

Advanced Emergency Nursing JOURNAL

Presents

Collected Clinical Tips©

*from the experience and wisdom of its Editors
as published on its website*

2013

1. Be sure to check the footwear and gait of patients with back, hip, or knee pain as poor footing and gait may directly contribute to pain in those locations; not just for foot problems per se.

For those patients “carrying a little extra weight,” it’s good to suggest the correlation: “You know, the pounds per square inch on your feet worsen the collapse of your arches. Wouldn’t you like to improve things for your feet?”

Provide podiatry referrals, not just pain pills.

2. Remember checking your sick dog’s nose to find whether it’s warm and dry or cool and moist?

Checking the human tongue is a rapid and pretty reliable gauge of hydration. Notice whether it is full and moist; just scantily moist, has begun to have mild scalloping of the lateral edges; has gone to dry and furrowed; or even shrunken like a prune or raisin, is a good quick check of volume loss.

People are used to saying “Ahhh.” Take full advantage of it. It’s easier and more sensitive than checking “skin turgor.”

3. Are you a borrower? Always borrowing a stethoscope, shears, flashlight, ear curette, tongue blade, safety-pin, calipers, etc.? Why be unprepared? Do you expect these to always be stocked for you? Resolve to keep the essentials on you. Respond immediately to events. Have a smoother flow of exam. You’ll be better prepared, and your co-workers will be less annoyed.

Bonus extra: Perhaps, you’re not carrying your calipers as much as you used to, as modern EKG machines calculate intervals for you. Calipers are excellent for checking sharp-dull, two-point discrimination, eliciting Babinski’s reflex, measuring wound dimensions. Give up that safety-pin.

4. Q. Why do all the EKGs of old people have lots of artifacts and waviness?

A. (Short answer) Your technician is not properly preparing the skin before attaching the electrodes.

A. (Reasoned answer) The skin needs thorough cleaning and preparation to improve electrical conductivity and adherence. Why is this so? Many Elders do not bathe very often as they chill easily and may feel unsafe at risk of falling. As they are not physically active, active perspiration isn't likely and insensible perspiration isn't noticed (Remember how bundled in layers of clothes they often are?). Layers of dead skin cells and old sweat may build up blocking the electrical signal. Younger and older patients with oily skin may have a brown grunge on the skin of accumulated sebum. Skin becomes loosely redundant as the skin is thinner and less well secured by vanishing subcutaneous connective tissue. The patient may be afflicted with tremor. Arthritis and kyphosis may cause unnatural contours not well supported by the gurney and bedding, and have the patient in constant pain. Easily chilled, the exposure during a 12-lead may make the patient quiver.

A. How do we deal with this? Make the patient warm and comfortable, with body hollows supported. Adequate pain medicine improves signals, and if the patient needs intubation, the neuromuscular blocker eliminates motion artifact except from ventilation.

It is absolutely necessary to scrub down the skin with alcohol and gauze (rougher than an alcohol wipe) to clean and defat the skin. Clean dry gauze is used to dry and abrade the site so that it is mildly reddened. Whenever possible, monitoring electrodes should be placed over bone (clavicles, floating ribs) so they are less mobile and it is easy to press the wire snaps on without pressing deeply on a soft spot with viscera underneath. You are also more likely to pick up impedance plethysmography respiratory signals.

Electrodes on properly prepared sites will stick longer and more durably, and you will consistently have cleaner signals from which it is easier to make clear decisions.

#5 Really sick patient just arrive?

In non-intubated patients, monitor ventilation with capnography, not just pulse oximetry for oxygenation, who have altered consciousness, respiratory distress, or who are potentially critical.

If already on a non-rebreather mask, pop the inline capnography sensor under the mask to sample exhaled CO₂; it's quick to do, and transitions easily to BVM, supraglottic or endotracheal airway, or ventilator support.

If you have a bit more time, a CO₂ sensing nasal cannula is useful for lower oxygen requirements, or procedural sedation, and flows easily into the [NO DESAT](#) techniques of [Weingart & Levitan](#) for RSI providing a bit of CPAP during spontaneous breathing or "bag-assist" to alleviate shunting and for apneic oxygenation during intubation.

Remember, too, anatomic airway obstruction may supervene when exhausted sleep-deprived patients relax after their hypoxia is corrected. It's good to have an obstruction alarm!

#6 A Reasonable Capital Improvement

Do you have a little room in your Capital Improvement Budget? Hah! Oh, well. Here's a modest project that should give a great Return On Investment in clinical advantage.

How many Scalp and Head Lacerations do you treat each year? Think of the awkward difficulties and mess in cleaning the matted blood in the hair and in irrigating the wound. Water everywhere. Towels. Incomplete cleaning. And then we tell the patient not to get the hair/wound wet, nor to towel it roughly for three days!

Imagine equipping your Suture Room with a Hairdresser's Hair-washing Sink! Add temperature-controlled faucets, an overhead washing hose, and a suitable tipping chair (makes getting at the wound for repair easier, also). Perhaps, even a standing hair-drier and a hand-held one for less mobile patients. You probably already have an overhead boom surgical light. What luxury and convenience! What Customer Satisfaction! Add some surgical bouffant caps for the patient to wear home and for sleeping, and all is well. Press-Ganey surveys may go up, but providers will be able to give better care more comfortably.

In the meanwhile, what to do? Consider [Dr. Gemma Morabito](#)'s tip from her Italian column "ABM (Astuteness Based Medicine)" as republished in [Michelle Lin, MD](#)'s renowned [Academic Life in Emergency Medicine](#) blog



Photos, and related tip, by permission of Dr Lin & Dr Morabito

7 Making light (weight) of things

This Clinical Tip is one that you will want to use for your entire career. Although you are working in Advanced Practice, there will be many times that you supervise or participate in logrolling, turning, or lifting patients.

Premise 1: None of us wants to be hurt or strained moving patients.

