. Emergency Medicine News: July 2016 - Volume 38 - Issue 7 - p 1,32–32. DOI: 10.1097/01.EEM.0000488818.02695.ef


**# 256 Does ‘Altered Mental Status’ alter our own?**

Dr. Natalie May (UK) presents an interesting review of two American papers questioning ‘presumed’ alcohol intoxication and the physical clustering of those patients raising diagnostic challenges of overcoming biases, anchoring, and triggers for further workup.

Of “29,322 patients with presumed alcohol intoxication – 1,875 had negative breath alcohol and were included in their analysis. That’s 6.39% of patients presumed to be intoxicated with alcohol who weren’t (Note: My emphasis) – around 1 in 16 patients”. 10% were admitted, with 1% to the ICU. This was a large center that uses breath alcohol screening. Dr. May notes that this is uncommon testing in the UK.

Do you have a standard screen or track for poor trajectory of clinical progress? How suspicious are you in seeking other problems, when alcohol is ‘presumed’ to be the main problem? Blood alcohol testing that I’ve seen was to exclude the diagnosis, confirm toxic (very-high) levels, check proportionality to the level of consciousness seen, or to check for other alcohols if that was an important possibility. Check glucose always. Choose other tests based on possible confounding, or masked, diagnoses.

Are there targets for open-minded re-exam? Failure to progress, or “reattendance” argue for more aggressive diagnosis.

An example used in first aid classes was that of a man found unconscious on the ground near his ladder. His breath is boozy. What happened?

- Drunken fall from the ladder?
- Fall from standing height?
- Drank his lunch and fell asleep?
- Felt unwell and took a drink?
Never got on the ladder; had a stroke?

Be careful with assumptions. Quiz EMS about scene observations. Thorough exam and testing. Review/Reexamine hourly or with any change.


# 257 Caring for VIPs; VIP Syndrome; Ethics

As with other patients, caring for VIPs can be satisfying or frustrating. Further, there is some hazard that care given may, by distraction or influence, vary from best and prudent care.

- Registration may be by pseudonym, address may be corporate rather than personal.

- Prompt privacy needed to avoid attracting stares and overhearing.

- The entourage may be helpful, or not; their loyalty is to the boss.

- Many celebrities can be ‘ordinary folks’, some will have special requests, or want to leave for the air flight.

- As the Joan Rivers case showed, VIPs may suffer from the wrong care and attention due to deference, ga-ga silliness from professionals, and specious reasoning in care or crisis. VIP Syndrome occurs when the patient is harmed by the consideration of status.

- Stick to standard care and unaltered procedures, focusing on the patient and disease. Maintain good communication and teamwork. Beware of concessions and compromise.

- Administrators, Chairpersons, Consultants, may want to pay courtesy calls or take part in the care, or request privileges for the VIP.

- VIP or preferential treatment arouses some ethical questions as to motivation and whether it interferes with the needs of others.


Alfandre, D., Clever, S., Farber, N. J., Hughes, M. T., Redstone, P., & Lehmann, L. S. (2016). *Caring for ‘very important patients’—ethical dilemmas and suggestions for practical management*. *The American journal of medicine*, 129(2), 143-147. (Abstract & Paywall) [PDF] [PDF; free source]


### # 258 Is that pelvis broken?

A nice tip originates from a large Australian centre (*The Alfred Hospital*, Melbourne, Victoria) in a small study.

Patients were prospectively screened with a test of straight leg raise eliciting pain and then X-rayed to determine if the pelvis was fractured. From the cohort of 328 patients, 35 patients had proven fracture. 32 alert patients (GCS=15) *could not* straight leg raise or did so *only with pain*. "Sensitivity of 91.43% (95% CI: 76.94–98.2%) and a negative predictive value of 98.57% (95% CI: 95.88–99.70%)" was claimed. The other 3 patients with fracture *could lift without pain*; these patients had GCS<15. For the sub-group who were alert, there was 100% sensitivity and 100% specificity in the test.

Older methods of examination by ‘spreading’ and ‘squeezing’ the Iliac Crests and pressing upon the Symphysis Pubis have been criticized as increasing injury dangerously leading to increased concealed internal hemorrhage which can be fatal.

As always, be cautious in eliciting subjective symptoms in patients who are impaired.

