

POPULATION HEALTH FORUMS

CPR Ready: Educating and Empowering To Improve Sudden Cardiac Arrest Survival in Philadelphia

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Eric Muther is the managing director of the Pennsylvania Health Care Quality Alliance (PHCQA), a multi-stakeholder initiative of the Health Care Improvement Foundation (HCIF). Mr. Muther has worked in health care for over 19 years leading a wide range of performance measurement, quality improvement, and public health initiatives. Mr. Muther is also the program director for CPR Ready, a regional awareness and training program to improve survival rates for people who experience out-of-hospital cardiac arrest. CPR Ready was the focus of this presentation.

Mr. Muther laid the foundation by providing an overview and description of a cardiac arrest and its public health burden. A cardiac arrest occurs when the heart stops beating abruptly, without warning, and the person is unconscious with a loss of pulse. Muther states that there are over 359,000 cases of out-of-hospital cardiac arrest across the U.S. with a low survival rate. Although there can be some risk factors, in most cases there are no known risks, no history, and often no symptoms.

Muther went on to explain some startling facts: 7 out of 10 Americans feel helpless to act during a cardiac emergency because they don't know CPR, or are afraid of hurting the

victim; in Philadelphia, 20.3% of people received bystander CPR in 2015 compared to the national average of 40.6%. Muther emphasized time as the critical factor – chances of survival decrease 7-10% for every minute without bystander CPR.

Barriers to bystander CPR cover a range of issues and circumstances. In addition to the fear of causing harm, bystanders are afraid of contracting infectious disease (i.e. mouth to mouth contact). Bystanders may panic or be overwhelmed by the complexity of the tasks.

Researchers have discovered that rescue breathing isn't necessary in most situations and therefore, Hands-Only CPR may serve as a practical method to reduce barriers for bystanders to act. It simply involves calling 911 and pushing hard and fast in the center of the chest – about 100 times per minute. Survival might be better as compared to traditional CPR because it is easier to remember and increased pressure in the chest decreases blood return to the heart. There are, of course, circumstances where it is preferable to use traditional CPR such as obvious breathing problems; children under 8 years of age; electrocution; and blunt trauma.

Muther shared an overview of various training methodologies and interventions, but he was particularly excited about PulsePoint, a mobile app that alerts CPR-trained bystanders to someone nearby having a sudden cardiac arrest that may require CPR. The app is activated by

the local public safety communications center simultaneously with the dispatch of local fire and EMS resources. This technology aims to reduce collapse-to-CPR times by increasing citizen awareness of cardiac events beyond a traditional "witnessed" area. It also reduces collapse-to-defibrillation times by increasing awareness of public access to automatic external defibrillator (AED) locations through real-time mapping of nearby devices.

Muther also discussed crowdsourcing as a great way to collect lifesaving AED location information. For example, applying game mechanics and design techniques to engage and motivate citizens to become more aware of AEDs in their communities. Gamification may include concepts of contests, achievements, and leaderboards for tasks such as adding AEDs or demonstrating knowledge of AED use.

In summary, this 3-year multi-stakeholder regional effort aimed at improving the outcomes of individuals suffering from out-of-hospital cardiac arrest is built on coordinating, energizing, and expanding existing resuscitative resources. Launched by the Philadelphia Regional CPR Awareness Coalition, it aims to double the number of people trained in CPR/AED in the Philadelphia region, and triple the bystander response rate. Additionally, there is a focus on ensuring that CPR/AED education is taught in at least half of the middle and high schools by 2019.

