Medical Control Board
Office of the Medical Director

Annual Report from the Medical Director
Operational & Fiscal Year July 2018 - June 2019

Report Structure

Continuing with this year's Medical Control Board/Office of the Medical Director (MCB/OMD) Annual Report, based upon feedback from key government and EMS system leaders in metropolitan Oklahoma City and Tulsa, the content is structured for efficient and purposeful review of key activities accomplished by MCB physicians, the Medical Director(s), and OMD professionals.

Medical Oversight Design

The **Medical Control Board** is established by the Emergency Physician Foundations of Oklahoma City (Western Division) and Tulsa (Eastern Division). The Medical Control Board is comprised of eleven physicians devoting volunteer service to the patients served by the EMS system for metropolitan Oklahoma City and Tulsa and to the dedicated men and women rendering emergency medical care as an Emergency Medical Dispatcher, Emergency Medical Technician (EMT), EMT-Intermediate, Advanced EMT, or Paramedic. By design, emergency physicians constitute all positions on the MCB with exception of one position designated filled by another physician medical specialist. The emergency physicians most typically represent the busiest emergency departments in the areas served by the EMS system. The following physicians served on the MCB during this operational and fiscal year:

Chad Borin, DO, FACOEP – St. Anthony Hospital (Oklahoma City)
Chair since January 2019; Vice Chair until January 2019
Michael Smith, MD, FACEP – St. John Medical Center (Tulsa)
Chair until January 2019; continuing member
Russell Anderson, DO– Hillcrest Hospital South (Tulsa)
Vice Chair since January 2019
David Smith, MD – Integris Baptist Medical Center (Oklahoma City)
Secretary
Roxie M. Albrecht, MD, FACS, FCCM – Trauma Surgery/Surgery Critical Care (Oklahoma City)
Mark Blubaugh, DO, FACOEP – Oklahoma State University Medical Center (Tulsa)
Member until September 2018
Brandon Boke, MD, FACEP – University of Oklahoma Medical Center (Oklahoma City)
Member until March 2019
Barrett T. Bradt, MD – Saint Francis Hospital (Tulsa)
Jeffrey D. Dixon, MD, FACEP – Hillcrest Medical Center (Tulsa)
David Gearhart, DO, FACOEP – Oklahoma State University Medical Center (Tulsa)
Member since September 2018
Karyn Koller, MD - University of Oklahoma Medical Center (Oklahoma City)
Member since March 2019
John Nalagan, MD, FACEP – Mercy Hospital (Oklahoma City)
Keri Smith, DO – Integris Southwest Medical Center (Oklahoma City)

The MCB meets bimonthly to review a report from the President of the Emergency Medical Services Authority, a report from the Medical Director(s), standard of medical care

advancements and/or revisions endorsed by the Medical Director(s), financial statements of the MCB/OMD, and new business brought before the MCB by any interested party.

The **Medical Director** is the day-to-day recognized clinical authority in the EMS system, serving as such between times the MCB is meeting. *Jeffrey M. Goodloe, MD, NRP, FACEP, FAEMS* is the Medical Director for all agencies receiving medical oversight from the MCB/OMD.

Beginning July 1, 2009, the MCB contracted with the Department of Emergency Medicine at the University of Oklahoma's School of Community Medicine for physician medical director services. Substantial benefits to the EMS system and its patients are achieved through this arrangement, bringing research and educational capabilities from the University of Oklahoma, its emergency medicine residency program, and its collegial network of medical professionals.

This year is Dr. Goodloe's tenth year as Medical Director for the MCB/OMD. For familiarization purposes, his biography can be found at the MCB/OMD website, okctulomd.com.

The **Office of the Medical Director** is comprised of the following professionals:

Jeffrey M. Goodloe, MD, NRP, FACEP, FAEMS – Medical Director
Curtis L. Knoles, MD, FAAP – Assistant Medical Director
David S. Howerton, NRP – Director of Clinical Affairs Western Division (Oklahoma City)
Duffy McAnallen, NRP – Director of Clinical Affairs Eastern Division (Tulsa)
Matt Cox, NRP – Director of Critical Care Analytics
Jennifer Jones – Executive Assistant to the Medical Director – service through May 31, 2019

OMD professionals work daily to assist public safety agencies charged with emergency medical services responsibilities to fulfill those according to the clinical care standards established by the MCB. Medical outcomes determinations, individual medical care review, personnel education, personnel credentialing, equipment/vehicle performance review and inspection are just some of the myriad activities performed in support of excellence in pre-hospital emergency medical care.

All OMD directors are particularly experienced and gifted clinicians and administrative leaders, guided by admirable work ethic. Each has served this and other EMS systems in a multitude of responsibilities, beginning with field service and progressing to their current oversight duties.

Philosophy of Medical Oversight

The provision of emergency medical services is more than public safety in metropolitan Oklahoma City and Tulsa; it is a practice of medicine delegated by the MCB's Medical Director to over 4,000 non-physician EMS professionals serving over 1.5 million residents, workers, and visitors of the affiliated cities.

Just as an individual has right to access an educated, qualified, and credentialed physician providing progressive medical care in times of illness or injury, it is incumbent the EMS system serving metropolitan Oklahoma City and Tulsa provide educated, qualified, and credentialed

EMS professionals authorized to deliver the finest pre-hospital medical care available. When an individual in this service area experiences sudden, unexpected medical symptoms from relatively benign, though concerning pain, to the extreme severity of cardiopulmonary arrest, he or she can rest assured individuals answering the call for help will be trained and prepared to address the medical situation at hand. This cannot happen without up-to-date, progressive medical treatment protocols, accompanying education and training, and a comprehensive credentialing program.

Beginning July 1, 2009, the MCB/OMD committed to bringing its medical treatment protocols to new standards, unparalleled amongst large, urban EMS systems in the United States. Significant numbers of protocols were added, updated, and/or reformatted consistently at MCB meetings this year as summarized within this annual report. All MCB treatment protocols continue to follow the now MCB-recognized innovative, evidenced-based format. In other words, additional clinical capabilities and care are being regularly added and provided for the patients needing those most. This commitment to excellence in pre-hospital emergency care reflects the drive and energy of the MCB, Medical Director(s), OMD professionals, leaders in affiliated fire departments and EMSA, and all field EMS professionals.

