

# OSDH / EMERGENCY SYSTEMS NEWSLETTER

Volume 4, Issue 1

January 2014

## New Faces in Emergency Systems

We would like to introduce you to the new faces in Emergency Systems.

Upcoming Meetings

1st Quarter 2014

### RTAB by region

- 1 01/28/2014
- 2 02/11/2014
- 3 02/06/2014
- 4 02/20/2014
- 5 02/13/2014
- 6 02/18/2014
- 7 01/07/2014
- 8 01/14/2014

### CQI by region

- 1 01/28/2014
- 2/4/7 03/13/2014
- 3 03/06/2014
- 5 02/13/2014
- 6/8 01/14/2014



**Brian Wilson**

**EMS Administrator**

Brian is a paramedic with ER, ambulance and military tactical experience. He currently serves as a Medical Service Corps officer in the Army Reserves and is looking forward to seeing more of Oklahoma with his duties as an EMS Administrator.



**Caitlin Holland**

**EMS Administrator**

Caitlin is a paramedic with six years of experience in Las Vegas, Oklahoma City and Norman. She has worked in ER and ambulance. She is very excited to be part of the OSDH Emergency Systems team and looks forward to seeing more of Oklahoma with her duties as an EMS Administrator.



**Yang Wan**

**Statistical Research Specialist**

Yang is a statistical specialist that will be working with Oklahoma Trauma Registry as well as conducting some economic analyses of the Oklahoma Trauma Fund. She has extensive research experience in statistical modeling of economic data and has published a series of articles in peer-reviewed journals.

So join us in welcoming these new faces to the Emergency Systems team. They will be a great asset to assist the staff and your agency or facility in the coming year.

# EMS 2020

SPONSORED BY  
**FERNO**  
When It's Critical™

## Are You Fit for Duty?

By Jason Busch, Associate Editor

Physical fitness standards specific to EMS are few and far between, but that trend is changing for the better of the industry

EMS providers have a problem.

All too often it's providers—who are supposed to be helping sick or injured patients—who are injured themselves. Providers might argue that helping others is more important than helping themselves, and besides, injuries are just one of the risks that come with the job. But while some injuries are, indeed, unavoidable, most are preventable, if providers just take the time to prepare their bodies for the rigors of their work.

That said, how can providers measure their fitness, and is being fit for EMS different than simply being fit?

### EMS Physical Fitness, or Lack Thereof

It's no secret patients are getting larger. For that matter, so are some providers—as we've all heard, obesity is an epidemic. As patients increase in size, extra stress is placed on the providers who have to lift and maneuver them, and a rise in lower back injuries, among others, has been the result. According to the National Association of EMTs (NAEMT), obese patients directly contribute to increasing levels of lifting-related injuries among EMS practitioners.<sup>1</sup>

Specifically, NAEMT reports:

- EMS providers are seven times more likely than the average worker to miss work as a result of injury;
- Half of all EMS workers suffer back pain annually;
- One out of four EMS providers will suffer a career-ending injury within the first four years of service;
- Back injury is the most frequently cited reason for leaving EMS; and
- Back injuries are often the result of cumulative wear and tear.<sup>1</sup>

EMS providers and supervisors alike seem to recognize there's a problem with

the number of providers who get injured performing their duties. But consensus on how to combat this problem has been hard to achieve.

Often, lack of resources for improving fitness is cited by individual providers as well as the agencies they work for. So is a lack of knowledge about how to live a healthier lifestyle. Volunteer providers, especially, note that demands on their time—working full-time jobs and volunteering—make it difficult to maintain regular exercise and healthy eating habits.

And EMS agencies aren't much better. Greg Lawton, president of Avesta Systems, which developed a pre-hire physical abilities test for EMS agencies, says he's seen pretty much everything when it comes to the kinds of tests companies use to evaluate candidates for hire.

"A lot of clients came to us and said they couldn't find an EMS physical abilities test for new hires," Lawton explains. "There are plenty out there for fire and police. And we found all these different tests companies were using—from lifting a 50 lb. weight and you're hired to a rigorous course that seemed like something you'd take to be a Marine. But we couldn't find any EMS-specific tests that had been validated."

