

Friday Night (under the) Lights...

2021



Happy Friday...

And a Happy Birthday to President William McKinley, who was born on this day in 1843 in Niles, Ohio. McKinley became the 25th American president.

While history is full of the accomplishments of McKinley, there's a little known fact about his presidency that caught my attention. Any idea what it was? (I can hear you racing to Google – No fair)...

So, you'll have to wait until the end. It's my strategic way to keep you reading the whole FNuL. Like putting the milk in the very back of the grocery store so you have to walk past everything else in order to get the milk and you pick up more than you came for...

And speaking of milk and grocery stores while I'm on a roll with shiny objects and ADHD writing behavior...

Do you know what the most common items purchased in a grocery store in 2018 were?

1. Soda (Americans drink 44 gallons a year)
2. Beer (the only shocker here is that soda beat beer – I guess we have to account for infants)
3. Cereal (Americans, on average, consume 10 pounds of cereal a year)
4. Frozen dinners (we bought 6.12 Billion dollars worth)
5. Salty snacks (notice it's not even a particular snack – Just "salty") \$9.0 Billion a year
6. FINALLY – Milk.



And that, ladies and gentleman, is why we refer to the Grocery Store as the birthplace of Emergency Medicine and EMS...

Thanks for going with me on that little rabbit hole writing journey...

A couple of quick, important things relating to our COVID19 journey that came to light this week. I want to try and communicate about the "C Word" in a thoughtful way. It shouldn't consume us in everything we do and think about (after all, we have 44 gallons of soda to drink and 9 billion dollars of salty stuff to eat...), but it is something we need to be smart about as we learn more every day...

First, two of the next vaccines in line for FDA submission and review are the Johnson & Johnson (Janssen) vaccine and the Astra Zeneca vaccine.

The J&J vaccine is a single dose vaccine (as opposed to the currently available Moderna and Pfizer two dose vaccines) and it doesn't have the same onerous refrigeration requirements as the Pfizer vaccine. Those two logistics advantages are huge. Because it is single dose, it would be much more beneficial in populations where a second dose is hard to coordinate (most notable homeless and transient populations). Because you don't have to transport and store the vaccine in a polar icecap equivalent (like Pfizer) it should be easier to coordinate mass administration to larger populations.

That said, the data that will be submitted to the FDA for review (hopefully next week) demonstrates the vaccine is 66% effective in preventing moderate to severe illness at 4 weeks post administration. The J&J vaccine has been studied worldwide and the results in the US demonstrated a 72% effectiveness. The vaccine was 85% effective in preventing severe illness and there were no cases of COVID related hospitalization & death. Of note, the FDA requires at least 50% effectiveness for vaccine approval.

The belief is that the vaccine had lower worldwide effectiveness in large part due to the emerging variants of the virus. The data suggests that the vaccine may not be as effective in the newer variants.

We are learning more about variants by the day. That said, it's important to remember that prevention of infection by any of the COVID variants is the end game. We should still receive the current vaccines which have a solid track record against the initial (and still, by far, most common) virus.

The J&J vaccine is a vector based vaccine. Different from the mRNA Moderna and Pfizer vaccines, the J&J vaccine is an engineered adenovirus that carries a full, stabilized copy of the virus's infamous spike protein, the blueprints of which were based on the first clinical isolate of the SARS-CoV-2 virus from Wuhan.

Spike is the protruding club-like protein found on the outside of the virus's particle. The virus uses it to grab onto, enter, and infect human cells (viral weapons of battle...).



The adenovirus (called Ad26 if you need a trivia question) was isolated long ago in human stool samples and has been a successful vector for vaccines, notably used in a recently approved Ebola vaccine. How some brilliant scientist figured that one out is beyond me – I'll leave the visual to you. Ad26 is generally seen as safe and good at prompting desired immune responses. This bore out in J&J's trial, which found the vaccine had no significant safety concerns and was generally well-tolerated by participants.

So, the more vaccines, the better off we are in fighting this battle. Keep your eye out for J&J approval by the FDA (hopefully) in the next week or so.

On the subject of research and studying / evaluating and approving new vaccines, I want to take a second and show you one of the most important components of a peer-reviewed, scientific paper.

The national discussions around vaccine safety often boil down to concerns that the vaccines were developed way too fast. How could they be safe? Most vaccines take years to develop. It's a very appropriate question to ask.

There are many reasons why the COVID vaccines have been developed so rapidly, including substantial funding worldwide, a concerted effort by scientists across the spectrum to focus on COVID, a relatively new, scientifically sound approach to use mRNA (much faster than traditional methods) and accelerated (NOT abbreviated) regulatory review.