Throughout the operational year, these MCB treatment protocols continued to be referenced and indexed by benchmarking EMS systems within the United States and even abroad. The patients of this EMS system can continue to rest assured they are receiving the very best in pre-hospital emergency medical care.

Key Advances in Medical Treatment Protocols

Suctioning – introducing the DuCanto Catheter™ for improved ability to clear occluded airways.

Supraglottic Airways – introducing the i-gel® airway as the preferred supraglottic device. Additional sizes to include pediatric sizing. This airway supports improved cardio-cerebral circulation during "no-flow" (cardiac arrest) and "low-flow" circulatory states.

Cricothyrotomy – introducing Control-Cric™ as the preferred non-surgical approach cricothyrotomy device.

Croup – introducing a new protocol with pediatric-focused treatment for acute croup presentations.

Stroke – extending emergency response, emergency return to hospital, and hospital "stroke alert" to acute symptoms compatible with stroke diagnosis up to 23 hours from onset. Prioritizing these same patients being transported to Comprehensive Stroke Centers OR Primary Stroke Centers with Mechanical Thrombectomy capability. These changes are in concordance with leading stroke neurologists in Oklahoma.

Multiple protocols – prioritizing dextrose 10% as the first line choice for parenteral dextrose administration, factoring safety in the 10% concentration in comparison to the traditional 50% concentration. Scientific study support timeliness of hypoglycemic reversal being very similar, without a statistically significant lengthening of time.

Extremity/Amputation Injury & Burns – added standing order for fentanyl use in pediatric pain management.

Patient Prioritization – revising traumatic injury priorities in adults and pediatrics, led by MCB member Dr. Roxie Albrecht, Medical Director, Trauma Services, OU Medical Center.

Formulary – updating throughout the year to ensure the formulary is consistent with all clinical treatment protocols.

Categorization of Hospitals – updating clinical care capability additions at multiple hospitals in the metropolitan Oklahoma City and metropolitan Tulsa areas. Additions of surgical specialty hospitals for established patients with clinically appropriate conditions for treatment at those facilities. Additions of micro-hospitals in metro OKC.

MCB/OMD Administrative & Clinical Policies

Historically, most administrative actions of the MCB/OMD prior to July 2009 had been "management by memo" in structure. Over time as the EMS system grew and structure, those memos proved difficult to track, confusing in intent, dated in instruction, and while unintentional, contradictory in direction. In efforts to be more transparent in operation, clearer in administrative and clinically-related expectations, and to better support field professionals, the Medical Director specified creation of an MCB/OMD Policy and Procedural Manual in the 2009 – 2010 operational and fiscal year to accompany the Medical Treatment Protocols. Like the treatment protocols, this continues to prove a multi-year project due to scope and nature of always advancing the practice of EMS medicine and its oversight. During this operational year, the comprehensive manual of MCB/OMD policies & procedures was reviewed and available on the MCB/OMD redesigned website.

MCB/OMD Review of System Performance Parameters

Basic Life Support EMSA Ambulances – Working in conjunction with EMSA leadership and AMR operations, a new tier of ambulance response piloted and proved successful throughout FY 18-19. This new program allows EMTs to fully utilize their assessment skills and garner valuable experience with electronic health records. Efficiency for Advanced Life Support (Paramedic) Ambulance response is gained as BLS ambulances can be allocated to an expanding scope of incidents, including hospital to home, BLS level hospital to hospital, organ harvesting team transfers, and helipad/airport to hospital with flight crews maintaining primary patient care responsibility. EMTs assigned to this program have performed notably well.

Response Times – EMSA calculates and supplies MCB/OMD with monthly performance reports regarding response times by American Medical Response, EMSA's contractor for clinical and clinically-related administrative services. All monthly reports supplied to MCB/OMD by EMSA were personally reviewed by the OMD Directors, the Medical Director(s), and the MCB. Reports most typically indicate aggregate compliance with contracted response time standards, with exceptions in which American Medical Response was fined by EMSA per contractual

specifications. Fire departments, particularly the larger departments, such as Oklahoma City, Tulsa, and Edmond supply their response times for EMS-related calls on a monthly basis as well. These reports are personally reviewed by the OMD Directors and the Medical Director(s) on a monthly basis. All reports indicate reasonable response time performances.

Response time allowance changes approved by the EMSA Board of Trustees that went into clinically operational effect on November 1, 2013 continued throughout this operational year. This specifically allowed for the historical 8:59 Priority 1 standard to be extended to 10:59 within the beneficiary cities. Priority 2 responses were also extended, specifically from 12:59 to 24:59, with notable cessation of red lights and sirens (RLS) use. Significant safety benefits of these changes were anticipated and observed during their sixth operational year, yet no clinical detriments in patients relatable to these response time allowance changes were noted by the Medical Director(s) and OMD personnel.

Hospital-Initiated EMS Diversion Requests – American Medical Response calculates and supplies MCB/OMD monthly reports on the number of hospital-initiated EMS diversions their personnel encountered in ambulance transports. All monthly reports supplied to MCB/OMD by American Medical Response were personally reviewed by the OMD Directors, the Medical Director(s), and the MCB. Most reports indicate reasonably desirable control of diversion numbers by hospitals in the service area. In May of 2008, the MCB took action to reduce then-elevating numbers of hospital-initiated EMS diversion requests by instituting a protocol that allows paramedics to override such requests if the patient was clinically stable and had a pre-existing relationship with that hospital, its network, and/or a physician on its active or referring medical staff. The effects of that protocol continue to show positive impact as the EMS system promotes patients receiving continuity of care for better clinical outcomes and fiscal stewardship.

A continuing area of concern related to hospital emergency department patient saturation is EMS "bed delay" times. This time period begins when EMSA EMTs and paramedics arrive in an emergency department with the patient packaged on the stretcher and encounter no available beds in which to transfer the patient for ED care and extends to the time in which a transfer into a bed or chair occurs. The Medical Director advised the MCB of continuing concerns, stemming from prior analysis prepared by EMSA, supporting anecdotal experiences detailed in daily EMSA Field Operations Supervisor Reports that ambulances were being held, at times, over 1 hour at hospitals. The problem continues to be more prevalent in Tulsa than Oklahoma City, likely due to fewer hospitals serving its metropolitan area, though some improvements were noted for a third continuous year throughout this operational year.