This report is gaining traction among various emergency professionals with presently 127 retweets.


### # 259 Several Simple Things to Ease Intubation

When setting up for imminent endotracheal intubation, several simple tips make things vastly easier; the neglect of which is a sign of a heedless cowboy trusting to luck.
1. **Firstly, have a ‘bougie’!** Just having it, puts you ahead to rescue a bad situation (poor jaw opening; Cormack & Lehane view ≥3; awkward tube passage; tactile confirmation needed).

The bougie’s diameter, less than that of the tube, improves visualization and allows for a low approach out of the direct line of vision. It can lift or manipulate the epiglottis or pass just above the arytenoid notch when the cords are not easily seen. ≥90% of the time, one can feel clicks of the bougie on tracheal rings; ‘hold up’ of the bougie in the Right Mainstem Bronchus occurs after 30-40 centimeters have been passed. (Don’t press harder --to prevent injury.)

Best is to have the ETT preloaded with the bougie (especially if help is limited) to find and navigate through the glottis and pass one’s own tube. Second best is solo use of the bougie, with a helper to ‘railroad’ the ETT over it.

2. **Lubrication.** ED intubations are more likely to have a wet field vs. an OR intubation due to premedication, but not necessarily. Prehospital and ED ventilation or preoxygenation, certain toxidromes, and smoke inhalation, may cause dryness of the membranes.

Slim to modest lubing of the tube tip helps you to slip it into where you want it to go; also do the cuff (helps tube delivery or glide across tissues, better cuff seal against aspiration); the stylet or bougie within the tube (helps with delivery, or rotation to clear the arytenoids; avoids being ‘stuck’ or needing a forceful pull).

3. **Collapse the cuff against the tube** after test inflation. [Leave the cuff interior at sub-atmospheric pressure.] The syringe should remain attached to the inflation line, ready to inflate. Having the cuff tight gives a better view around the tube to know where it goes. (c.f., linked image below) If the cuff is ‘nicked’ against the teeth or fragments, loss of tightness reveals the fault.

As the cuff volume {adults} is often greater than the 10 ml delivered by the usual syringe, it is less likely to be initially over-pressured; however, always, check intracuff pressure as soon as possible to a minimal occlusive pressure to avoid mucosal injury. Continuing attention is needed if transport includes barometric change at altitude, or if there is airway swelling.

*Yen Chow, @TBayEDguy, Tweet on VL exposure.* Note images 4, 5, 6, how ‘fluffy’ ETT cuff (not collapsed against tube) obscures vision. [Detail view.]
# 260 Have you thought of Clysis?

Same situation as at other times. It’s getting late. Despite an antiemetic, the child is still too fussy and cranky to accept oral rehydration. The veins are not promising, yet this doesn’t require an IO insertion. If rehydrated, the child could go home and follow up closely with the PMD. Are there options other than failed cajolery or multiple needles?

Dr. Horeczko reminds us of new updates to old practice. Hypodermoclysis, or modernly, subcutaneous rehydration is easy to do, reliable, less traumatizing, and effective. It is also vein-sparing for kids who have had too many in their short lives. It also avoids having to insert a nasogastric tube. His PEM Playbook article, and podcast, will give you all the history and information that you’ll need. It even works on adults.

Widely-used in the days of straight metal needles, he recommends some anesthetic cream, 24-gauge catheter, in-between the scapulæ, a little padding, a membrane dressing, and pump infusion, with 150 units of recombinant Hyaluronidase added for more rapid absorption. Remember, that the parents may already have done this for an aging pet, or their elders may have received end-of-life care.

This is ‘another’ way, that can give you safe and effective alternative access that is simple to do.


# 261 Secure Intraosseous line.

Intraosseous line insertion can give quick and reliable access for infusion and drugs in critical situations. Then you need to move that patient without losing that line to a sudden tug or getting caught in a narrow space (ambulance, helicopter, MR or CT scanners). The world-class website, “ALiEM” — Academic Life in Emergency Medicine, has a simple and quick solution for this problem with a readily available component. The result is displayed in a nine second video on YouTube: Trick of the Trade: Securing IO Line with Padded Mask. It should guard and shield the IO device, but be sure to ‘stress-tape’ the infusion tubing in case it is snagged. Michelle Lin, MD, describes it at: https://www.aliem.com/2016/05/trick-securing-intraosseous-needle/.