And, on top of that, there's this...

This came from the New England Journal of Medicine article describing the results of the Moderna vaccine trial:

APPENDIX

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It's an appendix. Think of it as the closing credits of a movie. Most of us pass right by it unless we're looking for someone we know. Not much fun to read and usually doesn't have pertinent information relating to the topic of discussion.

But the appendix is our powerful **message of trust**. If your old enough to remember (I'm not, but Ragone has told me) – It's the "Good Housekeeping Seal of Approval". The researchers and institutions which have participated in the review and publication of this paper are on display, front & center. Individual professionals that have dedicated their entire careers to understanding and battling illness just like COVID. We've trusted people like this in ebola, tetanus, measles, acute injury, operative interventions for managing cancer, endocrine abnormalities, fertility options, acute MIs, otitis media in our kids, hemorrhoid management and best approaches to heart lung transplants. The list is endless.

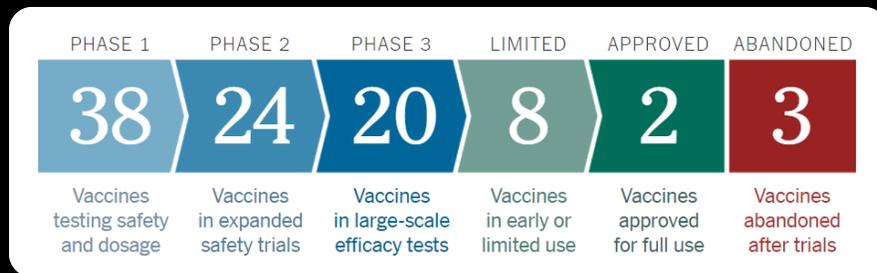
And now we need to trust that the same scientific rigor, focus, and principles of evaluation apply to this vaccine, as they have for illness and injury across time.

It is, perhaps, the most important foundation for the messages conveyed in the paper...
 Finally, many more vaccines on the horizon worldwide...

Like I said, there's never been such a focused effort in medicine worldwide on a single issue in such a short time...

Leading vaccines

Developer	How It Works	Phase	Status
Pfizer-BioNTech	mRNA	2 3	Approved in Saudi Arabia, Bahrain, Switzerland. Emergency use in U.S., E.U., other countries.
Moderna	mRNA	3	Emergency use in U.S., U.K., E.U., other countries.
Gamaleya	Ad26, Ad5	3	Early use in Russia. Emergency use in other countries.
Oxford-AstraZeneca	ChAdOx1	2 3	Emergency use in Britain, India, other countries.
CanSino	Ad5	3	Limited use in China.
Johnson & Johnson	Ad26	3	
Vector Institute	Protein	3	Early use in Russia.
Novavax	Protein	3	
Sinopharm	Inactivated	3	Approved in China, U.A.E., Bahrain. Emergency use in Egypt, Jordan.
Sinovac	Inactivated	3	Emergency use in China, Brazil, other countries.
Sinopharm-Wuhan	Inactivated	3	Limited use in China, U.A.E.
Bharat Biotech	Inactivated	3	Emergency use in India.



▪ The World of non-COVID medicine...

As we begin to approach the practical resolution of the current pandemic state (I'm being purposely optimistic here) one of the things we all need to focus on is to "autocorrect" some of the approaches we (necessarily) put into place during the pandemic that may have a less than desirable impact on our patients.

Look – we all know that the field practice of EMS has been substantially changed over the past year. Important advances that we've collectively made in time dependent illness and injury have sometimes taken the back seat to COVID related safety or practice issues.

Think about it:

- Decisions about advanced airway placement in the field
- Aerosolizing interventions – are they postponed, prohibited or paused?
- Initiation and termination of resuscitation efforts
- Bystander CPR
- CPR classes and advocacy programs
- Hospital destination criteria changes
- Hospital entry modifications – Maybe a potential stroke patient went straight to CT – Now they stop and are evaluated / screened in the ED

The list goes on.

I'm not condemning our collective efforts. We modified practice to protect ourselves, our communities, our hospitals and our patients.

In some ways, we have drifted a bit on our aggressive efforts in time sensitive illness and injury because we have to do it in a safe, protected way...

So as we emerge from this Charlie Foxtrot, we need to refresh and recharge our proven efforts to impact time sensitive conditions.

