



Advanced Emergency Nursing JOURNAL

Presents

Collected Clinical Tips©

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

2017

187 Holiday "Cheers," Highway Hypnosis, Hypothermia.

When accident victims are brought to you, naturally, you will obtain the best available history of the mechanism of injury and its antecedent events. Most seasonal possibilities will occur to you, yet combinations of subtle things may interact to cause the injury.

- Indulgence in alcohol, or recreational drugs may increase sedation of either prescription medicines or over the counter, and cold remedies taken.
- Fatigue from travel, family drama, sleep disturbance, may lessen attention to road hazards.
- Poor driving conditions: darkness; precipitation; dazzle and glare of headlights; dirty windshields that scatter light and worsen viewing, perhaps with wiper blades that have dried and stiffened in summer heat which have not been replaced; slippery roadways (and the tendency to conquer distance by speeding) ; pedestrians in dark clothing pulled close about (and who are unwary of drivers' inability to see them); hard to see street signs that are blocked by foliage; auditory confusion by voices, heater-defroster roar, music, and the voice of the GPS.
- Reduced mental functioning from effects of cold, or contrariwise –an overheated car and heavy clothing; "food coma" from burdensome digestive loads.
- Carbon monoxide toxicity from defective exhausts and heating systems.

The incremental or synergistic effect of one or more of these factors may be sufficient added risk as to lead to the accident. Being able to document such data may clarify understanding of causation.

189 Personal and Family Response to Extreme Weather
Read the Advanced Emergency Nursing Blog:
[“Preparing for what Nature can dish out.”](#)

Analyze your personal and family needs in community-wide or regional natural disasters. Consider your prospects in light of being at home with family; being at work and unable to leave; being at home with family yet called, or have a felt need to report to work; consider backup plans for child pickup and care. Make sure all important phone numbers are in your cellular phone, and that you have a paper list (remember those?) in case cell towers are out and you use a hard-wired telephone. (Wireless extensions and answering machines will be dependent upon household electricity. Have hard-wired phones in crucial locations; also, only hard-wired phones will give automatic location information to the 911 operator!!!!. Cellular phones may be answered more than 100 miles away by an operator with no local knowledge of your area and who will need an exact, clear, verbal identification of location by address and room number! Find out if your local 911 operator (use a *non-emergency* line to find out) can receive text messages and video from scene. Start family discussions and planning. Tackle manageable portions of your needs, plans, and acquiring supplies, at a time. “It’s better to have it and not need it, than to need it and not have it.”

191 FASTER detection of pneumothorax

Pneumothorax *can* be blatantly obvious, or if not greatly progressed, more subtle but no less potentially lethal. Using bedside ultrasonography can be a great, and *immediate*, tool. You may have your answer faster than the radiographer can shoot the film or before you can organize a hazardous trip to CT. Indeed, Kristensen says ultrasound “should be the first diagnostic approach when a pneumothorax is suspected intraoperatively or during initial trauma evaluation.”

If you are going to do a needle/cannula decompression, this is a great time to measure chest wall thickness *versus* needle length to ensure that it will actually *reach!* --A known problem. If there is compelling haste, consider a simple “finger thoracostomy” for rapid relief converting to an ‘open’ pneumothorax. Otherwise, plan your chest tube.

Kristensen, M. S. (2011). [Ultrasonography in the management of the airway](#). *Acta Anaesthesiologica Scandinavica*, 55(10), 1155-1173. {Abstract & Refs., Paywall; [Alt-source free [PDF](#)].

Husain, L. F., Hagopian, L., Wayman, D., Baker, W. E., & Carmody, K. A. (2012). [Sonographic diagnosis of pneumothorax](#). *Journal of emergencies, trauma, and shock*, 5(1), 76. {Free HTML; PDF Paywall}

Kline, J. P., Dionisio, D., Sullivan, K., Early, T., Wolf, J., & Kline, D. (2013). [Detection of pneumothorax with ultrasound](#). *AANA J*, 81(4), 265-71.

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Ozaki, Randi, MD et al; Chief Editor: Caroline R Taylor, MD. [Bedside Ultrasonography for Pneumothorax](#). emedicine.medscape.com. Updated: Jun 02, 2016.

Nickson, Dr. Chris. "[Finger Thoracostomy](#)." [Life in the Fastlane](#). January 23, 2017.

Griffin, Cynthia, D.O., EMT-P. "[What the evidence shows: Finger Thoracostomy Vs Chest Tube Insertion Vs Needle Decompression](#)." April 21, 2015. Great pdf of 35 slide show.

UCalgary EM. [Detecting Pneumothorax with Bedside Ultrasound - Tutorial](#). Video. [Youtube.com](#).

[SonoSite](#) Youtube Channel [How to: Pneumothorax Evaluation with Ultrasound](#). [SonoSite website education](#).

[UltrasoundPod](#). [Ultrasound Podcast - Lung Ultrasound Part 3: Advanced pneumothorax pro tips](#). 2017. One of 82 videos on [Youtube](#) from UltrasoundPodcast.

#192 Vertigo after blow to the head

You *will* have patients who have hit their head. Some will have persistent vertigo. Once they've had a thorough exam and appropriate imaging; if there is a non-focal neuro exam, and no central symptoms, a Hallpike-Dix Test may help discern a peripheral source of vertigo.

What are your discharge options?

1. "*This should get better. Follow up with your own doctor. If worse, return to the E.D.*"? That's common advice, but doesn't lessen symptoms.
2. Prescribe *p.r.n.* mild sedation, e.g., meclizine or a benzodiazepine to reduce dizziness and make symptoms less annoying?
3. Do you attempt (and, if suitable, teach) "Epley Maneuvers" to reposition otoliths in the semi-circular canals?

Episodes of Benign Paroxysmal Positional Vertigo can begin, usually in older persons, spontaneously without a trigger; with a trigger, such as rolling over in bed; or with minor trauma to the head. In each, calcium carbonate crystals become dislodged from the cilia and float within the semi-circular canals somewhat like the snow in a water globe; the resultant confusion in signals to the brain suggest that the world is moving or some sense of traveling.

The 'Canalith Repositioning' maneuvers seek to resettle the crystals at the bottom of the canals; this with some restriction on head movements and possibly sleeping with the head up, is often quickly effective and without medication or side-effects. Unsurprisingly, during the test and maneuvers, the patient's symptoms (nystagmus, vertigo, nausea, rarely vomiting) may be reproduced and help guide treatment as to the affected side.

If matters are not clear-cut, discuss with a neurologist or otologist. Having a solution to the problem is very satisfying to the patient and to you. Otolith repositioning can lessen and terminate symptoms that might otherwise leave the patient fearful and suffering for extended periods.

Chang, A. K., MD. [As the World Turns: Vertigo in the Emergency Department](#). {Apparently from University of Illinois at Chicago College of Medicine for [Foundation for Education and Research in Neurological Emergencies](#) and

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

presented to 2003 meeting of [AAEM](#) 2nd Mediterranean Emergency Medicine Conference at Barcelona.} c.f.. [FERNE Link](#) for additional formats, and many other valuable references.

Hilton, M. P., & Pinder, D. K. (2014). [The Epley \(canalith repositioning\) manoeuvre for benign paroxysmal positional vertigo](#). *The Cochrane Library*.

Godman, Heidi. "[Self-help videos to stop vertigo work for some, not all.](#)" Harvard Health Blog. Posted August 06, 2012, 3:00 pm. Updated April 25, 2016, 3:45 pm.

193 Aroma Therapy & Therapy for Aromas ...

Recently, it's again be suggested that inhaling vapors from an alcohol wipe may help a patient to abort sensations of nausea.

Patients can be helped to void with 1 or 2 drops of "Peppermint Oil, NF" near (not on) the meatus. Say how well it works, especially if *you relax*. Leave the patient and soon 'let-down' of urine will occur. (Smells like a candy shop.) Peppermint Oil is also an old remedy for nausea and to stimulate appetite.

"Clove Oil, NF" has traditionally been used to ease toothache. Nurses have used it to counter the malodors of pungent patients. (Some will say 'dentist office smell'; suggest 'nice baked home.')

Diluted Wintergreen Oil (1:1) can cover bad odors; but smell is medicinal. Benzoin spray or drops as a deodorant, also.

Sodium Bicarbonate applied topically, or sprinkled into the patient's shoes or onto smelly garbage can absorb odors, and neutralize the acidity that results from the bacteria in the odor.

Ground coffee is said to absorb strong odors in the room.

Vanilla Extract is said to be calmative. (Don't leave the bottle where someone might drink it. ([≥ 70 proof](#)))

Shaving cream can help clean a very dirty patient, soften crud, and leave a nice smell without irritating the skin. Hand lotion also softens dried matter.

Washing one's hands with a bit of mint toothpaste can remove retained odors.

[Trick of the Trade: Isopropyl Alcohol Vapor Inhalation for Nausea and Vomiting](#). Mark Culver, PharmD, BCPS. December 20, 2015. [ALiEM](#). [Inter alia](#).

"[Tips & Tricks](#)." [Emergency Nursing World!](#) 2008.

[Vanderbilt University ED Essential Oils Trial](#).

[Sniffing out the truth on dueling aromatherapy studies](#). Holland, Earle. [Health News Review](#). September, 2015.

194 “*Though she be but little, she is fierce*”

Wm. Shakespeare. “Midsummer Night’s Dream”

The humble, yet greatly capable, nasopharyngeal airway, in modified form, with a 15 mm endotracheal tube connector tightly inserted in the outer end, and an additional ‘Murphy Eye’ cut into the distal convexity, solves many problems. Though it does not put an inflated cuff past the vocal cords into the trachea, an endotracheal tube in the pharynx will work, until it is possible to place it intratracheally.

- The 15-mm connector prevents aspiration and connects directly to a breathing circuit. The ‘eye’ prevents obstruction if the bevel abuts tissue. Length placed is adjusted by listening for, or, feeling best airflow or inspection by scope (~10 mm from glottis, in adults).
- Insertion is possible even in trismus or during convulsions. Facial disproportion or irregularities are bypassed; lips and other nostril are held closed by hand.
- Overcomes palatal and base of tongue obstruction in the airway delivering flow adjacent to the glottis. The combined internal diameter of two NPAs is greater than an endotracheal tube (using a mask or double connector). High flow or CPAP is effective in preoxygenation, apneic oxygenation, and distends the pharyngeal diameter. A maximally open airway lessens pressures and gastric insufflation.
- Well-lubricated NPAs carefully inserted along the natural curves are generally atraumatic; vasoconstrictors can minimize epistaxis potential. This curve can be a conduit for flexible bronchoscopic intubation or a difficult nasogastric tube placement. The NPA can be slit on its curve to make removal easy with the delivered item *in situ*.
- An ETT, used as an NPA, can have its cuff inflated to further displace the base of tongue. Remember to deflate the cuff before advancing or removing the tube.
- Oxygenation and ventilation can continue during intubation or flexible laryngoscopy *via* the other nostril. One can also pass the scope through the NPA, during such, with a bronchoscopy swivel adaptor to the circuit.
- The attached breathing circuit ‘stays where needed’ during unassisted, or minimal staff , CPR. Heavy circuits may need support.
- Airways and lubricant are easily pocket-carried within a plastic bag.
- Although most literature is recent, modified NPAs have been used, anecdotally, since long before the mid-1970s.



