

Ada County EMS

Cardiac Arrest Study

Jan. 1 2003 – Dec. 31 2003

This report contains a summarization of all cardiac arrest incidents responded to by Ada County EMS during the 2003 calendar year. The EMS system in Ada County provides coverage to an area of 1,055 square miles and serves a population of 311,390 (US Census Bureau 2002 Community Survey).

The EMS system in Ada County utilizes a tiered response:

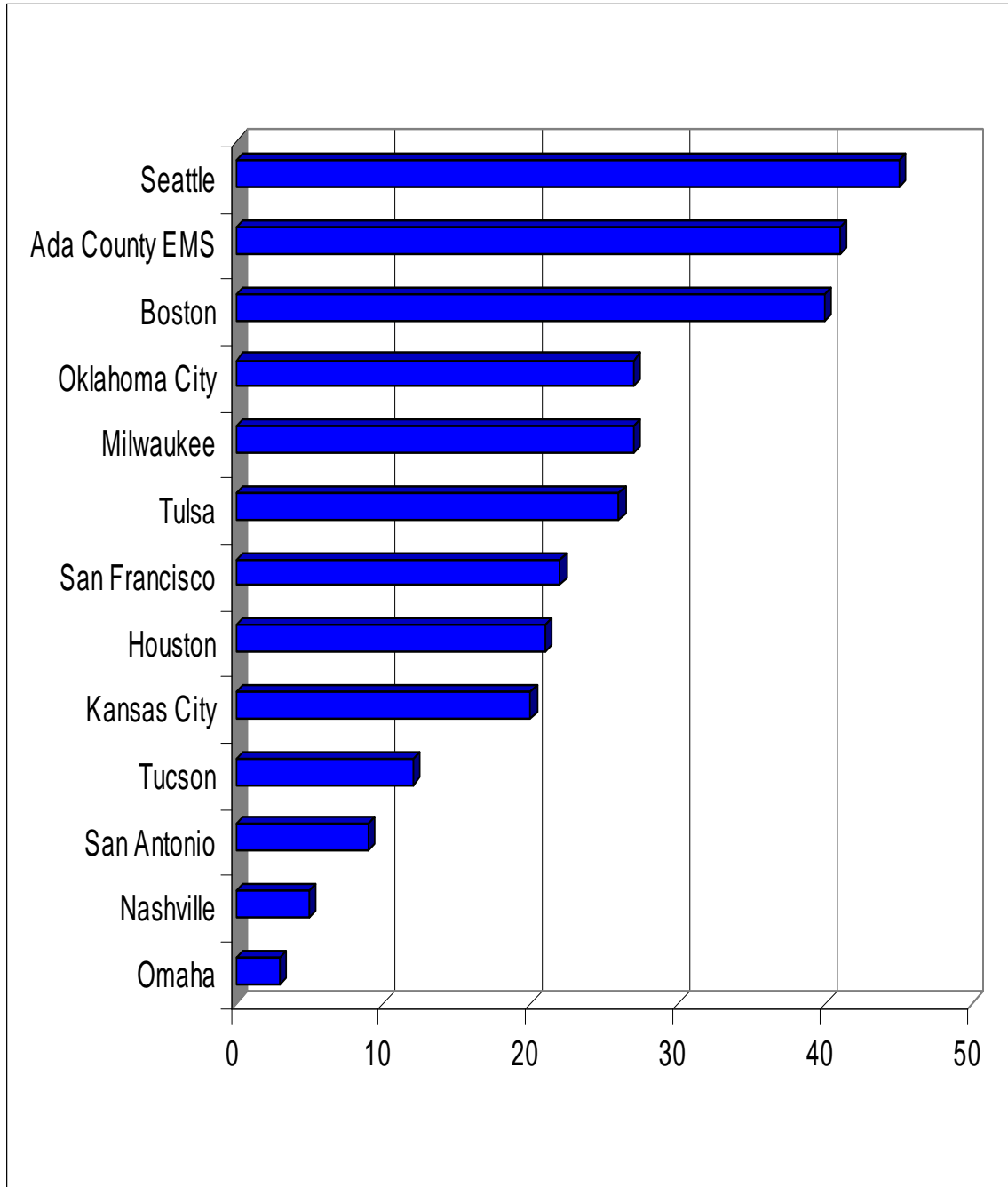
- Tier 1 – Emergency Medical Dispatch – 911 Dispatchers utilize the Priority Medical Dispatch System to determine the appropriate response to medical emergencies, and to provide pre-arrival instructions to the caller to begin providing care prior to the arrival of emergency responders.
- Tier 2 – Basic Life Support / Quick Response Units – QRU response is dispatched from 24 fire stations located throughout Ada County and includes units from Boise Fire Dept., Eagle Fire Dept., Kuna Fire Dept., Meridian Fire Dept., North Ada County Fire Dept., and the Star Fire Dept. All BLS units are equipped with Automatic External Defibrillators (AED) to provide rapid defibrillation for cardiac arrest patients.
- Tier 3 – Advanced Life Support / Transport Ambulance – ALS response is provided county-wide by Ada County EMS. Units are dispatched from 8 stations located throughout Ada County and provide Paramedic level care utilizing extensive standing orders.