### Getting—and Staying—EMS Fit

There are ideals of fitness—marathon runners are fit for their sport; bodybuilders look fit—but those ideals don't actually apply to EMS, says Fit Responder course founder Bryan Fass, ATC, LAT, CSCS, EMT-P. Providers can focus a lot on fitness but not actually cover the specific needs and duties of most EMS organizations.

When Fass developed the Fit Responder course, he was aiming for an injury prevention and fitness program that was both scientifically valid and evidence-

based. Not seeing anything else out there that met the specific fitness needs of EMS providers, Fass turned the fitness model on its head.

"We understand that in nontraditional settings the traditional wellness and injury prevention models are ineffective at educating and ultimately eliciting behavior change," Fass explains. "So we went around the problem and blind-sided it. Instead of teaching wellness, we focus on human performance, soft tissue pre-habilitation, postural education and restoring natural human movement in our clients. By utilizing evidence and scientifically based techniques—both in the workplace and at home—we gave the responders simple 'tools' to manage their body, their pain and to simply feel and move better."

Fass says once employees were given these tools, an interesting but predictable change occurred: "The responders began to feel better, they started to exercise, they made better food choices, and they were more productive. Wellness occurred because we removed one of the primary barriers to self-care—we empowered the employee to be responsible for their own pain, and wellness followed."

With responders feeling and moving better, the Fit Responder course then teaches a simple system of soft tissue injury reduction techniques they can apply to their job. For EMS and fire, Fass says, that entails patient and equipment handling ergonomics as well as awkward lifting techniques. He notes by "holding the mirror up" to ourselves as a profession, it's easy to see how generations of providers have been taught the wrong ways to perform patient lifts and transfers and subsequently passed on those bad behaviors to new providers.

"We were never taught to reduce

**\*POLICY:** EMS providers face rigorous job demands and are often physically unprepared, raising their risk of sustaining injury on the job.

cumulative traumas and excessive tissue loads; instead we were actually taught to load our bodies with excessive occupational strain," Fass says. "Fit Responder teaches leveraged lifting techniques and proper use of patient handling equipment, and we ask the ultimate question in our classes: Is it possible to create a no- or limited-lift environment in the prehospital setting?"

## Hiring the Right Candidates for the Job

Part of the problem, both Fass and Lawton note, isn't just that some current EMS providers aren't adequately physically fit for the job, it's that new candidates for hire aren't being properly evaluated ahead of time. That's where Lawton's pre-hire physical abilities test comes into play.

Modeled on job analysis, key metric data collection and direct observation, the pre-hire physical abilities test consists of multiple stations built to be completed one after another. The stages of the test don't just measure strength, but also endurance and dexterity, Lawton says.

Before candidates and agencies begin the test, Avesta puts everyone through an orientation process to set expectations and eliminate surprises. "We want to protect the employer from as much liability as possible," Lawton explains. "Somebody can get hurt during the test or be impacted by the test and not get a job, so the test better be right."

Getting the test right meant making sure it was scientifically validated, Lawton says. "Validation is collecting evidence that supports the use of a test for a specific purpose—predicting if a person is physically able to perform this job. Performance is based on a specific set of scores, scored objectively. If you fail, it is because the test is predicting you will not be physically able to do the job."

After extensive research and testing, the pre-hire physical abilities was rolled out in September 2012. Lawton says it's been nothing but successful.

"We start the test out making sure candidates can get in and out of an ambulance," Lawton says. "Then we run through a variety of lifelike scenarios at each station—moving equipment, lifting patients, loading patients onto

the ambulance. We also look at series of squats, dead lifts, steps and lunges through all the various stations. The whole process is scored objectively. They have to pass each station—if they flunk one station, they're done."

So far, Lawton says, he's conducted the pre-hire tests with nine agencies, ranging from small providers to national organizations. The pass rate for candidates taking the test is about 95%.

"We're not being ridiculous with test, we're not trying to push people out—we're just trying to evaluate them," Lawton says. "Folks who don't pass the test clearly shouldn't be there."

**"EMS providers are seven times more likely than the average worker to miss work as a result of injury."**

Lawton recommends companies don't hire candidates who fail the test, even on a provisional basis, because the test is designed so specifically for EMS that candidates who fail won't be capable of performing all their duties adequately. Candidates can take the test again—and some have—but Lawton says he doesn't advise them to try again for a period of three months. That's because candidates are shown which muscle groups failed them and given pointers on training those muscles to improve performance. To properly train, Lawton explains, requires time.

