



## Telecommunicator-CPR

### Enhancing the Chain of Survival

#### OVERVIEW

Annually, over 350,000 people fall victim to sudden, cardiac arrest outside of a hospital environment.<sup>1</sup> Sudden cardiac arrest is the unexpected loss of heart function, breathing, and consciousness and is commonly the result of an electrical disturbance in the heart. Unfortunately, only about 1 in 10 victims survive this dramatic event.<sup>1</sup> Early access to 9-1-1 and early cardiopulmonary resuscitation (CPR) are the first two links in the Chain of Survival for out-of-hospital cardiac arrest (OHCA).

However, while 9-1-1 is frequently accessed, in the majority of cases, OHCA victims do not receive lay rescuer CPR and wait for the arrival of professional emergency rescuers.<sup>1</sup> Moreover, the provision of lay rescuer CPR may vary within a given community based on neighborhood.<sup>2,3</sup> The disparity across and within communities, especially among minorities, highlights high-yield opportunities to improve lay rescuer CPR and thereby save lives.

#### OHCA CHAIN OF SURVIVAL

Successful resuscitation of cardiac arrest victims requires the time-sensitive, expert care described by each of the links in the Chain of Survival: 1) early access to emergency medical services (EMS), 2) early lay rescuer CPR, 3) early defibrillation, 4) early advanced care, and 5) post-resuscitation care to facilitate rehabilitation and recovery.<sup>4</sup> The first two links in the chain, early access to EMS and lay rescuer CPR, provide the foundation for subsequent treatment and are critical for successful resuscitation.<sup>5</sup>

#### T-CPR: WHAT IS IT?

Telecommunicators (including call-takers and dispatchers) are the initial public safety interface with the lay public in a medical emergency. Consequently, telecommunicators have a formative role in the foundational links of early arrest recognition and early CPR. The telecommunicator partners with the caller to quickly identify the arrest victim and, in turn, provide telecommunicator-CPR (T-CPR) instructions and rapidly dispatch the appropriate medical response. Through these actions, the telecommunicator can make the difference between life and death.

#### T-CPR INCREASES ACCESS TO LAY RESCUEE CPR

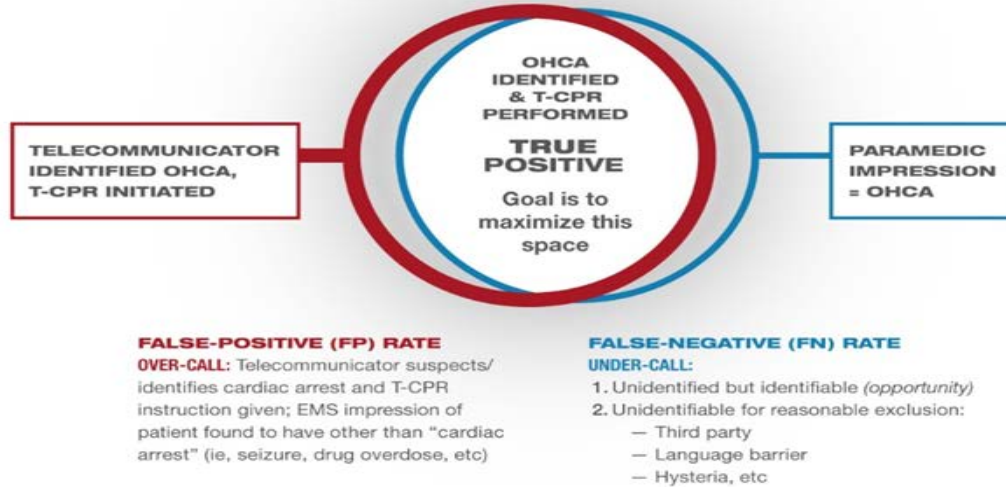
A program of T-CPR is especially appealing because it offers a safe, cost-efficient, and effective approach to substantially increase community lay rescuer CPR.<sup>6</sup> Near-universal use of 9-1-1 (or equivalent emergency numbers outside the United States) ensures activation of an emergency communication center for virtually all treated cardiac arrest events, providing a far-reaching opportunity to affect care for OHCA. Program implementation of T-CPR can increase lay rescuer CPR, often doubling the proportion of arrest patients receiving early CPR.<sup>7,8</sup> Even in communities where T-CPR is a standard practice, directed quality improvement efforts involving T-CPR can increase lay rescuer CPR, indicating that T-CPR requires ongoing evaluation and support to achieve optimal lifesaving benefit.<sup>9</sup>

