October 2021

Fire Line Newsletter

FOND DU LAC EST. 1848 FIRE / RESCUE

In This Issue:

From the Balcony – Time

It's hard to believe that summer is nearing its end and another school year is upon us. For the first time in 25 years, I don't have one of my children enrolled in school; it went fast, too fast. As I write this the Fond du Lac area schools begin in-person learning and unfortunately, the threat of the Delta Variant is threatening communities all across the country. We have remained healthy and those of you on the front lines need to continue to display vigilance and extreme safety in your close interactions with sick patients. I encourage those who have not been vaccinated to please consider doing so, I truly believe it could save your life.

We have a new probationary member who, as of this writing completed his third week of recruit academy. Tristan Schill is not new to our department having been one of our Fox Valley Technical College interns. We are thrilled to have Tristan join our ranks. We celebrated Firefighter/Paramedic Andrea Hoksbergen as she ended her probationary period and had her badge pinned by her father who is the fire chief in Randolph.

Our Fire Prevention Bureau is growing! We hired Calie Tasch as our new Community Risk Reduction Specialist. Calie grew up in Fond du Lac where she attended school. She was a recent part-time employee of the City Garage where she assisted Ray Dilts and his crew in the office. She's currently in the Wisconsin Army National Guard and holds the rank of Specialist E-4. Calie is currently enrolled at Fox Valley Technical College studying Administrative Professional Administration.

It's also hard to believe that 20 years ago this September 11, our country was brought to its knees as we watched terror attacks to the World Trade Center, The Pentagon, and the United Airlines flight that crashed just north of Shanskville, PA. I realize that many of our own members have little or no recollection of the 9-11 terrorist attacks while others of us were working in varying roles in the fires service. I hope we all take a moment and reflect back 20 years ago and keep those we lost close to our hearts.

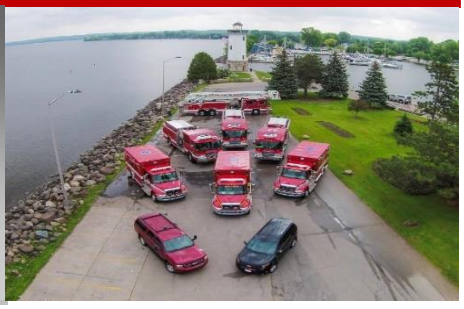
Our greatest assets are the brave men and women that make up Fond du Lac Fire/Rescue. The responsibility each of you have to the safety of our community cannot adequately be measured. Thank you for our newest members and our seasoned members who dedicate themselves to mentoring, schooling and teaching our rookies so they continue to grow. A new school year is a new beginning, just like having a member walk through our doors. Let's always make each other feel welcome and part of our team.

Until Next Month,
Be Safe and Be Well

Fire Chief
Peter O'Leary

FOND DU LAC FIRE RESCUE OPERATIONS

By: Assistant Chief
Erick Gerritson



Empathy vs. Sympathy – Do You Know the Difference?

At a recent conference, a group of firefighters were asked to explain the difference between empathy and sympathy. The responses were eloquent and thoughtful, but we like this explanation best:

By the very nature of what first responders do, they are put in the position of dealing with death, fear, grief, confusion and even anger. The difference in *just going through the process* versus *dealing compassionately with the complex situation* may be the difference of having empathy or showing sympathy.

Drilling down even further, we discussed the actual definitions of each word:

- Empathy is a term we use for the ability to understand other people's feelings as if we were having them ourselves.
- Empathy can also mean projecting our own feelings onto something or someone.
- Sympathy refers to the ability to take part in someone else's feelings, mostly by feeling sorrowful about their misfortune.

Firefighters naturally have the ability to feel empathy toward their victims. They've lived through difficult times and seen things firsthand on more than one occasion.

Empathy may be a soft skill, but it's a crucial one, especially when many fire departments are running EMS calls. Good fire departments will continue to be respected for their technical excellence, but great departments will couple that technical ability with compassionate service. **Empathy is what will set the standard of best.**

After all, when Mrs. Smith brings cookies to the fire station, it's not because you got the IV on the first stick or prevented water damage during overhaul. It's because she remembers how well you treated her and her loved ones. When someone is having one of their worst days, she will remember you for your empathy most of all. When someone needs help, you will exceed expectations only if you are empathetic.

A few tips to keep empathy top of mind:

1. Listen first. Victims of disaster are emotional and need to be able to share their feelings.
2. Connect with their feelings. You may have seen this many times; find a way to connect with them.
3. Acknowledge their pain. – "Rarely can a response make something better. What makes something better is connection."

