



2023 CARES Report



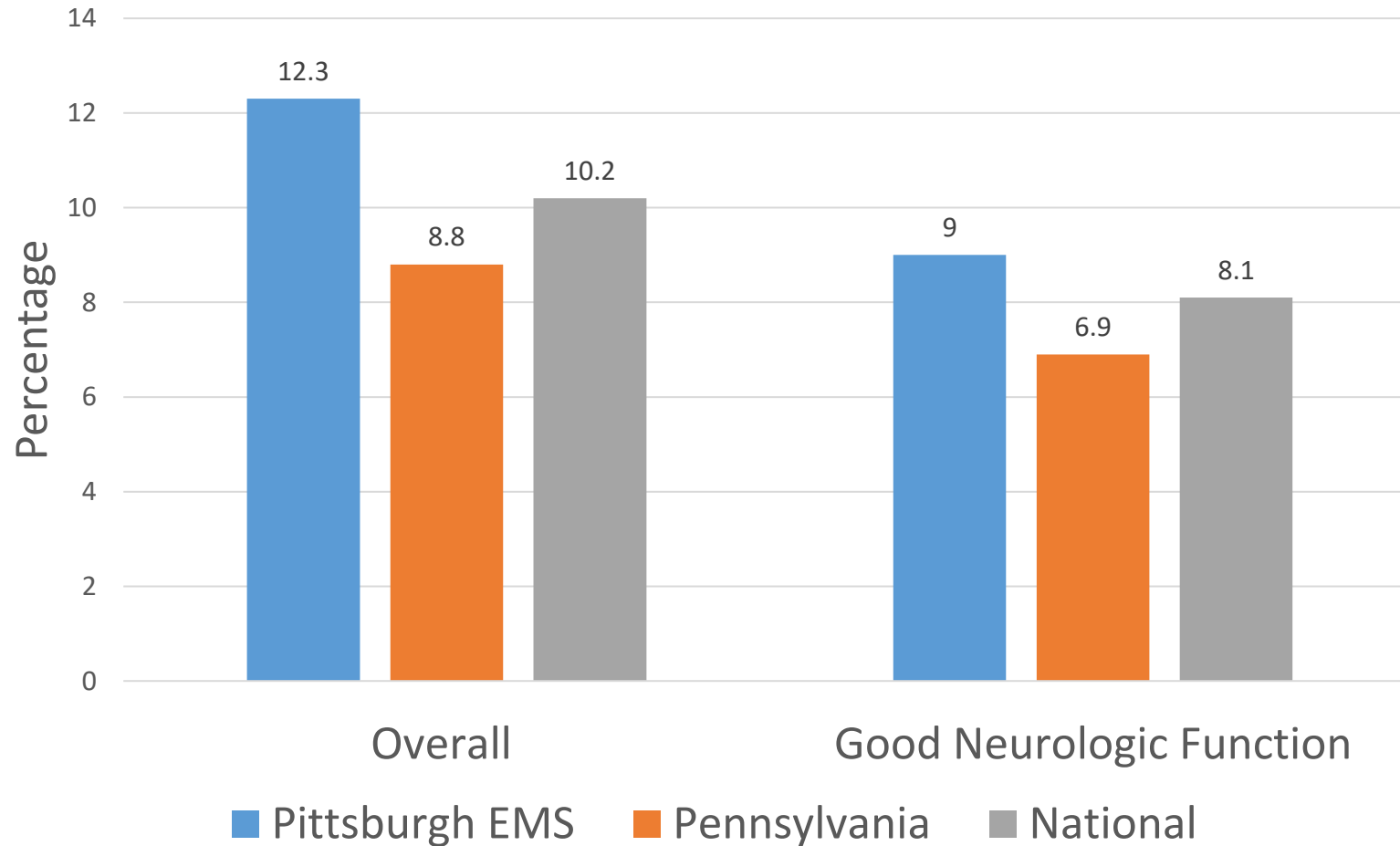
The Cardiac Arrest Registry to Enhance Survival (CARES) report is an annual report that is generated to assist communities with determining care measurements for out-of-hospital cardiac arrest treatment. This reporting system is utilized by more than 1,800 EMS systems nationwide and captures roughly 45% of the populated areas in the U.S. CARES is apart of the global Healthy People 2030 initiative, which aims to improve many health outcomes over the next decade.

Pittsburgh EMS has participated in CARES for many years. It serves as a major source to guide our trainings and quality improvement for patients suffering from cardiac arrest (sudden loss of heart function). This has led to the Pittsburgh EMS Cardiac Arrest Continuous Quality Improvement Project, which focuses on treatment for populations with high survival potentials. For cardiac arrest victims, those who receive immediate bystander CPR and/or have an initial shockable heart rhythm (ventricular tachycardia or fibrillation) have the greatest chance of survival with positive outcomes. Neurological function is the measurement used to assess the injury to the brain caused by cardiac arrest. In addition to restarting the heart, cardiac arrest care is also focused on minimizing the damage to the brain caused by low oxygen states.

