

Friday Night [under the] Lights 2014



Happy Friday.

OK. I love spellcheck.

Spellcheck serves essentially the same function as sloppy, unreadable handwriting does for doctors. We can't spell worth a hoot. So if we write – we scribble. If we type – spellcheck bails us out. No more worrying about how to spell correctly...

So, thanks to all of you who pointed out the message in my last FNuL, thanks to spellcheck.

Did you catch it? Here it is again.

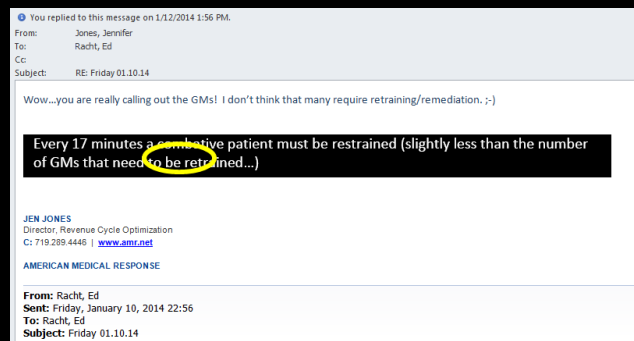
.....

- Every 17 minutes a combative patient must be restrained (slightly less than the number of GMs that need to be *retrained...*)

.....

Dean Anderson was the first to catch it – He suggested it was a Freudian slip.

But the Platinum Spellcheck Catching Award goes to Jen Jones. She not only caught it – she circled it and sent in her commentary (☺).



What a difference an s can make, eh? For my GM colleagues, I think it's pretty clear that restraint fits much better here... Thanks for your spelling vigilance.

From the Mike Ragone Cool Facts Division...

Mike Ragone, the AMR Director of EMS System Design, always seems to come up with fascinating facts about our practices. He's one of those people who's constantly thinking about the world of public safety medicine and has the ability to characterize his observations in a unique and engaging way. He's got his finger on the pulse of change and he's always feeding his colleagues fresh information from the profession.

He's *extremely* well respected in the EMS Industry (at least both of the folks I talked to, Mike) and has a really nice ability to paint a picture of what "could be" by putting together all the pieces of a complex puzzle. Like many folks I've had the pleasure to walk with in this EMS Journey – He always knows where True North is.

So yesterday, he sends me an email and asks (in typical Mike fashion) – "How many AMR Practices serve communities with greater than 200,000 people?"

I thought for a minute and responded with the number 16.

Turns out I was *way wrong*. We actually serve 37 communities with a population greater than 200,000. Not only that, those communities make up a covered population of 23,866,586 people (it was 23,866,582 but a new family moved into Topeka yesterday).

I won't bore you by hopping on my soapbox again, but this is just one more reason why it's critical that we, as the largest EMS Provider in the U.S., do everything we can to provide our patients with the best care according to the science, in a way that improves their experience and decreases costs of healthcare (recognize the Triple Aim?). There are way more than 24 million people counting on us. It's our obligation to our communities and ourselves.

We should be very proud that so many have placed their trust in each of us. I am.

...and thanks to Mike for always looking at the industry in a unique way and sharing his thoughts with the rest of us.

ETCO2 4U

After my discussion in the last issue of our ETCO2 utilization, several people asked about the indications for assessing ETCO2 in patients.

First and foremost, the best reference is your local Medical Director – while the utilization of capnography has been well studied in many specific patient conditions, like much in medicine, there is still an art to the science and many physicians have specific approaches that guide their practice.

That said, I think there are some "guiding principles" that help us better integrate ETCO2 in our patient assessments.

I always get a little uncomfortable when I give even the appearance of discussing clinical topics using phrases like "always", "never" and "here's a list of THE (fill in the blank)". Capnography is one of those interventions that fit into this category (with perhaps one exception).

So, when is capnography ideally used? Rather than list all the specific cases (since I couldn't possibly do that), I like to think of it as a Gerber Tool, of sorts. One "device" with many different possible uses.