Finally, it is important to not allow yourself to burnout or feel compassion fatigue. Lean on your brothers and sisters in the department, as well as trusted loved ones, for any struggles you may have with these emotions.

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Until next month…
Stay Safe!

Fire is Everyone's Fight™

September 11, 2001

Looking Back 20 Years, Never Forgetting

On September 11, 2001, we did not only lose firefighters and police officers that day, but we also lost mothers, fathers, sisters, brothers, aunts, uncles and the list goes on and on. We honor them and their sacrifice and pause to look back, so we never ever forget the heroism that took place on 9-11 in New York City, Shanksville, Pennsylvania and the Pentagon.

I have been in the fire service since 1979. I began my fire service career in Wheaton, Illinois as a paid-on-call firefighter. I was hired on as a career firefighter in 1988, and over the past 33 years, I have worked in Illinois, New Hampshire and Wisconsin. My roots are in New York City; more specifically, Manhattan, my birthplace.

On September 11, 2001, I was like many firefighters, on-duty in a firehouse. I was in Wheaton in my role as a battalion chief. I was in to work early that morning—we were having a very rare department staff meeting and I was getting some items ready while I had the TV on in my office. I watched with disbelief as the attacks began and found myself feeling an incredible sense of vulnerability as an American. As things worsened, I began to wonder what would be next and how far the attacks would reach. I was somewhat scared—the fear of the unknown was quite real to me. I reached out to my family—first to my brother who lives in Pennsylvania and at the time was a pilot for USAIR and would frequently be flying in and out of airports on the east coast. Once I found out he was okay, my siblings all started checking on each other.

At the firehouse, we were all in a state of shock and quiet reservation. We watched the TV and searched the internet for information. I remember thinking, why is this happening and praying and hoping this was all just some kind of bad dream, but as we all know, it was no dream. Our staff meeting that morning became irrelevant as we monitored the network news on the big screen TV in the room.

In the days, weeks and months after the attack, and even today, especially on the anniversary of the terrorist attacks on America, random citizens have stopped by firehouses all over the country to express their love and support for us. The letters, emails and cards that I personally received were beyond my comprehension of the level of our country's humanity and love and respect they have for our profession.

To the men and women of the fire service: What you do each and every day matters and your dedication and commitment to honor the heroes of 9/11 is something that should make you proud.

-Peter O'Leary, Fond du Lac, WI

Operations by the Numbers

August, 2021	By Month		Year-To-Date	
PREVENTION	**Last Year**	**This Year**	**Last Year**	**This Year**
Total Inspections	254	217	1477	1878
Total Defects	105	45	792	746
SUPPRESSION				
Alarms Involving Fire	5	8	85	76
Fire Mutual Aid Given	1	1	11	12
Fire Mutual Aid Received	0	0	3	5
Service/Good Intent Calls	46	50	395	386
False Alarms/False Calls	28	37	208	221
Other Calls	10	16	122	84
Total Fire Alarms & Calls	89	111	810	767
EMS				
Total Ambulance Calls	580	590	4080	4249
Total Fire/EMS Responses	669	701	4890	5031
Fire Property Loss	$2100.00	$15,000.00	$576,300.00	$300,168.00
Fire Contents Loss	$450.00	$9250.00	$265,951.00	$119,940.00
Engine Assisted EMS Calls	274	214	1765	1654

Current Status of New Construction

- River Hills Mixed Use Development on S. Main St. – *Building 12 is under construction*
- Forest Mall / Staples – *Demolition continues*
- Country Lane Cottages - *Townhouses under construction*
- Sullys Tavern – *Nearing Completion*
- Sister Catherine Drexel Homeless Shelter – *Under Construction*
- Hobby Lobby / Big Lots – *Construction/Renovation has started*
- BCI Burke – *Addition beginning*
- Summit Auto – *Addition will be starting soon*
- Brooke Street Lofts – *Planning Phase*
- Kwik Trip (Schreiners) – *Coming Soon*

The Code Summary

By: Assistant Chief Todd Janquart

Avoiding the Post-Intubation Crash

Authored by: Kelly Grayson NRP, CCP

"Oxygen saturation is really dropping, only 85% now on a non-rebreather. BP 90/46, pulse 120, respirations 24, etCO_2 is… 38. Okay, that's not so bad, but then he's in shock. This guy's about to crash," you muse. *"Maybe I should intubate him."*

