

New Castle County EMS: A High Performance EMS System

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Medical Direction

- Employed by State Office of EMS
 - County Medical Director and Associate MD
 - Oversight for all EMS patient care
 - ALS and BLS including first responders and dispatch
 - QA
 - Case Reviews
 - Incident Review
- Both are full time clinical emergency physicians
 - State employment is “casual/seasonal”

What is “High Performance” EMS

- Emerging term to describe the best EMS systems
 - Clinically sophisticated
 - Respond reliably
 - Perform efficiently
- Constantly working to improve
 - Quality Assurance and Performance Improvement
 - Major role of EMS Medical Directors
 - Commitment from NCC*EMS Staff

Is NCC*EMS a High Performance System?

- County Paramedics have been among the top performers in the nation
 - Achieved national recognition
- Provide an essential service at the highest level
 - Able to bring “the hospital” to the patient
 - Requires full resourcing: staff, supplies, training
 - Paramedics make a critical difference in everyday life
- Support from Council is essential: wise investment
 - Must be supported as other Public Safety agencies

Performance Measures

- Heart Attack patients
 - Accuracy of paramedic EKG interpretation
 - EMS time savings for patients with “heart attack”
- Trauma management
- Intubation and airway management
- Utilization of CPAP
- Cardiac Arrest survival
 - CARES registry

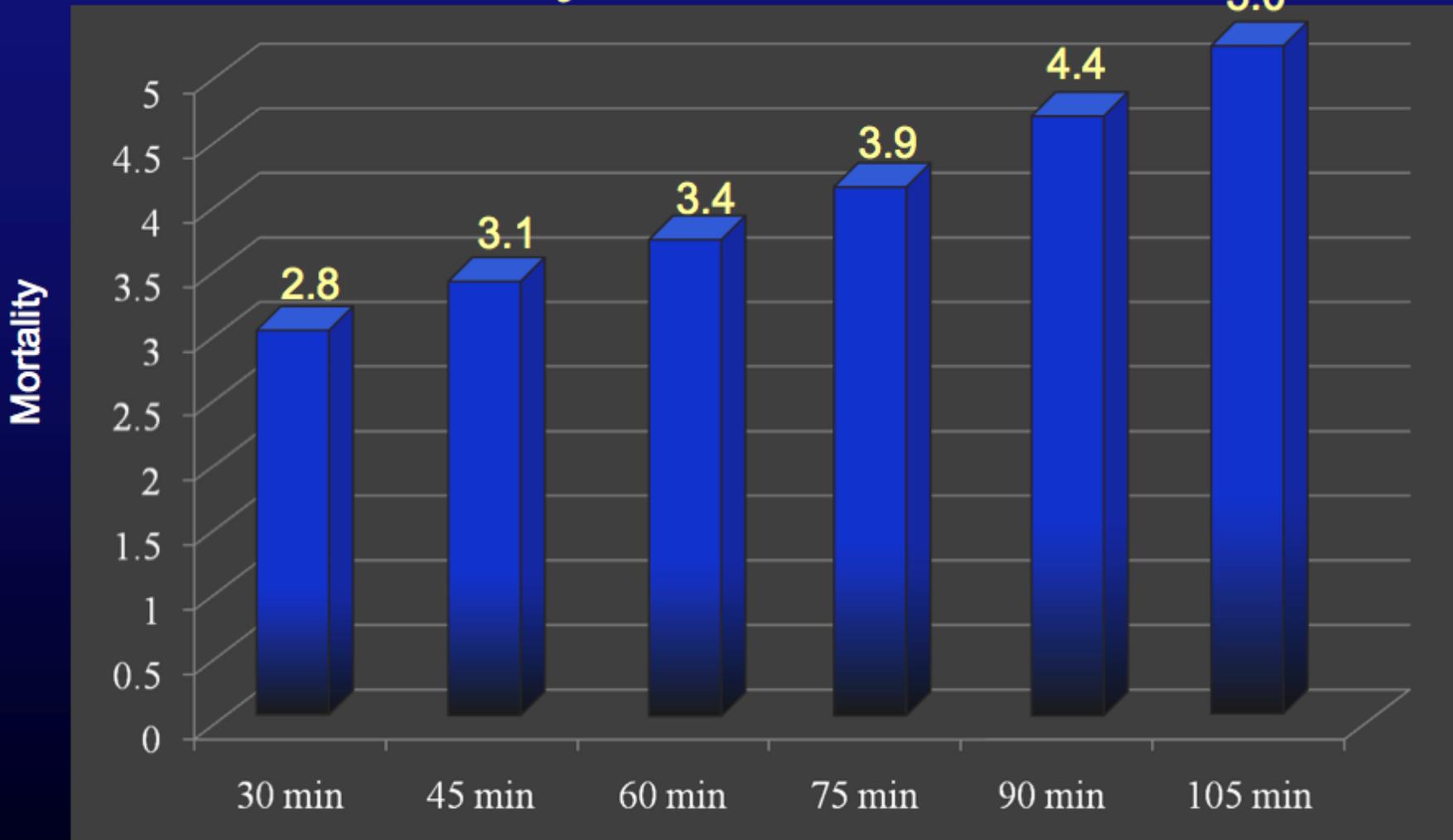
Heart Attack: “Time is Muscle”

