Teaching the Tough Stuff

Dan Limmer

Welcome!

Much of EMS training and education is based on tradition.
I do what my instructor did.
In many ways this tradition has served us well.
We can always improve.

The Old Model

Patient has a history of a condition
Patient has a prescribed medication for that condition
EMT can assist with the prescribed medication.

Study finds paramedics skilled in identifying strokes

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in Cardiology

(Medical Xpress) -- If a paramedic suspects a patient is having a stroke, the paramedic is probably right, a Loyola University Medical Center study has found.

Researchers examined the records of 5,300 patients who were brought to Loyola's emergency room by emergency medical services (EMS). Paramedics were able to identify patients with 99.3 percent specificity. (In diagnosing disease, a high specificity rate indicates there's a high probability the patient actually has the disease.)

"If a paramedic thinks a patient is having a stroke, that should be a reliable indicator that the hospital's stroke team should be activated," said Dr. Michael Schneck, a co-author of the study, which will be presented at the 64th annual meeting of the American Academy of Neurology in New Orleans.

Dr. Mark Cichon, who heads Loyola's emergency room and is another co-author, said the findings illustrate that paramedics "are very well trained in stroke recognition." He added that stroke is one of many emergency conditions in which paramedics are trained to initiate treatment before the patient arrives at the hospital.

Schneck is a professor in the departments of Neurology and Neurological Surgery of Loyola University Chicago Stritch School of Medicine and medical director of the Neurosciences Intensive Care Unit.

Cichon is a professor in the Department of Surgery and division director of Emergency Medical Services. Other co-authors are Elizabeth Wild (first author); Yongwoo Kim, MD; Alexander Venizelos, MD; and David Hyman.

Most strokes are caused by blood clots in the brain. If given promptly, the clot-busting drug tPA, in certain cases, can dissolve the clot and stop the stroke before it causes permanent damage. But before tPA is given, a patient must undergo a CT scan to confirm the stroke is caused by a clot. (About 15 percent of strokes are caused by bleeding in the brain; in such cases, administering tPA could make strokes worse.)

Since every minute counts, hospitals are striving to reduce the "door-to-needle" time -- the length of time it takes from when a stroke patient arrives at the emergency room door until the patient is given intravenous tPA. One way Loyola is cutting times is by having the ambulance radio ahead when it is bringing in an apparent stroke patient. Loyola's stroke team then is activated and ready to go into action as soon as the patient arrives, Cichon said.

In the study, Loyola researchers reviewed the records of 5,300 patients who were transported by EMS to Loyola between Oct. 1, 2010, and June 30, 2011.
This is an opportunity to change what we do to become more effective.

We complain. But will we do the work necessary to create meaningful change?

90% of Emergency Medicine is in the Cognitive Domain

What is the most important quality in the EMT that comes to YOUR house?

Providing quality EMS is a series of important decisions

We’ve been teaching scene safety all wrong
Wrong things we learned

- Oxygen is the wonder drug
- MOI = backboard
- Suction for only 10-15 seconds
- The brain begins to die in 4 - 6 minutes

Importance of Clinical Problem Solving

- Unique environment
  - Uncontrolled situations
  - Rapid decision making and action
  - Lack of information
  - Attention divided between multiple tasks

Importance of Clinical Problem Solving

- Errors are common; significant
- Diagnostic errors are the most common & difficult to detect.
- Critical vs. noncritical patients
- Inaccurate initial diagnosis
- Recognizing patient deterioration

Connoisseurship

A wine connoisseur detects subtle differences between wines.
His senses tell him the type, brand, and year.
Appreciation of differences develops through reflection on experience.

Connoisseurship in EMS

Subtle differences in patient presentation allow differentiation between problems.
Detecting differences requires active, critical reflection on experiences.

Medical Model

Differential diagnosis
Possibilities to probabilities
Assess body systems based on differential approach.
Neurological

Endocrine

Cardiac and Respiratory

Abdominal/GI

Musculoskeletal

Shock
Think of all the things that could be wrong.

Possibilities to Probabilities

Narrow it down to the most likely causes.

Let’s Try It…

A 54-year-old woman passes out while climbing a ladder.

A 54-year-old man passes out while watching the football game.

A 16-year-old patient calls because his inhaler isn’t working.

A 74-year-old female awoke from sleep with difficulty breathing.

A 67-year-old male has difficulty breathing and increased mucus production.

A 62-year-old female is short of breath and has been sick for 2 days.

How does a student identify criticality?