Four figures are included in this report that display the breakdown of different cardiac arrest categories and their respective survival rates.

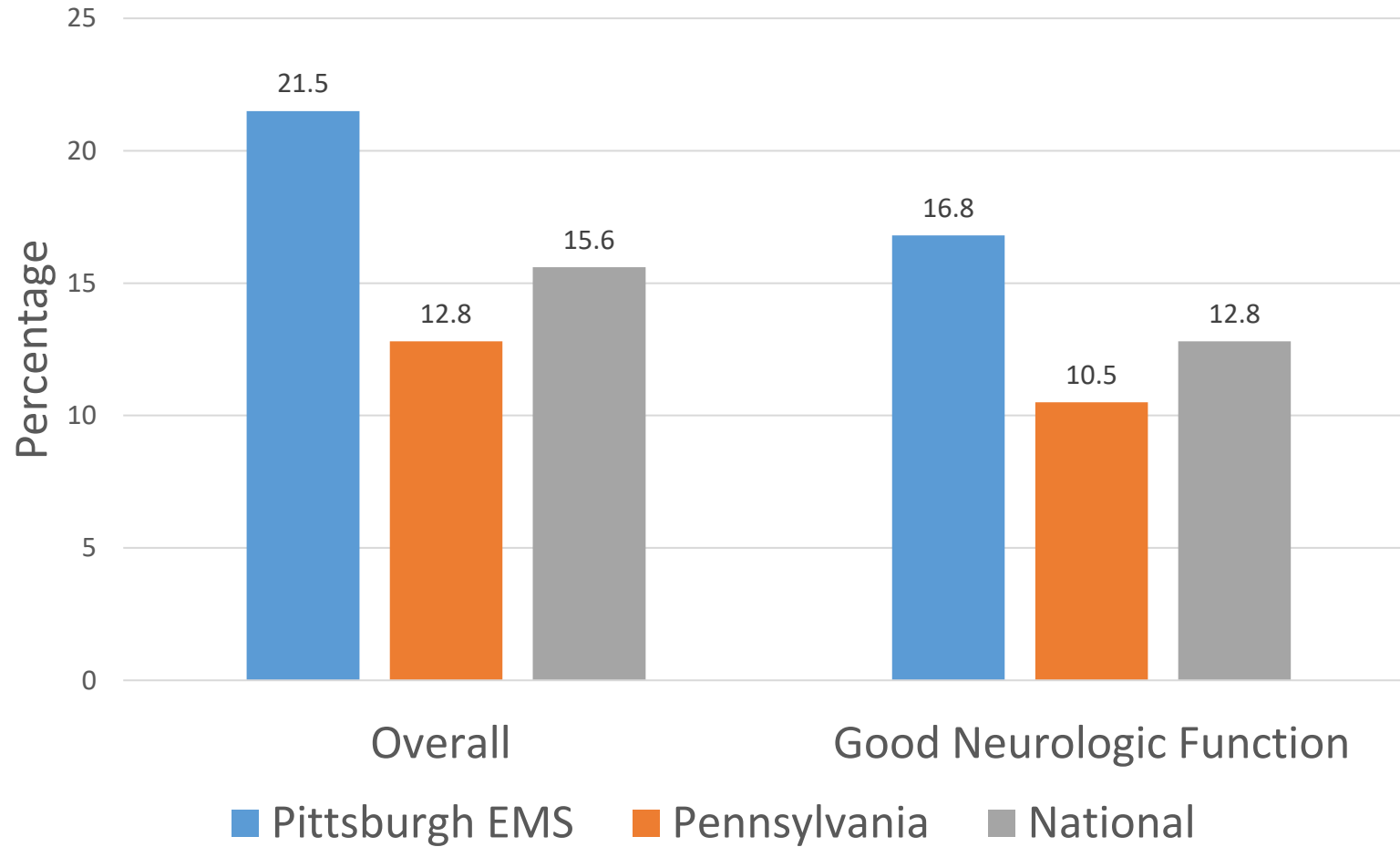
Lastly, a huge shoutout to the residents and visitors of Pittsburgh for providing bystander CPR, which is known to significantly increase cardiac arrest survival chances. And many thanks to the Pittsburgh Bureau of Police and Pittsburgh Bureau of Fire for their Basic Cardiac Life Support assistance.