Photo Courtesy of Tom Trimble, RN.

After, [Beattie, C](#)
[The modified nasal trumpet maneuver.](#)
[Anesth Analg. 2002 Feb;94\(2\):467-9,](#)
[PMID: 11812720](#)

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Whitten, Christine, MD. [Use Of A Nasal Airway To Assist Ventilation During Fiberoptic Intubation](#). September 16, 2015. [AirwayJedi.com](#).

Eipe, N., McGuire, T., & Aboms, D. (2011). [Airway Management in Maxillofacial Trauma—Alternative Techniques of Intubation and Modifications of Nasal Airways](#). *Oral Health*, 101(6), 46.

195 ... To the Bone ...

Consider keeping your Intraosseous Insertion gear on or near your Airway cart or code room IV cart so that it's ready to hand *and an immediate reminder!* Don't dawdle on access. If good access isn't immediately available in a resuscitation {When is it ever?}, go rapidly to intraosseus infusion. Keep two of each needle driver size with the unit (maybe three, if one is dropped? ☺). Have short extension tubing and flush right there too. If you have the space, consider one setup on each side.

If a little more time is available, a modest peripheral cannula might be replaced with a Rapid Infusion Catheter if the vein can be “dilated up.”

A cut-down will let you find a flattened vessel and cannulate it or hemi-sect with scissors and thread the line.

Simple physics is sometimes forgotten, raising the IV Poles to maximum with a slightly lower bed speeds the flow rate. Shorter and wider cannulae have less resistance to flow.

Sometimes, having someone hold the legs up high will help distend the vein, (if doing so will not worsen the injury).

#196 The Unruly Tube – fit to be tied

Your patient is disheveled; wet from weather, vomiting, bloodied, and his long hair and beard are as wild as Medusa’s snakes. An airway is placed. There’s no effective way of ‘taping it’ to the face. Nor is there any reliable commercial tube holder at hand. What to do?

If the tube is soiled and wet, wipe it with alcohol wipes: this will clean, sanitize, displace water etc., and evaporate quickly to dry. If you still prefer tape, it will stick to the tube, if not the patient.

Take the plastic oxygen tubing from preoxygenating the patient and using the middle of the tubing, make either a “[Lark’s Head](#)’ or ‘[Girth Hitch](#)’ (same knot, different names), or a ‘[Clove Hitch](#)’ in the air, and drop over the end of the airway tube moving down to the face. Resume bagging. The ends can be separated, and brought around the head and neck from front and back, can then be tied on the *side* for easier access, but not pressing uncomfortably anywhere. The *plastic-against-plastic* friction effect will keep the arrangement from slipping. Superfluous ends may then be trimmed.

Another quick way is to use a surgical mask of the four-string variety, placing the facial area under the occiput. The four ends can then be tied to the tube so that it is held in place and centered. The gaps between the strings can be used to insert a bite block, or to suction pharyngeal secretions with a Yankauer tip.

197 Saving articles

Saving a great article (to which you’re entitled) is valuable for your study and research. While there is citation software to manage your efforts, I’ve not used any. Here’s what I’ve learned.

1. Save it *now*. Delay means that it may be withdrawn and that you’ll forget where you found it. It is better to save the article than ‘bookmark’ the URL which may change, or access lost if you change institutions.
2. If not at your usual computer, use a flash drive, email the link or attachment, or upload to your cloud service.
3. Use a file system. Make up your own; it must make sense to you.

4. I format files as: article title, authors, date, journal or source.
5. Title Problems: Often too long; colons, ?s, '!'s, symbols, will not file and must be removed. Long titles can be abbreviated, but will not respond to drive searches with the full title. Consider keywords for special searches or when the title is not indicative of the main interest, or when saving podcasts or embedded videos.
6. Whenever I can, I save as a single-file archive html (preserves links) and as a pdf. This allows easier searching, live citation links, and good appearance across different platforms. Some pdfs may have multiple articles or correspondence where extra copies, retitled, may need to be saved -even in different topical folders. Older pdfs of photo-scanned pages cannot be searched or quality improved as they are images.
7. If 'right-click' has been disabled, you may be able to use 'Alt+File+Save as' to save the file. 'Print Screen' can copy into a graphics program.
8. If text is awkwardly formatted, pasting into a text file will strip the formatting and allow you to edit your file names.
9. Searches, citation formats, alternate locations and formats, can be found with [Google Scholar](#). Search engines can help find blogs that are not cataloged by academic sources.
10. *Backup your files!*

198 When the waiting room is overflowing.

Do you ever wish there was a waiting room for the waiting room? We have all struggled with overcrowding, insufficient resources, 'boarding', 'diversion' by other facilities, etc.^{1,5} Many efforts have been tried with ± effect.⁴ Add to the usual mix: Doctors out of town at convention; 3-4 day holiday schedule in O.R.; shortage of convalescent care beds impeding discharge; lovsl 'Pdyvh Emergency' is on bypass^{2,3}; 'Home Hospice' patient brought in by worried family; 'Discharge by Transfer' from nursing home "needs acute care"; ED Frequent Flyers; fresh batch of super-potent street opiates. No wonder we are exhausted and dismayed.⁵

When the pressure's on:

- ❖ Recognize the problem, and declare it to all staff.
- ❖ Notify Superiors and Administration. Ask for resources. See if float staff or on call can come.
- ❖ If Triage is backed up: send a tech out to screen C.C., VS; Registration to ID or start Disaster Tags with Tech.
- ❖ Split patient loads & free provider to start secondary screening and essential orders.
- ❖ Providers doing patient care should "huddle" to sort and share concerns.
- ❖ If a provider can rove (possibly the screener/secondary triage), this can help a lot.
- ❖ Expedite admissions, and have teams do their work-up and orders upstairs.
- ❖ If supported, triage minor c.c.'s direct to clinics or Urgent Care appointments in a.m.
- ❖ Remember to debrief and decompress!

1. Andrews, Michelle. [Hospitals Neglect Practices to Combat ED Overcrowding, Study Finds. MedPageToday.com/EmergencyMedicine/](#). December 12, 2015.
2. Smith, Ben, MD. [Ben Smith: Warehousing mentally ill people in emergency departments must stop.](#) February 5, 2017. [VTDigger.org](#).
3. Johnson, Mark. [State retracts data showing jump in psychiatric emergencies.](#) March 2, 2017. [VTDigger.org](#).
4. Ellis, James & Razavi. [7 Methods to Ease Hospital Emergency Department Overcrowding.](#) [HealthcareFinanceNews.com](#). September 6, 2011.
5. Zavotsky, K. E., & Chan, G. K. (2016). [Exploring the Relationship Among Moral Distress, Coping, and the Practice Environment in Emergency Department Nurses.](#) *Advanced emergency nursing journal*, 38(2), 133-146.

199 Some can wheeze, and some can't

Asthma can have a range of presentations; it can also fail to respond to initial treatments. The sick, tired, asthmatic who is fatiguing, or whose chest is “quiet” with little to no audible respirations upon auscultation will soon die.

Assuming all usual initial measures have been underway; that *precipitants* such as pulmonary infection or allergic stimuli have been sought; and that potential *deceivers* such as an aspirated foreign body have been eliminated; what to do next?

If the patient is “working” yet maintaining a reasonable oxygen saturation, and the goal is to lessen the “work,” if HeliOx (Helium-Oxygen mixture, 80%/20% at low altitudes, 70%/30% at higher altitudes) is available to you, the less viscous gas mixture will have more laminar flow in tight spaces can do much to ease the work of breathing for the patient. A few extra liters of oxygen by nasal cannula may be needed if saturations are borderline, but more oxygen makes the mixture less ‘slippery.’ This may allow rest and more time for therapies to work.

If the patient is likely to need intubation, but needs optimization first, a DSI Delayed Sequence Intubation, is useful. Ketamine is used to decrease agitation (stop pulling away the oxygen mask) to facilitate use of NIPPV to stabilize the pulmonary status and deliver inhaled meds; the goal is to optimize for intubation, but preferably allow the patient to ‘ride out’ the episode without intubation. Ketamine is a good choice as it has additional bronchodilator effect as it stimulates native catecholamine release (if not already catecholamine depleted). It does increase RR and BP about 20%. It can have a myocardial depressant effect if catecholamines are depleted. It is generally considered protective of airway reflexes. Consult your local directives.

Beware of a hyperinflated chest due to breath-stacking; rising pressures and lack of chest movement should cause you to immediately open the breathing circuit to vent the excess, you may need to squeeze the chest externally to force air out before resuming. Unwatched for, and un-rescued, barotrauma ensues as in an over-inflated balloon.

Parenteral β -agonists (Terbutaline) and α - β agonists (Epinephrine), once a mainstay of treatment before effective inhaled agents, may have a role in the very-tight ‘silent chest’ situation where it is presumed that inhaled agents ‘*can't get in*’ because the lower airways are locked-down. There is little downside in the critical situation to their use. IM is preferred, subcutaneous is avoided (\downarrow absorption), IV and infusions may be necessary.

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

When intubated, treatment remains active; the patient must be sedated and paralyzed; and lung-protective strategies used. “Plastic between the cords doesn’t cure the disease.”

Kim, Eden, DO MPH PGY3. [Epinephrine/Terbutaline in Acute Asthma Exacerbation](#). [The Original Kings of County Blog](#). March 12, 2017.

“basile” [Staten Island Corner: The Intubated Asthmatic](#). [The Original Kings of County Blog](#). September 17, 2012.

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[Global Initiative for Asthma](#) – New 2017 Report and materials.

#200 {'Double-Century' Edition} – Helping Those with Hearing Loss

This 200th Clinical Tips continues the weekly appearance of practical tips and useful knowledge for the work that we do. Each tip comprises several suggestions or facts, thus the actual count of tips is much higher making this a very popular feature of our website. We will soon have our fourth anniversary.

A common and 'invisible' sensory loss that affects our communication is hearing loss; not easily perceived and often unrealized by those who have it. Our triage and interviews can be badly off the mark if these rules are ignored. Remember, that looking at the computer screen as we talk occurs easily and is a major problem.

Correct attribution of authorship is uncertain, but this list has 'been around' for some years. The use of a 'commandment' format is an old literary device for lists of ten to which the author lends importance to its dictates.