Premise 2: The patient is in pain or fears pain, finds a spine board & collar uncomfortable and disorienting while forced to stare at the ceiling. He may take fright during the move and stiffen or grab to protect himself thus becoming a “live weight.”

Premise 3: Remembering what it’s like for the patient, if we engage the patient, get rapport, and provide calming advice that relaxes the patient and avoids muscle tension, the move will be easier for all.

Explain the necessity, intention, and process of the move (try to have the patient give serial answers of “yes” or “uh-huh” to establish a pattern of acceptance).

“Would you like to know what to do yourself to make it smooth and easy?”

Wait for the “yes.”

“I want you to hold your elbows with your hands (while you guide them in to place).”

“To loosen and relax your body so that your muscles don’t pull on where you hurt, I want you to fill your lungs with air, and then blow it all out and relax as we move.” [If added explanation is necessary, say “It’s the opposite of weight-lifting, they stiffen, grunt, and strain, everything tightens up. –When you’re at the end of your breath, it’s impossible for your muscles to be tight.”

“Ready, one” (Check your team.)

“Two. Take a deep breath.”

“Three. Breathe all the way out and relax.-x-x.!”

Sometimes, you may need to sneak the turn with your team on “2.5” if the patient is very apprehensive, or starts to grab. The key is to move while breath is not being held.

You may change your wording to suit yourself. However, the key is to explain things in terms of the benefits the patient would desire. Get rapport and trust. Obtain a natural series of “yes” answers. Complete the move during end-expiration when the muscles are relaxed. Less strain (and longer careers) for the workers. No dynamic change to “live-weight.” Greater comfort to the patient; who now learns to trust.

8 Jean's Tip: Getting the inpatient unit to take report

- “Sorry, the nurse isn’t available to take report right now. I’ll have her call you back.”
- “OK, thanks. Say, which nurse will be taking this patient anyway?”
- “Fran.”
- Wait a few minutes
- “Hi, is Fran there?”

#9 Put a hand in it!

Have a confused patient whose pulse oximetry adhesive sensor doesn’t stay on well, is being picked at, or the hand is cold and sensing erratic?

Choose an exam glove to fit over the hand.

Snip off the fingerstalls except that of the sensor finger.

Put on over the hand.

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The sensor will be snugly held against the skin and the finger warmed, the cable protected (should still have a "stress tape"), and the other digits are exposed for circulation checks.

(Is it a fussy infant who objects to the sensor on his toe? Apply the sensor. Stress-tape it. Put the sock on. Shortly, the child will "forget" about the sensor, which is now warm and protected. Keep the wire out of reach.)

Have an IV lock in the dorsum of the hand? Is it at risk for being "lost"? Protect it from picking or snagging on the bedding with a fingerless exam glove applied over the hand.

#10 "Mad Dogs and Englishmen Go Out In the Midday Sun"

***Hot weather is here!
So are Summer activities!***

Those most adversely affected by Summer Hazards are the very young, the very old, the polymedicated, and the very foolish.

Add value to your interactions with patients, prepare a leaflet for waiting rooms and treatment areas, and have your in-hospital TV health channel, review tips for avoiding and mitigating these risks.

Unrelenting heat stress kills. Urge awareness, hydration, sheltering, reduced activity. Decreased urination does not just mean more time for fun: it means inadequate hydration and the body is holding on to every water molecule. Urge drinking fluids to normal levels of urination and urine color. Remind that sugary drinks, caffeine, and alcohol increase fluid loss and should be minimized or additional water taken.

Elders often do not realize how their diuretics, beta-blockers, psychotropics, antihistamines, and other meds put them at risk. Nor, do they realize how their innate decreased thirst, altered thermoregulation, or dependence on others to bring hydration proactively may endanger them. Review this with them and their family or caregivers. Ask the ED Pharmacist, if you have one, to review the meds with them.

Solar radiation burns skin. Avoidance, cover-up (t-shirts expose the neck), high SPF UV block products according to label, wide-brimmed shade hat (not ballcap), early recognition and treatment of burns. Even "cloudy-bright" weather near water or reflective surfaces can burn (it's the UV, not sunshine itself).

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Don't dive or swim in unsafe waters or without a buddy. Children around water should never be unsupervised. It only takes a second for a child to vanish underwater. (If you don't see your child: YELL! Get everyone looking. It's better to be a little embarrassed then attend your child's funeral.) Infants can drown in very little water.

Never throw or squirt lighter-fluid onto already burning coals. Don't become the fire.

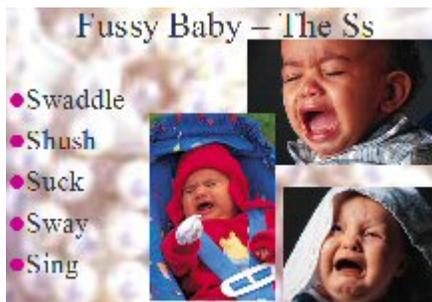
Beware of intoxicants in the setting of dehydration, or stupid activities: driving, swimming, jumping over bonfires, or into water from bridges or rocks.

#11 Little Tips for Little Ones

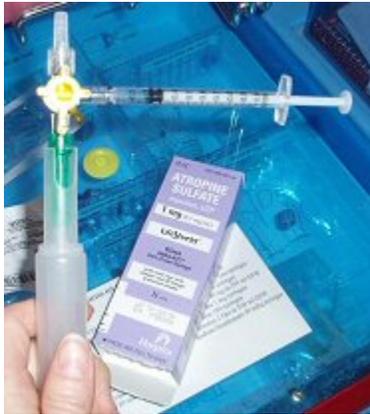
I've often avoided giving oral meds to children myself, but instead relied upon the prior trust between child and parent/caregiver. Beware, however, they may do it awkwardly or rush resulting in coughing, spitting, and vomiting, despite cautions to go slowly.