- Paramedics carry 12 lead EKG and perform them on patients with MANY complaints
 - NCC*EMS was first agency in the state to use 12 Lead EKG
 - Estimated 6,000 EKGs last year
 - Capture more heart attacks than if only used for “chest pain”
- Accuracy of interpretation evaluated/presented
 - As accurate as an emergency physician
- Decisions made based on paramedic reading
 - TEAM of nurses, techs, cardiologist called in from home before patient arrives

Heart Attack: “Time is Muscle”

- Time saved by EMS saves heart damage
 - Studying CCHS data for EMS arrivals with STEMI vs. those who walk in and are diagnosed
- EMS patients are saved almost 35 minutes on average to have blocked artery open
 - Savings is directly tied to EMS call before arrival
- High rate of correct activation and benefit to patients makes hospital and cardiologist act on paramedic call.

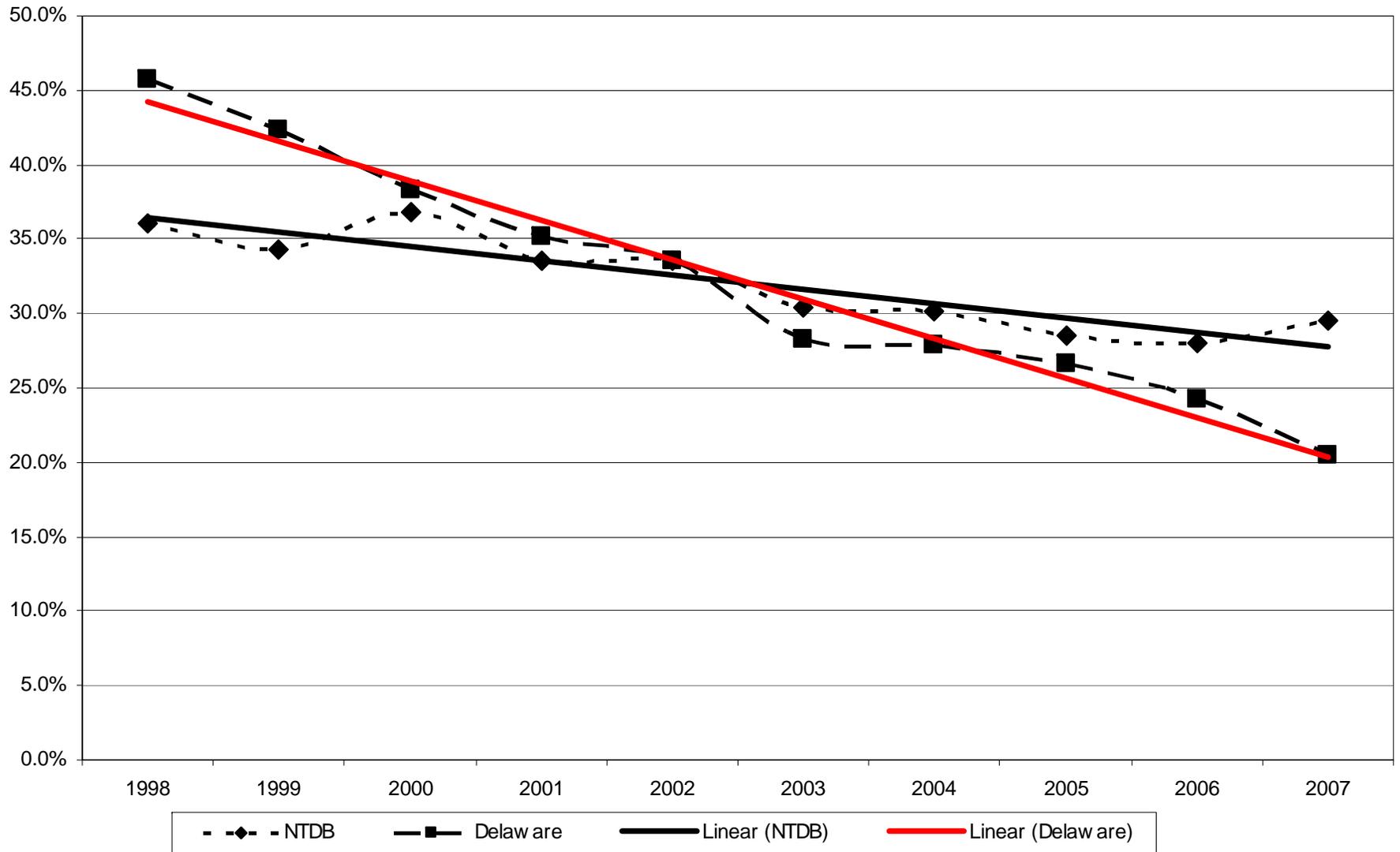
Even with Short D₂B Every Minute Counts



Trauma Management

- Review cases with Trauma PI
- EMS saves lives
 - First Statewide system to demonstrate a major life savings benefit to integrated trauma system
 - Death rate of trauma patients with major to severe injuries has been cut more than in half
 - Statewide we are now well below the national average
 - NCC even lower and has been better than national average for years longer
- Airway management cases reviewed

Delaware Trauma Mortality Data



Intubation and Airway Management

- Paramedics have added Rapid Sequence Intubation to their practice since late 2007
 - Series of drugs to make intubation easier
 - Requires 2 paramedics because of complexity
 - Having a supervisor on scene adds to safety
- Critical skill for severely injured or those with deteriorating breathing
 - MANY systems withdrawing this procedure
 - Our view: opportunity to help the sickest patients

Results of evaluation

- 2009 intubation success is now identical for non-cardiac arrest patients vs cardiac arrest.
 - This is our best measure to compare
 - Hits our goal; unexpectedly fast
- Airway management overall for 2009 patients was 100% successful
 - If not intubated, choice of other airway management was appropriate and done correctly

CPAP respiratory support

- Dramatic improvement in patient care
 - NCC EMS was an early adopter
 - Often avoids the need for intubation
- Studies show early application saves lives
 - Our system uses for many causes of “shortness of breath”; some systems are more restricted