The discussion, and the lower limb, are extended in Trick of the Trade: Tibial Intraosseous Line Stabilization in an Agitated Patient by Eric Shappell, MD, Seth Trueger, MD MPH, and Nurse Mark Samora.

Michelle Lin, MD. Trick of the Trade Securing the intraosseous needle. ALiEM. May 3rd, 2016.

# 262 Upper Extremity Injuries

Most of everything that we do is with our hands. Naturally, the unarmored tissues are easily injured. When we have repaired the injury for best healing, it is not enough to grandly say to the patient, “Keep it dry. You are excused from doing the dishes!”

Realistically, household roles don’t switch very much, yet income must be earned, food prepared, and the dishes washed, children cared for, personal bathing must be done, the house kept, etc. “Time off work” may be used up, unavailable, or non-existent. Exigencies and practicality may intrude upon ‘wound rest’.

Ask about patient responsibilities for others or work. Is task modification even possible? Is there a risk of immersing the injury dressings? Do the dressings put them at risk for being caught in machinery?

If there’s considerable pain, consider lidocaine patches for opioid-sparing.

Before leaving the ED, provide some gloves until the patient can get them from a store or online. Consider waterproof dressings, membrane dressings, or wound sealants that may be applicable.

If casted with plaster or fiberglass, provide a sling for rest and encourage elevation. Having nurses or PT/OT available may enhance the teaching. “Shower sleeves” should be available to protect during bathing. Remind about the awkwardness of being off-balance with risk of falls or dropping kids and packages. Provide an estimate of weight restriction in lifting or carrying. Rotational tasks (keys in doorknob) may be awkward, too. Driving may be impaired also. Added caution in circumstances of potential danger (parking lots, shopping zones) is needed: those who are injured or encumbered are especially targeted by criminals for robbery or assault.

# 263 Where’s that vein?

There are now several technologies which have been adapted to the eternal pursuit for a usable vein. When available, they can not only find a vein, but evaluate it also. They encourage the clinician and lessen the fear of the patient. However, ... we must deal with the emergency as and when it occurs; —such technology may not be with us.

**Cold or Warm?** If the patient is cold, he must be made warm. Local warmth may suffice. Moist heat is believed to ‘penetrate’ better. Traditionally, hot towels have been used. Check that it is not so hot as to likely scald. Forced air warmers work well and are comforting. Immersing the hand or foot in a basin of warm water is effective. Are your hands cold?

**Vasodilators:** If hemodynamically stable, the brief use of nitroglycerin ointment or spray over the vein may enlarge it sufficiently. Remove when through. Covering with a warm moist washcloth may hasten the effect. As examples of the principle, a patient who is already on Flolan®, will have dilated vessels. In the pediatric O.R., it is common to induce with Sevoflorane and place the IV when the vessels are dilated.

**Tourniquets:** The common elastic tourniquet is often not tight enough to dam the flow and create a reservoir of blood, particularly with obese arms. There is fear of ‘pinching’
the skin. A manual sphygmomanometer is ideal as it is wide, soft, and compresses efficiently and comfortably; pressure can be accurately controlled. Invert the cuff so that its tubings run upwards and away, leaving the entire area from the fossa to the fingertips for use.

**Gravity:** Often forgotten, lowering the intended IV site below the body or table increases filling behind the tourniquet. (Don’t wait until the patient is arranged on the MRI gantry to start the IV; it may not be possible to lower the arm.) Sit or kneel below the patient and dangle his limb, a usable vein may now appear.

**Stability:** Don’t handicap yourself; if you’re going to do precision work, give yourself the advantage of stable seating and good lighting. Standing, swaying over the patient, perhaps even too low for your back (because it’s a kid) doesn’t work well. Restless and agitated patients can be sedated or immobilized before the stick. You may even splint the arm before the start. Ideal prep = ideal start.

**Activity:** Have the patient exercise his tourniquetted arm to increase blood flow and filling. (Doing so overly long may hemolyze a blood sample.) IV drug addicts have offered to have a very tight tourniquet and then do push-ups to raise a vein!

People use simple patterns to wipe the veins with alcohol or other disinfectant. Instead of back’n’forth or circles, I suggest the only reasonable way is to stroke distal-to-proximal and repeat; push distal blood past the valves to create a greater pull below the tourniquet.