Editor Jean Proehl suggests: Put oral medication between gum and cheek, then blow in Baby's face to trigger a swallow.

If the baby's fussy, she recommends consoling with "S"s:



For accuracy in giving small volume high-potency meds, she suggests a stopcock and TB syringe to draw from adult size injectors.



#12 "The Eyes Have It"

- 1) Visual Acuity not checked at triage? Download a Snellen Chart for your smartphone and check it at bedside.
- 2) Patient claims large pupils are chronic? Anisocoria: new or old? Check the Driver's License photo with a magnifier. You may get your answer. Perhaps, even from social media photos.
- 3) Bradycardia without ACS or explanation? If appropriate age, review the meds taken for β -blocker eye drops. Many patients don't think of eye drops as real medicines such as pills and omit them from their list. I've seen ~10 patients with iatrogenic bradycardia from such drops who were admitted for observation due to systemic absorption of β -blocker via the nasolacrimal duct as they had not been instructed in eye drop administration by any of their providers. (I've also seen systemic allergic reaction to NSAID drops in a NSAID-sensitive patient.)

It's important to tamponade the lower inner corner of the eye for 30-60 seconds after each drop of systemically active medicines. Another factor is if the drops are warm (pocket or purse), it is harder to feel and count the drops until running down the cheek; if cool, it's much easier. Caution about taking extra drops if a near-miss hitting the lashes or lids is given.

- 4) If offering help to blind persons, ask how to help or "Would you like to take my arm?" Being grasped, propelled and steered by another is disconcerting to most. It is best to offer an arm to be held; often, the person will prefer to drape a hand on your shoulder to better sense your body motion and direction. Call out direction, change of direction in advance, distance estimate, change of surface, obstructions

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or general description of room or route as you go. Allow tapping or touching at the goal to settle in final position. Basically, provide guidance like a human GPS system.

#13 From the Outside In

We're often urged to use open-ended questions to evoke patient-centered responses. Once we've accomplished the initial greet and establish rapport, then elicited chief complaint and short history of present illness, the patient may seem perplexed or internally preoccupied. Cut through this; reach the inner person: "What do you think is the problem?" or even "What are you worried about most?"

This may bring forth family history of concern, admissions of behaviors or indiscretion, or let you identify the angst so that it can be addressed or incorporated within your diagnostic and testing strategy. With concerns on the table, barriers are let down, the patient feels respected, and the relationship is trusted and enhanced. And, he may even have helped clinch the diagnosis.

Your patient needs a urinary catheter. The nurse reports difficulty or the patient indicates past trouble. Perhaps you suspect awkwardness due to BPH, stricture, obese habitus, atrophic introitus. Suggest a Coude' tipped foley catheter and order a prefilled syringe of 2% Lidocaine jelly, 10 ml. (If not available, a syringe of lubricant is sufficient.)

The Coude' catheter makes it easier to find and pass the meatus, navigate the urethra, and find a path. Instilling jelly within the urethra before insertion provides slight mucosal anesthesia but more importantly the bolus of lubricant dilates the urethra, prelubricate it, and find the path. (If one simply lubes the tip, the lube is dragged off the catheter the farther in it goes.) The anesthetic gives you 20-30 minutes of respite from the inevitable complaint: "I feel that I have to pee." This gives time to explain, and consider oxybutynin to ease the sensation.

#14 A Fresh Breeze

---How often have you noticed that some chronic pulmonary patients in acute exacerbation, even with supplemental oxygen meeting their needs, express dyspnea and anxiety with a “smothering” sensation? It’s not uncommon. There’s two ways to relieve it without drugs.

1) Use a Venturi Mask to entrain room air and more accurately controls oxygen concentration and by its high air flow felt on the face provides refreshment that eliminates the smothering sensation and minimizes rebreathing of exhaled CO₂. (Consider also using heated aerosol mist by nebulizer to loosen and mobilize mucus plugs. Don’t turn down the flow (high flow carries more mist). The FIO₂ is controlled by the Venturi port.

2) Provide a room fan that blows upon the patient for the consoling breeze. Editor Jean Proehl concurs, but notes a myth that The Joint Commission prohibits fans. --It does not, as such:

From: [TJC - Standards - Use of Fans](#)

A. It has been common practice to not allow fans in laboratories or patient care areas, but it is not prohibited by Joint Commission standards. While fans may be used for additional comfort of the patient, such as those with respiratory distress or post cardiac surgery, they may indicate to surveyors that a temperature control or ventilation problem exists, which can impact equipment, patient testing results, and overall patient care. This concern usually arises after adding equipment or use of the space without increasing the size of space or ventilation. Perform an assessment to determine the need for the fan based on risks pertinent to the needs of the patient and the ventilation and/or temperature concerns for equipment, airborne particles/contamination that may impact patient care, cultures or equipment operation, and possible tripping hazard(s) created by cords.

I would chart the therapeutic intent of the intervention was to *ease the subjective component* of the patient's dyspnea.

---Do you have a sun-stroked, hyperthermic, or hyperpyrexia patient who needs cooling measures? Yes. Use cold packs at the neck, axillae, and groin. But for supplementation, or when something simpler will do, place wet towels on the patient, and use those room fans to accelerate evaporation. Advise staff to avoid clustering that block the fans’ flow.

---If you’re offering a warmed blanket for transport, or when the patient complains of being cold, adjust their understanding and expectations: “Hospitals are always warm, but the large rooms and halls can make them a little drafty.”

---For that matter, don’t sabotage yourself by saying “This disinfectant, ultrasound jelly, etc., is c-o-l-d.” Say, “This is room-temperature; it may feel a little cool to you (because you’re 98.6°).

15 Flush Syringes

Pre-filled saline syringes of 10 ml are my preference for ready to hand solutions for many IV problems in the ED and several will be in my pocket.