You sit in the airway seat at the head of the stretcher and mentally catalogue the injuries of the motor vehicle collision victim you are transporting. *"Left femur and pelvis fracture. Likely internal bleeding. And judging from his lung sounds and his dropping saturation, likely pulmonary contusion. No doubt about it, he needs positive-pressure ventilation."*

You ready your equipment: bag-valve mask (BVM); bougie, capnography cannula, your favorite laryngoscope blade; a 7.5 endotracheal tube; a securing device; and after a moment's contemplation, you set an extra tube and a supraglottic airway close by and attach a PEEP valve to your BVM's exhalation port. You mentally review the steps of endotracheal intubation as you deliver thirty seconds of BVM ventilation with high-flow oxygen, and notice that his oxygen saturation is up to only 88%.

"*Yep, definitely needs a tube,"* you decide as you perform laryngoscopy and deftly slide a tube home. Thirty seconds later, you have confirmed placement with multiple methods, secured the tube, and are ventilating the patient with a BVM and 5 cm H_20 of PEEP.

"*Not bad at all,"* you congratulate yourself, "t*hat was easy."* As trauma intubations go, this one was smooth, unhurried. The patient gagged only briefly, and you didn't even need suction. From cessation of BVM ventilation to resumption via the endotracheal tube was no more than 30 seconds. You breathe a sigh of relief as you glance at the cardiac monitor and note with alarm as the blood pressure reads only 74/30, even as you note equal chest rise with each ventilation. Five minutes later, you yell up front for your partner to pull over as you begin chest compressions.

What went wrong? Well, it could be a number of things. Post-intubation hemodynamic instability is well-documented in the literature, both in the EMS environment and within the hospital setting.[1-4] Common predictors of post-intubation hypotension (PIH) include:

- Hypoxia
- Acidosis
- Obstructive states, i.e. cardiac tamponade or tension pneumothorax
- Vasovagal events during prolonged intubation attempts
- Central hypovolemia
- Distributive shock states
- Neuromuscular blockers and other induction agents

"But, wait a minute!" you protest. "Hypoxia is at the top of that list. Isn't that why we're intubating the patient in the first place?"

One of the biggest myths ever foisted upon EMS providers is that endotracheal intubation is the "gold standard" of airway management. Endotracheal intubation (ETI), like any other invasive procedure, comes with its own set of inherent risks and potential harmful sequelae. The true "gold standard" of airway management is *whatever device or technique provides physiologically appropriate oxygenation and ventilation*; it is an outcome, not a specific device or technique. If that outcome can be achieved with a supraglottic airway or well-performed BVM ventilation, then you are serving your patient well. Conversely, even a properly-placed, easily inserted endotracheal tube can make the clinical course of some patients far more complicated and fraught with risk. This article will address three of the more common risk factors of post-intubation hemodynamic instability: acidosis, hypoxia and shock states.

Acidosis

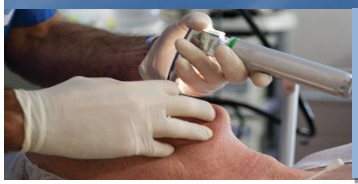
In patients with high-minute ventilation as a compensatory mechanism for metabolic acidosis, ventilator settings that do not seek to equal those minute ventilation requirements may result in worsening acidosis and resultant hemodynamic instability. Factor in the hypovolemia common in DKA from osmotic diuresis, and you have a recipe for post-intubation hypotension.

Adding sodium bicarbonate to the mix only complicates the issue if no mechanism is in place to get rid of the increased CO_2 production. The oxyhemoglobin dissociation curve shifts to the left, affinity of hemoglobin for oxygen increases, and cellular delivery of oxygen suffers as a result. Instead, you need vent settings that mimic Kussmaul respirations.

Hypoxia

Peri-intubation hypoxia is a well-known factor in post-intubation hemodynamic instability. While investigating the circumstances of a peri-intubation cardiac arrest at his agency, Williamson County, TX, EMS Medical Director Dr. Jeffrey Jarvis noted a disturbing trend of several other similar arrests, all of which had one thing in common: peri-intubation hypoxia. Initially hypothesizing that these arrests were due to difficult or prolonged laryngoscopy, Jarvis' deep dive into research on the phenomenon proved otherwise.