Some of the people who have retaken the test have managed to pass, but a lot do not, Lawton says.

"The prehospital environment will always require a specific level of job-specific physical ability," Fass adds. "Departments cannot continue to hire their injuries—a content-valid, job-specific pre-hire physical abilities test (PAT) is a must for all departments. With a validated pre-hire PAT, not only will EMS stop hiring physically incapable applicants, it will serve to raise the physical bar for the profession."

## Improving Your Fitness Once You're on the Job

While the pre-hire test Avesta offers was designed and validated specifically for new hires, Lawton says he doesn't yet have an evaluation tool for current employees. But he's working on one, which should be completed in about a year.

"It's a test that will actually predict return to work ability" for employees injured on the job, Lawton says. Such a test could also be used by employers as part of a regular physical for providers to determine if they're still fit to perform their duties in the field.

"After pre-hire PATs are in place, departments must then test all incumbent employees on an annual basis," Fass recommends. "This, of course, raises the question: What do I do if an employee fails the test? For pre-hire it's not an issue, as the test is administered pre-offer. For incumbent responders it will require an internal policy stating how many times the incumbent can fail before punitive action is taken. Departments must also provide some level of guidance to these employees on how to get fit to pass the PAT. This can include referral to a qualified personal trainer or a physical therapist. It can also include access to a gym, either within the operation or freestanding, along with a scientifically valid exercise progression to get the incumbent ready to retest."

Fass says job-specific fitness for EMS requires three complementary components:

- **Flexibility**

For EMS this includes soft tissue flexibility in the muscle groups that promote safe movement and also in the joints that allow sufficient range of motion to do the job safely. Responders must have both for safe biomechanical patterns in the body, and this translates to safe job-specific motions.

- **Strength**

There are hundreds of programs out there that promote strength as the means to reduce injury and be fit. Yet when we look at the injury data, two strange data sets emerge. Around 33% of all injuries occur from training to be fit to do the job, and the fit are also just as likely to get hurt as the unfit. "Rule #1 is that exercise should never cause injury," Fass says.

**STRATEGY:** Evaluating candidates before hire and conducting appropriate physical testing and training can help produce more fit providers.

## NAEMT AND ACE PUBLISH EMS FITNESS GUIDELINES

By Michael Szczygiel

In an effort to reduce injuries from patient movement, improve practitioner health and create a safer EMS work environment, NAEMT established a formal relationship with the American Council on Exercise (ACE) to create the *Task Performance and Health Improvement Recommendations for Emergency Medical Service Providers*. The NAEMT Board of Directors endorsed these fitness guidelines earlier this year.

ACE sent a team of exercise physiologists to five sites across the country: Memphis Division of Fire Services, Tenn.; Austin-Travis County EMS, Texas; Charleston County EMS, S.C.; Upper Pine River Fire Protection District, Colo.; and North East Mobile Health Service, Maine. The sites offered a variety of service delivery models, environments, populations served and geography. Most important, they represented a diversity of EMS practitioners. The team used the site visits, ride-along encounters and staff interviews to generate initial observations and a practitioner task analysis. The results of the efforts were found to be consistent from site to site. Consequently, they are reliable and reproducible.

What about practicality? Common concerns, requests, obstacles and possible solutions were uncovered among the supervisors and staff. Concerns included work-related injuries, general health issues, the avoidance of forced retirement, the desire for a good quality of life post-retirement, and the additional costs from lost time due to injuries. They were also interested in weight management, stress management and the promotion of healthy lifestyles.

Commonly cited was the need for physical competencies and requirements for EMS practitioners—but the feasibility of such standards was questioned. Common obstacles were identified as lack of resources, lack of knowledge, work demands, lack of healthy eating options, and low motivation to make healthy lifestyle changes.

ACE has helped address these issues with guidance to achieve the following primary outcomes:

### 1) Improve job-related physical capacity.

To improve job-related physical capacity, ACE developed specific physical ability assessment and general exercise guidelines as a result of a biomechanical

analysis of specific motions required to perform EMS tasks. Physical ability assessment includes waist circumference, standing posture, core function and stability and mobility. Within the EMS Fitness Guidelines, "Appendix A: Physical Assessment" provides detailed instructions for objectives, equipment, test protocol, administration and evaluation, with a score sheet for each component.