- Typically we start PIVs with an extension set and an evacuated lab tube adapter or syringe. 10 ml ensures a thorough flush of blood from the tubing and tests patency or infiltration.
- Need to give a small volume potent drug slowly? The 10 ml volume of diluted drug is easy to hold and control in small increments. Minimize opioid "rush" and make nausea rare.
- Many drugs will burn if it's given through a small vein that is easily irritated. Slow diluted administration will be tolerated.
- Incompatible IV fluid when giving a push med? Stop the flow; flush; give drug; re-flush; resume infusion.
- Did the gravity infusion run dry? Aspirate to remove clot and flush to verify patency and safety.
- Are air bubbles in the tubing and the patient is freaking out? Use an injection port below the bubbles to aspirate the air and reestablish flow. Air bubbles rise in the fluid proving the catch and the fluid keeps the line open while fixing the source of air.
- Rearranging tubings? The cap of the syringe keeps the tubing tip sterile while the flush keeps the line open.
- In an unconscious patient, moisten drying corneas gently and rehydrate contact lenses prior to removal, which can be kept in the remainder of the saline in suitable containers.

Never be so enamored of the cost savings of IV locks as to use them during the critical phases of resuscitation. Give meds through hanging fluids running at a rate appropriate to hemodynamic status. Anti-backflow valves in the tubing assist this so that you don't have to pinch tubing during injection.

"Code" patients can crash when tubings without valves are used and meds back up in tubing, or if several meds are given (when tubing is pinched) and flow resumes bolusing meds into the blood stream.

#16 Measure for Measure

It's hard to hold your computer next to a wound to measure it. Next time that you're in the hardware store, spend a few bucks on a metal pocket rule with inside-outside caliper tips. Use them to describe wound or lesion dimensions, foreign objects, height of JVD, mouth opening in trismus or checking airway access.

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Want to know the patient's height? Take a tip from the bank and local Stop & Rob and have index lines painted on the doorway at triage. Short of that work order, affix a tape measure there.

A well-known tip, but useful in areas where the Broselow-Luten tape is used frequently, is to enclose the tape within plexiglass sheets and have a short hanging chain for a nearby hook.

The plastic graduated oral medicine cups can be used as an expedient IV shield if a purpose-built shield is not readily available.

Where's the 20-foot line for the Snellen Visual Acuity chart? Our floor tiles are 1 foot square. Step-off the distance and mark the spot. The spot vanishes after repeated floor buffing. Consider changing the one tile to a different color: "stand on that square." Hope the building design people don't complain

17 Getting attention

Do you have information or a technique that you want *all* staff to know about? Do your emails or fliers in the mailbox not get read? Get their attention where they're less likely to miss it or be otherwise distracted. Editor Proehl calls it "Potty Training." Australian Ian Miller, RN, calls it "[the ThunderBox papers](#)" after the old outhouses in the outback.

Make a large, easy to read, succinct, notice or poster for the inside of the staff restroom door. Everyone goes there. Word will get around. It doesn't take extra time or fuss and is less time consuming than a magazine. Just check with the office that there are no policy issues of health & safety, prohibited posting area, and that janitors are okay with surface mounting. Plastic "sheet protectors" from the office may eliminate some concerns and protect the project.

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Two things get attention and alarm response from staff:

- 1) A staff member yells "I *need HELP in here!*" No faster way to get help.
- 2) Seeing any staff member running through the department. Avoid it when you don't want that reaction; besides, it's dangerous. If you must move quickly (responding to a yell), use the "[Groucho Run](#)." It's quieter, quicker, safer. It might draw quizzical stares, but not the panicked crowding of a full run.

Move briskly with dropped hips, flexed legs, and swinging arms as in [Groucho Marx's comedic run](#). It's [natural](#), and [much easier](#) on your body. Your colleagues will learn that it is your measured rapid response. In the ambulance world, we avoided the flat out run and gathered a breath at the door because "If you arrive [breathless](#), you [arrive useless](#)."

18 "Ear-igation"

Oh, no! The dreaded irrigation or ear-wash. Don't have a fancy ENT device or bulb syringe? Syringe and butterfly tubing is too clumsy to aim? The catheter-tip syringe (2 oz) pokes and is scary?

The lowly 1 Oz bulb Infant Nasal Aspirator (yeah," the snot-sucker") does a good safe job for these reasons: convenient & non-scary size; smoothly rounded plastic tip doesn't over-insert and semi-obturates the auditory meatus without excessive pressure; volume is limited thereby avoiding dizziness, great noise, excessive pressure, and rebellion; the flow is good, quick, without too much force.

An eight-ounce cup of warm water divided between ears is all that's needed. Leaning over the sink is the easiest way to contain the splash. If the exam (and r/o past TM perforation) showed a really hard plug, soften it first with warmed oil, commercial wax softeners, or hydrogen peroxide (caution about fizzy warm sensation). The patient, himself, should be advised never to put anything in his ear except his own elbow. ;-} *i.e.*, only a competent person should visualize the ear and do any procedure after or during. This disqualifies the patient from packing things in with cotton swabs.

If a dry canal is needed, visualized gentle swabbing may help; use a commercial "swimmer's ear" product, or if the patient will tolerate the warmth, a small amount of rubbing alcohol displaces the water and evaporates, disinfecting the canal as well. Do not use if the canal is scratched.

Getting poor sensing from the pulse oximeter ear clip or forehead strip due to poor

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perfusion?

Try using the ear clip on the nasal septum until perfusion picks up. You may get a better reading. Avoid prolonged pressure there as it is not purpose-designed for that and might cause injury.

Before otic foreign body removal, try instilling a little local anesthetic liquid or a soft spritz of Lidocaine spray. Caution about warmth and spraying sound.

#19 Changes.

"Code Stroke" coming in? Clear the scanner now. Meet the ambulance crew. Assess quickly. Evaluate need for airway protection. Consider going "straight to scanner." Early call to Neuro resources ASAP based upon best available field information. "Stat scan, done stat." If intubation needed, do it in the Code Room, then go to CT. Intubation while "in" the scanner is NOT desirable.