#### T-CPR IMPROVES OHCA SURVIVAL RATES

- ✓ Early lay rescuer CPR is associated, on average, with an approximately two-fold increase in the chances of survival after OHCA.<sup>10</sup>
- ✓ T-CPR has the potential to increase incidence of lay rescuer CPR significantly.<sup>11</sup>
- ✓ Compared to no lay rescuer CPR, a T-CPR program in King County, WA led to nearly a 50% greater likelihood of survival after OHCA.<sup>6</sup>



## FACT SHEET: T-CPR – Enhancing the Chain of Survival



## THE AHA ADVOCATES

- Ensure T-CPR training is a compulsory requirement for all 911 telecommunicators who provide dispatch for emergency medical conditions.
- Ensure T-CPR training shall follow evidence-based, nationally recognized guidelines for high quality T-CPR which incorporates recognition protocols for out-of-hospital cardiac arrest (OHCA) and continuous education.
- Secure monies to provide for the effective implementation of T-CPR training and ongoing quality improvement requirements.

<sup>1</sup> Virani SS, et al. Heart Disease and Stroke Statistics-2020 Update: A Report From the American Heart Association. *Circulation*. 2020; CIR0000000000000757.

<sup>2</sup> Sasson C, et al. Association of neighborhood characteristics with bystander-initiated CPR. *N Engl J Med*. 2012;367:1607–1615. doi: 10.1056/NEJMoa1110700

<sup>3</sup> Moon S, et al. Disparities in bystander CPR provision and survival from out-of-hospital cardiac arrest according to neighborhood ethnicity. *Am J Emerg Med*. 2014;32:1041–1045. doi: 10.1016/j.ajem.2014.06.019

<sup>4</sup> Kronick SL, et al. Part 4: systems of care and continuous quality improvement: 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2015;132(suppl 2)(18 Suppl 2):S397–S413.

<sup>5</sup> Sasson C, et al. Predictors of survival from out-of-hospital cardiac arrest: a systematic review and meta-analysis. *Circ Cardiovasc Qual Outcomes*. 2010;3(1):63–81.

<sup>6</sup> Rea TD, et al. Dispatcher-assisted cardiopulmonary resuscitation and survival in cardiac arrest. *Circulation*. 2001;104:2513–6.

<sup>7</sup> Ro YS, et al. Effect of dispatcher-assisted cardiopulmonary resuscitation program and location of out-of-hospital cardiac arrest on survival and neurologic outcome. *Ann Emerg Med*. 2017;69:52.e1–61.e1(1).

<sup>8</sup> Tanaka Y, et al. The continuous quality improvement project for telephone-assisted instruction of cardiopulmonary resuscitation increased the incidence of bystander CPR and improved the outcomes of out-of-hospital cardiac arrests. *Resuscitation*. 2012;83(10):1235–1241.

<sup>9</sup> Bobrow BJ, et al. Implementation of a Regional Telephone Cardiopulmonary Resuscitation Program and Outcomes After Out-of-Hospital Cardiac Arrest. *JAMA Cardiol*. 2016;1:294–302.

<sup>10</sup> Hasselqvist-Ax I, et al. Early cardiopulmonary resuscitation in out-of-hospital cardiac arrest. *N Engl J Med*. 2015;372:2307–15.

<sup>11</sup> Rea TD, et al. Temporal trends in sudden cardiac arrest: a 25-year emergency medical services perspective. *Circulation*. 2003;107:2780–5.