Northern Virginia EMS Council
Performance Improvement and Trauma Committee
Fairfax County Fire Station 40
4621 Legato Road, Fairfax, VA 22030
June 7, 2017 Meeting Minutes **Approved 9-6-2017**

Those present were:

Stephanie Boese, Inova Loudoun, Stephanie.Boese@inova.org
Craig Evans, Northern Virginia EMS Council, Craig@vaems.org
Elizabeth Franco, Inova Fairfax, elizabeth.franco@inova.org
Dr. James Higgins, Union Memorial Hospital, jamesh@chesapeakehand.com (guest speaker)
Brian Hricik, Alexandria Fire Department, Brian.Hricik@alexandria.gov
Kate Kramer, Arlington County Fire Department, KKramer@arlingtonva.us
Michelle Ludeman, Northern Virginia EMS Council, Michelle@vaems.org
Anne Marsh, Arlington County Fire Department, AMarsh1@arlingtonva.us
Melissa Morin, Prince William Hospital, MLCottingham@novanthealth.org
Keith Morrison, Reston Hospital Center, Keith.Morrison@hcahealthcare.com
Melinda Myers, Inova Fairfax, Melinda.Myers@inova.org
Brian Orndoff, City of Fairfax, Brian.Orndoff@fairfaxva.gov
Erik Rhodes, Physicians Transport Service, ERhodes@ptsems.com
Judy St. George, Northern Virginia EMS Council, Judy@vaems.org
Chris Wanka, Metropolitan Washington Airports Authority FR, Christopher.Wanka@mwaa.com
Dr. Scott Weir, OMD for Fairfax County Fire and Rescue, WeirSD@comcast.net
Dr. Nargues Weir via teleconference, Co-Director Research Development Inova (guest speaker)
Ray Whatley, Alexandria Fire Department, Ray.Whatley@alexandriava.gov
Jaime Wolfin, StoneSprings Hospital Center, Jaime.Wolfin@hcahealthcare.com

The PI and Trauma Committee meeting was called to order at 9:05 a.m. by Dr. Scott Weir and introductions were made around the room.

Meeting minutes from the March 1, 2017 minutes were distributed and unanimously approved.

Dr. James Higgins from the National Hand Center at Medstar Union in Baltimore presented an in depth presentation on hand and arm amputations and re-implantations for the trauma portion of the meeting. The Center serves as the Maryland state referral center for the care of injuries to the hand, wrist and elbow.

The presentation included extensive background and history of the center's facility, staff and expertise as well as photos of some of the various complex surgeries performed at the center. The presentation will be filed with the minutes and is available upon request. Below are some highlights from the presentation.

- Upper Extreme Trauma Management
  - Common to complex
  - Shoulder to finger
  - 24/7/365
  - Limitations:
    - Polytrauma: not a Level 1 trauma center
    - Pediatrics: no emergent case < 5y/o; no PICU
    - Obstetrics

- Replantation
  - Considerations for replantation of digits/hand differ from lower extremity
  - Lower extremity prosthetic use more likely successful due to greater functional demands of the upper extremity
  - Level and extent of amputation help predict functional benefit

Dr. Nargues Weir, Co-Director Research Development Inova-NIH Advance Lung Program presented via YouTube video and teleconference: *Sleep and the Workplace* for the medical portion of the meeting. The link to the presentation https://www.youtube.com/watch?v=OWlXfeDNKZQ&feature=youtu.be

The following highlights were extracted from the presentation:

- Sleep: Important to Occupational Settings and Outcomes
  - Truck drivers
  - Airlines, trains and other mass transit workers
  - Nuclear powerplant workers
  - Physicians in training
  - Any shift worker
- Sleep: Changes Made:
  - Legal – drowsy driving laws (Maggies' law in NJ)
  - Mandatory screening for sleep apnea in some industries – among truck drivers
  - Regulations – ACGME limiting hours allowed to be worked by residents and interns
  - Regulations – airline pilots are required 10 hours of sleep before flights and not allowed to fly more than 8 – 9 hours
- What is Sleep?
  - A time of rest for the body and brain
  - Physiologically, body has slowed metabolism
  - Each organ has slowed performance (i.e., heart, kidneys, lungs, etc.)
  - Brain has distinct EEG patterns; there are different stages or "depths" of sleep
  - Sleep restriction leads to:
    - Tiredness, sleepiness
    - Difficulty concentrating
    - Loss of productivity
    - Increased need to nap
    - Leptin and ghrelin imbalance
    - Hypertension and cardiovascular disease
    - Depression
    - Weight gain
    - Subjective pain
    - Type 2 Diabetes
    - Poor psychosocial functioning
    - Lower immunity and viral illnesses
    - Associated with cancer (and a decreased response in treatment of breast cancer); sleep apnea is also related (30% of men over 30 will have sleep apnea)