Trauma Priority & Destination Reports –American Medical Response calculates and supplies MCB/OMD monthly reports detailing the numbers and percentages of trauma patients by priorities (One, Two, or Three) and destinations. All monthly reports supplied to the MCB/OMD by American Medical Response were personally reviewed by the OMD Directors, the Medical Director(s), and the MCB. All reports indicate continuance of the following: 1) Priority One Trauma patients comprise <15% of traumas on a monthly basis, with most months seeing <10%. 2) Documentation supporting patients identified as Priority One Trauma is typically at or above 90%. 3) Destination for Priority One Trauma patients is appropriately

selected at or above 98% of the time. Deviations from appropriate destination selection are reviewed with individual paramedics making those deviations.

Clinical Continuous Quality Improvement Agency Reports –American Medical Response and fire department EMS liaisons calculate and supply MCB/OMD monthly reports detailing the activities related to EMS in the respective agency. All agencies with EMT-Intermediates, Advanced EMTs and/or Paramedics regularly adhere to the requirements to supply these reports. Content is comprised of call types and volumes, airway management performance, cardiac arrest management performance, intravenous access performance, pharmaceutical utilization, and educational initiatives. All monthly reports supplied to the MCB/OMD by these agencies with advanced life support capabilities were personally reviewed by the OMD Directors and the Medical Director(s). These reports consistently reflect that agency personnel are meeting or exceeding the clinical expectations of MCB/OMD. Summary statements of these reports are either reported to the MCB by Dr. Goodloe and/or the full agency reports are available for review to any MCB physician at their request. Smaller, basic life support fire departments are varied in their reporting consistencies. OMD Directors and the Medical Director(s) continue to work with these departments to facilitate timely and consistent reporting of their activities.

Cardiac Arrest Outcomes – The EMS System for Metropolitan Oklahoma City and Tulsa continues to achieve enviable outcomes in cardiac arrest. Whereas the national average for survival from out-of-hospital cardiac arrest (witnessed arrest, bystander CPR, and shockable cardiac dysrhythmia upon EMS arrival) has improved to nearly 13.6%, outcomes in Oklahoma City and Tulsa are well above this national aggregate performance. See Attachment A – 2017 Cardiac Arrest Report. The 2018 Cardiac Arrest Report is being completed at the time of this Annual Report and will be posted on the MCB/OMD website ahead of next year's Annual Report.

Response Vehicle Inspections – OMD Directors continue to inspect new emergency medical response vehicles, such as fire engines and ambulances, to ensure correct medical equipment provisioning and condition. Few deficiencies are typically discovered and immediately corrected when found.

MCB/OMD Project Initiatives

Cardiac Arrest Outcomes Optimization Program (aka "50/50" Program) – Building upon the EMS system's pattern of admirable success in aggressively resuscitating cardiac arrest victims, the MCB continued promulgated sophisticated resuscitation team dynamic protocol standards. These standards detail optimal team role performances to maximize chest compression fraction time, reduce delays in timely defibrillation, and achieve coordinated efforts in lifesaving.

Cardiac arrest resuscitation team dynamics continue to be reinforced during continuing education for all current EMS professionals in the system and are reviewed in focused detail during the orientation for all EMS professionals joining this system. Coordinated skill precision is further reinforced through individual feedback supplied to all EMS professionals involved in a specific resuscitation. Utilizing the CodeSTAT software platform, resuscitation care elements (chest compressions, ventilations, defibrillations) are analyzed by the OMD Director of Critical Care

Analytics, annotated for clinical event accuracy, and then reported to the Medical Director(s), OMD Director of Clinical Affairs, and relevant agency CQI personnel to then be forwarded to the frontline clinical personnel actually performing the care analyzed. This feedback is essential in reinforcing excellent care provision and helping individuals make desirable modifications for future resuscitations. Attempted resuscitations are formally annotated, and reviews are returned to CQI personnel typically within 72-96 hours to forward to front-line credentialed personnel.

The EMS system has shown abilities to produce approximately 30-40+% neurologically intact survival among victims experiencing a citizen witnessed, citizen CPR initiated, and EMS discovered shockable cardiac rhythm upon their arrival. While very good in its impact upon cardiac arrest survival, the MCB/OMD has stated a system goal of achieving 50%+ survival in the same patient types in both metropolitan Oklahoma City and Tulsa, thus the program's "50/50" description and our endless enthusiasm to achieve this goal in a multi-year progression program. See Attachment A – 2017 Cardiac Arrest Report. The 2018 Cardiac Arrest Report is being completed at the time of this Annual Report and will be posted on the MCB/OMD website ahead of next year's Annual Report.

Coordinated Continuing Education – Prior to July 2009, OMD did not have consistent interaction and oversight of continuing education in the EMS system. The results, without a hub of coordination, have proven that agencies are pursuing disparate educational initiatives, resulting in educational message inconsistencies. Work has progressed and educational materials are more consistently being created and shared for multi-agency use. The results will promote consistency in educational messaging and consistency in timing of education material distribution throughout the EMS system, thereby promoting better integration of treatment plans between fire-based and EMSA-based EMS professionals. Multiple OMD-produced educational videos are also accessible on the okctulomd.com website.

EMS Professional Credentialing Testing – OMD Directors, with oversight by the Medical Director, continued the practice of verification of clinical skills performance and knowledge base testing of all professionals on a biannual basis. Continued updating of all personnel credentialing written examinations was performed with direct involvement of the Medical Director(s). A computer-based testing platform allows for more efficient testing access and completion for EMS professionals and OMD professionals alike.

EMS System Promotion – Metropolitan Oklahoma City and Tulsa is blessed with the multitude of dedicated EMS professionals in its EMS system. Dr. Goodloe and Dr. Knoles, with endorsement by the MCB, have continued a purposeful plan to better recognize the achievements of these EMS professionals. Academic writing, system-based research with outcomes presentations at scientific assemblies and acceptance of EMS conference speaking invitations are routinely conducted to promote this fine EMS system. The cumulative results advance the interests of patients, EMS professionals, and the cities within the service area. Specific actions in this realm included:

Indiana Emergency Response Conference (Goodloe)
Anaphylaxis & EMS: Recognizing Risk & Targeting Treatment

Hillcrest Medical Center Fall CME Symposium (Goodloe)
Termination of Cardiac Arrest – Do We Know When to Say When?

