The Big Problem in the Big Apple

THE PROBLEM

In 1994, the first report of cardiac arrest survival in New York City (NYC) found that survival among witnessed out-of-hospital cardiac arrests (OOHCAs) presenting with ventricular fibrillation (VF) was 5.3%.

CHALLENGE

Focus on OOHCA treatments that will improve survival for patients presenting in VF.

CHANGE

From 2004 - 2010, the following changes were implemented in the NYC EMS system specific to OOHCA:
- chest compressions-only instruction given to untrained bystanders by Fire Department of New York (FDNY) dispatchers
- retraining of all firefighters (i.e. certified first responders), EMTs and paramedics in CPR with a focus on compression rate, depth and recoil
- CO2 confirmation of advanced airway placement
- use of vasopressin as the preferred first-line vasopressor agent
- use of alternative airways for the management of all difficult airways
- use of IO access
- role of "resuscitation leader" in the form of mandated response by an EMS Officer to all cardiac arrests
- elimination of "stacked shocks"
- use of adult AEDs for pediatric patients when needed
- use of VF waveform analysis in AED algorithms

RESULT

A study published in 2013 that focused on OOHCA patients presenting in VF in NYC found that survival to hospital discharge had more than tripled since that first report nearly 20 years ago (5.3% --> 16.6%).

NEXT STEPS

The FDNY is implementing technologies among CFRs, EMTs and paramedics that will allow for the assessment of CPR performance characteristics (depth, rate, release, duty cycle, interruptions). Given the >10,000 personnel employed at those levels, both the initial training in proper CPR mechanics and the quality assurance mechanisms necessary to provide feedback on individual resuscitation performance present significant challenges. Furthermore, while short-term measures of survival (i.e. return of spontaneous circulation, or ROSC) are maintained by the FDNY, on-going issues prevent the universal collection of data from NYC hospitals regarding the long-term survival of these patients.