

Incident Command for Cardiac Arrest in Chicago

By Dr. Joseph Weber, EMS Medical Director, Chicago EMS System

Until recently, Chicago has been known as a city with one of the lowest published cardiac arrest survival rates and therefore, a place you did not want to have a cardiac arrest. But in 2011, the Chicago EMS System and the Chicago Fire Department (CFD) decided to take on out-of-hospital cardiac arrest. This new quality assurance initiative started with a focus on CFD and their EMS response to cardiac arrest. The department created new protocols that focused on high quality on scene resuscitation with team-based care. However, in an EMS system the size of Chicago with more than 1,500 paramedics and 3,000 EMTs, protocol change is not easily achieved. The CFD simulation training center was central to their success. They took on the herculean task of putting all of their providers through a hands-on simulation based course in their new approach to cardiac arrest, termed "Incident Command for Cardiac Arrest". The training continues today for all new providers as well as refresher courses for those who have previously completed the training.

With their new protocols on the streets, CFD needed data to see if their initiatives were improving survival. In 2013, they joined a multi-institutional collaborative group from the state of Illinois, Illinois Heart Rescue, that applied for and was awarded the Medtronic Foundation Heart Rescue Grant. As part of this grant, CFD began using the CARES Registry to collect outcome data on all of their cardiac arrest patients. In September of 2013, the first data reports from the CARES registry showed that their efforts thus far had already made significant improvements in cardiac arrest survival rates in the City of Chicago and their 2013-2016 data show a more than four-fold increase in survival over previously published rates.

CARES registry data and collaboration with Illinois Heart Rescue also helped identify other areas for out-of-hospital cardiac arrest quality improvement. New dispatch CPR protocols and training were initiated, as well as a more formalized quality assurance call review process. Bystander CPR training initiatives were led by the Illinois Heart Rescue Community Sphere, which focused efforts on medically underserved areas of the city with a high incidence of cardiac arrest. Both of these initiatives have led to a more than doubling of bystander CPR rates in Chicago. Finally, new EMS protocols were developed requiring that resuscitated cardiac arrest patients be transported only to hospitals able to perform 24/7 percutaneous coronary intervention (PCI) and targeted temperature management (TTM). Hospital based CARES data is additionally used to give feedback to these hospitals on the quality of care they deliver to these patients.



Chicago has made great strides in their approach to cardiac arrest over the past several years. Their basic approach and use of CARES data to measure and improve is now an example for communities of any size, that improving cardiac arrest survival is possible anywhere.