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Make a deal with EMS. Patients like to dress before coming to ED. Editor Proehl suggests: whenever an IV may be necessary, put the uppers on backwards, or remove entirely to eliminate threading bags and tubing through sleeves, or cutting clothes.

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Do you need a critical lab value ASAP? Faster than the usual *Stat.*? Cultivate your lab person who answers the phone. Use their name and yours. Tell the brief story *on a personal level*, of *why* this test should be "run now", "taken back immediately," "super *stat.*" "We need this because we think the child is in DKA." "We need to go to the Cath Lab." You'll get that processing quicker. Thank profusely, on a personal basis. Make their day. It's hard to feel like part of the team when one feels like a factory worker in the lab.

#20 SOCMOB

Every person injured by street violence that I've treated was the victim, not the loser or mutual combatant. They told me so. All were just "standing on corner minding own business" who were usually jumped from behind by two dudes they didn't get a look at, and had no idea why this had happened to them.

Chart wounds and injuries by their appearance and location without attempting to judge whether it was an entry or exit wound, or estimate age. There are too many variables. This is the realm of forensic pathologists who can do wound microscopy

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and studies. Even anatomic or hospital pathologists who do not have special training should beware of making conclusions that require forensic analysis.

Be appropriate in charting, it is subject to the discovery process. Expect to be asked if you discussed the case with anyone or kept any private notes, etc.

In view of long-term abductions, beware of things that just don't seem right, absence of primary care or of school-required immunizations, adult surrogates for parents who cannot be reached, Provider's Note not needed for school due to home schooling. Any of which may be innocent, but unusual taken in totality with other clues.) Behavioral cues of evasive answers, avoidance, or hypervigilance, can be suggestive.

Know your state's mandatory reporting laws for children, adults, or vulnerable elders. Involve consulting staff or authorities. Have hot-line information visible in the ED.

Have ready connections to protective services, hospital security and surveillance, law enforcement, risk management. Consider delay by in-house staff involvement to "check test results."

For official prisoners, all communications should be through his Officers (with the patient out of earshot) or directly with the custodial facility's medical staff. Do not give any information (e.g., follow-up) that could aid an escape or rescue attempt. Be circumspect. Be alert, and physically cautious, to minimize a personal assault to you

21 Pulse Oximetry – Can it get you in trouble?

[Pulse oximetry began in 1935](#), but didn't become practical and cheap until after NASA. It certainly wasn't in my early EDs or ambulances.

It is accepted that [cyanosis](#) is [not visible unless there are at least 5 grams per deciliter of circulating deoxygenated hemoglobin](#). Recognition is also impaired by inexperience in observation, the amount of ambient light and its [color temperature](#), pigmentation of the skin (look at the tongue {highly vascular,} nailbeds or inside of eyelids {no overlying pigment}), [anemia](#), exsanguination, or [carbon monoxide](#), [methemoglobinemia](#), or [cyanide](#). Cyanosis, alone, is not necessarily a reliable sign; in procedures, it should be avoided. Relying upon hypoxia to tell something is wrong, or to "relaxation" from it to improve a difficult airway is false and dangerous.

Special oximeters can give you carboxyhemoglobin and methemoglobin levels. Pink or "cherry-red" appearance after CO poisoning is a *post-mortem* finding –not

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a clinical sign. Typically, the *living* CO patient is pale, headachy, nauseous and vomiting, progressing to confusion and obtundation. Cyanosis will not appear.

Methemoglobinemia will give a diffuse blue “Smurf”-like appearance and SpO₂ in high 80s. Cyanide poisoning will give high hemoglobin saturations, as less O₂ is taken up by tissues unable to use it.

Be sure to use the most suitable sensor (generally adhesive in critical situations), that there is adequate perfusion, that the patient is warm and not vasoconstricted and shivering. Have alternatives and spares. For orthopedic manipulations, or other cases wherein the sensor might be dislodged, use a sticky sensor and stress-tape in place.

Pulse oximeters have been called “[time machines . . . It transports you 30-90 seconds into the past \(even 2-3 minutes\)](#).”

- This time lag means that as the SpO₂ reading falls, you are already beyond that.
- If you are not using a capnographic ventilation monitor, **and** you are giving O₂, this will mask deteriorating conditions until very late. “Routine” oxygen is *not* safer in this instance. Be attentive to airway, ventilation, SpO₂ readings and trends. If high-moderate to deep sedation is planned, use O₂ and capnography also.
- [If you are preparing to intubate](#), use [NO DESAT](#) method. Be sure to have [extra O₂ outlets](#) (or Wye Adapters 2-in-1) from your Respiratory Therapists
- If the patient is very sick, use [Delayed Sequence Intubation](#); optimizing the patient with a suitable supraglottic airway on the ventilator, and intubate via the SGA, if possible.
- If the patient cannot be optimally oxygenated, make ONLY ONE intubation effort designed for first pass success. If it doesn't work --then pull out, even if sat seems OK, and reoxygenate the patient (there won't be enough reserve for a second attempt).

#22 Airy Solutions

You have a wheezing patient in distress, sitting up, anxious, a little sweaty. Immediately a beta-agonist nebulizer is given. You're worried. The patient keeps taking out the mouthpiece to talk, cough, or reposition --even spills part of the dose.

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Get rid of the mouthpiece until the patient is stable. Remove the patient stem from the nebulizer jar; insert an aerosol mask; place on patient to resume treatment; add 6" reservoir tubes of corrugated aerosol tubing (trim it to the first ring of the tube so it doesn't scratch the face) into the expiratory holes of the mask. The patient wears the mask without interruption by talking; the reservoir stays vertical; the patient gets a better delivery of drug as each breath draws from the mask, jar, and the tubings. Multiple problems solved. Can chart as "mask with horns".