        - Working the shift – shortens life span
    - Short-term acute sleep deprivation
        - Performance depends on how much sleep is restricted
        - Leads to cognitive impairment, especially with monotonous tasks
        - Sleeping; 1st restored is deep sleep and REM sleep (physiological
        - But complete neurocognitive recovery takes longer
        - Interferes with our circadian rhythm – internal clock that tells our bodies when to sleep, rise, and other physiological processes
    - Long-term sleep loss
        - CV outcomes, workplace accidents, societal burden
        - Excessive sleepiness contributes to more than 50% of fatal accidents in U.S.
        - 2003 study police officers found sleep loss contributed to anger, misuse of force and errors
        - Can lead to "microsleeps" when the brain goes in and out of sleep – you think you are awake, especially during monotonous tasks like your daily commute or rounds but you are actually asleep for maybe 2, 3 or 5 seconds. Enough time to crash a car or make other serious errors. We recognize this when we wonder where we are or what we are doing.
    - Sleep Pathology – what can we do?
        - Recognize sleep as a limitation (half the battle)
        - Responsibility; own your part individually to make a difference in our own lives' first
        - Choices – choose better options to allow for healthier sleep – caffeine intake, exercise diet, smoking, how much time we allow for sleep and all the decisions we make in our lives
        - Sleep hygiene- incorporate into your routine at home and on shifts and sleep hygiene counseling
        - Organizationally advocate for better shift structure
    - Diurnal rhythms
        - We have built in circadian rhythms (this is disturbed with sleep deprivation)
        - Light is the greatest "setter" of diurnal clocks
        - Light suppresses melatonin
        - Other factors that change our diurnal clock: exercise, temperature, stimulants, prior sleep, medications, etc.

Dr. Nargues Weir emphasized that much is being discussed about the outcome of chronic sleep deprivation but not enough is being done in the workplace to enable our shift workers to get the sleep they need. We need to "practice what we preach" and organizationally advocate better shift structure for a more sustainable workforce and practice sleep hygiene both at home and in the workplace. In the last 15 years we have been driving further to better paying jobs which means more time on the road and less sleep = a more chaotic life and more stress.

Dr. Scott Weir took the floor and emphasized, again that not enough is being done to advocate for better shift structure and no one is looking at the worker's rest, work, sleep and eat cycles noting that it was easy enough to recognize this in others, but we don't often look at this in ourselves. It is clear that accidents increase after 10 hours of continues work. How do we reset on our off days and practice sleep hygiene

and how do we make the best of downtime between calls when on shift? At Scott's organization they don't do anything, but they can work as long as 48 hours straight, on a 24 hour on/24 off (3 day tour, 4 days off) but if asked to work 36 only 12 hours is left that includes commuting back and forth which could take 2 -3 hours, cook and eat dinner decompress from the day, etc. . That doesn't leave much time for sleep; that's a recipe for more vehicular crashes, poor cognitive function. Is the public being well served, we become surly, so how is this affecting our compassion, our interpersonal skills and our interactions with our peers? Coming in with policies is not the answer as so many have the long commutes and enforcing policies will cause us to lose part of the workforce. Some ideas Scott is addressing:

- A mobile workforce and move people around so that those in lower call volume jurisdictions won't rust out and those in higher call volume jurisdictions won't burn out.
- For QI cases, Scott doesn't like that it seems more like an inquisition that we easily default to human error. Scott has requested we ask a list of questions unrelated to the event like the place, provision and policies, the people, the patient variables, how long were you up, what time of day did the incident occur (errors go up around shift changes between 5:00 – 6:00 a.m.), how many calls on the shift (frequent calls fragment sleep); decision making skills go down. Ask these questions and look at all the variables and not just label it as human error. Some of the areas we can impact and control their influence others we cannot, but awareness will motivate providers to practice sleep hygiene on off days. Scott is lucky to be on a 10 hour shift based on closed claims that show a dramatic increase in medical malpractice claims in the curve between hours 10 – 12.
- Rotate the phasing in of new physicians coming in on duty – some will come in at 6:00/8:00 and 10:00 a.m. This allows for collaboration and a second, fresh set of eyes. This is why a 2 medic crew can be critically important; decreases medmath errors, cognitive checks and cross checks – having the workforce to do this is invaluable
- Personal situational awareness (cognitive pitfalls where we're at risk of making errors); know your vulnerabilities (hungry, thirsty, tired, distracted, patient triggers) – allows you to practice cognitive forcing strategies to prevent anticipated errors (i.e. think before speaking).