### 2) Improve overall wellness.

For the outcome of improving overall wellness, "Appendix B: Exercise Program Recommendations and Guidelines" provides general physical-activity recommendations. The purpose of this assessment is to identify postural deficiencies, physical deficiencies and activities that cause pain. The goal of the exercise program is to strengthen and lengthen muscle groups to improve the body's structure and function, and concomitantly decrease the risk of injury, pain and dysfunction.

### 3) Create self-reliance.

What do we do with all this information? We must take control by making good decisions, setting goals and self-monitoring our progress.

ACE provides a process in which goal setting is specific, action-oriented and time-sensitive. The guidelines delineate methods to promote social connection among EMS personnel, maintain an environment that fosters success and use technology to encourage self-reliance.

## CULTURE OF CARING

Agencies helping their employees implement these changes can achieve significant financial benefit when insurance premiums, overtime, attrition, equipment and training costs all improve. Employee retention will be better not just because employees are uninjured, but because the culture of our organizations is better.

If we do a better job of caring for ourselves, we'll do a better job of caring for our patients, our families and our industry.

*This article is reprinted with permission from the National Association of EMTs. Visit [www.naemt.org](http://www.naemt.org).*

.....  
Michael Szczygiel is a senior loss control specialist for THOMCO, a Markel Company, and a member of the NAEMT EMS Safety Program Committee.

"Rule #2 is that the exercise must fit the need of the individual and not a group. Rule #3 is that exercise should be progressive, and rule #4 is that exercises must carry over to the job. To qualify that last statement, we do not lift patients sitting down, so exercising while sitting has no carryover. We climb stairs carrying gear—which requires loading the trunk and torso, and also requires single leg strength—yet most responders never exercise while standing on one leg. Finally we see a lot of very fit, strong and physically impressive responders who have no ability to transfer all that power into the job task. Strength and fitness without muscular balance (muscle flexibility and joint mobility) is useless."

### • Anaerobic conditioning

When we looked at the national data on average call length, distance, terrain and gear weight, from arrival on scene to departing the scene, it was around 12–18 minutes. When we dialed that data down to "exertion time," it was under 3 minutes. That energy system is anaerobic—or, as we all remember from paramedic school, short-burst, stored energy. Breathing rapidly increases, heart rate increases, and the muscles often burn from exertion as your body tries to blow off and buffer the lactic acid produced in that short time frame.

Fass notes unless all responders are at least six feet tall and weigh at least 250 lbs. with 10% body fat, there will always be crew issues when it comes to patient and equipment handling. "The only way to overcome the ever-increasing patient weight issues and spiking call volume effect on the body is to remove the major causes of injury and unwellness in public safety," he says.

That means:

### • No more lifting

The industry has been steadily moving to a reduced-lift environment, and we must continue to head in that direction, Fass states. Powered cots and stair chairs are an excellent answer, but the added weight of these devices can cause other issues. When using powered patient transport tools, they must be married to a lifting system. Ramps and winches, powered lift gates, loading systems and no-lift cots are all necessities. "Sure, we saw a reduction in injury when the powered cots hit the

**VISION:** Only candidates capable of job demands are hired; those on the job stay fit and healthy, performing better and staying safer.

market," Fass says, "but the spike in upper body traumas has been dramatic due to their weight."

- **Reduce friction**

We have to stop moving patients from bed to bed with a sheet drag. "Plain and simple," says Fass, "as an industry we must embrace and make mandatory the

## **"Strength and fitness without muscular balance is useless."**

use of friction-reducing devices for all transfers. This one step alone will reduce provider injury and often simplify moving patients with responders of varied heights and physical abilities."

- **Stop poisoning your body**

Responders cannot continue to poison their body with inflammatory foods, dehydrate themselves, consume

high sugar and unnatural processed food products and expect to have any semblance of wellness. "Chiefs, if you truly care about your employees, get rid of the nasty stuff in the vending machines and give them healthy options," Fass says. "Responders, eat smaller portions, eat more healthy veggies and fruits, and, by all means, stay hydrated. Dehydration will increase your chance of injury, can cause concentration errors, increase fatigue and damage the disks in your spine."