Originally, nasopharyngeal airways were cut off the roll of tubing, individualized to length, and a safety pin inserted to keep it from being inhaled. Now, manufactured NPAs have length proportional to diameter; this may be too short for your patient. The distal tip should be ~10mm from the glottis. Make a custom NPA from an endotracheal tube; check the length; cut; replace the 15mm connector; warm and soften in warm water, lubricate generously (lidocaine jelly); insert.

Before you intubate, look at the patient from the side. Is there a receding chin or short jaw under the beard? Is he ramped properly (Ear Hole equal to height of Manubrium/sternum; face parallel to ceiling)? If obese, in 25 degrees of reverse Trendelenberg (BP OK) to take visceral weight off of diaphragm. Buck teeth, or bad dentition?

Drunk patient observed in high-visibility hallway? Pulse oximeter on and portable suction at bedside. Would you like a little more visual confirmation of airway status? A narrow strip of paper or paper towel can be cut and taped to the nose so that it flutters with oronasal airflow. Avoid supplemental oxygen, if SpO2 is not what you'd like, RE-EVALUATE!

**#23 *"Where is the Life that late I led?
Where is it now? Totally dead."***

Cole Porter, "Kiss Me, Kate"

When elders present with problems of cognition, confusion, or delirium, you must, of course, seek out urgent organic or structural problems, The SDH, subtle urosepsis, pneumonias, electrolyte disturbances, heart, and more.

Try to verify the "medication reconciliation" and actual usage patterns: polypharmacy, newly added medications, changed dosage, or forgetfulness, may be behind the problem. Who sets up the medicines? Is there a reminder chart?

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Can labels be read with the old optical prescription? Is there double medication where one bottle is labeled warfarin and another is labeled Coumadin? Is the elder likely to drop small tablets and miss doses? Are “child-proof” caps too difficult for the arthritis? Do lab results imply a consistent expected clinical result?

Does new constipation, hemorrhoid problems (if bleeding, possibly the cause of a mild anemia), and dry mouth suggest an excess dose of anticholinergic “bladder pills” or overreliance on OTC sleep aids?

How is the sleep pattern? Has nocturia increased and interrupted REM sleep? Is a loop diuretic taken at HS? Is BPH not recently evaluated?

Has snoring increased? Redundancy of pharyngeal tissues, decreased tone, increased weight (perhaps from decreased activity or from an antidepressant) pushed the patient over into Obstructive Sleep Apnea? Post menopausal woman no longer have a protective effect of estrogen and may now have acquired OSA (and additional heart risk).

Has there been a “Life Change”? A loss of spouse or loved one? Grieving? Comments of “he’s dead, too.” Ruminations of friends who have already died? Erectile dysfunction or disparity in sexual activity with the partner? Loss of work, hobby, or driving privilege? Other signs of depression? Is the patient reasonably kempt? Is the house reported clean and safe? Has there been an increase of alcohol consumption? Worse nutrition?

If syncope is reported, have sexual enhancement drugs been used (may not have been Rxed: “borrowed from a friend) possibly while on nitrates or antihypertensives?

Does your neuro exam suggest problems with balance, station, or gait? Have anti-parkinsonian drug doses been revisited?

How does the elder explain the reason for the fall or visit? Does it seem confabulatory? (“Oh, I must have tripped.” “The accelerator stuck.” “Maybe, I hit both pedals?”) Does insight and judgment seem to coincide with reality?

Is there an informant as to recent changes in the quality of driving? Are they concerned about when to take away the keys?

Are living circumstances safe for disposition to follow-up?

You may not be able to elicit a final “cause”, but you can explore a number of significant leads and pass them on to the primary care provider. It may help determine the need for a geriatrician or a cognitive behavior consult.

#24 Closure

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Wound Irrigation sets in short supply? If the vessel of irrigating fluid is flexible, pierce it with a sterile needle, and s-q-u-e-e-z-e for a handy stream with some velocity that can be aimed for the nooks and crannies of the wound.

Applying several adhesive wound closures to support wound edges? Keep them neatly parallel by using the card to apply them simultaneously from the end with the small backing already removed.

Adhesive wound closures are convenient when taping IVs as they're strong and long-lasting, sterile, and hardly anyone is allergic to them. Using skin protectant or Compound Tincture of Benzoin enhances adhesion.

#25 It's for the children

Winter increases potential for Carbon Monoxide intoxications and given equal exposure, infants and children are affected earlier and more severely than larger body mass family members: they are the canaries in the mine. If family members have the same symptoms, and seem to improve since leaving the source; be suspicious. Fatigue, headache, nausea, vomiting, lethargy -> obtundation are hallmark symptoms. Put a display of CO information and detectors in your waiting room.

Liquid diphenhydramine is a common medicine for kids. It's useful for adults, too, when you want a prompt response but don't need an injection or IV. As it's flavored, it goes down well. Biting a capsule or tablet to speed dissolution will give the characteristic bitter taste and local anesthetic effect on oral tissues.

For safety's sake, no inflated glove toys for the kids. Consider latex allergies, popping, inhaled fragments, mouthing of the balloon, dropping on the floor, spreading of viruses, etc. You need a higher sanitation and safety standard than in your own home. Toys should be single-use, or have a program for cleaning and sanitizing. Stuffed animals absorb a lot of undesirable things.

Be careful of run-about toddlers following you or reaching through doorways as you leave. Keep the responsible adults strictly accountable for safety and observation. Remind them firmly and kindly at once when you see an actual or foreseeable problem.

Try to find time for a brief personal chat with children, adolescents, as to their interests and plans; sharing fun facts and insights on our work may recruit for their future career. At minimum, play up a love of reading, the permanence and power of knowledge from reading which can make one able to do anything one wants. You may positively influence that life and be an ally to that parent.

