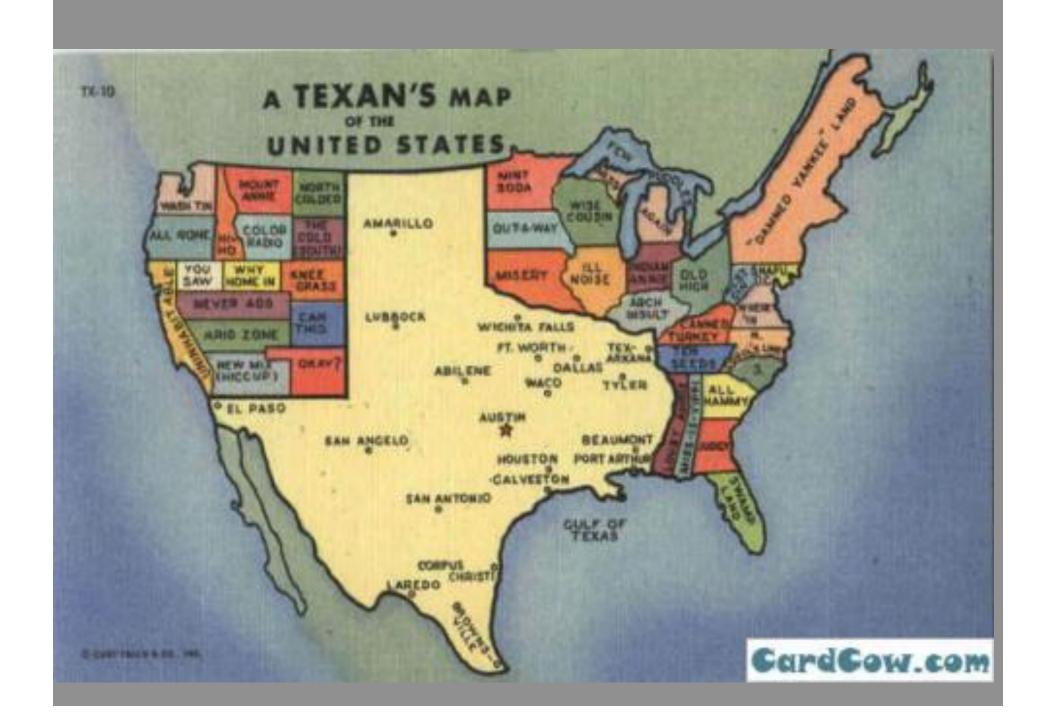
Philosophy of Five: Using performance improvement to unify a system



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If you've seen one EMS system.....

you've seen one EMS system

- Unknown

The System: The Players

- The transport agency (ATC EMS)
- Austin FD
- Emergency Service Districts (ESD) x 13
- Corporate First Responders
 - Industrial Safety
 - Municipal Agencies
 - Volunteer

..... and the

Office of the Medical Director

The OMD

- Freestanding office
- Provides medical direction to roughly 2k providers
- Control exists through credential of provider



Pros and Cons

- Pros
 - Clearly defines mission
 - Duty to serve the public
 - Duty to serve <u>all</u> the providers
 - Independent identity