Figure 1 – Overall Survival for Cardiac Arrests Patients



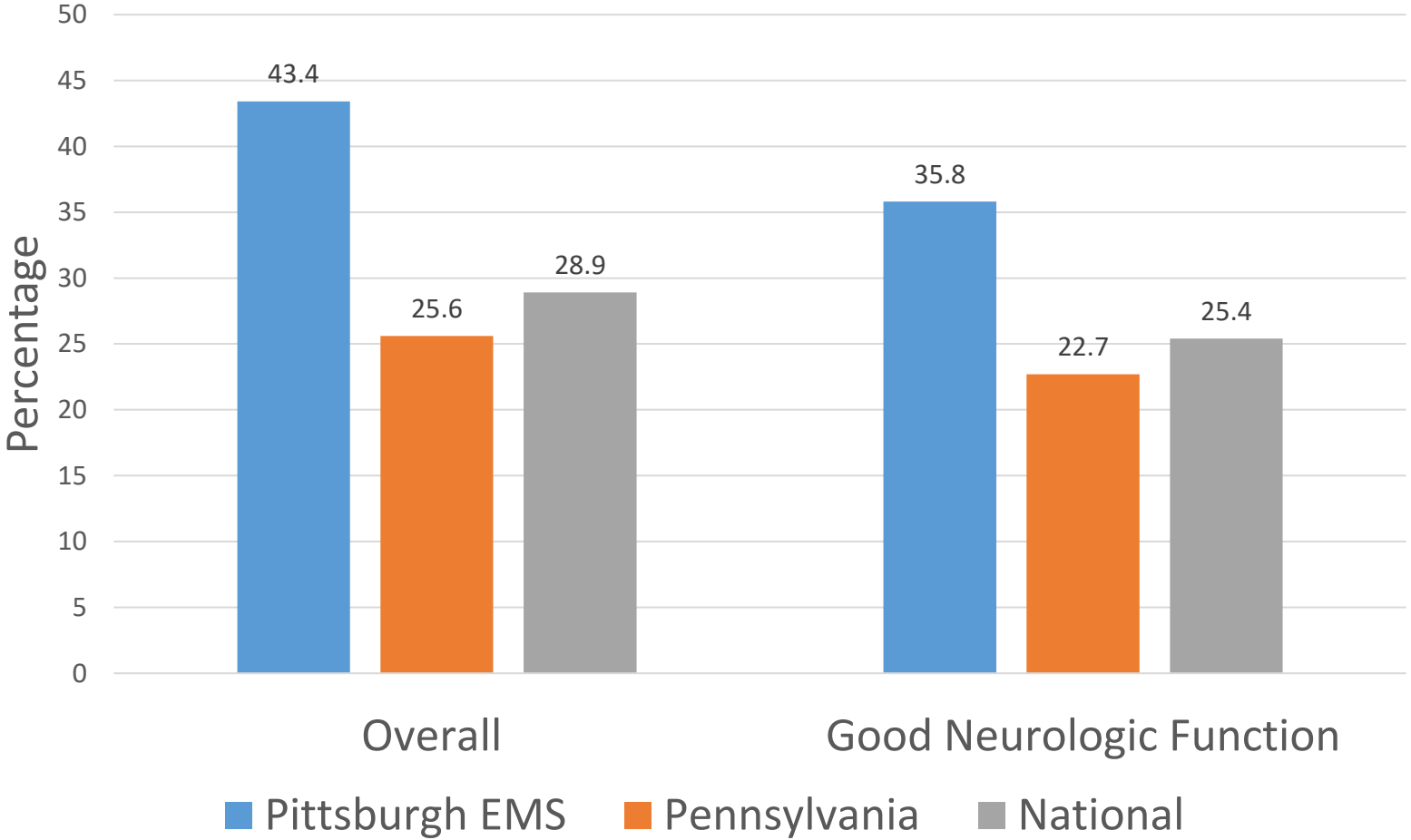
The overall cardiac arrest patient category is defined to include both shockable (V-Tach and V-Fib) and non-shockable heart rhythms (PEA and asystole). Many cardiac arrests patients present in a non-shockable rhythm, which is unfortunately associated with low survival rates. This fact contributes greatly to our overall survival rate of 12.3%, and the discharge with good neurological function rate of 9%. However, these statistics also indicate that the overall treatment provided by Pittsburgh EMS led to survival rates that exceeded both Pennsylvania and national outcomes.