- **Fitness must be a priority:** The only way to truly reduce injury is to have good "mostability" (mobility and flexibility), adequate job-specific fitness and exceptional ergonomics tied to proper use of patient handling tools. "For years the industry has tried to get by with one or the other, but has never really tried to tie all three together," says Fass.

#### REFERENCES

American Council on Exercise. Task Performance and Health Improvement Recommendations for Emergency Medical Service Practitioners. [www.naemt.org/Libraries/Health%20and%20Safety%20Documents/Recommended%20EMS%20Fitness%20Guidelines.sflb](http://www.naemt.org/Libraries/Health%20and%20Safety%20Documents/Recommended%20EMS%20Fitness%20Guidelines.sflb).

### EMS 2020 Online



Find EMS 2020 bonus content online at [www.EMSWorld.com/2020](http://www.EMSWorld.com/2020):

- Q&A: What does embracing these tenets of fitness mean in practice for a major EMS agency?;
- Outside Spotlight: What can EMS learn from police and military approaches to fitness and training?;
- EMS 2020 podcast host Chris Cebollero discusses the physical demands of EMS with a representative from the American Council on Exercise.



Scan QR code to find bonus content online at [www.EMSWorld.com/2020](http://www.EMSWorld.com/2020).

For More Information Circle ?? on Reader Service Card

# OSDH / Emergency Systems Newsletter

Volume 4, Issue 1

January 2014



## Emergency Systems

### OSDH

1000 NE 10th  
Oklahoma City, OK  
73117

Phone: 405-271-4027  
Fax: 405-271-4240

[www.health.ok.gov](http://www.health.ok.gov)

We would like to receive comments on the Newsletter. We would like to use this platform to address your questions. We are attempting to address each area as presented by our stakeholders.

If you have a specific topic that would be of benefit to you, please notify us as soon as possible so we may research and determine the best way to approach your request. Forward requests or suggestions to:

BrandonB@health.ok.gov  
DavidG@health.ok.gov

The new and improved Emergency Systems is extremely proud of our growth and expansion. We look forward to supplying you with pertinent information to help us all grow into the future.

## Education and Licensure

Friendly Reminder for all that renew their licensure in 2014. National Registry expires on March 31st and your state licensure expires on June 30th. Make sure you have all your information and it is correct. Make sure you have the proper signatures from your Medical Director and your Training Officer. This is the last year that you can mail your renewal application to the National Registry if you do not want to renew online.

Also when you are attending Continuing Education classes or Refreshers make sure you get a certificate or copy of the certificate. Making sure you keep copies either paper or electronic in case you are ever audited by the National Registry or the State.

## Development

The EMS Administrators are here to work with you in where you might need assistance. We have a development request form that will allow you to pick the areas that you would like further information or training. Once you submit your form an EMS Administrator will create a customized development plan.

Questions? Below are the topics followed by the names of those who can assist you.  
405-271-4027 then ask for the following

|  |   |
|--|---|
| Training / Education / CAN Requests      | Robert Irby                             |
| Licensure—Agency or Medic Communications | Casey Brockelman/Robert Irby            |
| Certification—EMR or EMRA                | Chris Dew                               |
| HB1888                                   | Casey Brockelman                        |
| Trauma Fund                              | Dale Adkerson                           |
| OKEMIS / Trauma Registry                 | Jana Davis / Grace Pelley               |
| EMResource™                              | Martin Lansdale / Kenneth Stewart Ph.D. |
| Complaints                               | Bill Henrion / Grace Pelley             |
| CQI/MAC/Referrals                        | Chris Dew / Dale Adkerson               |
| Rules/Regulations                        | Vacant / Jennifer Shaw                  |
| Development                              | EMS Administrators                      |
| OERSDAC                                  | Sean Oats                               |
| OTSIDAC                                  | Dale Adkerson                           |
| OERSSIRF                                 | Brandon Bowen                           |
| Protocols                                | Dale Adkerson                           |
| RTAB / RPC                               | Robert Irby                             |
|  | James Wilkins Regions 2, 4, 6 and 8     |
|  | David Graham Regions 1, 3, 5 and 7      |
|  | Brian Wilson                            |
|  | Caitlin Holland                         |
| Newsletter                               | Edited by: David Graham                 |