EMS State of the Science Florida/"A Gathering of Seagles" (Goodloe)
Active Compression-Decompression CPR
MONA Goes LISA – The Fine Art of EMS STEMI Management
Challenging EMS Stroke Assessment Scales
Alternative Motives: Destinations Other Than Traditional Hospital-Based EDs

National Association of EMS Physicians 2019 Annual Meeting (Goodloe)
Advanced Topics in Medical Direction Pre-Conference
Mission Task Times – Analysis and Best Practices

EMS State of the Science XXI/"A Gathering of Eagles" (Goodloe)
Balancing the Scales: 1-Stroke Handicaps & Mobile Cerebral Telepathy – Challenging, Choosing and Modifying Best Practices in CVA Management
Alternative Motives: Destinations Other Than Traditional Hospital-Based EDs

EMS Today 2019/The JEMS Conference (Goodloe, Knoles, Howerton)
Update from the Eagles Panel (Goodloe)
Redesigning EMS Airway Management Programs (Goodloe, Knoles, Howerton)
Pediatric Sepsis Panel – Recognition & Treatment (Knoles)

EMS Medical Director's Course 2019 – Norman (OOA) and Tulsa (OSU) (Goodloe)
Effective Medical Oversight in the Practice of EMS Medicine
Medico-Legal Liability Concerns in the Practice of EMS Medicine
Medical Director-Driven CQI Programs

Response Configurations – When a caller dials 911 with a medical complaint in metropolitan Oklahoma City or Tulsa, that complaint is coded into one of approximately 1,200 condition and acuity determinants established within the Medical Priority Dispatch System (MPDS), a proprietary medical dispatch software system. MPDS is the most widely utilized such system in developed countries around the world and is supported by evidenced-based medicine. MPDS has been adopted by the MCB in specifying clinically appropriate utilization of fire response resources, while attempting to keep as many resources available in service for highest acuity medical responses and non-medical roles (fire suppression, hazardous materials, specialized rescue, and training). The design is to promote the usually closest fire apparatus is available for response to the scene of particularly serious, time-sensitive medical emergencies, such as cardiac arrest, unconsciousness, or gunshot wounds to the chest or abdomen. The criteria utilized to determine whether fire response was selected has previously been agreed to by the affiliated fire departments. During this operational year, in scheduled and ongoing analysis, the Medical Director and OMD personnel conducted further review of each MPDS code for EMS system response configuration and priority for ambulance response.

Community Response Team (Tulsa) – OMD, represented by Duffy McAnallen, led and continued support of a consortium of public agencies in Tulsa to collaboratively form a multi-agency,

multi-disciplinary resource team to address individuals accessing the EMS system at notably high frequencies for non-acuity/non-medical needs. Tulsa Fire Department's EMS Office, Community Outreach Psychiatric Emergency Services (COPES), and Tulsa Police Department are integral parts of this program are now in active presence in Tulsa. Indications continue to reflect positive impact for the individuals served in this program and anecdotal reduction in accessing police/fire/EMS services for predominantly chronic mental health related conditions.

Research Leadership and Support – The Medical Director(s) and the OMD Directors led and participated in scientific studies throughout the year conducted by the EMS Section of the Department of Emergency Medicine at the University of Oklahoma School of Community Medicine and the Department of Pediatrics at the University of Oklahoma College of Medicine.

Airway Management Task Force – The Medical Director(s) and the entirety of OMD professionals convened and continue to support an ongoing task force to review relevant peer-reviewed, published scientific literature regarding optimal EMS airway management and translate those findings into equipment selection, education, training, and clinical logistics for airway management throughout the EMS System for Metropolitan Oklahoma City and Tulsa with the specific goal of optimizing abilities to achieve favorable oxygenation and ventilation of all patients served.

EMSA Electronic Health Records Availability to Emergency Department/Hospital-Based Medical Practitioners – MCB physicians, the Medical Director(s), and OMD professionals worked collaboratively throughout the operational year with EMSA's Jim Winham and Frank Gresh to increase the accountability of American Medical Response to provide timely patient care documentation in accordance with existing MCB policy. EMSA provided a new faxing component of reports and is working to implement full compatibility to transmit within hospital specific electronic medical record platforms (eg. EPIC). Further work was accomplished in a formal Lean/Six Sigma based team led by Dr. Goodloe, Matt Cox, and Health Wright (AMR), focused upon systemic review of current practices and identification of improvements for Hillcrest Medical Center. Multiple EMSA administrative leaders supported this effort, alongside AMR leadership and field paramedics were involved throughout the process. Success of this endeavor will be leveraged to help additional hospitals throughout FY19-20.

Regional Medical Oversight Team "Best Practices" and Efficiency Identification – The Medical Director(s) and all OMD professionals hosted the second Mid-America Symposium for EMS Medical Oversight in Tulsa, with participation by the EMS medical oversight teams from Wichita/Sedgwick County, Kansas (led by John M. Gallagher, MD, FACEP, FAEMS) and Johnson County, Kansas (led by Ryan Jacobson, MD, FACEP, FAEMS). This continues to be the first of its kind, team-oriented, medical oversight for EMS convocation and yielded outstanding efficiencies in protocol development, continuing education creation, and simulation testing practices. A third event is planned for the coming operational year with additional medical directors invited from Colorado Springs, CO and Kansas City, MO.

MCB/OMD Smart Device App – significant platform updates were achieved to allow smart device users an easier and richer interface with MCB/OMD resources, including all treatment protocols, CE videos, and announcements.

Handtevy System Smart Device App – MCB/OMD funded this app for utilization by all field personnel in the EMS system, allowing real-time medication dosing and equipment size selection assistance in time-sensitive situations, including pediatric cardiac arrest.