**Uncommon Sites:** It may be necessary to use a less-desirable and relatively non-standard IV site (e.g., ventral wrist, as veins may be curvy or any leakage may cause a compartment syndrome). Any non-standard IV site requires additional surveillance to monitor for leaks or other adverse consequences. Such sites should be removed when a standard site becomes available as rehydration ‘fills the tank’.

**Infusion Augmentation:** When little is available, use the little. Scorn not the vessel that seems only ‘baby-sized’. Use a 24-gauge cannula or a 25-gauge winged-needle to infuse a quantity of IV fluid with tourniquet still in place. This will cause other vessels to appear. (This is similar to a Bier’s Block for regional IV anesthesia.) Do not use any of this diluted blood for testing.

Also, if it may be difficult to navigate the cannula within the vein, have ready an extension set with a syringe of fluid attached. When the cannula tip is within the vein, steady the cannula, you or a helper can then connect the extension to the hub and carefully infuse fluid while progressively inserting the cannula as the fluid expands the vessel and centers the tip within the lumen, thus you may ‘float it in’. Be sure to remove the tourniquet before starting the regular infusion.

**Use of Vessel Dilators:** With a suitable vein, it may be possible to gain access with a Seldinger technique, so that the initial cannula is replaced, after mechanical vessel dilation, with a larger cannula for the desired flow rates. The Arrow RIC (Rapid Infusion Catheter) is a commercial example of a kit for this purpose. If a single lumen is not enough, a multi-lumen catheter may enhance infusion capabilities.
Tricks may satisfy one’s pride, in starting a line, but if perceived difficult, it’s wise to use available technology to minimize complications. If a substandard vein may be worked beyond its likely capabilities, keep a close eye on the site and the line for problems. If the patient is increasingly unstable, go for an intraosseous and plan for a central line. One, or more of these techniques used together, may help you through a difficult access situation. Use skill, have good luck, and know your available resources in personnel, technologies, and organizational capabilities.


# 264 When the cuffed airway leaks from the device

A [Twitter link](https://twitter.com) reminds of an airway (or human) equipment failure that can happen in mid-resuscitation; it is not infrequent, --you will encounter it several times. A damaged ‘pilot tube’ inflation line to the cuffed endotracheal tube leaks air or is severed (beware of scissors); the cuff will not inflate and seal to minimize aspiration. What to do?

1. First, clamp the tube to retain any residual air. Clamp is a cautious term, as unless you have provided for toothless clamps that do not further damage the tubing (good idea); the handiest will be a toothed hemostat.

2. The traditional step would be a ‘blunt needle’ that won’t pierce the line or prick any fingers. These are uncommonly stocked, and confusion may reign. The modern answer is a 29-gauge IV cannula fitted snugly within the inflation line. This can be capped with a needleless-valve injection cap.

3. Inflate with syringe and re-clamp only if you must. The technically-minded often add a 3-way stopcock, but weight, bulk (the syringe), and complexity lend problems of their own.

4. Stop. Check that all is working well.

5. Sometimes the automatic valve may not work (either stuck closed or stuck open). For which the cure is to amputate the part and do the repair just described.

6. A yank at the junction where the pilot tube ‘goes inside’ mandates replacement.

7. The cuff itself may be perforated by a snaggletooth, tooth fragment, or glass in the airway. Iatrogenic damage is less likely if the lubed cuff is snugged firmly against the tube by sucking with the syringe *before insertion*, using a bougie to increase viewing area and guide the tube, and *watching the cuff* as it transits teeth and mouth.

Cuff Pressure Manometers *are your friend* in not only minimizing mucosal
pressure damage (worse in aircraft) but in tracking cuff efficiency and leakage.

8. If the tube was reliably placed in the trachea, and it is irreparably damaged, OPTIMIZE the patient if distressed.

If not feasible with the tube in situ, change to a Gen 2 SGA. to recover, and perhaps to be a conduit for a new ETT.

If holding ok, then exchange the tube over an airway exchange catheter (longer and more convenient than some bougies and may be hollow for oxygen insufflation or CO₂ detection. These can be valuable, even life-saving, in difficult airways.).