A round table discussion followed and shifts were shared and it was clear that most all of the jurisdictions' providers are sleep deprived and that there is a huge difference between day work and shift work.

Some factors and what are some of the jurisdictions doing

- Facilitate longer commutes allow, with approval, for off duty personnel to sleep at the station on their in between day in the event of a rough night or, more commonly, if held over 12 hours and employee lives four hours away many won't go home. But, sleeping at the station is not without its distractions.
- What goes on outside the fire department such as second jobs (not resting/recovering), social activities, family, etc. that cumulatively effects their tour around day three (awareness)

From a mental health perspective we get grumpy, depressed, a shortened fuse that typically hits around day two or three and injuries happen shortly thereafter and then increase prior to demobilizing.

Question: How long does it take to reset that clock and the response was that you could catch up on your sleep (phases), but your neurocognitive may still be impaired and you won't even know it. There's some tremendous variables among people (many factors), but what is that specific range? What is the floor – four days? If someone gets poor sleep for 5 days straight it would take four days of 10 hours sleep to regain the neurocognitive. People with chronic sleep deprivation have higher risk of cancer. Collected data from nurses that are getting breast cancer. It would be interesting to get data sets on EMS providers as well and have that data catalogued at least for advocacy.

A round table discussion began and shifts and what, if anything, each jurisdiction is doing to address sleep deprivation:

- Metropolitan Washington Airports Authority (MWAA) – Chris Wanka
    - NOVA schedule – can be mandatory up to 72 hours and 96 with battalion chief approval (medics not typically riding 96)
    - Allow personnel to stay over at the station after a rough shift; most commonly used when being held over 16 hours for those with lengthy commutes (folks won't go home, they stay at the station during their in between day)
    - Can work but biggest impediment to why this is not working is not so much the shift structure but what goes on outside the fire department (second jobs, family obligations, social time, etc.)
    - 11:30 – 1:00 p.m. personal time
- Alexandria Fire Department – Ray Whatley
    - ALS personnel can work only 36 hours on a medic unit, may be permitted an additional 12 hours on a suppression unit for a total of 48 hours.
    - 01 Jul – everyone on NOVA schedule – single-role providers will have a Kelly day built in (about a 42 hour work week)
    - Single-role provide can become dual-role provider – Choose to work the Kelly day
    - Would like two ALS units then July going to one on one unit; two engines ALS; 85% staffing
- Fairfax City – Brian Orndoff
    - NOVA schedule
    - 36 hours max; written but not enforced
    - Short on medic officers (currently 4; should have 6); functional shortage
    - No shortage on medics
    - When station is up for remodel they will be looking at separate bunks, better lighting, but this is far down the road
    - Only two stations that are within a mile of one another so, moving personnel really is not going to address the issue
    - Fairfax City is looking at sleep deprivation and they are aware of the problem
    - Currently no out of work policy (not factored in on national study)
- Prince William Hospital – Melissa Morin
    - 12-hour shift – but most always runs over to 13 or 14 hours
    - Many commuting from Stafford or Lynchburg
- INOVA Fairfax – Dr. Elizabeth Frances

  - When on-call (in house) – comes in 3 p.m. – 7:00 a.m. following morning with pager, but if there are still outstanding things probably stay on to finish depending on how bad the shift was
  - Days are fine; nights are difficult
  - Works so far
  - If on call for trauma they may take the general surgery case if they admitted the patient, for example, though it's very individual. It really depends on how the night went
  - Talked about changing schedule because there is one day they work 24 hours at end of shift and looking at ways to break this up to work more 12s

- INOVA Loudoun – Stephanie Boese
  - Now Level 3 / 30 minute response time so when on call they stay at the hospital mostly due to traffic
  - Nurses work 8, 10 or 12 hours. Happier working the 8. There is no cap and can work seven days straight if they choose
  - Commutes from New Jersey and West Virginia and North Carolina; some will work 6 days straight and then have a chunk of time they are home; some will work up to 9 to get the overtime, but no cap – Around day 3 nurses get cranky, no therapeutic communication with each other and family members
  - Focus on patient sleeping at 9:00 p.m. announcement made that it is quiet time; no cell phones and everything is shut down, visiting hours etc. It focuses on the patient, but it works for the nurses too
  - Pushing for breaks; shifts don't go over in pre-op – ED – turn over; however ICU and on the floor have a longer report time and their shifts do tend to go over
  - Rotation 50/50 work nights then days – hard on the nurses

