

The Alaska CARES Experience: 6 Years of Measure and Improve

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Nationwide, there can be as much as a ten-fold difference in the likelihood of surviving an out-of-hospital cardiac arrest (OHCA) depending upon the community in which it occurs. Communities with better outcomes are those that have instituted a chain of survival to include participation in a data registry which allows objective monitoring of outcomes, as well as the metrics associated with improvement in those outcomes. The utility of a registry such as CARES was emphasized by a recent National Academies of Sciences report in which a cardiac arrest registry was recognized as an important tool for improving OHCA survival.

The Municipality of Anchorage has participated in CARES for over a decade and has achieved survival outcomes that have exceeded the national average. Over the past 6 years, a growing number of Alaska communities have joined the registry as a result of the HeartRescue effort to improve outcomes from OHCA, and we now estimate that over 80% of the state's population lives in an area covered by an agency participating in CARES. The expanded availability of these data has helped communities focus on opportunities for system improvements that could ultimately translate into lives saved. Over a six-year period, from 2013-2018, both Anchorage and Alaska have achieved above average rates of overall survival, Utstein survival, and bystander CPR provision. Examples of state-level monitoring and benchmarking are included in the figures to the right. Alaska's overall statistics show some anticipated fluctuations in the years during which we on-boarded newer systems, since earlier years largely reflected Anchorage's performance. This helps to illustrate the challenges associated with providing care for OHCA in rural areas and the statistical effects of lower volume systems.

CARES registry data can also highlight specific parts of the chain of survival in need of improvement. The five links in the chain of survival are early access to care, early CPR, early defibrillation, rapid delivery of EMS care, and early post-resuscitative care. For example, CARES data were useful for the Anchorage Fire Department in determining that their 911 response system needed to be improved to achieve better outcomes. In the past, the department used a standard proprietary system for 911 call-taking, including the provision of dispatcher-assisted CPR. Initially, the goals of achieving shorter times to CPR and increasing bystander participation were not being met. A different system was adopted in May of 2014 that included Criteria Based Dispatch (CBD) and utilizing the CARES Dispatcher Assisted CPR module to track numerous time intervals as well as monitor barriers encountered by the dispatcher. Subsequent review showed a considerable decrease in time to dispatcher recognition of cardiac arrest, decrease in time to first chest compression, and higher compliance with bystander CPR.

In conclusion, the CARES registry is a vital source of actionable information for improving survival from OHCA by addressing those links in the chain of survival showing the greatest opportunity for improvement. Various metrics can be obtained to review a range of factors involved in OHCA survival including response times, community engagement, bystander CPR training, and circumstances where laypersons identified OHCA early enough to activate the chain of survival in a timely manner. Stakeholders are encouraged to review data that are specific to their own systems/communities to identify areas of success and areas in need of improvement. Agencies and hospitals should review their outcomes data over time to identify temporal trends. Such reviews can be useful for establishing new benchmark goals to further improve survival rates.

