Bystander Cardiopulmonary Resuscitation: Impact of Training Initiatives

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Purpose of the Study:
Bystander CPR improves survival from out-of-hospital cardiac arrest (OCHA). Various studies have shown that training in CPR and mass media public awareness campaigns are associated with a substantial increase in the proportion of OHCAs receiving bystander CPR, and an increase in survival rates. This analysis aimed to determine whether UK training initiatives and publicity campaigns for bystander CPR have influenced English bystander CPR rates.

Materials and Methods:
Data for the period April 2013 to December 2016 was supplied by the OHCA Outcome Registry for three ambulance services for which there was complete data. Monthly rates for bystander CPR in bystander witnessed OHCAs were calculated as the three-month-moving average. Segmented regression (SR) analysis of interrupted time series data was used to analyse the data to assess the impact of Restart a Heart Day (October 2013, 2014, 2015) on bystander CPR rates.

Results:
Restart a Heart Day has seen increasing numbers of people receive CPR training, national figures for 2016 and 2017 were over 150,000 and 195,000, respectively. Over the analysis time period there was a significant increase in bystander CPR rate (58.9% to 72.3%). SR-analysis noted temporal changes in the rate of bystander CPR associated with Restart a Heart Day. The time following Restart a Heart Day 2015 saw the greatest increase in the rate of bystander CPR.

Conclusions:
Whilst a direct link with events in regions served by the 3 ambulance services and the Restart a Heart Day, and numerous other, campaigns cannot be established by this type of analysis, we observed that over the analysis time period, there has also been a significant increase in bystander CPR; about 23% over 45 months. The initial steep rise may have been due to significant improvement in data quality at start of registry. The observed initial rising trend has been maintained by ongoing campaigns and initiatives. Repeated campaigns to provide participation in CPR training over time are required to continually reinforce the benefits of bystander CPR training.