Ten Commandments the Hearing Impaired Wish You Knew

- I. Thou shalt not speak to the listener from another room.
- II. Thou shalt not speak with your back toward the listener or while the listener's back is toward you.
- III. Thou shalt not speak as you walk away.
- IV. Thou shalt not turn your face away from the listener while continuing to talk.
- V. Thou shalt not speak while background noise (water running, radio or TV playing, people talking, etc.) is as loud or louder than your voice.

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- VI. Thou shalt not start to speak before getting the listener's attention and while the listener is reading, engrossed in a TV program, or otherwise preoccupied.
- VII. Thou shalt not speak while your face is hidden in shadow.
- VIII. Thou shalt not obstruct a view of your mouth while speaking.
- IX. Thou shalt not speak rapidly or by shouting.
- X. Thou shalt be patient, supportive and loving when the listener appears to have difficulty comprehending what has been said.

Source: www.InMyGoodEar.com {graphic link below}

- [Hearing Loss](#)
- [Progressive Hearing Loss](#)
- [18 everyday sounds that can hurt your hearing](#)
- [Hearing Loss Signs](#)
- [The 7 warning signs of hearing loss](#)
- [10 Warning Signs of Hearing Loss](#)
- [Ten signs you may have hearing loss](#)
- [Symptoms of Hearing Impairment](#)
[Do you, your older staff, or younger staff who like loud music, have any symptoms?]
- [Top Ten Reasons to get a Hearing Test](#)
- [How to Read an Audiogram](#) [basic]
- [Ten Commandments That The Hearing Impaired Wish You Knew](#) [Graphic]
- [Ten Commandments for those who interact with the hearing impaired](#) [Graphic]
- [Speaking to the Hard of Hearing](#) [Graphic]
- ["Single-Sided Deafness"](#) [Graphic]
- [Communication Tips for Hearing People in Communicating With Those With A Hearing Loss](#) [Graphic; print cards for staff meeting in-service topic]
- [Hearing Loss Association of America](#) [Link]

201 The Peripheral Brain and Nervous System

Many health personnel humorously refer to their system of pocket cards, pamphlets, phone lists, or cellular phones as their "peripheral brain."

The smart phone has merit in this role. It handles all sorts of digital media, and many apps are available for every specialty.

Copies of uncommon and worrisome ECGs, sonos, CTs or MRI findings can be saved for reference; likewise, infographics; entire reference articles, and your reading list.

Consider using the calendar function to keep track of renewal dates for licensure and certifications, for scheduling continuing education. Unless required to produce actual certificates; a lot of wallet space can be saved by photos of the cards.

If you are travelling, or submitting articles, retain your *curriculum vitae* for easy attachment or printing.

If you use it for clinical photography or videos, be sure to obtain informed consent, and if in audio or video format, a stated assurance of understanding and consent by the consenting party within the recording adds ethical value to it, apart from the signed agreement. Be sure that your facility is OK with this, or that they require a staff medical photographer.

202 Tox Screening

"Send a tox screen." Now, *there's* a common phrase. Which screen is meant, however? Most places that deal often with patients who are intoxicated somehow (deliberate; suicidal or homicidal; accidental; occupational; mass event; *etc.*), have several types of test, depending on resources, complexity, or outsourced to forensic or reference laboratories. We're also familiar with TV shows that have results in seconds contrasting with news that "autopsy will not be final until tests return in six to eight weeks."

Rules of thumb when dealing with truly unknown toxic agency:

1. The results may not return in time to be clinically useful (patient dies or survives without a result).
2. The sensitivity and accuracy of the test result ***depends*** on the specificity of the request by the provider (Tell them what the poison is, then they will test for it.).
3. As in an Advanced Cardiac Life Support 'megacode' briefings, at the time of care, ask fellow providers and caregivers if there is a possibility of a toxic agent with which they are more familiar than yourself.
4. Broad-spectrum hunts for an unknown agent ***increase***: the types and quantity of sample fluid or tissue to test; need for outsourcing; cost\$; time (delay) for processing.

5. Selective testing for a likely *presumed* intoxicant [Drugs of Abuse Screen] may (within the accuracy of the test) confirm your clinical hunch, but *does not* exclude other causes or other intoxicants. Beware of confirmation bias and anchoring on the single diagnosis. Patients may have other undiagnosed problems. Keep on working.

Ethanol intoxication, for example, may make the *victim* less wary of another agent, be the vehicle of another agent, or have worsened depression and inhibition so that a self-poisoning might occur which would have been less likely if not 'under the influence'.

6. Consult references, a toxicologist, or poison control center, *at first suspicion* and review all medical history and findings to determine if there is a toxidrome or interaction that may direct treatment and potential identification of the offending substance [review **all** needed/potential samples now: some may need freezing, less common lab-tubes, or specific tissue samples].

The poison control center may correlate 'your' patient with a cluster of similar cases in an informative way, such as weekend mushroom gathering, hemlock ingestion, or participants in a group event now similarly affected.

7. If there is potential forensic implication, invoke the appropriate authorities, establish an evidentiary chain-of-custody for all specimens, and ask for official help to isolate/protect the patient, begin other investigations, or take custody of his remains. Likewise, funerary arrangements or cremation should not occur without official approval (re: criminal or civil tort proceedings).
8. While some toxins or overdoses may have specific useful therapies (hence the need for a consultant), remember that most cases will recover with only diligent supportive care.

203 Defensive Injuries

Some injuries have characteristics that suggest, bearing in mind the natural actions and reflexes of one being assaulted, that the injuries were inflicted by another. This may give the lie to a contrary story. Self-inflicted injuries claiming a false assault may be revealed if inconsistent with the allegation, e.g., a right-handed false wound might, if true, seem from a left-handed assailant.

Thus, wounds to palmar or ulnar aspects in a proximal direction suggest arms upraised to fend off overhead downward blows; associated fractures of the ulna have been termed "nightstick fractures." Contused tissues may yield the contour or imprint of the instrument causing it; I recall one scalp photo with the reverse-image of the famous "Louisville Slugger" baseball bat logo.

Stab wounds (deeper than wide) may show distorted margins indicating a 'twisting of the blade.'

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

Contused and burst lacerations may indicate a strong blow of blunt force such as a bludgeoning rather than the offered 'he fell off the curb.'

Due to the elasticity of skin, it isn't wise to offer a conclusion as to size of blade; caliber of gun; distance of shooter; or as to entry or exit wound without forensic examination, perhaps including microscopy of wound margins for gunshot residue tattooing; gas blast pattern; abrasion of edges; or direction of motion by the projectile. Such offhand estimations by characters in entertainment are meant to advance the plot, rather than as an evidence-worthy examination.

While one should have expert investigators and scientists conduct forensic and medicolegal proceedings, their knowledge base can inform and improve our practice. Continuing Education programs in these areas can often be used for our knowledge and credits. Heightened awareness can support appropriate suspicion and notifications in cases that 'don't seem to add up.'

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204 What's Wrong With The Old Bag?

Two things are certain. 1) The population is aging, individually and by proportion. 2) Ask most laymen what is the largest organ of the body? — very few will correctly say "the skin." Few also realize the important protective functions of skin – our sack of envelopment and homeostasis.

As emergency practitioners, we shall face skin problems in elders who come to the ED, sometimes as the chief complaint, but often as a "By the way ...", or because of long-term care and debility.

While management of chronic lesions is not within emergency purview, acute detection of potential skin cancers is part of our alerting function. New drug rashes, life-threatening Stevens-Johnson Syndrome or Toxic Epidermal Necrolysis, and worsened pressure ulcers with potential infection and sepsis may confront us.

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

Aging changes include: thinning of skin; solar radiation; high HgbA1C's; estrogen deprivation; decreased circulation. Injury may be from polypharmacy; fall risk; easy wounding of fragile tissues; Immobility; incontinence; and shear forces in movement of bedridden patients.

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205 Another IV Access Method

For some time, a more expeditious method for IV access has been needed when the usual peripheral sites are not usable, even with the help of vein detection devices or ultrasound. Intraosseous is rapid but seems more invasive, and placing a central-line is time-consuming and invasive. Use of ultrasound to guide a 2.5 inch "peripheral" IV catheter into the Internal Jugular vein has been studied in several centers, and seems suitable as an 'niche' option.

Basically, real-time ultrasound allows identification, entry, and confirmation of placement of an ordinary 4.8 cm or ~2 inch peripheral safety cannula into the Internal Jugular Vein without entering the deeper portions of the IJV. This is sometimes known as the 'peripheral IJ', 'Easy IJ', or 'Rapid IJ.'

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206 Put a finger in it

How many ways can a glove be used? Who knows? Ingenuity prevails when it must.

Authorities agree that gloves, whether latex or nitrile, should not be used as inflated toys for children as it is too risky for that chewing tooth to pop the glove and the fragment be inhaled to the airway.

A long finger of a glove can be slit at the distal tip for an impromptu flutter valve.

The rolled cuff can be cut from the glove and used with a hemostat as a tourniquet for a brief repair of a finger laceration for a bloodless field.

Likewise, a patient with a heavily soiled hand who needs a finger repair can wear a sterile glove and the slit fingertip can be rolled proximally as the tourniquet, while the glove provides a field less easily contaminated.

Of course, soiled dressing materials or other debris from a procedure can be rolled up within the glove as one degloves over the held matter; better yet, when double-gloved to minimize incidental soiling. Do not inadvertently throw away needed evidence that must be saved. Used catheters, so easy to flip and drip, are easily contained this way.

The open end of an evacuated container that now holds the proceeds of a large-volume paracentesis can be covered by degloving until removed. Although, the best solution is a sticky bio-occlusive dressing membrane.

If the patient is restless with cold or poorly perfused fingers; the pulse oximetry signal may be spotty or the sensor pulled off. Improve things by using an adhesive sensor (on the 'best' finger) then apply a snug glove over it, having first snipped away the unused fingerstalls. The glove will now hold the sensor in place and keep that finger warm. The wire trails away under the glove and is less likely to be snagged. Confused patients and children are less likely to disturb it. It's a solution that fits, well, like a glove.

207 Respect the Equipment

One hears stories of surgeons throwing instruments on the floor; let's hope this is no longer a practice. A workman worthy of his hire, should be worthy of his tools and instruments. They have honor; designed and refined for the noble purpose of saving life in peril. They should be cared for and kept in fine tune.

The skills, with tools, should be diligently acquired and honed to mastery, not only of the hands, but of the brain that controls them, and the heart which inspires them. Abusing the tool but indicates a fault with the man.

Convey these precepts to all your initiates. Instill the same respect. Teach them all the practical things that must be known, and the preparedness for instant use, upkeep, repair, and graceful skillful use. How to know when it will work rightly, and when it will fail because it wasn't checked. Do not neglect this care you owe.

Portable suction machines kept always plugged in; but the maker says that must be taken off-line for 15 minutes each week and run for that time to preserve the cycle of the batteries.