What does the new EMS class look like?
Class models

Class meetings per week
Semester schedule
Length of class
Clinicals?
“Traditional” models may not work

The Five Tips:

Ditch the PowerPoints
Match Your Student’s Lifestyle
Have your students BYOD
Change your lecture:active ratio
Let the students teach

ONE
Ditch the PowerPoints

I don’t have to say why…

While PowerPoint can be interactive…
There is a reason it is called “Death by PowerPoint.”
And, quite frankly, it is easy.

When might you use PowerPoint?

Project anatomy art
Project onto dry erase board and “draw” on slides
Student or instructor created custom presentations to supplement active learning processes or PBL.

PowerPoint Slides Can

guide you in what to say
ask questions
present cases
give instructions
be interactive
What are the Alternatives?

PowerPoints are far from the best for learning.
Remember, teachers teach and students learn.
What did we do before PowerPoint and slides?
Let's go back there!

Thinking Strategies

Two groups:
One group develops a trauma scenario to specific criteria
The other group has to choose the "perfect" equipment to bring to the scene.

Assigned Self-Study

Aids in note-taking skills
Focus
Relate importance of material in class

TWO
Make Your Class Match Your Student's Lifestyle.

Today's Students

Connected
Multiple Devices
Tech competent to savvy
Live with and by tech

It's Not That Easy...

Educators may be less connected than their students
We can't stereotype students or educators
A certain level of tech competence is required in EMS in 2017 and beyond
Technology

Podcasts
Video
Narrated PowerPoints
What else?

General Concepts

Keep it relevant
Shorter bites are generally better
Match the medium to the message
Be wary of file size

Easy Podcast Recording

$59 and up (Amazon)
Allows you to record audio
Easily edited in free programs (Audacity)
Students always have headphones in their ears.

Podcast Tips

Outline first, don’t script
Find a quiet place with minimal interruptions
Minimize other noise (shuffling papers, chair squeaks)
Use cloth and carpet to improve your sound.

Lecture Capture App

Inexpensive: $0.99
Allows you to save as MPEG video
Save where you choose
Easy and simple recording

Camtasia

Camtasia gives you the tools to...

Record It All
Create Powerful Videos
Engage Your Audience

Use Camtasia’s powerful screen recorder to capture anything on your screen. Or, record audio and video with your webcam to create and share professional videos.

Edit and enhance your videos with Camtasia’s powerful tools. Add music, graphics, captions, and more.

Engage your audience with interactive videos with clickable links, buttons, and more.
THREE
Have Your Students BYOD

Bring Your Own Device
We have been hesitant to have students use their electronic devices in class.
- Distraction
- Inappropriate materials
- Why not take control of it?

Appropriate Device Use
- Medical reference
- Researching issues
- Problem-based learning
- Accessing textbooks
- Exam review and preparation
- Preparing presentations

Is there more?

Integrating Apps
- Students are buying them.
- Price is much less than textbooks.
- Many apps are poor quality
- Educators can guide students to quality

How do I Integrate Apps?
- As class assignments
- As extra credit
- As remediation
- As a game or contest
How do I Integrate Apps?

- Use built-in communication features
  - email
- Social media integration

Classroom Polling

FOUR
Change Your Lecture: Active Ratio

Our belief that we have to “teach” is fundamentally flawed.

How much do we learn from a 19-year-old male student pretending to be an 80-year-old woman?
Assisted Living Facility

- 25 EMT students
- 5 residents
- Learning in all domains

Obtaining a history may be a challenge

Vital sign challenges
- Arm size
- Limited mobility
- Heavy clothing
- Extremes in findings

You don’t have to do it all at once.

The Differences
- Expectations
- Seating
- Activities
- Outcomes
- Everything!
Let the Students Teach

What do you do before a lecture?

- Check your notes?
- Review the material?
- Make sure you know it cold?
- Isn’t that what we want from our students?

Watch What Students Do

- If given an assignment to teach a group of students do they:
  - Create PowerPoints?
  - Write on the dry erase board?
  - Create a video?
- It is our job to change the tradition!

You are still needed

- Advise students as they develop their presentation
- Assure the correct message/info is sent
- Facilitate as needed

You Want Your Students To Be Able To Think.

Here’s your chance.
Examples

List the five most essential qualities of an EMT you would want to come to your house and care for you or a loved one.

List three things an EMT can do without a doctor's permission and three things that need a doctor's permission. You may use your book and other resources available to you.

Exercises

You are called to the scene of a "man down." You arrive to find a man on the ground outside a local supermarket. The man appears to be responsive but a little confused. He can answer directions and answer basic questions. He is in his 40s-50s. He shows no signs of injury or trauma (e.g. getting assaulted or hit by a car).

List at least 5 medical conditions that may be causing the patient's altered mental status.

For each of the conditions above, list two or three things that might help you confirm the diagnosis on scene.

Thank you!

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