Because there is a clear and strong relationship between the circulatory and respiratory systems, end tidal CO₂ monitoring adds valuable additional information (how much end tidal CO₂ and a graphical representation of how it was exhaled) to our overall clinical assessment.

The most common advantages of using end tidal CO₂ monitoring are related to conditions or therapies which affect or are likely to affect airway maintenance, effective spontaneous breathing, and circulation (perfusion). The idea of evaluating end tidal CO₂ during airway maintenance procedures is the primary reason that this assessment tool gained such rapid recognition in the EMS setting. So, from an airway standpoint, examples of reasonable (frankly, expected) indications include anytime an advanced airway is in place (the entire time), particularly when the patient is moved with the advanced airway in place or their physiologic status is unstable and constantly changing. Changing ETCO₂ values alert us to possible changes in patient condition that require rapid assessment and (potentially) intervention.

As I said above, “always” is a difficult word to use in medicine. I’ll use it here though – we should always use ETCO₂ when an advanced airway is in place. It’s a critical monitor of patency and an indicator of changing physiology or tube placement.

Using end tidal CO₂ monitoring is also a valuable way to aid in ongoing assessment of ventilation status and effectiveness. In the EMS setting, ventilation can be affected by upper & lower airway obstruction, circulatory failure (shock), neurologic disorders, medications (opiate analgesics & benzos) and a host of other causes of hypo-/hyperventilation. As most of you know, a subset of this group has chronic respiratory disease. In these patients, end tidal CO₂ monitoring provides some information about the patient’s current condition and can provide extremely useful information about the effect of bronchodilating therapies. Finally, end tidal CO₂ monitoring has proven useful during cardiac arrest resuscitation and shock. An increase in ETCO₂ following interventions aimed at improving circulation may provide us with some indication of improved perfusion. In cardiac arrest, the initial and sustained ETCO₂ values may be useful (though not alone) as a prognostic indicator.

So, when should end tidal CO₂ monitoring ideally be used? The short answer is when the patient’s condition or therapies we provide will have any potential significant impact on the ABCs... End tidal CO₂ readings are dependent on three important components:

- Production of CO₂ by tissue
- Movement of CO₂ from the tissue to the lungs (perfusion)
- Effective elimination of CO₂ from the lungs (patent airway and effective ventilation)

So any abnormal or changing values require an assessment of all three components to sort out the cause of the abnormal readings.

And, one more thought. Although end tidal CO₂ monitoring is non-invasive and relatively non-harmful, using this tool “always” (e.g. on “every” patient) isn’t really indicated. As in most areas of medicine, we should use assessments and therapies appropriate for the patient’s condition – not just shotgun approaches with everything we have.

What does Sin City Medicine look like on New Year's Eve?

From our Las Vegas AMR colleagues...



Little stuff – Huge impact.

I just saw a lady in the airport with a shirt that read:

Let's eat grandma
Let's eat, grandma
Commas save lives

After I blew some diet Pepsi through my nose, I realized how pertinent that is to our own world. It was a little thing – a comma for crying out loud. But its absence made a huge difference. I started thinking about all the “little stuff” in EMS that has a huge impact.

- Just a little drop of blood on the stretcher
- Just a decimal point in drug concentration (1:1000 or 1:10000)
- Right street / wrong end (N. vs S)
- The laryngoscope certainly has a working bulb
- Jump bag is always there
- I'm sure the previous crew checked...

You get the drift. Little stuff. Huge impact. It makes a difference in our world.

Life's little oddities:

Just got this tonight. Seems to me the headline writers took some liberty on this one...

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January 24, 2014
5:16 pm EDT
BREAKING NEWS

Supreme Court temporarily exempts nuns from contraception coverage mandate

BREAKING The U.S. Supreme Court issued an injunction stopping the Obama administration from imposing the mandate for contraception coverage on a chain of nursing homes operated by the Little Sisters of the Poor, an order of Roman Catholic nuns.

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Epilogue...

From the waiting room in Emory University Hospital.



That's it from my world. *Happy Friday.* Thanks for paying attention to the little stuff...

Ed

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