Directions for Operational & Fiscal Year 2019-2020

The upcoming year will be filled with continuation of the multitude of projects identified in this report as well as additional advancements and revisions to clinical standards of care. Cardiac arrest resuscitative care will continue to be a hallmark of intervention efforts over the coming year, with anticipation of continuing formal research into the early impacts of adding active compression-decompression CPR. We also anticipate field verification of a device that supports "heads up" CPR to further optimize cardio-cerebral perfusion in the sudden cardiac arrest patient.

Additional strategic planning, including regional EMS system medical oversight collaborations and benchmarking, will occur within the coming operational year to continue to build upon service to organizations comprising the EMS System for Metropolitan Oklahoma City and Tulsa, EMS professionals within those organizations, and the patients we collectively are honored and humbled to serve.

We anticipate adding a third medical oversight physician to the MCB/OMD team. This physician is a graduate of the OUDEM Emergency Medicine Residency and has just completed the EMS fellowship at University of New Mexico, one of the highest regarded such fellowships in the United States. We anticipate this physician will allow us to develop an EMS fellowship at the University of Oklahoma School of Community Medicine, further advancing the capabilities of our EMS system and promoting its achievements.

In sum, this past operational and fiscal year has seen tremendous energies and enthusiasms evident from MCB/OMD. Similar commitments and enthusiasms have been mirrored by many of the EMS leaders and liaisons in affiliated agencies. Continued effective working relationships between affiliated agencies and MCB/OMD have resulted in the two achievements that matter most:

1 – High quality EMS clinical care for the spectrum of acute illness and injury patients.

2 – Determined, agency-neutral support for the EMS professionals providing high quality EMS clinical care.

During the 2010-2011 operational year, the Medical Director adopted the following philosophy of his Seattle counterpart:

On Achieving Success

"There is no 'silver bullet.' There is just hard work."
Michael Keyes Copass, MD.

This sentiment continues to be found in prominent position upon every desk at which work is performed by the Medical Director(s), the OMD Directors, and the Executive Assistant to the Medical Director. It will remain in such places throughout Dr. Goodloe's tenure as the Medical Director, serving as a constantly visible reminder of the expectations in meeting the incredible trust afforded to MCB/OMD by the patients we serve.

Hard work, focused enthusiasm, and the relentless pursuit of optimal clinical care and outcomes continue to advance both the science and art of EMS medicine in the EMS System for Metropolitan Oklahoma City and Tulsa. We again enter the coming year, Operational & Fiscal Year July 2019 – June 2020, convinced it will be the finest in the history of the MCB/OMD.

Attachment “A”