Not only was peri-intubation hypoxia common in the EMS and emergency department (ED) setting, it happened quite often in patients with no pre-existing hypoxia, in EMS systems and EDs with high first-pass success rates at endotracheal intubation, and in patients who were



Avoiding Post Intubation Crash…Continued

"easy intubations."[5-9] The same was true of intubation attempts in his system, where 44% of their RSI (rapid sequence induction) patients had a peri-intubation hypoxic event. Clearly, the ease of intubation had little to do with the incidence of peri-intubation hypoxia and post-intubation hemodynamic instability. Better care had to be taken both to correct hypoxia before intubation, and to prolong the safe apnea window for the patients his medics were intubating.

Jarvis implemented a clinical bundle at Williamson County EMS aimed at doing just that.[10] His mantra to his medics, first espoused by intensivist and resuscitationist Dr. Scott Weingart, was "Resuscitate, then intubate." The clinical bundle consisted of:

- Patient positioning (head elevated, sniffing position)
- Apneic oxygenation with flush-flow nasal cannula oxygen
- Delayed sequence intubation
- Goal directed pre-oxygenation (spO2 > 93% for a minimum of three minutes) using a BVM with PEEP valve at 5 cmH_20, sustained for a minimum of three minutes

The pre-oxygenation goal of 94% was meant to factor in "pulse-ox lag," considering the very real possibility that by the time a pulse oximeter read 90% (the threshold of the drop-off in the oxyhemoglobin dissociation curve), the patient's hypoxia had likely progressed beyond that. Their clinical bundle resulted in Williamson County EMS reducing peri-intubation hypoxia for their patients from 44.2% to 3.5%.[11]

Shock

During normal breathing, inspiration results in negative intrathoracic pressure, causing atmospheric air to flow into our lungs. This negative intrathoracic pressure also results in dilation of the great vessels in our chest, particularly the vena cava, resulting in greater venous return to the right atria. Much of the venous return to the heart is dependent upon generation of negative intrathoracic pressure.

However, artificial ventilation does just the opposite. The shift from physiologic negative pressure ventilation to artificial positive pressure ventilation, particularly with higher PEEP settings, causes increased intrathoracic pressure and diminished venous return. An intact, uncompromised circulatory system can usually compensate for this, but a patient who is centrally hypovolemic or a patient with the diminished vascular tone common in distributive shock cannot. The compromised cardiovascular system in these patients cannot compensate for the shift to positive (or even neutral) intrathoracic pressure, and post-intubation hypotension and hemodynamic instability often follow. Using shock index as a predictor of post-intubation hemodynamic instability can serve as a guide to providers in correcting shock states before crossing the clinical threshold of endotracheal intubation.

Allgower's Shock Index was developed by Dr. Martin Allgower in 1967 as a means of quantifying the severity of shock, and is calculated by dividing heart rate by systolic blood pressure. (Figure 1)

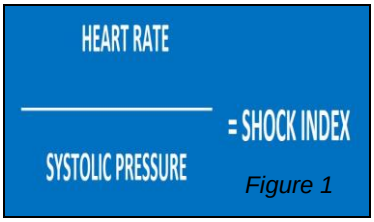


Figure 1

Normal shock index is less than 0.6, and a shock index greater than 1.0 indicates moderate to severe shock. (Figure 2)

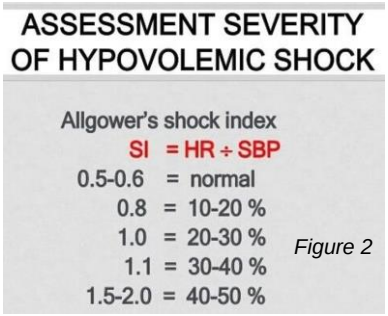


Figure 2

A pre-intubation shock index of greater than 0.9 is a strong predictor of post-intubation hemodynamic instability.[12] Allgower's Shock Index, however, due to its focus on systolic blood pressure, has limitations in predicting the severity of shock in patients with inadequate vascular tone (distributive shock) or age-related decline of compensatory mechanisms(use of antiarrhythmic or antihypertensive medications, for example). For this reason, a Modified Shock Index (Figure 3) was derived to better account for the role of vasoconstriction in compensated shock.

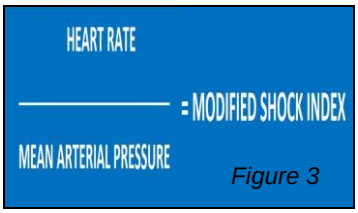


Figure 3

The Modified Shock Index is calculated by replacing SBP (systolic blood pressure) with MAP (mean arterial pressure). The Age Shock Index (Figure 4) is calculated by multiplying the patient's age by the Allgower Shock Index.