Direct laryngoscopes with bulbs of the wrong size inserted, (a small or loose one can fall into the trachea. Distal bulbs that are too hot and burn the tissues (When not in the hand for use, press the blade against the mattress to turn off the bulb and cool it.). Used {contaminated} blades, unwashed, dropped into glutaraldehyde solution not only is filthy and infectious, but the proteins *inactivate* the sanitizing solution, itself. {Everything put in thereafter is unclean.}

Bougies that are inserted too roughly, or too deep, can cause perforation of the tissues transited. With skill, must also come art and finesse.

"But these tasks are not mine!" you cry. All that is done before you, done by others in your behalf, or done after the task is through, must meet standards of which you are aware, scrutinize, and verified by you, as part of the global responsibility.

Do you teach your helpers all that they must know? Can you say they know how to detect faults in equipment that is "new" from the manufacturer? Can they repair and reassemble the device? Is there abundant redundancy to assure working copies are available for sudden need? Have you shown them how a fault will affect performance? A simple missing exhalation valve will degrade oxygenation or even prevent ventilation; can they resolve the problem rapidly?

The Leader must lead or the followers cannot effectively follow, or hand you the right tool at the right time in the right condition.

208 'Bag of Meds' or 'Pandora's Box'?

The ambulance crew bring you a sick elder, possibly confused as well. "*There was a huge bunch of meds, and the patient wasn't sure about which ones are taken; so, we brought them all!*"

Medication Reconciliation can be arduous in such cases. Often delegated to the least-powerful (student or nursing assistant); it should be done by someone who is patient, engaging, and clinically astute. Ideally, this is yourself, a Clinical Pharmacologist attached to the ED, or a Registered Nurse.

[Larissa Cronje](#) tweets from the meeting of South African Society of Anaesthesiologists: "Butler: elderly & their bag of meds. Think: drug-drug & drug-disease interactions, duplication, dose under/over, contra-indication."

This bag of meds is an opportunity to discover truth, perhaps the problem, and sort-out patient-error, polypharmacy, and iatrogenesis. Remember to thank the medics for their diligence.

Let's see that list again:

- drug-drug & drug-disease interactions;
- duplication {especially brand-name & generic labels};
- dose under/over;
- contra-indication;
- *To which we may add:*
- side-effects, and adverse reactions e.g., constipation, excessive anticoagulation; thermoregulation, altered taste or thirst, drowsiness;
- confusion and sedation;
- altered sleep patterns;
- anticholinergic burden;
- unchecked changed need for previous dosage "auto-renewal".

With the right analysis, you may be able to reduce and simplify the regimen to better effect.

209 Words have power

A young man is brought in by ambulance with first-time seizures, of which several have occurred prior to arrival. When controlled, the patient awakens.

He and his family come from a region where Tuberculosis is endemic. He is followed by an excellent clinic at another facility. He was begun on a course of Isoniazid, and a return appointment made. After the first few doses, being busy with the important work of a young man, he forgot to take them. As the appointment neared, he remembered that he was supposed to be taking his medicines. Embarrassed, he recalled words to the effect of "*When I see you next month, you should have finished all the pills ...*" Wanting to do the right thing, he had taken all the remaining pills at once.

An infusion of Pyridoxine was given to correct the toxicity of the dose taken. He was stabilized, and admitted for further care.

- Choose words carefully to avoid confusion, especially to those working in a new language, or who come from different educational and cultural experiences.
- Try to have "tell me" or "show me" moments to check usability of new knowledge given. Assess that the teaching learned is the knowledge that you intended to be learned.
- Emphasize that "***anytime***" advice is available: it is important to use. Advocate for provision of such service.

- Family will ask questions of the patient that were not discussed which causes uncertainty for the patient.
- Explain that the only "stupid question" is the one not asked when it should have been.
- Words have power, but correct Knowledge *is* real power.
- With the right analysis, you may be able to reduce and simplify the patient's regimen to better effect, fewer interactions, and lower cost.

#210 Laryngeal Manipulation during Intubation

There are two reasons for moving the larynx with the hand during intubation.

- 1) To bring the glottis and vocal cords into view for intubation.
- 2) To prevent aspirating regurgitation during 'full stomach' intubation.

Some try to do both at once, or in confusion, think to use the wrong cartilage for the purpose.

Improving View

The larynx may be too 'anterior' to see, when extending the head backwards tightens the neck and pulls it forward; a short jaw, neck, or childhood, can make it awkward to manipulate or be higher in the neck, limiting the space with which to align the axes of mouth, throat, and trachea through which a tube must pass.

It is common practice for airway managers to move the thyroid cartilage to tip the larynx posteriorly to see cords; it is often "**B**ackwards, **U**pwards, **R**ightward **P**ressure" to offset the vectors of laryngoscope lifting. A helper is then asked to "*hold it right there.*" Different proponents have called it: Laryngeal Manipulation; (OELM) Optimal External Laryngeal Manipulation; "BURP" *op cit.*; or Bimanual Laryngoscopy.

Preventing Aspiration

In 1961, Sellick proposed cricoid pressure to occlude the 'oesophagus' by compression, but unlike current practice he did so with head-down table tilt and the head turned to the side, *after* previously inserting a stomach tube, suctioning, and removing the stomach tube. In a very brief article, he told of a few cases, his suppositions, and a minor experiment.

Criticism includes: poor evidence base: non-standard application with inter-operator variability; may not occlude esophagus; may worsen view; may worsen or obstruct ventilation; may make ETT or SGA passage difficult. It is sufficiently challenged, that it is no longer considered an essential standard in some settings.

Summary Points

- Laryngeal manipulation (\pm head elevation & neck flexion) can greatly improve laryngoscopy and is worthwhile using routinely and in difficult cases.

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- Tipping the thyroid cartilage (or the larynx, itself,) should improve view by \geq one grade.
- Cricoid pressure may help prevent aspiration, but force should be reduced or removed if adverse events occur.
- This Tip is too brief to be comprehensive. References are useful starting point.

"It should be noted that "BURP" differs substantially from Sellick's manoeuvre. The pressures are applied to the thyroid rather than the cricoid cartilage and the displacements are backward, upward and rightward rather than backward alone. Accordingly, "BURP" cannot be expected to achieve the purpose of Sellick's manoeuvre, *i.e.*, the occlusion of the upper oesophagus to prevent gastric regurgitation."

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{which are reproduced here, below}

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[PPT][The Case for Cricoid Pressure - Dr D John Doyle](#)
doylecv.homestead.com/thecaseforcricoidpressure_rev1.2_sept_2003.ppt [Cached]

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i.e., the occlusion of the upper oesophagus to prevent gastric regurgitation.”
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Knill, R. L. (1993). [Difficult laryngoscopy made easy with a “BURP”](#). *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*, 40(3), 279-282.

#211 ApOx and Gastric Rupture Risk

We share in the general enthusiasm for apneic oxygenation (ApOx), and believe that attention to quality of oxygenation throughout the process of intubation should lead to increased safety, especially in untoward circumstances. There has been the suggestion that patients with severe respiratory failure may not benefit as much as others, although they need it more; the shunt physiology and V:Q mismatch would challenge any efforts, absent ECMO.\

Weingart & Levitan’s plan was simplicity: two sources with 15 LPM via NRB mask or BVM *and* Nasal prongs. ^[Weingart] ^[Hofmeyr] Newer offers are afoot.

- High-Flow Nasal Cannula did well in the THRIVE study and others. ^[Patel] ^[Gustafsson]
- Nasopharyngeal airways are suggested to deliver ApOx to the pharynx. ^[Eross] ^[Ching]
- A new product, an adapted nasopharyngeal airway, unlikely to be aspirated, is fitted with an oxygen line and a CO₂ sampling line. ^[Pratt]
- Preformed Ring-Adair-Elwyn endotracheal tubes are modified for ‘Buccal Insufflation’ ^[Heard], reminiscent of the old Gwathmey’s Oxygen Hook.

Whenever a new device or technique is proposed, modifications –even subtle, may change characteristics and introduce new risks.

Those who have long memory may recall nasal or nasopharyngeal oxygen catheters (1929s-1960s), and that sometimes, –gastric rupture occurred. ^[Yao] This was thought due to migration or malposition of the catheters; reflexive aerophagia; or excessive flow rates (although could happen at 3-4 LPM). Patients’ natural airway was used, and may not have been continuously observed.

In any resuscitative situation, it is essential that the airway be kept open throughout *both* phases: inhalation/insufflation, and expiration. Should this fail on expiration, any gastric insufflation will be retained rather than passively escape. Five percent of patients will have obstruction by the soft palate: vibratory snoring or complete obstruction; lip spluttering or ‘poof’; if not overcome by a nasopharyngeal or oral airway, the mandible will need to be opened and dropped to allow exhalation if being bag breathed.

During laryngoscopic attempts at intubation, the airway should be maximally open, and if paralyzed, the patient will not be swallowing. If, however, the airway is briefly neglected, and flaccidity obstructs the airway, fast delivery of oxygen deeply to the pharynx may distend the stomach with regurgitation and emesis, or gastric rupture ensuing. [Trimble] [Rummens]

A smooth, careful, timely, intubation will do the most (in most cases) to shorten the apnea interval. Apneic oxygenation is beneficial when an unexpectedly difficult intubation occurs allowing time for resolution. Nonetheless, resolve to make your

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

procedures efficient and effective so that the airway is always open, the patient is always intubated, or other rescue measures are done.

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212 Paradoxical Vocal Cord Dysfunction

When is respiratory distress not what it seems? "*All that wheezes is not asthma.*"

There is always a risk in anchor fixation upon the first or most likely diagnostic choice. From basic nature and pattern recognition, to Occam's Razor or Law of Parsimony, or whether the hoofbeats are horses or zebras, we gravitate to the obvious.

Some are natural errors or a failure to look/exclude, e.g., aspirated foreign body treated as asthma and then subsequent pneumonia.

An excellent asthma mimic, which unfortunately has received pejoratives such as factitious; Munchausen's; psychogenic; is VCD, Paradoxical Vocal Cord Dysfunction, which can be due to hypersensitive inflammatory irritation, or co-exist with actual asthma. Some doctors have been angered that the distressed patient just intubated was "a faker" without respiratory failure.

Listening over the larynx may identify the inspiratory component and localize the source of the sound.

Vocal cords that abduct tightly during inspiration, but for a small posterior chink, create the stridor and transmitted wheeze that is heard in a Mueller Maneuver (essentially, a 'reverse Valsalva' Maneuver. Although Pulmonary Function Testing Loops are flattened and altered, and there is no response (with pure VCD) to Methacholine Challenge, a certain diagnosis can be done by visualizing the cords when symptomatic; most easily by a flexible endoscope via the nose.