Note: California (union) – comments from Dr. S. Weir:
  - Caps volume of patients nurses can have on shift (most CC and trauma 2/1)
  - VA – doesn't' have cap (agency dependent)
  - Come in staggering shifts
  - Some have floating staff to fill gaps
  - Call dispatchers are also affected equally

- HCA Stonesprings – Jaime Wolfin
  - Nurses: staggering shifts (7, 9, 11, 1 and 3) 12-hour shifts
  - 90% of nurses and doctors live within 7 miles; on staff are happy and well rested; on call from home
  - #2 HCA hospitals for customer satisfaction (probably due to short commutes)

- PTS – Eric Rhodes
  - Combination of shifts, 12/24 hours during the day
  - Overnight 24 /72 hours shifts and no Kelly days; don't sleep during shift; 34 hour cap
  - Encourage safety naps (fragmented sleep; not greatest)
  - During surges will put up shorter units. Goal is to have 24-hour trucks during the peaks time, 12-hour trucks overnight; added BLS trucks overnight when needed;
  - Move trucks around with the call volume; 8 p.m. to 8 a.m. 2/1 ration

    - Did a study for VIP of Ops – but was stopped midway; as results were pointing to the death of 24s; they worried about workforce loss with the recommended shorter shifts especially since PTS has a relatively younger workforce (already have staffing shortage)
        - Don't deny the reality, use other strategies
- Arlington - Anne
    - 1 BLS and ALS on transport and one ALS on suppression unit on every call
    - Robust suppression rotation
    - ALS not working on a transport unit more than 50% of the time
    - Work the NOVA 24-hour schedule (ALS trainees on medic unit at all times until they pass their test and complete 800 hours – after that time, can be put into the suppression rotation
    - Upgraded most stations to single-bunk rooms with concrete walls; remaining are in the improvement plan to upgrade
    - Staffing – medic unit low and on mandatory holds which drive sick leaves up
    - Can work 60 hours straight with a six hour break (break not required to sleep just cannot be in operations)
    - Desperate times 72 hours with a 12-hour break (does not happen often)
    - Working very hard toward 4th shift (24/72) in the 5 – 7 year plan
    - Deprivation is a huge concern – medication errors, not robust at rooting out those errors); goal as new Battalion Chief to make that process better
    - Monitors go silent at 7:00 p.m. after which time you will only get calls for your station
    - 24-hours shift will not be going away, commuters form Delaware and Pennsylvania
    - Station officers are allowed to nap
    - Discourage night drills, encourage after lunch naps

Dr. Scott Weir advocates for napping. At home have a quiet, dark place, use of white noise can be effective, regulate temperature, avoid alcohol to fall asleep (interferes with deep restful sleep) and avoid caffeine at least five hours prior to sleep. Provigil was used for vigilance on night shifts and comes with many side effects (GI intolerance, joint issues). Melatonin and L-Tryptophan (OTC) is good for promoting sleep. Sleep medications, like Ambien or Lunesta are not recommended by the USAR Team as it was shown to decrease performance, creates a hangover effect, impairs mobility, dexterity and ability to walk.

Topics for next/future sessions:

- Medical – Stroke
- Trauma – Mass Casualty/blast injuries/regional capacity issue/surge and flux capacity and time volume curve?? Janet Ingles/GW guest speakers
- Opioids
- Telemedicine
- Performance Measures – medical and trauma
- Someone form ImageTrend – pulling information and how to use it regionally

The next Regional Trauma Committee meeting will be on September 6, 2017 at 10:00 a.m. and will be located at Fire Station 40, 4621 Legato Road, in Fairfax, VA 22030. A reminder will be sent prior to that meeting.

The meeting was adjourned.

(For NV EMS Council Use only)

CERTIFICATION OF BOARD OF PERFORMANCE IMPROVEMENT AND TRAUMA MEETINGS

NV EMS Council
7250 Heritage Village Plaza, Ste. 102
Gainesville, VA 20155

I, Craig Evans, Executive Director of the Northern Virginia EMS Council certify that the above minutes are a true and correct transcript of the minutes of the Performance Improvement and Trauma Meetings of the Northern Virginia EMS Council on June 7, 2017. The minutes were officially approved on September 6, 2017 at the meeting of the Committee.

_____ _____

Craig Evans
NV EMS Council

Date