Figure 4

All of the commonly used shock indices listed here have been demonstrated to be independent predictors of post-intubation hypotension and hemodynamic instability.[13]
When possible, endotracheal intubation should be deferred in patients with these predictors of post-intubation hemodynamic instability until their oxygenation, ventilation and circulatory deficits are addressed by other means. When delay of endotracheal intubation is not possible, clinicians should be aware of the risk of post-intubation hemodynamic instability and be prepared to take the necessary resuscitative steps.

References and Article can be found in the 8/12/2021 online edition of JEMS.com

Reality is the leading cause of stress among those in touch with it. Lily Tomlin

NEWS AT THE STATION

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FDLFR welcomes **Calie Tasch** to our team as our new Community Risk Reduction Specialist. Just a little bit about Calie… *I was born and raised right here in Fond du Lac, WI. Early on, I took an interest in being involved in the community for my future career. When I was 17, I enlisted into the Wisconsin Army National Guard which brought me discipline and a sense of purpose. I then decided to enter the Fire Protection Program at Fox Valley Technical College where I completed my Firefighter 1 and HazMat Certifications. I took a break from firefighting and my love for Administration grew. Some would say I'm a workaholic, but when I'm not working I enjoy doing outdoor activities with my fiancé or working on DIY projects at home. Wherever you find me, I'll have my beautiful five month old Mini AussieDoodle, Mia, by my side.*

WELCOME CALIE!

Congratulations to FF/P **Andrea Hoksbergen** who took the oath of office as a full member of FDLFR ending her probationary status. Andrea's father, Ed, pinned on her badge with several of her family members also in attendance to join in the celebration.

Thanks to Rob Vande Zande for presenting FDLFR with a signed USA Patriots bat in appreciation for our participation in their youth camp. The Kids Camp is for children ages 8-12 who are amputees. We are honored to play a small part in this most worthy cause.

Happy October Birthday

Brian Munson • Garth Schumacher •
Andy Aird • Jake Fisher • Phil Seibel

Well-trained people are the best defense against fire.

By: Assistant Chief of Training/Safety
James Knowles III

Command & Control Success: People before Water

We have been taught for decades that the initial fireground incident priorities are life safety, property conservation and incident stabilization. Placing people before water shows a deeper understanding of putting life safety before property conservation in the strategic thought process of the fireground commander, which drives the initial tactics that arriving companies take. However, the historical order of tactics that are taken to accomplish fire attack, primary search and a sustained water supply needs a closer look.

First, this look requires firefighters, company officers and, particularly, fireground commanders to solidly understand the capabilities of the onboard water supply of assigned engine companies. This pertains to the size, occupancy and fire location in the building, combined with the amount of fire. Of course, fast water and a sustainable water supply are critical to the overall mission. However, this shouldn't be prioritized over life safety rescue operations.

Second, to prioritize saving both life and property through fire attack, you must understand the hose and the nozzle package that are on your apparatus, particularly the individual attack line flow rates. This understanding drives how much fire that you can extinguish with the water application rate of the line size that's selected and how long that your tank water will last while flowing (timing your tank).

Four or fewer firefighters

Historically, the fire service has taught that the second-due engine company establishes a water supply by laying a supply line from a hydrant to the fire. It seems that many areas throughout the country perform this the majority of the time by completing a forward lay: It's as if the reverse lay hasn't been taught or is considered taboo. A forward lay for a supply line from the hydrant removes a firefighter from the equation of supporting the booster tank attack and/or supporting fast water on the fire. It also means that fewer firefighters are available to start the initial primary search in the first five minutes of arrival.

In today's fire service, most departments operate single-company stations; firehouses that have dual companies almost are nonexistent except in major metropolitan cities that use fully staffed engine and ladder companies.

The majority of departments staff their companies with two, three or, hopefully, four firefighters. Arriving on scene on one apparatus with no more than four firefighters limits the speed of getting water on the fire and, more importantly, delays the start of a primary search.

Chief Brian Brush recently finished a survey/research project on civilian rescues at fires that are performed by firefighters. The data that were collected and the results that were produced by Brush and the *Firefighter Rescue Survey* indicate that firefighters rescue an average of 10 civilians per day from fires. Most rescues occur in private dwellings and apartment buildings. The research, along with nearly 2,000 rescue surveys that were completed on firefighterrescuesurvey.com, provides data on the importance of a rapid-fire attack, supported by a rapid primary search operation in the first 5–7 minutes after arrival. To complete fire attack and search operations in a basic private dwelling in fewer than 7 minutes takes at least six firefighters who maximize tank water "fast water." Therefore, it is vital that you get water on the fire and you remove trapped occupants more quickly than ever before based on modern building construction and furnishings.