Immediate treatment might include: explanation; calming measures; panting breaths to relax the cords; Heli-Ox; Ipratropium; or topical lidocaine to the larynx. Follow-up should be with an ENT, Chest, Allergist, Speech Therapist, ± Psych. Prognosis is good as patients learn to control their symptoms. ^[Buddiga]

Buddiga, Praveen ,MD. [Vocal Cord Dysfunction Treatment & Management](#).

Medscape. Updated: Mar 30, 2016.

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O'Hollaren, Mark T., MD. [Dyspnea Due to Vocal Cord Dysfunction and Other Laryngeal Sources](#). Medscape. August 26, 2002.

Sidofsky, Carol. [Can't Breathe? Suspect Vocal Cord Dysfunction!](#) Last updated 2017; website started 2001.

N. B. This is a website by a VCD patient, intended for the public, to raise awareness and to provide information and resources.

American Academy of Allergy, Asthma & Immunology. [Vocal Cord Dysfunction \(VCD\) or Paradoxical Vocal Fold Movement](#) (PVFM). ©2017.

N. B. This is a consumer page from a professional organization.

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

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N. B. This is a consumer page from a leading respiratory center.

[Li, James T. C., MD PhD. What's the difference between vocal cord dysfunction and asthma?](#) MayoClinic.org. Oct. 10, 2014.
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Brugman, S, Craven, D, Fahy, B, Hewitt, H, Sockrider, M. [Vocal Cord Dysfunction](#). *Am J Respir Crit Care Med Vol. 174, P9-P10, 2006.* www.thoracic.org. *ATS Patient Education Series* © 2006 American Thoracic Society (in Cleveland Clinic website).
N.B. Consumer oriented information.

#213 We need more space

Every E.D. wants and needs more room and to de-clutter. Doesn't yours?

I can't give you more space, but I did find a hospital with a clever way to manage some of the clutter.

The patient is on a bed/gurney/trolley/stretchers. Most supplies are in cabinets, hanging on the wall, or from the ceiling. Some carts roll in and roll out. How can we get rid of the extra furniture?

Two chairs were provided for visitors in a treatment room. Wooden folding chairs hanging from hooks on the wall. If not in use, they hung snugly to the wall, with their 'feet' off the floor for easy mopping. An explanatory sign also warned not to use the rolling stool (for clinician use, but capable of causing injury to the unwary).



214 Clothing maketh the emergency worker

We all wish to have our own *style* in clothing. Yet, sometimes a more uniform appearance is dictated. Practical considerations are needed, too. Rules often cover hair length, jewelry, fingernail length and adornment, and footwear.

Hair length and covering is regulated to prevent contamination of a sterile field, and it's best to not give an assailant a painful cord to whirl you around the room. Rings, pins, and buckles, prevent full washing and may press against the patient. Long or decorated nails interfere with washing and can damage gloves or the patient's skin. Shoes should give comfortable support, protect from fallen objects, or wheel rollovers, and be non-slip and be non-marking with floors.

Be mindful when buying work clothes to avoid loose styles that are easily grabbed. If you do much kneeling or lifting, think of one size larger in the waist preventing splits and rips. A diamond shaped gusset in the crotch makes for freer motion with squats and lifts. A full-cut leg is also freer with moves and lifts, especially with laden pockets. Knees may be shaped or reinforced for active work; and if you have bad knees, pockets at the patella can hold cushioning sponges or foam.

I find working less efficient without a breast pocket for: pens and 3"X 5" [7.5 cm X 12.5 cm] index cards for notes; a light; an ammonia inhalant protected within an old pen case; bite-sticks and tape-sticks for intubations have also ridden there. If your uniform has patch pockets, look for bellows design for larger capacity. Look for, or make, pen slots for your pen and penlight. If flapped and buttoned, consider hook and loop fasteners underneath. Magnets or snaps could be used, if you don't go inside the MRI area. Ensure that your tools in your pockets are not easily grabbed as a weapon against you.

Cargo pockets on trousers are good for extra 'cargo'. Heavy items may bounce against your leg as you walk. Above the knee seems to work best.

Two-piece garments are usually more convenient. While coveralls work well for '*get up in the middle of the night*' rural ambulance volunteers, and flying suits for helicopter crew, either is very awkward at toilet time. If you attend prehospital or retrieval care, consider retroreflective striping, titles, Star of Life, *etc.*, for safety and less role-confusion among multiple agencies.

215 Pre-Violence Indicators

It is to be hoped that your institution provides excellent security, has trained all staff in recognizing volatile situations, attempting de-escalation, knowing indicators of violence, and permits you to use countermeasures included in the training.

Search the Internet for 'pre-violence indicators,' 'pre-attack indicators,' 'pre-incident indicators' sometimes called PINs. This will bring you material from psychology, criminology, domestic violence, martial arts or self-defense, and law enforcement sources. Study these intently. There is much to learn.

Remember the old movies that said, "watch his eyes to see if he'll shoot?" Danger doesn't come from eyes, —you *can't see into the soul*. Psychopaths conceal everything, and stealthily yield no clues. As the hands carry out the will of the owner, they are the source of harm to you. Watch the hands!

Early signs might be internal preoccupation as his mind assesses and calculates risks, advantages, potential weapons to be grabbed, route of escape, whether being watched

or camera surveillance, *etc.* Furtive glances, and scanning of surroundings, may be present during the predator's pre-attack planning, which may seem to you to be a lack of engagement with you.

Danger increases if there is shifting of weight and balance 'before the lion's pounce.' Lowering a shoulder and moving a flexed leg backwards (usually, on the dominant side), is the start of a fighting stance or potential lunge. These may be preceded by a jockeying for a position of dominance, menace, or an attempt to outflank you or be closer to the door.

Hyper-dynamic physiology (flushing and redness; rapid pulse and breathing; sweating; clenching of fists or jaw; pacing; removing clothes due to raised body heat, and to prepare for the assault;) indicate obsession and physical agitation before the attack.

Verbal cues may be subtle distractions to shift your attention. "Trash-talking" insults or threats may intimidate you, cloud your thinking {*nice people don't do that*}, and delay your responses to the assault (which will be *very rapid*).

Avoid dwelling on your own civilized values and judgments during these encounters, they will "unman" you and delay or deprive you of an appropriate "alpha" behavior to cause a stand-down or to effectively defend yourself and others.

Whenever possible, as indicators are noted, alert and prepare your team and resources to *prevent* violence. Distract the subject with offers of food or medication. Withdraw before outright hostilities.

We often hear comments of "senseless violence." This is false and foolish. Violence *always* makes sense to the perpetrator; it is a matter of prey and predator. Even to those with disordered minds from distortion of reality; whether organic, toxic, or functional; it is logical within that context. Be prepared; —do not be prey. If confronted by potential or actual violence: avert, contain, control, or defend. Use measures that will rapidly protect yourself and other innocents from harm.

216 The 'eyes' have it & the other senses, too

Nursing must be both sensitive and sensible. It must be 'switched-on' and engaged. It must be able to discern feelings, as would an empath. It must apply analysis and logic to observations with Vulcan-like reasoning. Combined with examination, a patient who is correctly questioned "will tell us the diagnosis." But, we must carefully use our senses to find the clues to be yielded. —A continuous round of "what's wrong with this picture?"

Barriers to this remain: complacency; literal-mindedness or dullness preventing imagination; imposed rigidity of approach; and excessive work-pressure that create the foregoing or interfere with the analysis.

When mentoring staff, new to our setting and its unique needs, we try to share knowledge, skills, and approaches for what we do; yet, it is igniting the intellectual spark and zest to find answers and look beyond the initial complaint to the greater truth, for which we really hope. Our emergency clinicians should apply the talents of Sherlock

Holmes, and his human model: Dr. Joseph Bell of Edinburgh (who trained Sir Arthur Conan Doyle) to their work.

After triage, a young Asian woman with abdominal pain but no apparent distress was being walked to a minor exam room; but upon a glance was rerouted immediately to a room for potential resuscitation. Drawn blood was thin, pale, and watery. The clue was “pallor greater than to be expected.” After some years away to her native country, her aplastic anemia was reactivated; the CBC was extremely low; being newly stressed by menses. The diminished oxygen-carrying ability was causing mesenteric anemic hypoxia as the source of the pain. Admitted.

In another case, an older man, awaiting exam for ‘weakness’ while recumbent on a hallway gurney, was noted to be pallid with mild tachycardia at rest. Recently, more trouble was had with his knee, for which he was concurrently taking NSAIDS and a systemic steroid. He was increasingly easier to fatigue, accompanied by dyspepsia and dark stools. Now, trying to rise from supine, he felt faint and had chest pressure. Transfusion of two units of RBCs resolved these symptoms. Admitted.

These are simple examples of patients who were sicker than first impression suggested; yet, by active observation of *discrepant* appearance prompting rapid analysis and action, were spared delay or adverse events. Ask those further questions. Examine more.

217 The Difficult Orogastric Tube

Your patient is intubated. Your best nurse is unable to pass the orogastric or nasogastric tube, despite usual tricks. What now? This recurring occasional problem may defy many skilled attempts. Here are some frequently used tricks.

- Head & neck flexion (if C-Spine cleared).
- Lateral rotation of head and neck.
- Lateral Displacement Pressure of Larynx.
- Laryngeal Lift (anterior lifting of larynx to widen esophagus).
- Laryngoscopy & Magill's forceps to enter esophagus.
- Endotracheal tube placed in esophagus, digitally or direct visualization, and tube passed within it. It may be secured to the tracheal tube or withdrawn carefully and cut away from the gastric tube.
- A pre-cut endotracheal tube may be passed into the esophagus under direct or video laryngoscopy, it is then peeled away after OGT passage.
- Fiberoptic placement of the gastric tube.

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Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

[make them enter the esophagus](#). *Anesthesiology: The Journal of the American Society of Anesthesiologists*, 91(1), 137-143.

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Willette, Paul, DO, FACEP. [Trick of the Trade: Rapid Insertion of Orogastric Tube](#). [ALIEM – Academic Life in Emergency Medicine](#). February 13th, 2017. Associated Video: [Rapid Orogastric Tube Insertion](#). (YouTube).

218 Biceps Tendon Rupture

While not an everyday injury, it's still likely that you'll examine an older man of vigor who, following sudden violence and resistance with a flexed arm, complains of pain and swelling of the elbow or shoulder. The diagnosis is clinical, although in difficult cases MRI may be revealing. Uncertain 'diagnosis' of 'soft tissue injury' has been provided. There can be some loss of strength, but for strong individuals this may not be discerned.

Injury may be distal or proximal (*q.v.*, Wheelless). Immediate application of cold packs, resting the limb, and analgesics, are useful. What will become apparent is the loss of biceps contour, although perhaps not at first, as complete rupture of the proximal tendon 'lets it roll up like a window shade.' Loss of the distal tendon gives a flattened contour to the "Popeye" muscle.