- Hospitals note fewer patients on ventilators, faster time to improvement, shorter admissions

Cardiac Arrest evaluation

- Often hard to measure performance
 - Medical Directors and NCC*EMS Administration pressed to be part of a national registry
- CARES: Cardiac Arrest Registry to Enhance Survival
 - CDC sponsored project
 - National project with 26 sites
 - Many other “high performance agencies”
 - NCC accepted quickly based on our data gathering and strong support of hospital partners

CARES Current Sites



CARES

- Data tied together from start of patient encounter through hospital discharge
 - Using measures of performance by dispatch, EMS, and hospitals
 - Overall survival rate can be followed
 - Opportunities for improvement can be identified
- RESULTS: NCC in upper 1/3 of peers
- Innovations: Hypothermia
- Opportunities: Increase bystander CPR

What do others say?

- NHTSA: National Highway Traffic Safety Admin
 - Oversight of State EMS systems
 - Visited January, 2010
- Official report still to follow but comments were positive regarding commitment to excellent care.
 - The system design is configured to get the right resources to the right patients in the right time.

What do others say?

- CAAS: Commission on Accreditation of Ambulance Systems
 - Voluntary evaluation for accreditation
 - ONLY non-transport/ALS chase system EVER accredited
 - 1 of 134 accredited out of over 22,000 national
 - First EMS agency in Delaware to achieve this
 - Raising the bar: Volunteer Fire agencies requesting information and may apply for CAAS accreditation.

Opportunities going forward

- Improve community education
 - CPR and other bystander interventions
 - EMS resources could improve community survival
- Expand field supervision
 - Recent addition of 2 Sergeants; 6 total on 4 platoons
 - They add to paramedic and BLS oversight and pt care.
- Add to office QA oversight
 - Data management key to identifying opportunities
 - Automating many processes but others labor intense
- Maintain high level of training
 - Clinical skills performed and being added demand it

Summary

- New Castle County EMS: amongst the elite paramedic services in the nation
 - Evidenced by documented internal performance reviews and outside evaluations
- Your system: your constituents should be proud
- NCC*EMS constantly strives to improve
 - Excellent relationship with medical partners who support advanced practice and recognize EMS value to our patients
- A system that needs the capacity to grow so it can continue to meet the growing demands of NCC.