By combining rescue data, the results of *UL Fire Safety Research Institute* research regarding types of fire attack (including coordinated fire attack) and understanding of the modern fire environment, you must put people before water—and forgo the strategy and tactics of yesterday. Yes, use your experience to create strong tactics that put out fires, but you must be open to modifying your strategy and tactics based on a change in response times, staffing and fire behavior. People's lives depend on fast water. Please note that I, as a fireground commander, fully support and want a continuous water supply from a hydrant at every fire. However, it just might not be established by the first or even the second apparatus. A large portion of the fire service needs firefighters more than water in the first 5–7 minutes. Remember, you have to be using water to need water, and it takes firefighters to properly stretch and operate an attack line using water. It takes even more firefighters to push into a building properly and to get the hoseline past different pinch points. Once the line has made it to its final room of fire, some firefighters who are staffing the line can go from an attack search to a fully committed search.

Tank, booster backup timing

Given the fact that a fire flow of 150 gpm, or 2.5 gallons per second, is the fire service's most commonly accepted application rate for private dwellings, a 750-gallon booster tank can flow continuously for five minutes. We frequently reference that the first five minutes of a fire is when most life-saving tactics are

Command & Control Success…Continued

carried out. Water application is a life-saving tactic that directly supports search and rescue operations. We know that fire growth is exponential through science and experience, and, conversely, we know that victim survivability declines exponentially.

The data from the Firefighter Rescue Survey show that when the primary attack team or search team located victims, the victims have an 88 percent survival rate if they were found in the first four minutes and a 77 percent survival rate if they were found in the first six minutes. The data confirm what I experienced in the streets over the past 30 years: Fireground tactics that utilize onboard tank water to get fast water on the fire—supported with proper staffing, so enough firefighters arrive on the fireground early enough to initiate a fire attack and a primary search or VES simultaneously—are successful.

As far as the aforementioned tank, flow rate and flow time of a 750-gallon booster tank, let's take that tank and back it up with another tank of water from the second-arriving engine, or what I call the booster backup. (Some call it the force multiplier.) This fireground tactic puts people before water. When doing this, you go from 750 gallons to 1,500 gallons of fast water available without delay. It brings two companies of firefighters straight to the scene, provides 10 minutes of sustainable flow at the aforementioned flow rate and, most importantly, provides an additional company of firefighters on scene in the first 5–7 minutes (depending on your department response times) to maximize the completion of several fireground tasks. These tasks include the fast attack to get water on the fire quickly, force entry, push in with the attack line, search for victims, and, possibly, vent if the fire and smoke conditions dictate that venting is a positive tactic based on a tactically intelligent decision and on understanding coordinated fire attack.

To drive the booster backup tactic, one must look at the survey data, today's fire behavior, UL studies and, most importantly, our experiences to put people before water. Yes, a sustained water supply is critical, but is it more critical than if your family or neighbors were trapped in a private dwelling that has just one or even a couple of rooms of fire? We tell citizens who we protect that they should close their doors at night before they go to bed, but are we getting there with enough fast water and staffing and using the proper tactics that will maximize the rescue of trapped occupants? It's time that we take a long, hard look at what our booster tanks, or fast water tanks, truly can extinguish.

Third due for supply

We must evaluate the concept of laying a supply line when a single company that has no more than four firefighters is on scene of a private dwelling fire that has a high probability of trapped occupants. Sometimes, the second company must respond directly into the scene to provide additional staffing, so people's lives are prioritized above a supply line. You can and will save more lives if you truly can understand: the extinguishment capabilities of tank water; your staffing levels and maximizing the capabilities of the first two companies working together to get a line in the house; putting water on the fire; tactically ventilating; and quickly searching for and removing trapped occupants.

When you place people before water, you must understand the importance of filling in the remaining tactical assignments to companies that are on the box. One such assignment is what I refer to as third due for supply: the third-due engine secures a hydrant water supply, to ensure a positive, sustained water supply. I prefer this to be a reverse lay, if possible, to allow everyone other than the apparatus driver to report straight to the scene. The driver reverses out and places the engine on the hydrant for maximum water supply capabilities. This allows the driver to engage the pump and send water to the scene.