For distal tendon, try: to palpate the tendon in the fossa; to 'hook' the tendon with your finger from lateral aspect while arm is flexed 90°; strength-test pronation and supination against resistance (what I call "doorknob test."); comparison of uninjured vs. injured sides for position of crease of edge of muscle. Distal Tendon injury needs orthopedic consult for early surgical repair. Patients may present sub-acutely when not better, or as a repeat injury with prior scarring.

Proximal Tendon injury may need surgical treatment. Again, consult ortho.

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219 On the side of the road

It happened again today. We're on a rural Interstate Highway, trying to be as safe as possible in high-density traffic, of which most are going 10-20 mph greater than the speed limit. A sedan is stopped on the shoulder of the road (but not very far over). A lone woman is standing outside the vehicle (but within a few feet) talking into her mobile phone. She's behind the vehicle (nearest to oncoming traffic). —And, she's facing away from the traffic!

It was likely an innocent and natural attempt to minimize ambient sound from the loud traffic while on the phone. Yet, this is actually a shocking example of inattention to situational awareness that could prove *fatal*. Many emergency responders can tell you of "unintended pedestrians" who are struck by vehicles, and even of colleagues who sustain a line of duty death. Some even speak of drunks or sleep drivers 'homing in' on the flashing lights of stopped emergency vehicles. NEVER turn your back on approaching traffic!

It is *very* important as a vehicle occupant to carry clothing suitable to the weather for waiting outside the car if it's in a poor location. Light, bright, reflective vests are useful at night. Few people carry warning triangles or flares (and flares may not be safe if there is spilled gasoline or dry grass and brush). Fewer yet, post sufficient warnings far enough back to give drivers sufficient warning at high speed. (This may be farther, still, if there is a 'blind summit' or 'blind bend' behind which your car is hidden from view.)

While it is tempting to shelter within the vehicle, this may limit your ability to see all around you, perhaps helping 'highway robbers; to sneak upon you in the false guise of a good Samaritan. Clearly, it helps to have trusted companions, a cellular phone (with back-up power), a knowledge of local roadside assistance call boxes and services, and a wariness of suspicious offers of help. A lawful means of self-defense may, *in extremis*, be essential.

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[American Automobile Association](#). [AAA-What-To-Do-When-Your-Vehicle-Breaks-Down.pdf](#). [No Date; No Author]

220 Subungual Hematoma

We probably all like the inner personal satisfaction, and the audience astonishment of those rare moments when we solve problems and relieve pain in wizard-like fashion. Apart from quick resuscitations, Dextrose, and Naloxone, are the humbler reduction of Nursemaid's Elbow, and easing the super-owwie of subungual hematoma from a crushed finger or toe.

Blood escaping from crushed capillaries causes exquisite pain as the volume and pressure of the space-occupying lesion increases. Providing an outlet decompresses the tension and pain. *Ahh!* It's good, too, that to do so is painless especially as, often, the victim is a child. Build trust, and inform that you'll go slowly and gently, stopping when

there is a hole. If using a heated method (most popular), tell the patient, before starting, of the slight smell of burning hair to be expected.

This simple and familiar procedure will resolve the isolated injury, Details of exam, procedure, and associated injuries are in the references. It's comforting to know that we have an easy, effective, procedure (even under austere circumstances) that lets us do good, and look good doing it.

Mayorga, Oliver, MD FACEP. [Subungual Hematoma Drainage](#). [emedicine medscape](#). Updated: Mar 09, 2017.

Wheless, Clifford R., III, MD. [Nail Bed Injury / Pathology](#). [Wheless' Textbook of Orthopaedics](#). Last updated May 11, 2012.

221 Back Pain

"Oh, no! Not another back pain ... Well, it could be 'legit', maybe, they just want oxycodone? And, the 'Red Flags'; how can something so common have so many 'Red Flags' that I mustn't miss? I could end up putting some lawyer's kids through college." Sometimes, it can be so hard to present a clinical face of friendly, caring, affable, equanimity. Yet, every patient with back pain deserves exactly that, and a thoughtful, careful, exam.

The problem is that so-called 'Red Flags' are well-meant indicators for special thought and care, rather than precisely-measured (sensitivity, specificity) risk stratifiers. Just as (IVDA) 'shooters with fever' have endocarditis until proven otherwise; the shooter, post-operative back surgery patient with changes, immune-deficient, or having disseminated disease is 'epidural abscess until proven otherwise.' Ensure that your triage nurses are trained and wary of patients with "a *little* more than *just*" simple musculoskeletal strain.

Prompt analgesia can facilitate better examination and interview. Imaging or referral may be necessary before appropriate disposition. Ask details about difficulties with Activities of Daily Living. Is a Designated Driver, or after-care person, present to ensure patient's safe return home and safe ADLs? Check with PMD re findings vs change and plan before disposition. This is especially important with patients with chronic pain or has a pain management plan. Acute upon Chronic Pain, or analgesia inadequacy, can occur with changes in activity.

- Hx of cancer; unplanned weight loss; lytic lesions; metastases; tumor.
- Neurological findings: Cauda Equina sx's; parathesias; foot drop; sciatica.
- Immune deficiency; chronic steroids;
- Osteoporosis; arthritis; DJD; spinal stenosis;
- H. Zoster Shingles (dermatomal pain before vesicles).
- Hypertension; aortic aneurysm or dissection.

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- Referred pain from visceral disease.
- Trauma, even from mild-moderate mechanism if elder or osteoporotic.
- Renal dz: infxn.; stone; vascular interruption; urinary retention or incontinence.
- Pain: disabling; persists at rest; >6 weeks.

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Lin, Michelle, MD. [Pitfalls in Low Back Pain](#). From course: "High Risk Emergency Medicine 2009" by UCSF. 10pp PDF.

222 Migraine Headache

Migraine provokes a range of responses among nurses and between them and the patient. The First Rule is *Don't send in the nurse who is known to dislike/distrust the patient or has an 'attitude' tonight*. The migraineur is undergoing an assault of oppressive sensations from which relief is hard to gain. Adding a negative environment compounds the situation and nullifies the therapeutic intention.

Individual comprehensive Treatment Protocols are best for optimum and consistent outcomes, with options for variable presentation. Such plans, from the neurologist or pain manager, agreed by the patient, can assure consistent care. If the patient is falling askew of historic headache patterns, or fails a treatment arm, consulting the primary provider is important for effective care and not missing changes, *de novo*, that may suggest an occult pending disaster.

If the episode has unremittingly persisted beyond 72 hours despite home treatment efforts, [Status Migrainosis](#) mandates consultation and potential admission to provide extended or specialized treatment to prevent serious outcomes.

Collected Clinical Tips from Advanced Emergency Nursing Journal, by The Editors.

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Namee, J., & McGovern, T. [How Propofol Compares with Dexamethasone, Sumatriptan for Treating Migraines](#). ACEP Now. June 1, 2017.

De Simone, R., Ranieri, A., Ferra, G., & Cautiero, F. (2017). [Intravenous mannitol in status migrainosus treatment: a clinical case series](#). *Neurological Sciences*, 38(1), 163-167.

Modi, S. Y., Dharaiya, D., Katramados, A. M., & Mitsias, P. (2016). [Predictors of prolonged hospital stay in status migrainosus](#). *The Neurohospitalist*, 6(4), 141-146.

223 Thyroid Problems

Problems of the Thyroid Gland are usually a matter of Primary Care Management or by Endocrinology. The ED is usually involved only when it is a matter of *way too much* or *way too little*. This is still true. (If you diagnose a cancer, you'll refer the patient.) It is the ill effects of *hyper* and *hypo* that will need treatment.

"Thyroid Storm" labels the florid, and lethal, hypermetabolic state from the merely laboratory detectable hyperthyroidism in which clinical signs are scarcely distinguishable. Prompt, decisive, action must be taken to abate the tremors, agitation and psychosis, tachydysrhythmias, fever, CHF, diaphoresis, dehydration, and shock. Exophthalmos, and thyromegaly, may be present. Treatment may need to begin before lab confirmation, based on clinical suspicion. The patient will survive unneeded antithyroid agents, but may not survive absent needed treatment.

Chronic deficiency of thyroid hormone causes slowing of body function which in extreme cases (with apologies to Millennial persons,) is like playing a 78 rpm phonograph record at 33 1/3 rpm. Weight gain, sluggishness, thinning hair, cool dry skin, brittle nails, constipation, and a slow gravelly monotone voice, are characteristic. Dilutional hyponatremia occurs from inappropriate antidiuretic hormone. 'Myxedema Coma', as a name, is not a good choice as myxedema isn't always present and coma is rare; 'decompensated hypothyroidism' has been proposed as a better term.

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224 Serotonin Toxicity

Serotonin 'Syndrome' (Toxicity) is a potentially *fatal* problem of CNS disturbance, Autonomic hyperactivity, and Neuromuscular manifestations [Mnemonic of triad =CAN]. It is a clinical diagnosis, thought to be often unrecognized, with significant differentials to exclude, which is caused by serotonin accumulation due to: Increased, or multiple, serotonergic dosing; interactions with other drugs⁴; changes in uptake or excessive reuptake inhibition.

- Thorough medication history is essential. Polypharmacy common.
- Careful exam; other/variable findings not detailed here. *C.f.* refs.
- Discontinue all serotonergic agents.
- If OD, <1 hour, may try single dose activated charcoal.
- Benzodiazepines for agitation, seizure control.
- Avoid anticholinergics, and antipsychotics that may contribute to anticholinergic syndrome or neuroleptic malignant syndrome; caution.
- May need critical care unit for monitoring and treatment, multiple organ failure.
- Blood pressure and HR control with titratable agents.
- Aggressive control of hyperthermia d/t muscular activity (i.e., *not* 'fever'; cooling, *not* antipyretics).
- ↓Na d/t SIADH.
- Drugs such as chlorpromazine, cyproheptadine, and olanzapine may be used.
- Consult Poison Control Center, or Clinical Pharmacologist for guidance.

"When making the diagnosis of serotonin syndrome, it is important to keep in mind neuroleptic malignant syndrome (NMS), malignant hyperthermia (MH) and anticholinergic syndrome (AS), which can all present similarly."⁹

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2. Werneke, U., Jamshidi, F., Taylor, D. M., & Ott, M. (2016). [Conundrums in neurology: diagnosing serotonin syndrome—a meta-analysis of cases](#). *BMC neurology*, 16(1), 97. [[PDF](#)]
3. Chang, Wan Tsu Wendy, MD. [Serotonin Syndrome \(Part 1\) - What is It? UMEM Educational Pearls](#). 9/9/2015.
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225 Dementia & Cognitive Decline

EDs are impacted by the so-called ‘*Silver Tsunami*’ in several ways. As the “demographic trajectory” indicates a larger proportion of elders, increasingly frail, and consuming ED resources, when EDs are fewer, under-reimbursed, and are clogged by longer work-ups and admission blocks; there are calls for sensitive and compassionate care, alertness in differential diagnosis, unravelling of many potential causes for the visit, and organizing to lessen the impact of the visit on the elder, and extending the interval between visits.