2017 Cardiac Arrest Report

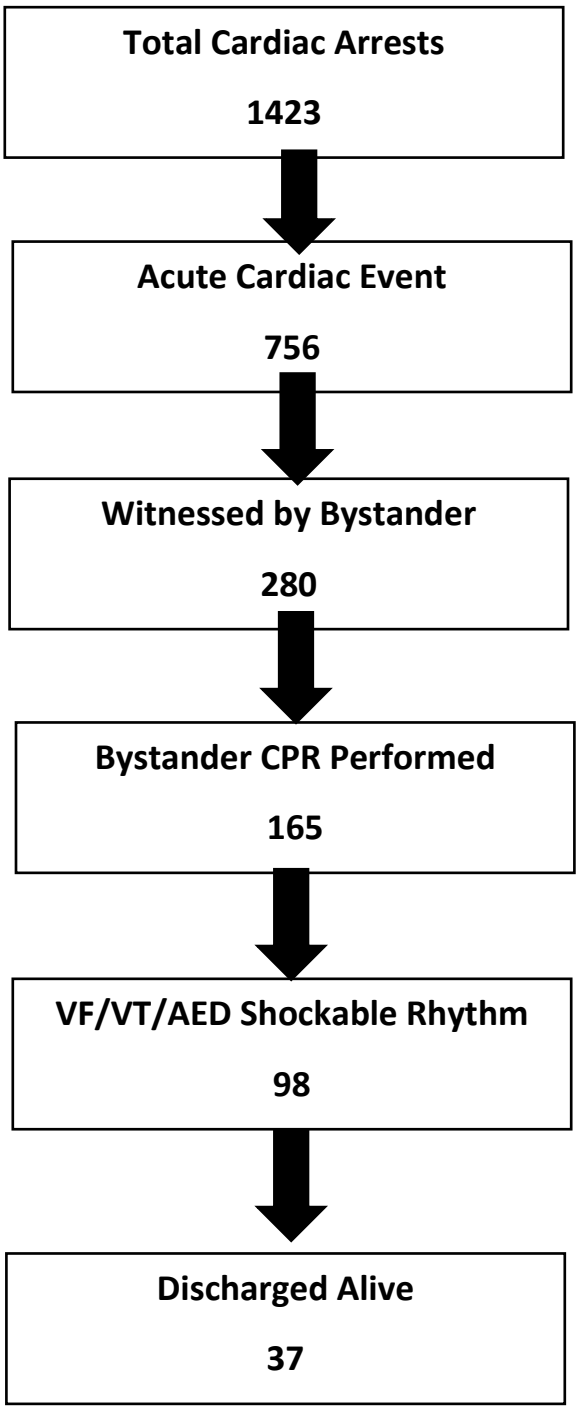
2017

2017 Cardiac Arrest Summary and Outcomes

CARDIAC ARREST ANNUAL REPORT
COX, MATT

OFFICE OF THE MEDICAL DIRECTOR | 