To that end, I share with you an intriguing article recently published by Dr. Brian Clemency and our Buffalo GMR colleagues in the Journal of Emergency Medicine:

Changes in Field Termination of Resuscitation and Survival Rates After an Educational Intervention to Promote on Scene Resuscitation for Out-of-Hospital Cardiac Arrest

Brian M Clemency¹, Johanna C Innes², Michael Waldrop³, Lynn J White⁴, Eric Dievendorf⁴, Robert Orłowski⁴, Keja Wang⁵, Heather A Lindstrom³, John M Canty Jr⁶, David Hostler⁷

Affiliations – collapse

Affiliations

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The article addresses an important question in resuscitation practice in the field.

As everyone knows, the measurement of survival in out-of-hospital cardiac arrest requires both a numerator (how many individuals survived the event neurologically intact) and a denominator (out of how many individuals had resuscitation attempts initiated).

There's also always been the schizophrenic approaches of initiating and continuing resuscitation in patients that have clear negative prognosticators for survival. The question of who receives resuscitation attempts and who does not, as well as if & when field termination of resuscitation is initiated varies by system, individual and the "culture" of resuscitation in a community.

Brian and his colleagues provided an educational initiative to more clearly define the parameters around termination and continuation of resuscitation. Their data suggested an improvement in survival associated with an alignment in approaches.

While more work has to be done to clearly define the impact, the study is a nice entry into the world of the "art influence on the science" in resuscitation...

Strong work by our Buffalo colleagues...



▪ *And speaking of the importance of the art & science of resuscitation...*

The Citizen CPR Foundation Cardiac Arrest Survival Summit to "Reconnect & Recharge" (sound familiar??) is being held in San Diego this December...



The Summit is a great educational and connecting opportunity to Realign our focus on the challenges of Sudden Cardiac Arrest...

AND...

CCPRF is inviting you to submit a proposal for a pre-conference workshop, concurrent session or poster.

The Summit brings together all of the leading organizations dedicated to saving lives from cardiac arrest. It is the place where the widest spectrum of resuscitation professionals - instructors, practitioners, program directors, and researchers, as well as SCA survivors and community champions gather to learn from experts and one another.

The deadline for submissions is February 15, 2021.

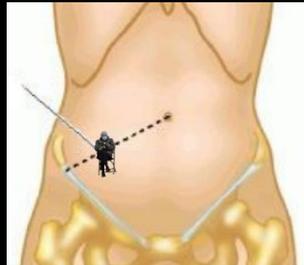
The Summit is the ultimate platform to discuss, debate and grow the Art & Science of resuscitation.

As EMS practitioners, we play a huge role in the comprehensive system built to save lives.

For more information or to submit a presentation, here's the link - [CARDIAC ARREST SURVIVAL SUMMIT - CITIZEN CPR FOUNDATION](#)

- *A couple of laughs courtesy of medicine for you to figure out...*

Know what this is (thx to Alan Craig...)?



Can you think of one thing COVID didn't change?

Estimated Volume Losses by Service Line 2019 vs 2020

Ophthalmology	Spine	Gynecology	Orthopedics	ENT	Endocrine
81%	76%	75%	74%	72%	68%
Dermatology	Gastroenterology	Rheumatology	Neurosciences	General Medicine	Urology
67%	67%	66%	66%	64%	62%
Genetics	Vascular	Hepatology	Cardiology	Pulmonology	Breast Health
60%	59%	58%	57%	56%	55%
General Surgery	Nephrology	Hematology	Allergy & Immunology	Behavioral Health	Burns & Wounds
54%	52%	49%	48%	45%	44%
Cancer	Obstetrics	Infectious Disease	Neonatology	Not Assigned	Normal Newborn
37%	30%	23%	20%	4%	2%

Model examined YoY comparison for a 2 week period (March 24 - April 6, 2019 and March 22 - April 4, 2020)

Oh yeah... President McKinley.

He was the first United States President to ride in an automobile...

After the ride, the President reportedly remarked "Stanley's overoptimistic, I think, when he says those things will someday replace horses".

However, it turned out that it was not the last time McKinley rode in a "horseless carriage". After McKinley was shot by assassin Leon Czolgosz at the Pan American Exposition in Buffalo on September 6, 1901, medics moved the president to the small infirmary on the exposition grounds in an electric ambulance.



The ambulance in which McKinley rode after his shooting was electric in keeping with the theme of the Exposition. And in 2021, GMR continues the exploration and pursuit of electric ambulances.

- *Epilogue...*

An Epidemiologist, an ICU Physician and a Scientist walk into a bar.

(I'm just kidding. They know better...)

So, that's it from my World. Happy Friday everyone...

I hope you and the people you love and care for are holding up during these tough times.

It will get better. It's already starting...

Ed

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