There are visits for: “We think Granny is failing, what’s wrong?” Skilled Nursing Facilities sending patients at first sign of decompensation; or has the insurance run out? ‘Drive-by Respite Dumps’ by family on the weekend (a fall, a can’t do anything) who cannot be reached to bring Dad home. ‘Hospice Failure’ when a downturn excites family demand for acute care.

There are overlapping hospital and ED concerns for increased service demand; elder-appropriate facilities and staff; sorting-out acute and chronic needs, and facilitating re-streaming; gentleness with cognitively-impaired patients; and providing end of life care when a hospice patient is brought in by alarmed and guilt-ridden family members. These Venn Diagram-*like* overlapping interest areas and population subsets make it difficult to tease out practical specifics for EDs struggling with time and staff-consuming needs. Avoidance of agitation without inducing somnolence and minimizing drug overlays are important to success and flow-through.

The 2012 literature review by Clevenger et al found:

“The articles recommended clinical practices that can be categorized into five themes (my formatting):

1. assessment of cognitive impairment,
2. dementia communication strategies,
3. avoidance of adverse events,
4. alterations to the physical environment,
5. and education of ED staff.”

“Many recommendations are extrapolated from residential care settings.” “Seven articles ultimately met inclusion criteria; all provided Level 7 evidence: narrative review or opinions from authorities.” Noted is “minimal guidance for the care of PWD {Persons With Dementia} specific to the ED setting.” Current recommendations lack a research base to support their effectiveness or adoption as evidence-based practice.”

““Dementia and the ED do not mix successfully; the ED experience is “vulnerable to a rapid escalation of risks.”⁶ {authors reference for quotation} Dementia lowers the threshold for sensory overload, distress, and disruptive behaviors. The ED is fast paced and overwhelming even to cognitively intact individuals. Dementia may contribute to inaccuracies in the medical or medication history, difficulties gathering a history of the present illness, or an individual’s inability to comprehend or follow complex discharge instructions. Any of these may cause untoward clinical outcomes.””

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226 Occiput & Elbows

When it comes to stripping a patient for immediate exam and treatment, there's only two methods if the he can't undress himself.

- 1) Cut the clothes. He'll be upset when he has to go home with nothing to wear, and probably will glare at the shreds in the trash bin.
- 2) With care for injuries found, try to peel the clothes off without damage to clothes or the patient.

As in childbirth *per vaginam*, the awkward diameter is the occiput. Enlarge the neck opening, if possible. Cervical spine injury contraindicates this method. Guide the fabric over the bump. If he can help, have him tuck the chin in flexion to ease passage (as in birth). If no arm injury, arms raised over the head can make a one-step process. Outward tendency of elbows is harder. If the arm isn't raised, or elbows protrude, tuck and guide fabric past elbows. Now it's easy. If clear of arms, and garment is around the

neck, fabric can be guided past the chin with your arm inside the garment and fingers deflecting from hang-up on the chin, if the neck isn't flexed.

Hips and buttocks are the widest parts for lower garments. Widen the waist and zipper, then peel to the stopping point. If the patient is weak, the lower back should be supported and the pelvis lifted slightly if need be. Everything else should be smaller diameters, unless "skinny jeans" are worn. If a foot or ankle injury, one may have to undo a seam or make a small cut to slip over the injury.

Wet clothes are harder to maneuver and bind easily. They need removal to prevent hypothermia, and permit drying of patient and clothes.

Experienced staff will have learned these principles, but emergency novices may not have met the problem or been taught before. Most patients can go home with their own clothes. Truly lifesaving treatment may still mandate rapid cutting. Discernment makes for living and happier patients.

227 Readiness, Redundancy, & Reserves

The mass shooting in Las Vegas, Nevada, has pointed some sharp lessons to instruct us in our 'Disaster Planning'. Here are some of my thoughts. From news reports, it seems all has gone as well as could be hoped.

1. Casualty numbers, arrivals, and medical needs, were high and immediate. Disaster mode must begin instantly with the first casualty. How quickly can you do it? Will there be ample supplies ready to hand? Will 'triage tagging' be coordinated with Registration quickly?
2. Private transports may be high, lack prior notification or coordination, and may have little to no first aid. The only 'Triage' may be who screams loudest and can be gotten into a vehicle.
3. Smaller and non-trauma-designated hospitals may need to take a high proportion of casualties to spare functional capabilities of the trauma center.
4. Many casualties mean many family inquiries. Can we devise a way of taking cell phone photos of each casualty as tagged and put on a monitor for family identification?

While triage (and Incident Command System) remote from the hospital is desirable, it may not happen soon enough, as planned, in dynamic and dangerous circumstances. **Commonly** in community-wide disasters, patients will arrive unselected, without notice, and have severe to lesser needs. Planning and preparation must start from a 'Zero-Time Basis' concept. "NOT: *the drill will start at 10 am Monday morning.*" Remember, too, you may be 'short-staffed' on *the day*.

When Teddy Roosevelt went to war in Cuba, his uniforms were tailored, but *he took 12 pairs of spectacles with him.*" He planned for sudden unexpected need.

'Bean-Counter' administrators bemoan staff 'hoarding' of supplies. Practical minded staff save for sudden need when the supply chain stops or cannot keep up with demands. Worst contingency' should be the theme of planning.

"Amateurs talk about tactics, but professionals study logistics." Gen. Robert H. Barrow, USMC (Commandant. 1980). Wars are won or lost by the availability of supplies; and to resupply easily during critical dynamic events.

228 When it sucks to be blue.

The concept of Negative Pressure Pulmonary Edema, in my opinion, is not one that is well known as it should be among all levels of rescuers and resuscitators, as skill in opening the airway at all times is essential. Patients who struggle against an inadequately open airway must use greater effort and negative force to breathe. Hydrostatic changes in the lung cause fluid shift into the alveoli. It is also known as Post-Obstructive Pulmonary Edema. Guarding the patency and efficiency of the airway is a principal duty. NPPE may occur during procedural sedation.

Vigilance should be high if there is altered mental status with decreased alertness and an unsupported natural airway. Airflow should be open and easy throughout the cycle. Best known following frank obstructive episodes after extubation, laryngospasm, tube-biting, ventilator dyssynchrony, choking, or hanging. Might it be a component of lesser incidents such as those "sleeping it off", opioid overdose pulmonary edema, or stupor with obstructive sleep apnea?

Fix obstruction or laryngospasm immediately. Remove stimulus (secretions). Onset may be immediate or slightly delayed. Oxygen and PEEP are most useful. CXR confirms. A diuretic is controversial but thought possibly useful if there is much swelling or refractory response. In critical cases, ventilatory support, proning, or ECMO may be needed. Resolution within 12 – 48 hours.

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229 TTIP, LMA to Stoma, Baby mask to stoma, Chin Drop

Not well known, but useful tricks for awkward Bag-Valve-Mask ventilation problems:

1. TTIP, or "Tube Tip In Pharynx" is a means for the unassisted ventilator to easily switch over during pauses in intubation, disturbed facial anatomy, large beard, incorrect size or dropped mask, and use the endotracheal tube *per oris* or *per naris*, to ventilate the patient with a bag-valve device. One hand is used to do chin lift, seal the mouth and nostrils, and stabilize the tube. It has also been called "The Poor Man's LMA"; however, it does not provide a supraglottic seal.
2. If tracheostomy cannulae or endotracheal tubes are not available when there is respiratory distress in a patient with an ostomy, or staff present are not permitted to "pass tubes," it is possible to use to use an inverted LMA held to the stoma, or an infant face mask, to adapt the Bag-Valve device to the patient.
3. Sleep Apnea patients with a long soft palate and uvula may have expiratory resistance if an oral or nasal airway is not present to separate the tissues for an expiratory outlet. Breaths will "stack," leading to progressive hyperinflation. This can occur in ~5% of patients with OSA risk. The 'quick fix' is to drop the chin (with the mask hand) and slightly open the mouth with each exhalation while maintaining head tilt and open airway. This mouth opening will provide an expiratory outlet until the airway has some form of airway conduit placed to better secure the airway.

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Boyce, J. R. (2001). [Poor man's LMA: achieving adequate ventilation with a poor mask seal](#). *Canadian Journal of Anesthesia*, 48(5), 483. {Abstract & References; Free full content in PDF.} [\[PDF\]](#)

230 The Lint Trap

[Haney Mallema, MD](#), was [quoted](#) as saying "*The lungs are the lint trap of the human body*" He was speaking of [#pulmonaryembolism](#), but I think that it also applies to other things.

Anyone who has seen [Black Lung Disease](#) (Anthracite), asbestosis, or the lungs of a chronic smoker knows all sorts of junk can be found there. Altered Mental Status or being strangely unwell in an elder, *if not due to* ↓Na or URI, may be found in the subtle pneumonia. A persistent cough may be due to an undetected inhaled foreign object. These may be batteries, plastic, metal, or vegetation.

Certainly, many small air bubbles have gone through IV tubing with little consequence, but no guaranteed safety. Procedural errors with large lines, disconnections, or inadvertent injunction can produce air embolism of great danger. It's good to be prepared with planned actions should this occur, to prevent cardiac arrest, stroke, or infarct.

If something is otherwise unexplainable, recheck the lungs as a potential nidus of harm.

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(Concerning Ingegerd Svahn Karlsson, of Hallsberg, Sweden, who as a child had 12 pneumonias over ten years followed by surgical removal of a branch of christmas tree that was found in the lung.) In Swedish; translate.google.com will translate.

[Google keyword search of non-scientific press concerning Sidorkin case below.](#) "Minnesotastan". [A pine or fir tree did NOT grow in a Russian man's lung.](#) TYWKIWBIDBI – "Things You Wouldn't Know If We Didn't Blog Intermittently." 13 April 2009.

231- (2017-11-5) On the road; On a rant ...

Lately, distracted pedestrians who text or play 'Pokémon' instead of looking where they're going, are provoking punitive legislation, Campaigns to decrease distracted driving continue.

I submit that, IMHO, considering variables, driving is the single *most complex and dynamic human activity* with risk; millions participate, often with minimal training, perhaps with impairment, and the scant controls are likely to come into play only after the harm is done.

Having just survived a long journey at the wheel, I have observations that must serve as a 'rant' as "I/you/we" as individuals have little direct impact, but I call these as points of discussion.

- Scofflaw mentality: Prevailing suburban and highway speeds ≥ 10-15 mph above posted limits regardless of conditions; "*whatever you think you can get away with*"; urban 'racing' traffic lights, disregard for speed or right of way.