Tactics put out fires.

Source: Isakson, C (2021) Firehouse

Photos of a recent garage fire on Everett St., Fond du Lac

Fire Prevention

The Bureau Never Sleeps

By: Division Chief Garth Schumacher

Data Analysis

As I type this my children, like so many of yours, are back to school, back to being under the supervision of the great educators we have in our school districts. For me, especially through the last school year and the continuing COVID 19 pandemic, I have apprehension of what this means to the health of our children and our community. Whether we mask our kids, or vaccinate those of our children that are old enough, the fact still remains that we have a virus to contend with. I have watched the board of education argue in both support and opposition to mask mandates, I've watched a community become divided and in some cases so vehemently that relationships with what were once friends has been broken. What I have also noticed through all of this is the level of trust in the data that is out there is either gone, ignored, or won't be heard due to many variables and personal opinions. Science and data analysis is historically the measure we use to find success in changes that have been made and more importantly identify areas where improvement is needed or issues exist. So what does my opening paragraph have to do with Community Risk Reduction? The simple answer is EVERYTHING!

October is home to Fire Prevention Week, a week when many departments go out and instruct our children on the importance of fire safety, smoke alarms, and escape plans. Data and scientific study has shown us the importance of these practices, the time it takes a normal fire to grow in size and the time it takes for a smoke alarm to sound, and most importantly how long it takes to get out of a structure safely in the event of a fire. This training has saved lives, new advances in community risk reduction will continue to save lives. Today's atmosphere has lead me to question which way we are heading in the overall risk reduction arena. Community Risk Reduction guidance, initiatives, and standards are predicated upon data analysis, science, new technology, and current best practices. These are analyzed frequently and the data is compiled so that we may not only learn trends, but also measure success when data driven changes are implemented. It is concerning to me that now, through this pandemic, data is often being construed as false, inaccurate, or completely biased based solely upon opinion or conjecture, no matter the science or the data findings. If this trend continues, what could happen to our programs, funding, and the justification for much needed changes in fire safety if the data that we collect is not trusted or aggressively challenged? A vast majority of where we are today has been guided by data trends, scientific studies and testing, as well as the frequent measure of these changes or trends. That is why some areas change and sometimes albeit not that often, things return to how were, because the measure of success through data shows no change, or infrequently, adverse changes that require revision.

I bring this up in this month's newsletter because science and data is a very contentious topic right now but that does not make it less important. I look at the data we keep as a department, the data NFIRS keeps throughout the country, as well as all the EMS data AC Janquart and medical control keep with our EMS service. The fact remains that all the data for community Risk reduction, EMS, Fire incidents, training, and pretty much everything else we keep are very good reflections of the trends we see here, the success and the failures are also included with this data and ideas or changes can be implemented based on this data. It is an avenue to measure our success and our failure. We have cot loaders because data shows it saves backs, we have gloves, masks, gowns, and other PPE because the data in the past has shown the prevalence of contagion if we don't wear them. Our move to transitional attack was based on data and scientific testing, and I believe that most of us have seen firsthand the positive outcome with this type of data driven change. Safety needles, seatbelts, car seats, are all data driven as well, all of these are just a few examples but all were based on science and data and have paved the way for changes to our own safety, health, and longevity.

It is my hope that this apprehension for science and data will, like this pandemic, eventually fade away. That science and data will continue to be utilized to make the best decisions for fire and life safety, prevention, medical treatment, and that when we as community risk reduction professionals have questions we look first to research the problem and identify the data associated with the issues at hand. Doing this will only lead to changes that have the backing of data, science, and best practice to guide us in our decision making. Remember, data is a measurable tool we can use to develop and implement positive changes in our risk reduction efforts, it is most often the "why" in the things we do, and it is often the "what" in the things we need to focus efforts on.

Have a safe and enjoyable October!

FOND DU LAC FIRE/RESCUE

FIRE PREVENTION WEEK

OPEN HOUSE

OPEN HOUSE HELD AT THE

PUBLIC SAFETY TRAINING CENTER

750 N. Rolling Meadows Dr.

TUESDAY, OCTOBER 5TH > 4:30 – 6:30pm

Join us for:

Live Burn • Medical Helicopter •

• Fire/Safety Prevention Activities •

Various vendors on site –

proceeds going to Fire Education Programs

Ang & Eddies Premium Chicago Style Pizza

DQ Dairy Queen
635 W. Johnson St., Fond du Lac

Silk Screening
HOPPER'S
All Star Trophy

BOB'S 1969 PIZZA
Fond du Lac

PEER FITNESS TIPS

By: Peer Fitness Trainer
Jack Prall

A Woman's Guide to Weightlifting

While some weightlifting advice is universal, other advice is not, especially when it comes to training women and men. Physiology, anatomy and hormones, for example, can vary between women and men, and this can impact on how training should be programmed for women.