The American Heart Association recommends that cardiac arrest data be reported using the “Utstein Style” to provide uniformity in how the data is reported. This consistency affords us the opportunity to benchmark the EMS system in Ada County against other systems across the country to evaluate the effectiveness of our deployment.

The Utstein Style selects, for core data evaluation, the cardiac arrest events which are witnessed by bystanders, of cardiac etiology, and present with an initial cardiac rhythm of ventricular fibrillation or ventricular tachycardia. The EMS system survival rate is based on the number of patients meeting those criteria who were successfully resuscitated and discharged from the hospital alive.

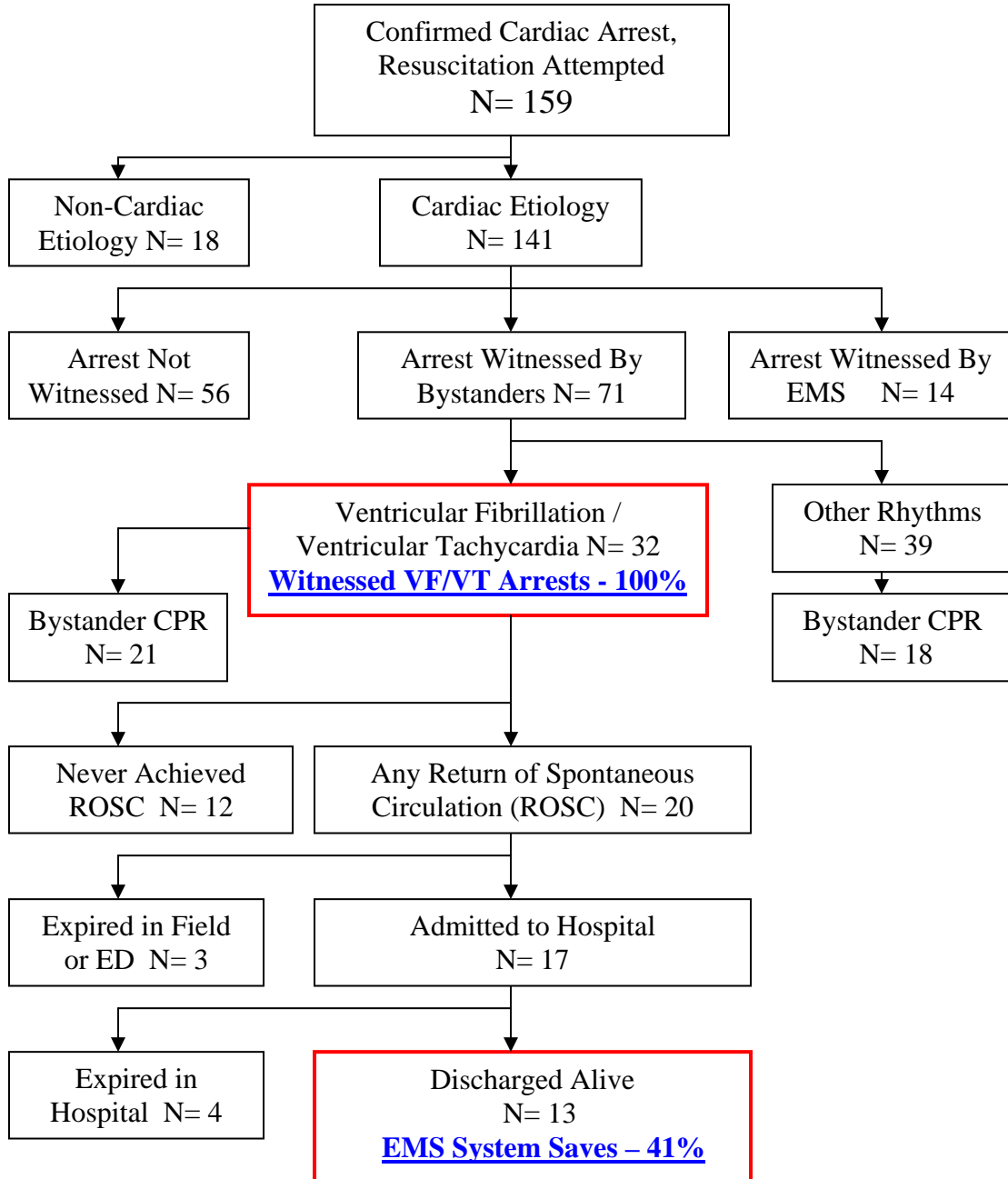
41% of the patients meeting the inclusion criteria in Ada County were discharged from the hospital alive.