Figure 2 - Survival for Bystander Witnessed Cardiac Arrests



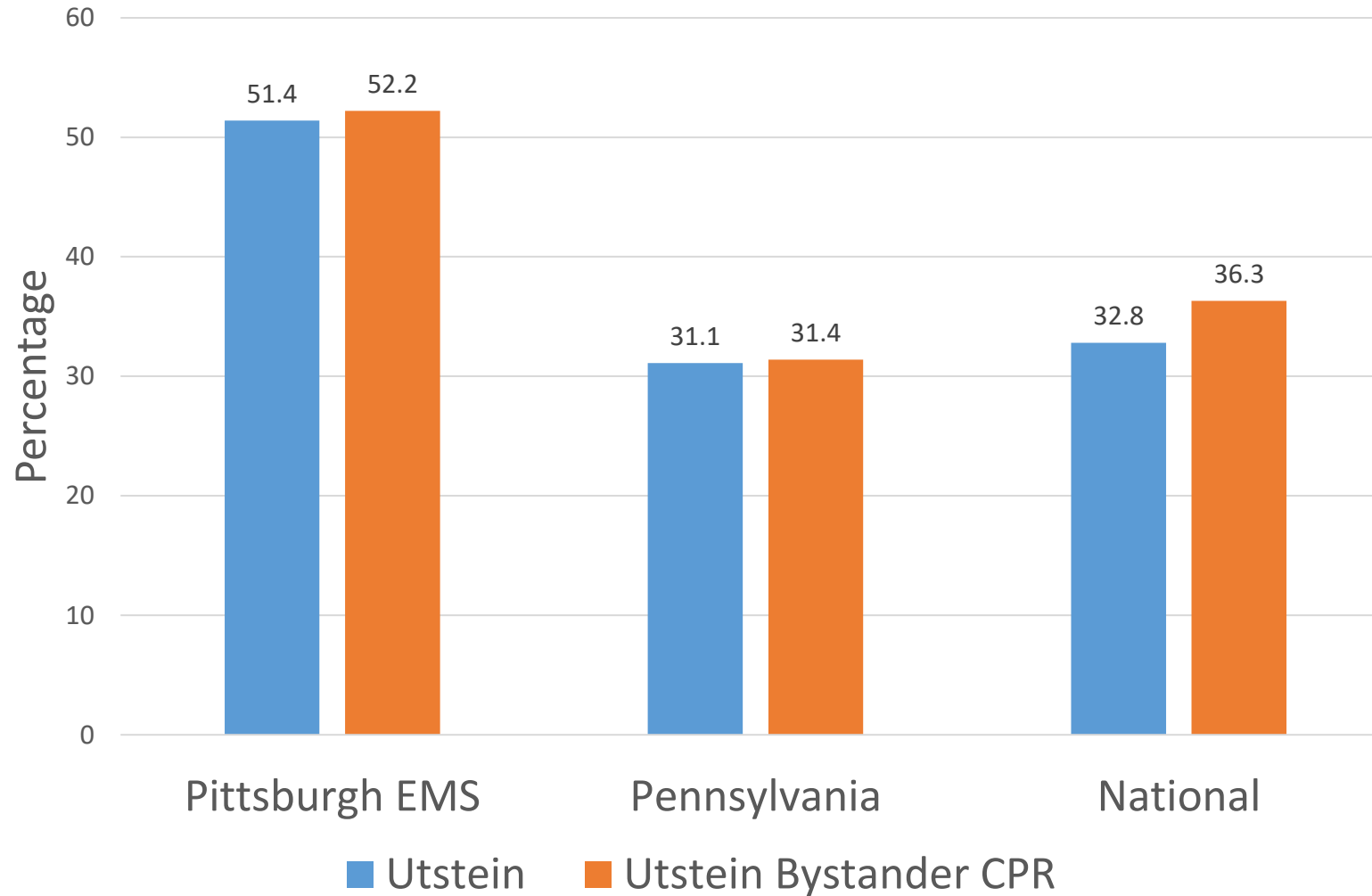
Rapid bystander action is associated with increased survival rates. Though this can be challenging, as only 35.5% of out-of-hospital cardiac arrests in Pittsburgh were bystander witnessed in 2023. However, of witnessed cardiac arrest patients, 21.5% survived and 16.8% were discharged with good neurological outcomes. We attribute this to the quick efforts of good Samaritans, including those who performed CPR in 44.9% of out-of-hospital cardiac arrests, as compared to the state rate of 39.3% and the national rate of 41.5%.

Figure 3 - Survival for Cardiac Arrests with an Initial Shockable Heart Rhythm



Patients presenting with an initial shockable rhythm are also associated with increased survival. Providing early defibrillation, by EMS or via an AED, to cardiac arrest patients is associated with increased survival. Sadly, not all patients are eligible for early defibrillation. However, for patients who were eligible for early defibrillation, 43.4% survived and 35.8% were discharged with good neurological outcomes. These rates greatly outperform both the state and national values. Something Pittsburgh EMS takes pride in.

Figure 4 - Survival for Utstein Cardiac Arrests



Patients who are bystander-witnessed out-of-hospital cardiac arrests that also present with an initial shockable rhythm are termed Utstein. These are the patients with the greatest chances of survival. For this population, Pittsburgh EMS care led to a 51.4% survival rate. A very impressive value compared to the 31.1% and 32.8% for Pennsylvania and national means, respectively. When the witnessing bystander also performed CPR, this survival rate increased to 52.2%. A reminder that every bit of CPR helps with patient care.