9. The 15mm ETT connector is easily lost, as it is packed loose, or if it is manipulated. They usually bounce onto the floor and under a cabinet. Have spares. If no spares, a smaller ETT can intubate the lumen of the patient’s tube, until suitable correction is made.

10. Obviously inspect and function-check all planned equipment before use to detect faults in manufacture or handling. Anticipate common problems and have ‘materiel’ on hand. Be “the Cool kid” who know what to do, quickly, when crisis occurs. Gracefully, accept high-fives afterwards.

# 265 “Hocus … POCUS !!”

The first widely accepted usage of Point of Care Ultrasound in Emergency Departments (by emergency providers rather than radiologists) was FAST: “Focused Abdominal Sonography for Trauma.”

Which of the following are accepted usages?

- Measure the diameter of the optic nerve sheath to estimate ICP.
- View the heart and IVC to sort out undifferentiated shock.
- Examine the the eye for ruptured globe.
- Examine vasculature while starting central lines.
- In phlebopenia to find usable peripheral veins.
- Look for “sliding lung sign” to assess pneumothorax.
- Find the Cricothyroid Membrane when palpable signs are lacking (short thick neck).
o Confirm intubation of the trachea and depth of tube.

o Find evidence of ectopic pregnancy and bleeding vs intrauterine pregnancy.

o Estimate bladder filling, urinary retention, anuria, atony.

o Evaluate abscesses and cysts.

o Check location for regional blocks, or for ‘difficult’ lumbar punctures.

o Assessment of DVT/PE.

o Assess effusions and presence of tamponade physiology.

How many checkmarks did you place in the list? I hope that you did so for each and that you feel comfortable in performing those procedures. Isn’t it remarkable how the number of indications has grown, and continues doing so?

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Hospital for Sick Children (SickKids), Toronto, Canada, A Brief History. P2|SK PEM POCUS. ~2016. No date.

Dalhousie University, Department of Emergency Medicine. POCUS Competency Program. No date.


FUJIFILM SonoSite. Butts, Christine, Dr. POCUS in Emergency Medicine: Dispatches from Iraqi Kurdistan. January 24, 2018. [Ed. Note: This is the commercial website of a manufacturer of sonography machines. It is of interest for the description of use in austere circumstances. ≠ endorsement. FYI.]


Wong, Michael, Dr. Focus on POCUS: Ultrasound in undifferentiated shock. EMOTTAWA. September 21, 2017.


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Anton Helman, MD. Dr. Fischer, Dr. Hannam, Dr. Chenkin & Dr. Hall. *Episode 18 Part 2: More Point of Care Ultrasound*. [Podcast: 1:53:51] *Emergency Medicine Cases*. November 8th, 2011. [Topics: Soft Tissue Infection; Vaginal Bleeding; FAST Exam; Abdominal Aortic Aneurysm; Cholecystitis; Urinary retention & Post-void Residual; Emergency procedures; Nerve Blocks; more pearls.]


# 266  O₂ NOT good?

Recent research has been building a conclusion that administering oxygen is not always a ‘good thing’. Patients getting too much oxygen may have worse recovery, more deficit, and more deaths than studied groups who are normoxic during their period of care. During hyperoxia, the complex metabolism and usage of oxygen may create “reactive species” which alter cellular functioning.

Traditionally, oxygen was a ‘good thing’ to be given freely and generously for many problems; and a student’s safe answer to questions. Faith, trust, and medical dogma encouraged a provider’s self-comfort and a feeling of ‘doing something’. Previously, it was difficult to study deleterious effects in so many different arenas of care, with disparate personnel, environments, philosophy, and needs. These are now being looked at more closely.

It now appears that it’s safer to be more frugal with oxygenation. Hypoxemia can be treated with oxygen to a normoxic level, provided there is no hypercarbia (which is treated with ventilation). The patient should be watched for the need for increased effort or distress in maintaining a satisfactory level.

The patient who remains oxygen dependent should have it efficiently delivered, rather than by leaky masks and cannulae that do not provide enough volume for needs at a controlled O₂ concentration.

As always, manual ventilation with a bag by a person not keeping track of rates, volumes, and pressures, may create adverse hemodynamic changes within the chest that may prevent resuscitation and survival. Automatic transport ventilators may be the preferred device.

Watch the patient. Treat the patient! Be alert to change.