#26 Safety Miscellany

1. Who is responsible for the “ABC room checks” in the radiology suite of your ED? No one wants to run a code in the X-Ray room or CT scanner. As codes there are relatively infrequent, and Radiology Techs do not take much part in the care of a coded patient, the equipment there may not get the scrutiny of the rest of the ED. It should be checked daily with a clinician's eye as in any patient care area.
2. Do your Reception, Triage, and Restraint areas have “Silent Alarm” buttons to trigger a Security response? Even if an officer is posted there, there should be a discreet or hidden alarm.
3. Emergency equipment and monitors in a security room for patients may be within a cabinet. Ensure that its lock can be opened instantly, even if one is flustered. Polycarbonate windows or strict inspection for checking should be required.
4. When confronting a high-risk patient: have reinforcements; maintain a safe distance and safe exit; remove your stethoscope, pens, tools, shears, that can be used against you; lanyards (if not removed) should be of break-away design; have your hair back, up, or covered; be gloved, and have wide protective glasses or goggles on.
5. Do you get a lot of unruly or dangerous patients? Consider keeping a police whistle as part of your gear. It makes an effective alarm audible throughout the department. Staff in any custody setting will all have one.
6. For that matter, do you routinely carry an effective self-defense device with which you have practiced and are proficient? Make those end-of-shift trips to your car a little safer. Get a Security escort or co-worker to go with you.

#27 Holiday expectations

This week begins an entire season of holidays, travel, gatherings, and communal celebrations. It is likely to put a certain uptick in holiday-related cases, albeit perhaps lost in longer term or more global statistics.

In medical cases, most obviously there will be an upturn related to overindulgence. Dyspepsia & GERD related chest pain may predominate over CAD, but each must still get their EKG within 5 minutes and be promptly evaluated. Problems related to increased fatty diet are likely to increase. Higher sodium intake is likely to increase hypertension, CHF, and with “missed” dialysis appointments with more presentations of “I need dialysis.”

Trauma and travel-related problems may include MVCs or auto-pedestrian due to darkness, distraction, drunken, and drowsy driving; multiple collisions from foggy or

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slippery roads, speed and following too closely; stress and fatigue from delayed or missed connections; even cardiac decompensation from aircraft cabin altitudes of 5000-7000 feet, perhaps even a PE from a very long flight. The mundane slip/fall may increase with slushy pavement, spills in stores, or overreaching for special occasion dishes or household goods.

Holidays are psychic stressors for some, with ruminations of past problems, close contact with difficult relations, alcohol consumption, and heightened dreams of perfect futures versus present imperfect realities provoking worse depression. The ED may be sought for respite by the unhoused and ill-fed.

Even if we “have to work the holiday,” the comparison to those under our care should help us be grateful for what we have.

“Be kinder than necessary for everyone is fighting some kind of battle.”

#28 Suspicion

Sometimes you may have a feeling of *all is not right* or *something doesn't add up here*. This is a useful and valuable instinct. I think of it as “The Agatha Christie Theorem” ---“*fell, jumped, or was pushed*” in the classic phrase. Take care of the patient, yes. But, become the “[compleat](#)” observer, circumspect in statement, painstaking in examination, and omitting no test or means of verifying the story.

In charting, prefer “is reported (by whom) to have fallen” to “appears to have fallen” which implies your medical opinion as “consistent with ... “ Involve the Coroner/Medical Examiner or investigative authority early rather than later. It is better to have suspicion refuted than to have fault undiscovered.

Hospital autopsies have declined for some years. Yet, hospital pathologists may not have a forensic outlook or training. If their findings are consistent with a likely cause of death, they may not pursue further studies to exclude all other possibilities.

Medical Examiners are often short-budgeted and under-resourced. When no suspicion shrieks, if the hospital report of the final illness appears competent and has medical imaging, the case may be happily signed out rather than investigated. Beware. If you have uncertainty, speak it. In my state, being unable to certify the cause of death is grounds for a Coroner's investigation. Should no investigation be instigated, the alternative would be to default to the PMD's prior assumptions.

EDs are so often associated with reportable cases that are either: sudden; unexplained; not previously seen by a physician; solitary; have been unconscious throughout hospital stay; toxic; or occupational causation. It may be worthwhile to invite a representative from the Medical Examiner's office to speak at a departmental meeting.

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Remember, too, that your active suspicion or clinical hunch may protect the living, as when a patient crashed, coded and died within a half-hour and whose immediate *post-mortem* blood cultures confirmed the fulminating meningococemia. Exposed staff were able to take antibiotic prophylaxis.

#29 Warmest Holiday Wishes

There is a quotation, often seen on the Internet, variously attributed to Norwegians, Scandinavians, [Alfred Wainwright](#), or [Sir Ranulph Fiennes](#), that "*There is no such thing as bad weather, only bad clothing.*" Indeed, there is a substantial element of insufficient preparation by victims. And, it has been written that "*No previously healthy person should die of hypothermia after they have been rescued and treatment has been started.*" [[Cameron C. Bangs, M.D. The Mountaineers 1986.](#)]

Immediate actions upon arrival include ABCs, physiological monitoring, point of care glucose testing, and if a combustion device had been used, POCT oximetry that checks hemoglobinopathies (for CO) or ABG/VBG with coximetry. Monitoring should include continuous online thermometry of esophagus, rectum, bladder, or central line. Blood Alcohol Level should be sent.

High flow heated & humidified nasal cannula should begin immediately unless the patient is to be intubated at once. Such heat delivered to the nasopharynx and adjacent brain, lungs and heart, results in essential warming where it is most needed and immediately distributed. The patient should be stripped of cold clothing, *etc.*, and the skin should dried as needed.

Large bore vascular access should be obtained for warmed IV fluids. Early consult to Anesthesiology or Intensivist should be made. If invasive warming is feasible, consider placing a temporary dialysis catheter or two 7.5 fr Introducers to venous and arterial vessels.