In July of 2003, *USA Today* reported the results of an 18 month study of 50 of the nations major cities EMS systems. Thirteen of those cities were found to have scientifically determined survival rates. Of those 13 cities, only Seattle, Washington (45% survival) was able to achieve a survival rate higher than Ada County.



Utstein Template for Reporting Cardiac Arrest

Core Dataset



Utstein Core Dataset – comparison of patients discharged from the hospital alive to the patients who were not successfully resuscitated.

- **Bystander CPR** –
 - **Discharged Alive** – 77% of the cases reported bystander CPR prior to EMS arrival
 - **Unsuccessful Resuscitation** – 63% of the cases reported bystander CPR prior to EMS arrival

- **Dispatch to Defibrillation** –
 - **Discharged Alive** – 5.6 Minute average time interval from Dispatch until the First Defibrillation is delivered
 - **Unsuccessful Resuscitation** – 7.8 minute average time interval from Dispatch until the First Defibrillation is delivered

Supplemental Data

- Total Cardiac Arrest Records – 247 – Includes all EMS responses to Cardiac Arrest

- Resuscitations Not Attempted – 88 – Patients who met the criteria for Obvious Death (Criteria Includes – Rigor Mortis, Dependent Lividity, Injuries not compatible with life), or where there was a valid Do Not Resuscitate (DNR) order.

- **Outcomes of resuscitations not meeting the Utstein inclusion criteria** – all resuscitations attempted on patients with cardiac etiology (arrests witnessed by bystanders, arrests witnessed by EMS personnel, and un-witnessed arrests with an unknown interval from the time of collapse until the time of event recognition).
 - **Un-Witnessed** – Ventricular Fibrillation / Ventricular Tachycardia – 9
 - No Return Of Spontaneous Circulation – 5
 - ROSC / died in field or ED – 6
 - Discharged from the hospital alive – 2
 - **Asystole** (witnessed and un-witnessed) – no cardiac electrical activity – 68
 - No Return Of Spontaneous Circulation – 54
 - ROSC / died in field or ED – 11
 - Discharged from the hospital alive – 3
 - **Other Rhythms** (witnessed and un-witnessed) – 32
 - No Return Of Spontaneous Circulation – 13
 - ROSC / died in field or ED – 15
 - Discharged from the hospital alive – 4