Historically, workouts created for women have tended to focus on using lighter weights at a higher repetition range. Likewise, a misplaced fear of getting "bulky" or "too muscular" has led many women to avoid lifting heavy weights, depriving them of the power and strength that can benefit them for their entire life.

Perhaps we should replace the fear of getting "bulky" with a healthy concern for losing muscle. After age 30, women lose about 3 to 8% of their muscle mass per decade, and this rate of loss is even higher after the age of 60. Less muscle increases the risk of falls and injury, especially as you age, which is another reason why muscular training is so important, as it helps you maintain muscle mass and strength as you age.

Hormonal Differences
Unlike men, whose hormones generally stay stable, women's hormones are cyclical through the month depending on the phase of their menstrual cycle (if they have one).

The monthly cycle for menstruation is broken down into four weeks. The first half of the cycle is known as the follicular phase, which lasts about 14 days. In this phase, the training experience is similar for both women and men because of the hormonal profile. It starts on the first day of bleeding.

However, in the luteal phase, which also lasts about 14 days, there is a higher hormone presence. This makes a woman's chemical makeup more catabolic in nature, which means it may be more challenging for a woman to progress the intensity of her training. This is because recovery may take longer, sleep is often impacted and energy levels may be lower overall from ovulation until the end of the luteal phase.

During the luteal phase, depending on your personal response to exercise, you may find it beneficial to reduce the volume of your training, and possibly even reduce the number of intense training days.

Even though training volume and intensity may need to be reduced in the last two weeks of the cycle, research suggests that muscular training during the first two weeks of the cycle may result in "a larger gain of lean body mass than regular training." So pay close attention to incorporating muscular training into your program throughout your monthly cycle, but especially in the first two weeks. This may mean that you strength train more often or with a higher volume during the first two weeks (say three to four times a week) and then consider reducing to two to three times a week for the remaining two weeks of your menstrual cycle.

Physical Differences
The Q-angle, which is the measurement of the angle between the long axes of the femur bone and tibia, is often larger in women than in men because women often have wider hips. This is one reason why women are more susceptible to knee injuries. For example, college-aged women account for two to six times the number of knee injuries as men.

Additional Training Differences
Because of these differences between the sexes, **it is important for you to focus on stability in the knees and lower back** to help limit your risk of injury. A well-rounded muscular-training program should center on basic functional movements such as the squat, deadlift, horizontal push, horizontal pull, vertical push, vertical pull and rotational movements.

Aim for two to four days of muscular training per week, depending on your goals, energy levels and hormonal cycle. If you're training two days per week, do a full-body routine that includes squatting plus upper body push exercises (like a bench or overhead press) on one day and deadlifts and upper body pull exercises (like pull-ups or rows) on the second day.

If you're training three to four days a week, aim to do a lower-body and upper-body split across those days. Focus on lower-body squatting and quad-centric movements (such as Spanish squats and leg extensions) on one day and upper-body pushing and/or pulling the next day (such as bench press, pull-ups, rows, overhead presses, Arnold presses, etc.). Finish with deadlifts and more glute-and hamstring-centric movements (such as hip or glute thrusts, single-leg deadlifts and forward-leaning walking lunges) on the third day, with upper body pushing or pulling on the fourth and final day (don't repeat the previous day of upper-body work completed earlier in the week).

Regardless of how many days you train, every day should include some form of core work that revolves around planking, heavier carries (such as suitcase or farmer's carries), and some rotational work (such as Russian twists or banded chops). For repetition, ranges (reps), to maximize strength, aim for 5-10 total sets per muscle group per week. Rest intervals should be at least 1-2 minute in length between sets in order to optimize recovery for the next set.

While there may be physiological differences between the sexes, there is no need to radically alter your training. Instead, take note of any fluctuations in your energy throughout the month, and mitigate any potential risk for injury by strengthening your shoulders and knees. Focus on lifting heavier weight (while still maintaining good form), push yourself appropriately, depending on how you feel, and remember that this strength work will greatly benefit your longevity and overall health.

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