Forced air warming blankets are often used, but may interfere with procedures; some hospitals will place them under the patient for this reason. Warmers or rapid infusers should be on IV lines. Cavitary lavage of peritoneum, thorax, and bladder have been done. However, if a perfusionist and ECMO, or bedside dialysis, are available soon, these may be the most effective. Immersion in a Hubbard tank, if available, warms rapidly but severely limits care and monitoring.

When transporting, take care to insulate the patient as warmly as possible to minimize temperature drop. Lessen heat loss from the head and neck with a ski cap and warm blankets with other measures.

Do not omit searching (including head CT) for other injuries that may have led to the exposure or prevented self-rescue.

"The snow doesn't give a soft white damn whom it touches." [~e.e. cummings](#)

#30 Finding things

Take a look for a small vein on a little hand. Seek a subcutaneous sliver. Transilluminate with your LED pocket light or the otoscope light. No luck? Go to ultrasound.

Tape your tongue depressor to your penlight for a free hand to guide the head's position.

Lift off shards of glass with a large adhesive membrane dressing. A hand-held vacuum cleaner has also been used to remove shards and sand from the patient and his stretcher wrappings.

A pocket-sized illuminated magnifying glass (2X-6X) is cheap and handy for looking at small lesions, splinters, drug tablet codes, sluggish pupils, and the infuriatingly small lettering on drug labels when one is over 40!

Drop something and can't find it? Get low on the floor with your flashlight and look for reflection, color, height irregularity, or long shadow in your beam.

Did your laryngoscope go dim? Your video laryngoscope lens is fouled? Is the airway soiled by vomitus, UGIB, or charcoal? Is it a dark hole down there? Consider a bright penlight or flashlight (LED) pressed against the anterior neck over the cricothyroid membrane to provide a chink of light for which to aim.
<http://bjj.oxfordjournals.org/content/105/1/96.full.pdf+html>

---Still not sure? Have someone give a sharp squeeze or compression to the chest which may make a visible bubble at the cords. Pass your bougie there and seek tactile confirmation of tracheal rings or "hold-up" of the bougie at 30-40 cm.

#31 Thoughts in my head

3"X5" Index cards in your shirt pocket beat a note pad. They "file" easily there, are stiff to write upon without a backing or clip board, easily stamped or stickered with patient ID and,, if colored are less likely to be mislaid. Some will punch a hole in the corner to keep on a metal ring. If lined, and you know the spacing distance, you can use as a handy ruler.

If there is a bug or foxtail burr in the ear, gently spritz a little lidocaine spray in the canal to minimize discomfort (it feels warm, too) during exam and removal.

Traditional head mirrors may seem old-fashioned, but if your patient is sitting with a good halogen light behind him, the mirror gives the widest field of light and is co-axial with the vision, sparing your neck. Many use a modern head-lamp for want of practice with the mirror. However, if you are performing hallway procedures, and have a head-lamp light source, or carry a hiker's LED headlight, it can serve well to improve suturing, etc.

An unconscious patient rolls in, and quickly spews vomitus (from the hyperventilated stomach per BVM?): Gurney to Trendelenburg's Position; Roll patient to side; pull up the patient's own T-shirt around your fingers to swab dry the upper airway whilst suction is being prepared. Useful accessories on your airway tray are bulk-packaged 4"X4" gauze squares and long vaginal swab sticks to clean the airway.

It has been said that the aroma of Vanilla is soothing and relaxing. No one will ever do a head-to-head trial versus an adequate dose of benzodiazepine or antipsychotic. But it might give you an extra edge with those long-stay patients on psychiatric holds. And, it'll give a nice seasonal holiday smell to the ED.

#32 Phlebopenia

Not much peripheral access to go for? Don't need a central or midline? Is the ultrasound machine in the shop? Look carefully for a "little blue line" into which you think that you might be able to insert a 24 ga cannula or 25 ga winged needle. Hold steady when you obtain a flash or feel that you are within the vein. Keep the tourniquet on. Have an assistant, with a large syringe of saline and flexible extension, gently fill the vein with saline; advance the cannula when you are confident. Continue filling the vein (50-100 mls) with tourniquet on (as if a mini-Bier's Block). Other larger veins may then appear.

Sometimes chubbiness or edema overlies the "Intern's Vein" (Superficial Radial V.) making it hard to discern. Remove the wristwatch compressing the skin; palpate that spot for the vein, –you may find it there. If the arm is very puffy, exsanguinate the arm by high elevation and elastic wrapping to redistribute the interstitial fluid. When there is reduction in edema, apply a proximal tourniquet, lower the limb as much as possible and remove the wraps. The reactive increase in flow, and now-compressed tissues, may reveal a vein. An added distal tourniquet may be necessary. If edema is likely to recur, choose cannula length carefully so that sufficient length of cannula remains intravascular.

Occasionally, an odd vein may present itself when vascular access is needed (without drilling a bone or placing a central line): scalp veins in adults; e.g., cutaneous veins of the thighs, shoulders, or chest wall.

#33 Drug Reminders for Patients

Patients may pass up the Pharmacist's Consult and may not read the handout.

When dispensing, include pertinent important reminders at the time of giving the prescription.

- Early signs of drug reaction and anaphylaxis and of serious adverse effects.

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- Interactions with other drugs being taken.
- Some antibiotics decrease effectiveness of oral contraceptives and back-up contraception should be used.
- Cephalexin commonly causes some stomach “bubbles” and metallic taste (take with snack) and alter intestinal flora leading to loose stools (prevent or stop with yoghurt or acidophilus milk).
- Some medicines, especially psych, increase dermal photosensitivity and caution with UV exposure is needed.
- Steroids have many effects and frequently alter sleep cycle (mitigate by timing of dose), increase hunger, weight gain from eating or retained fluids, mood swings, stomach irritation, acne episode, raised blood sugar and hypertension, delayed wound healing. Dormant past TB can be reactivated. Chronic use can soften scars, lead to cataracts, cause GIB.