THE NEXT COOL THING MAY NOT BE THAT COOL...

When the data may tell you differently

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The Plan...

- Use data to drive EMS education programs to prepare students
- Understand what the data means to their program
- Appreciate the decision-making by medical directors involving data
- Understand how to walk the fine line of student/programmatic needs vs. dogma
Austin’s Story (c. 2006-ish – 2018)

• 2005 AHA (ILCOR) Guidelines
  – “New CPR”
    • 30:2 adult
    • 15:2 pedi
  – Therapeutic Hypothermia
    • Now TTM
  – De-emphasis on ventilations
Improved Out-of-Hospital Cardiac Arrest Survival After the Sequential Implementation of 2005 AHA Guidelines for Compressions, Ventilations, and Induced Hypothermia: The Wake County Experience

Paul R. Hinchey, MD, MBA, J. Brent Myers, MD, MPH, Ryan Lewis, MS, EMT-P, Valerie J. De Maio, MD, MSc, Eric Reyer, MSN, ACNP, Daniel Licatese, RN, Joseph Zalkin, BSHS, Graham Snyder, MD, For the Capital County Research Consortium

From WakeMed Health and Hospitals (Hinchey, Myers, De Maio, Reyer, Snyder); the Clinical Research Unit, Emergency Services Institute (Hinchey, De Maio); Wake County EMS (Hinchey, Myers, Lewis, Zalkin); and Rex Healthcare (Licatese), Raleigh, NC.
The Story Continues...

- Impedance Threshold Device
- Choreographed CPR (a.k.a. – HP-CPR)
  - Everybody has a job
  - Minimize Interruptions in compressions
  - Asynchronous ventilations
And More...

Mechanical CPR vs Manual CPR
Lies and Damn Lies…

Then there's the Statistics!

Benjamin Disraeli said there are three kinds of lies:

Lies, damn lies and statistics.

Nine out of ten people say that was Mark Twain.

There are three kinds of punch lines: obvious, painfully obvious...

I thought the Twain bit added an extra layer.
What did the data tell us?

- **2006**
  - Witnessed VF/VT – ~30%
  - All Rhythms - <8%
- **2009**
  - ~32% & 10%, respectively
- **2013**
  - ~42% & 13%, respectively
- **2016**
  - 52% & 14%, respectively
- **2018**
  - No Mechanical CPR!!
What did the data tell us?*

- 2013
- ~25% & 13%, respectively
- 2016
  - 17% & 9%, respectively
- 2018
  - Data not available

*2013-2016: Reliable mCPR data due to system change

Mechanical CPR!!
Out-of-hospital cardiac arrest outcomes with “pit crew” resuscitation and scripted initiation of mechanical CPR

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Hayes Corollary

While the data shows a trend of problems associated with management of cardiac arrest with mCPR, these data MAY be a result of the way the procedure is applied, not the procedure itself.

It is also clear that everyone needs to critically evaluate every step of the fundamentals.
“The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking.”

-Albert Einstein
Data

• Obvious programmatic...
  – Grades
  – Successes in lab/clinical procedures
  – Performance measures
  • Faculty AND Students
  – Admission rates vs. graduation rates
  – Employment
Data

• Obvious post graduate...
  – Comparative results...
  – Graduate performance (individual)
    • Procedural successes (not that important)
    • Managing specific patient populations
  – Strengths/deficiencies in specific Pt. populations
Other Data?

- Eureka Points?
  - Airway management
  - Cardiac arrest management
  - Medication administration opportunities
  - Pediatric encounters
Other Data?

• What defines your Eureka Points?
  – Wilson, et al (Fisdap/Kim Grubbs)?
    • >80% success for more than 20 attempts
  – Other?
    • Percent of successes >80% per exposure
    • FTO/Faculty sign-off (inter-rater reliability)
    • Medical Director certification
BOY...IT SURE IS QUIET OUT THERE

KEVIN RUINS A PERFECT DAY
Challenges

• Field Internship sites
  – Teach their culture
  – Teach new procedures
    • Outside of National Standard Curriculum
    • VL
    • HP-CPR/mCPR
    • Blood Administration
    • Non-standard medications
  – You’re program is not a NEO
Challenges

• Available clinical experiences
• Non-simulated pathology exposure
  – NOT an indictment on simulation
• Data/evidence-based curricular content
  – Often outside of NSC
Challenges

• Competent/employable graduates
• Consumers fail to appreciate educational methods of programs
  – Think: Concepts vs. specifics
• Limited review of current literature beyond what is required
"I think this means no candy."
Take Away...

• Stay current on the literature
  – Enough to argue your position
• Teach to the “Why”
• Use data to your advantage
  – Improve student success
  – Improve your program
Take Away

• What if...
  – Non-program performance improvement directed your performance improvement?
  – Aggregate performance data was a two-way street?
Fin

Thank You!