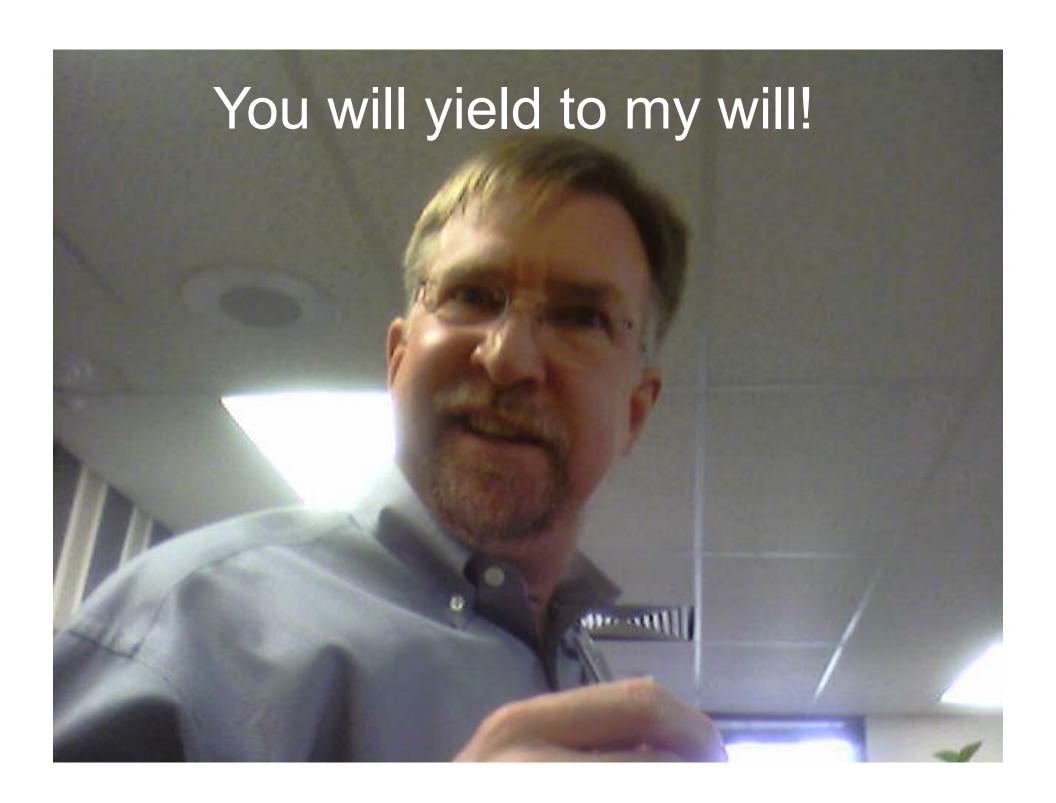
Pros and Cons

Cons

- Independent identity
- You are accused of being in bed with everyone
- You are actually in bed with no-one
- Like sex....may be difficult to achieve consensus



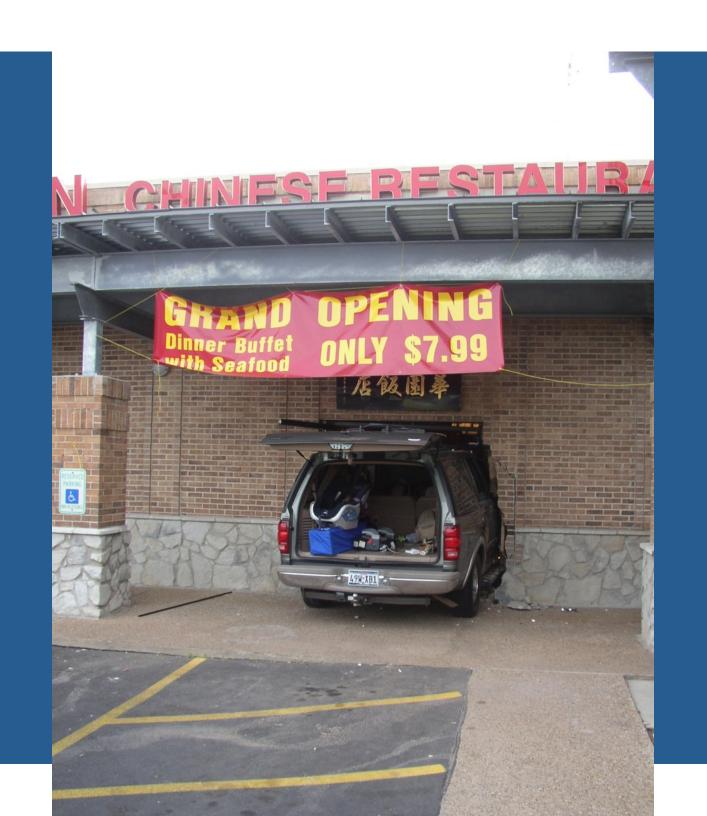
.....A familiar figure?