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- Unsafe following distances for speed, surface condition, blind road bends and summits, unable to see around large vehicles, tinted windows; dependent upon other fellow's safe decisions; extreme tailgating and weaving.
- Driving faster than one can see the roadway by the headlights' illumination.
- Overtaking on shoulder/verge, where there is no lane, or crossing prohibited center line.
- Not allowing for potential sudden events: foolish actions; objects in roadway; shoulder activity, wind gusts, *etc.*

One recalls the years 1966-73, each with >50,000 deaths (at one point greater than all US deaths in Vietnam war to that date). There are fewer fatalities now despite more cars, but this is probably due to *engineered* solutions, seat belts and helmets, airbags, improved trauma care, and stricter Blood Alcohol limits.

Wikipedia reports: "Records indicate that there has been a total of 3,613,732 motor vehicle fatalities in the United States from 1899 to 2013." This is nearly the entire population of Los Angeles, California; a stark vision to imagine those numbers as individual persons and the total sorrow of families.

232 The Glove.

Influenza season will be hitting soon. Some will be very ill, or even die. Word from Australia is that this is a hard season; as the influenza type makes its earthly progression, expect your next season to be hard.

Some patients will be restless and picky, hypothermic, or annoyed by the adhesive pulse oximetry sensor that keeps coming off. You may be struggling for good consistent signals.

Pick the best perfused digit. Carefully apply the sensor snugly. If needed, spiral a supporting piece of tape without tourniquet effect around the digit. Fit the patient's hand with a nitrile glove that has the fingerstalls cut off except the finger being sensed. This will keep the sensor snug, in place, with a warmer digit, and allow inspection for cyanosis. (IV sites in the hand can also be protected this way.) With infants, attach the sensor to the toe or foot, then replace the sock so they won't pay any attention to it. Always apply a "tug tape" for stress relief at the wrist (or ankle). We sabotage ourselves when patients move around pulling the sensor by its wire thus lifting the sensor off its site,



233 What happens when you breathe out underwater?

In which direction do the bubbles go? Upwards, of course. It still shocks me when I see even experienced nurses, medics, or doctors, trying to 'prepare an IV line' by holding the tubing downwards to a sink or wastebasket to express a turbulent flow of bubbles and fluid. As Chief Engineer Scott reminded Captain Kirk, "*Captain, I canna change The Laws of Physics!*"

Air will always rise in fluids, so the only efficient way of clearing the line is to avoid air and provide it an upward path to escape should there be any.

When spiking the container:

1. Have the drip chamber pre-squeezed between thumb and forefinger.
2. The tubing should be pulled upward sharply (to prevent flow) between lower fingers and over which the tubing makes an upward and downward arc like the aorta from the heart.
3. Pierce the port firmly as you insert the spike.
4. Slowly release the drip chamber to half-fill it with solution.
5. Release the crimped tubing carefully so that flow begins without turbulence or bubbles and a clean meniscus of fluid rises in the tubing pushing all air out before it.
6. In seconds, you have cleared the line with minimal effort and maximum speed.



234 Homework Assignment: Planning for Chaos

Time has passed since the Las Vegas Mass Shooting and we have returned to unquestioning routine.

1. Read the article (below) about Sunrise Hospital from our sister publication, *Emergency Physicians Monthly*. Clear your mind. Absorb what you read.
2. Look at your department with *fresh eyes*. What are the problem areas?
3. What “choke points” to patient flow can you find?
4. How rapidly can you access every essential drug or supply: in the ED? From the entire hospital? From the warehouse? Vendors? Other hospitals?
5. How fast will “pulled staff” get there? Extra trash, kitchen, security, parking, etc.
6. Inter-Departmental and Administrative Support to “break rules,” shorten processes, break down the ‘silos’ of usual isolation within the hospital? Alternate documentation?
7. Staging areas for arriving off-duty staff, family of casualties, rest and nourishment of workers.
8. Direct line to hospital administrative command post.
9. Disaster supplies & tags right at ‘front door’: ambulance bay; triage; ‘drive-up area.’
10. Skills Inventory of all providers and staff to train ‘skilling-up’ and refreshers.

Menes, K, MD.; Tintinalli, J., MD MS.; Plaster, L, [How One Las Vegas ED Saved Hundreds of Lives After the Worst Mass Shooting in U.S. History](#). [Emergency Physicians Monthly](#). November 3, 2017.

235 Too much Seasonal Cheer?

With inclement weather, there will be an increase of persons brought in due to public intoxication and lack of shelter. You will be expected to rule out other causes or occult complications, provide for the safety, warmth, nourishment, and sheltering of these patients until they are fit for discharge. In doing so, you will relieve other public agencies of obligation or liability.

Some will be well-known frequent-flyers; yet, newly at risk with each intoxication. Some will be 'novices'; youthful binge, unknowing of consequence. Some responding to a life crisis or psych problem. Some will be unknown until sober and can be talked with. 1% will have a critical problem to find.

If only a few, spread the load among the nurses, but ensure that they will be not be 'back-burnered' and neglected if things are busy. If many, or very busy, create a special observation unit with nurse and technician; but choose someone different each night, or someone who is specially 'up' for the job. Ensure maximum visibility, ready suction, monitors, SPO2, point-of-care testing supplies. Give essential hydration; but don't expect a 'cure'; do expect urine. Warming supplies. Re-exam every hour. Have food available upon waking. Sometimes, clothes will need to be replaced. Consider Social Work/Case Management for those who have appeared several times, or other social issues.

Try "Brief Interventions" for alcoholism every time. We've seen complete turn-arounds and sobriety, even after years of effort. Celebrate successes.

Every youth should have a heart-to-heart to elicit issues, or etiology. Counsel strenuously, how this time was 'lucky' *versus* high potential for accident, risky behavior, or being unable to make safe decisions for oneself. This is an eminently necessary "teachable moment."

"Surriya" [Just another Alcoholic? Approach to EtOH-Related Conditions in the ED.](#)
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236 Home Medication Tips

You probably find that some older patients need help with self-administering home medicines safely. Sometimes, that can be by suggestions to the patient, or the family 'caregiver', or by arranging a visiting nurse assessment.

Emphasize the basic "Five Rights of Medication Administration" appropriate to the situation. Good lighting and a clock are useful; nighttime doses are problematic if the patient doesn't wish to waken his partner. A small flashlight can be useful to identify the medicine with minimal disturbance. Remind for glasses to be worn when taking medicines. Each person should keep their *own medicines in a space different from their partner* to avoid confusion, even if one 'helps' the other one. Remind patients and families *not to save* left over medicines 'for the future.' Local pharmacies often will safely discard old drugs without contaminating the local landfill and watertable. You may need to explore if the patient is deliberately noncompliant due to cost or to side effects.

High-risk medicines can be cognitively highlighted with rubber bands or sandpaper on the bottle as a tactile signal. Colored marks on the label may be perceived differently at night; the tactile signal on the bottle is a better 'Aha!' distinction.

Many elders carry a bottle of mixed pills (not ideal) or a multi-chamber container for the day or the week. This makes it difficult for EMS to identify drugs without labels; — encourage affixing an up to date list of medicines and directions, allergy information is important also. 'The Classic *Bag O' Meds*' brought in is slow to identify, absent labels or EHR data. There are useful smart phone apps for recording health information. Complex information, including EKGs, medical imaging, and other studies, can be placed on a flash drive for those who are travelling and may need to make data available if ill.

Any drug level, lab result, or clinical finding, suggestive of abnormal intended therapeutic effect, should open discussions with family, primary physician, pharmacy, or visiting nurses, to review patient's competency to self-administer medicines.

State of Ohio, Department of Developmental Disabilities. [Self-Administration Assessment](#). 2015.

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[The Institute for Safe Medication Practices](#).

237 Chest Pain & Vomiting; when it doesn't add up

When the diagnosis is unknown, or the patient's response is unusual to ordinary measures, it is good to have read deeply and widely in medicine so that the fund of knowledge supports a quest for alternatives. Yet, as the patient 'hasn't read the textbook', he may not exactly match the classical description.

A 69-year-old man arrived by ambulance with "chest pain and vomiting." The pain was unusually persistent and difficult to ease. Some more emesis occurred. A carefully placed gastric tube yielded no aspirate. Asked "which came first?", the patient admitted to vomiting first. Boerhaave's Syndrome was suspected and proven. Surgery followed with patient survival. At presentation, there was no Hamman's Crunch sign nor any subcutaneous emphysema.

This useful tale is mindful during periods of holiday overindulgence in food and drink. The Index Case earning the eponym, was in 1723 when Grand Admiral of the Dutch Fleet and Prefect of Rhineland, Baron Jan Gerrit van Wassenauer succumbed to a ruptured esophagus, mediastinitis, and three liters of fluid in the chest, following upon a prodigious meal and the force of vomiting. The chest pain had followed the vomiting.

It is said that Boerhaave kept a book with "the secrets of medicine" which was opened upon his death, and all that was said was "keep the head cool, the feet warm and the bowels open." In ambulance days, we jested that this was standard treatment, as the patient's face was exposed, his body in a warm blanket, and a disposable absorbent pad was always under the patient. One could postulate a more generous interpretation as supporting homeostasis and providing comfort and rest.

[Herman Boerhaave](#). [Whonamedit? - A dictionary of medical eponyms](#). Material provided by Zoran Bojanic, M.D., Serbia. © 1994 - 2017 Ole Daniel Enersen. All rights reserved.

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238 White Phosphorus

Munitions containing white phosphorus are commonly used in warfare as incendiaries, signals and illumination, and for screening smokes to conceal activity from vision or infrared detection. WP is not primarily to be used as an anti-personnel weapon, though such injuries may occur in military targets, but is prohibited to be used against civilians and non-combatants. Exposure may also occur in training, or transportation accidents.

WP self-ignites in air, gives a bright yellow flame and large amounts of rising white smoke (which, itself, can be irritating and toxic to the respiratory tract), and particles on the skin produce deep, painful burns; systemic absorption rapidly causes metabolic derangement, ECG changes, and bone destruction. Odors of garlic or onion may be detected, but not relied upon. Green phosphorescence may be noted of the particles.

First aid is (with precautions to oneself) to irrigate away or immerse particles in the wound with cool, not warm, water (mindful of hypothermia), meticulously removing particles with forceps or pliers. Sand can be used in the receptacle. Cool water avoids increasing chemical activity from warmer water, to worse effect. Violent irrigation or reckless removal can scatter particles to injure others. Water/saline-soaked dressings in the wound can temporize for transport.

Classically, a fresh 1% solution of Copper Sulfate was used to paint particles to keep out air and blacken them for easy identification. However, significant toxicity can occur from

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CuSO₄, so it should not be used as an irrigant, and perhaps best not at all. Ultraviolet from a Wood's Lamp enhances phosphorescence for easy identification, instead.

[CDC-NIOSH: WHITE PHOSPHORUS : Systemic Agent.](#)

[\[Emergency Response Safety and Health Database\]](#)

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