1417 N Lansing Ave Tulsa, OK 74106

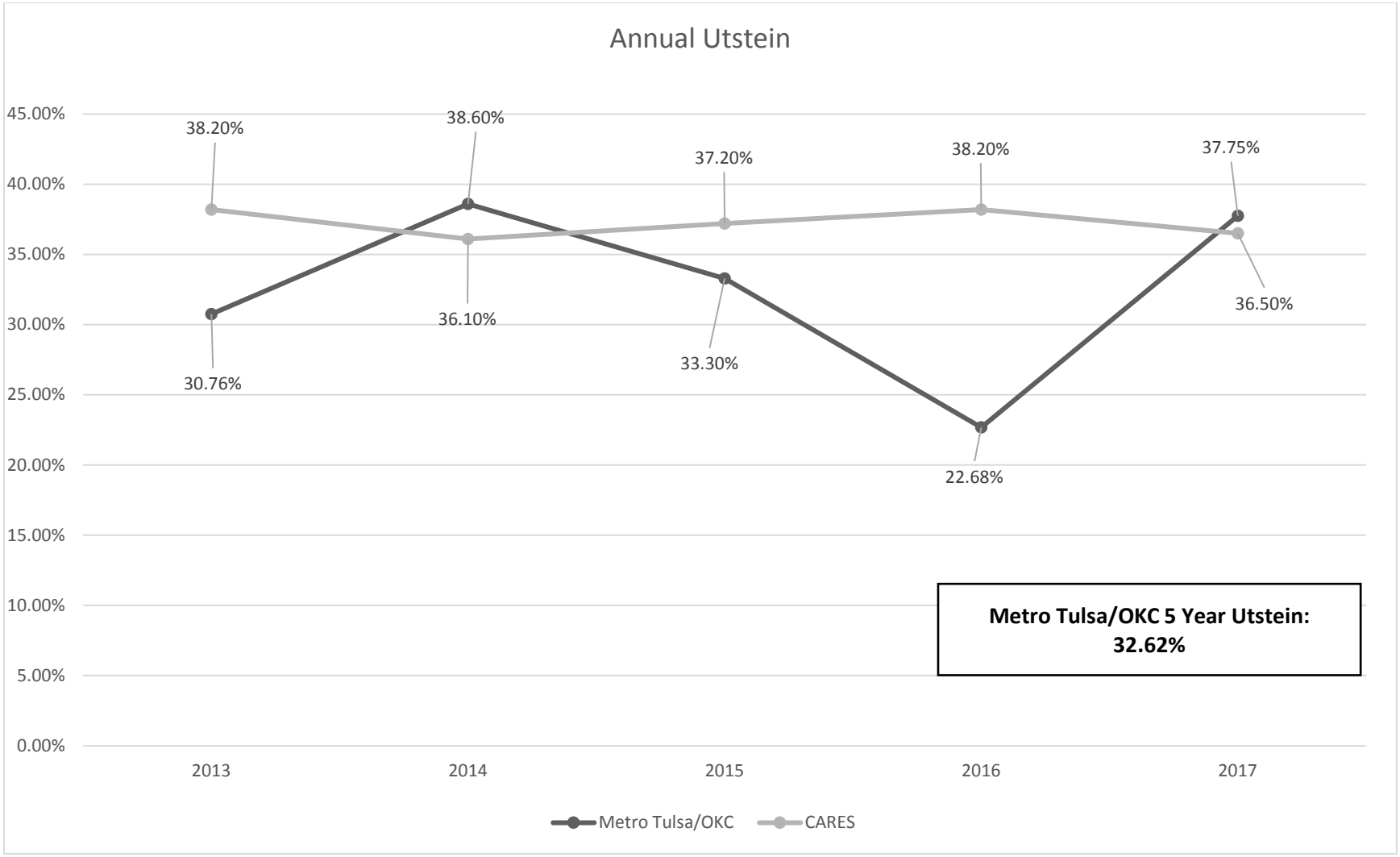
2017 Utstein



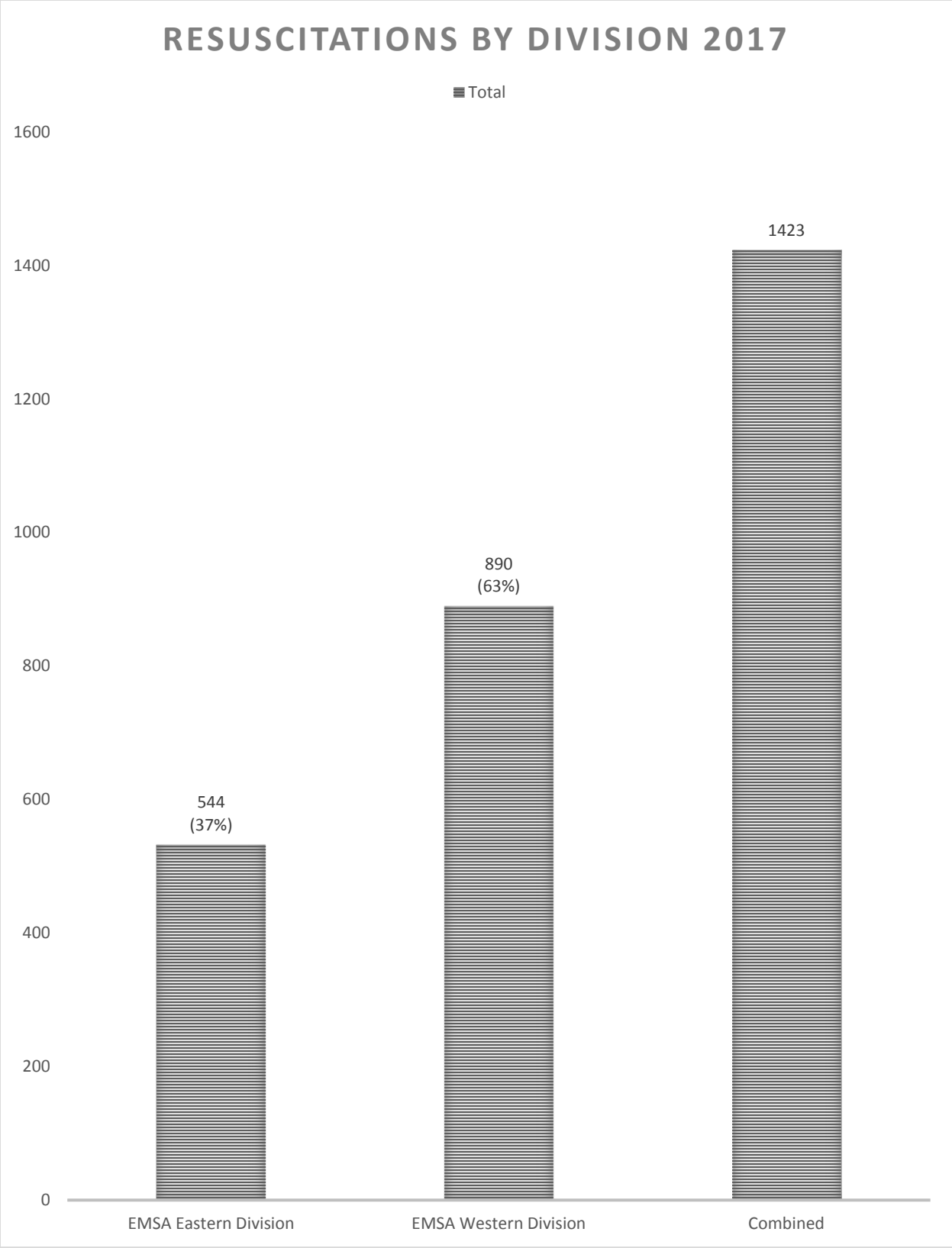
2017 Utstein:	**37.75%**

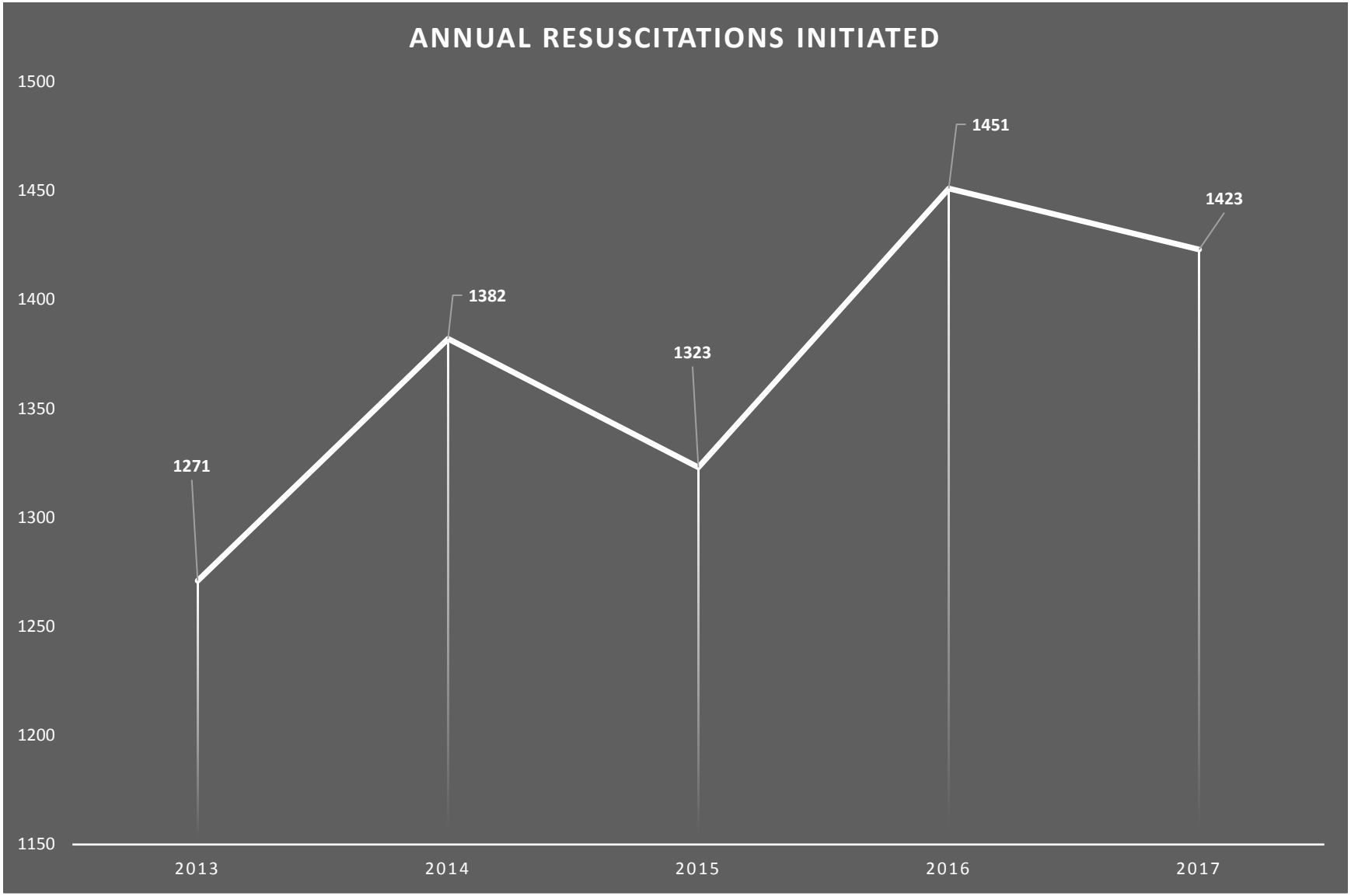