Without Direction

- Politically motivated worship of false deities
 - Response times
 - Skills targeted care
- Loss of unified clinical focus

Loss of cohesion as a system



Needed a Plan

- Target for performance improvement
- Focus the system on clinical issues
- Oppose political pressure on response times
- Framework for education

Create a "Movement"

Back to Basics

What defines EMS from the public perspective

 What conditions generate the 5-10 % of our EMS patients who are really sick

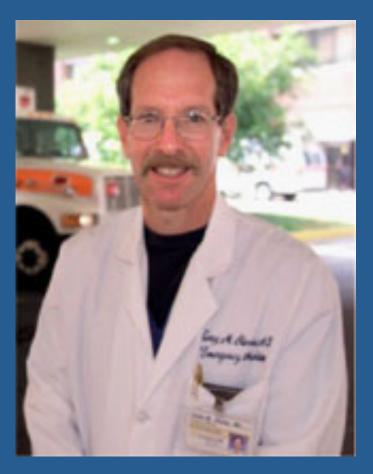
What things must we be able to do well



Developed a list...the "Essential 8"

- STEMI
- Stroke
- Trauma
- Asthma
- COPD
- CHF
- Anaphylaxis
- Cardiac Arrest

Something wasn't right



"Not eight.....FIVE!"

"Philosophy of Five"

- Time Sensitive
 - Stroke
 - STEMI
 - Trauma
- Intervention Sensitive
 - Respiratory distress
 - Cardiac arrest

Time Critical Events

Interventions are minimal

Most are performed by basic providers

Requires cooperation to achieve goals

Establishes value of first responders

Intervention Critical

Intervention intensive

Overlapping interventions

Requires critical thinking

Validates expertise of advanced providers

PI and Education

- System bundles for each of the conditions
 - Only clinically relevant components
 - Only components controlled by provider
- Measured across provider level
- Synergy with education
 - Links education across provider levels

Measured behavior = Desired behavior = Clinical benefit

SPECIAL CONTRIBUTIONS

EVIDENCE-BASED PERFORMANCE MEASURES FOR EMERGENCY MEDICAL SERVICES SYSTEMS: A MODEL FOR EXPANDED EMS BENCHMARKING

A STATEMENT DEVELOPED BY THE 2007 CONSORTIUM U.S. METROPOLITAN MUNICIPALITIES'
EMS MEDICAL DIRECTORS (APPENDIX)

J. Brent Myers, MD, MPH, Corey M. Slovis, MD, Marc Eckstein, MD, MPH, Jeffrey M. Goodloe, MD, S. Marshal Isaacs, MD, James R. Loflin, MD, C. Crawford Mechem, MD, Neal J. Richmond, MD, Paul E. Pepe, MD, MPH

PEC 2008; 12:141-151

TABLE 1. Key Treatment Elements for Various Clinical Entities Encountered by EMS Systems

Entitles Encountered by EMS Systems			
Clinical Area	Elements in Model		
ST-Elevation Myocardial Infarction (STEMI).	Aspirin (ASA), if not allergic		
	12-Lead electrocardiograph (ECG) with prearrival activation of interventional cardiology team as indicated		
	Direct transport to percutaneous coronary intervention (PCI) capable facility for ECG to PCI time < 90 minutes		
Pulmonary edema	Nitroglycerin (NTG) in absence of contraindications		
	Noninvasive Positive Pressure Ventilation (NIPPV) preferred as first-line therapy over endotracheal intubation		
Asthma	Administration of beta-agonist		
Seizure	Blood glucose measurement Benzodiazepine for status epilepticus		
Trauma	Limit non-entrapment time to < 10 minutes		
	Direct transport to trauma center for those meeting criteria, particularly those over 65 (with time consistent caveats for air medical transport situations)		
Cardiac arrest	Response interval < 5 minutes for basic CPR and automated external defibrillators (AEDs)		

 ${\tt TABLE~2.~Numbers-Needed-to-Treat~(NNT)~by~Clinical~Scenario}$

Clinical Area	Elements	NNT	Harm Avoided
ST-Segment Elevation Myocardial Infaraction (STEMI)	Aspirin 12-lead electrocardiograph (ECG), direct transport to percutaneous cardiac intervention (PCI) interval from ECG to balloon < 90 minutes ^{46,47}	15	Either a stroke, 2nd myocardial infarction, or a death
Seizure	Administration of benzodiazepine for status epilepticus ⁶⁶	4	Persistent seizure activity
Pulmonary edema	Noninvasive positive pressure ventilation (NIPPV) ⁵⁹	6	Need for an endotracheal intubation
Trauma	Patients with an Injury Severity Score (ISS) > 15 to trauma center ⁷²	11	1 death
Trauma	Patients over 65 years of age with ISS > 21 to trauma center ⁶⁹	3	1 death
Cardiac arrest	Defibrillator to the scene < 5 minutes rather than < 8 minutes ¹⁵	8	1 death