Utstein Neurologic Score Totals

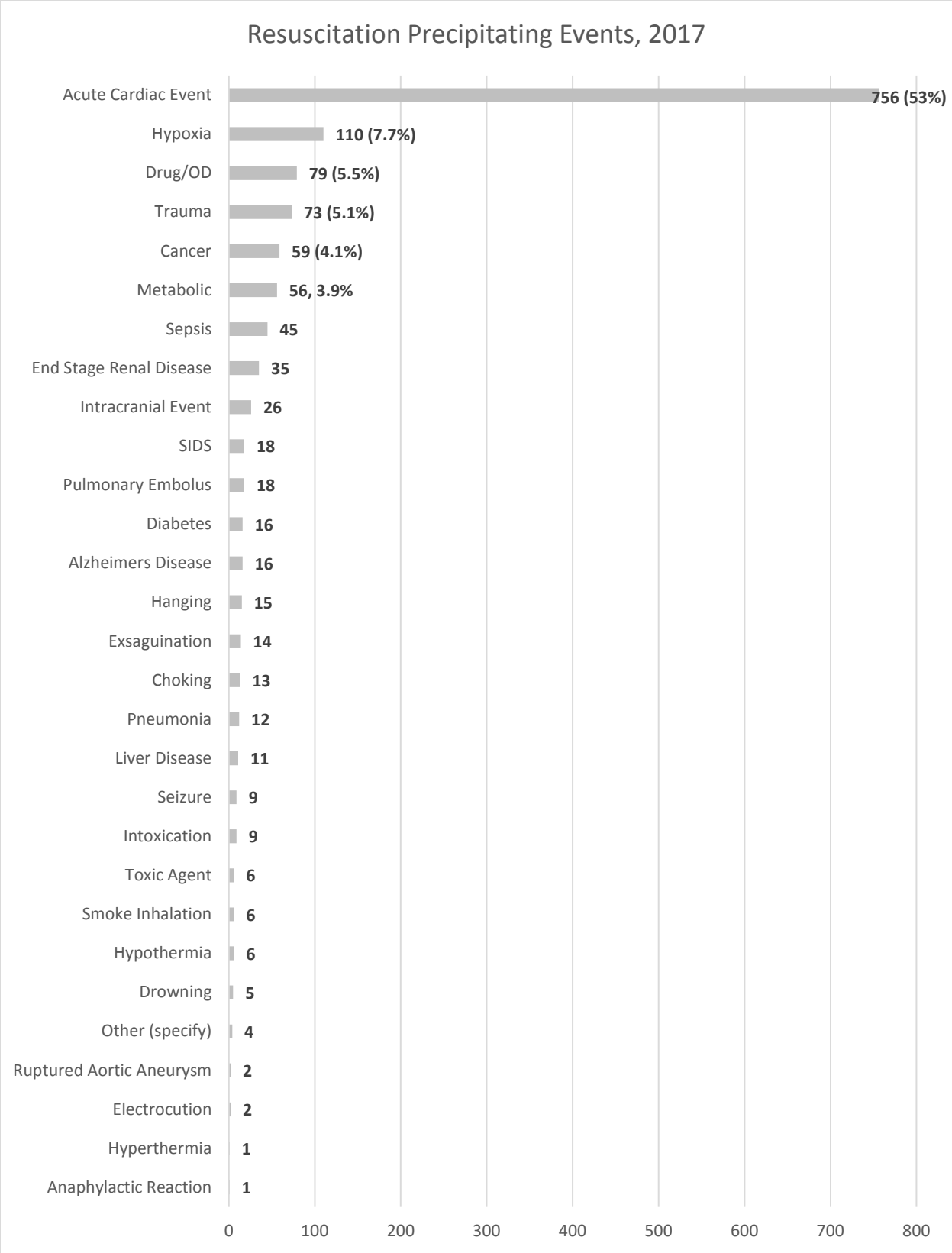
CPC 1:	***34***
CPC 2:	***0***
CPC 3:	***2***
CPC 4:	***1***

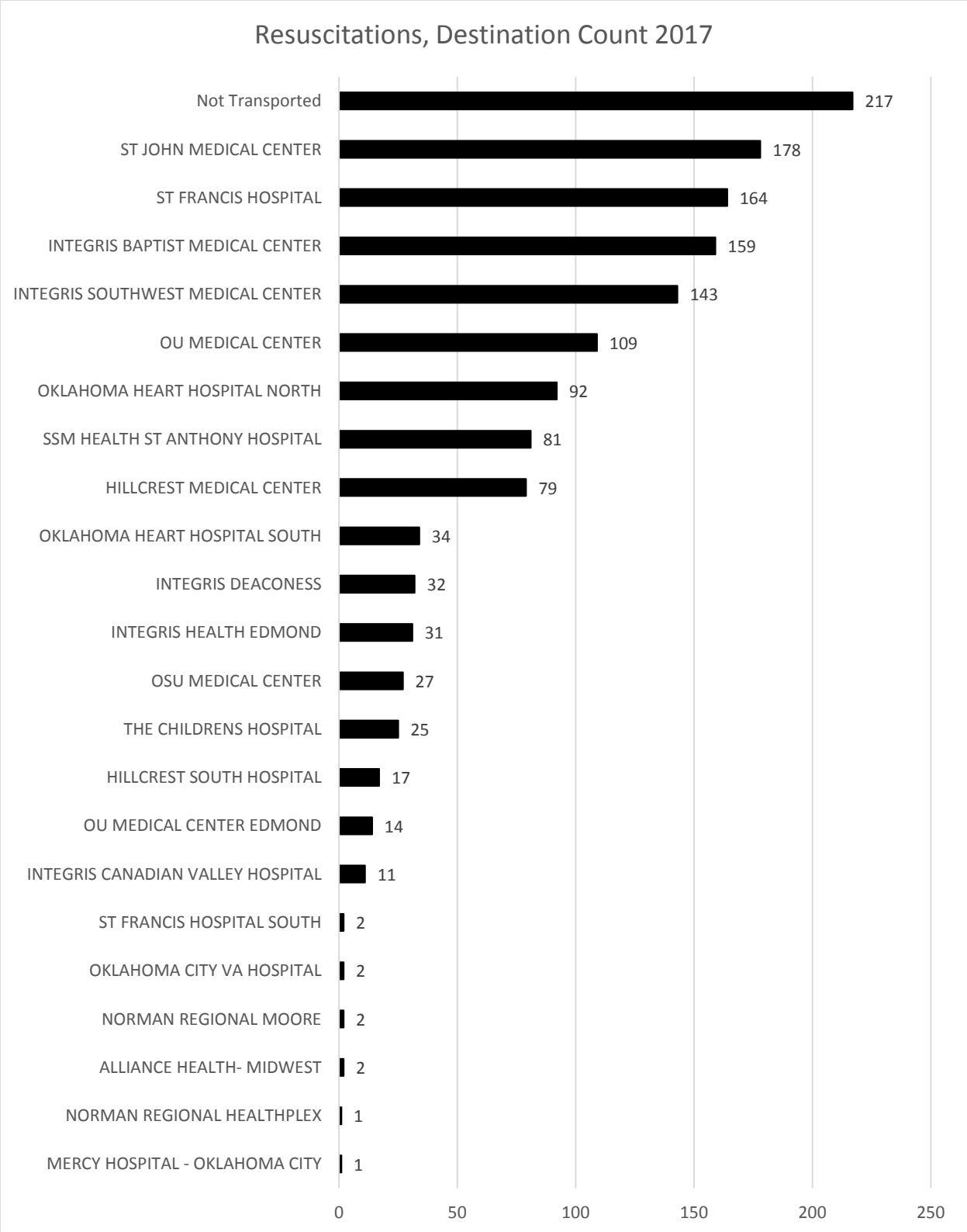


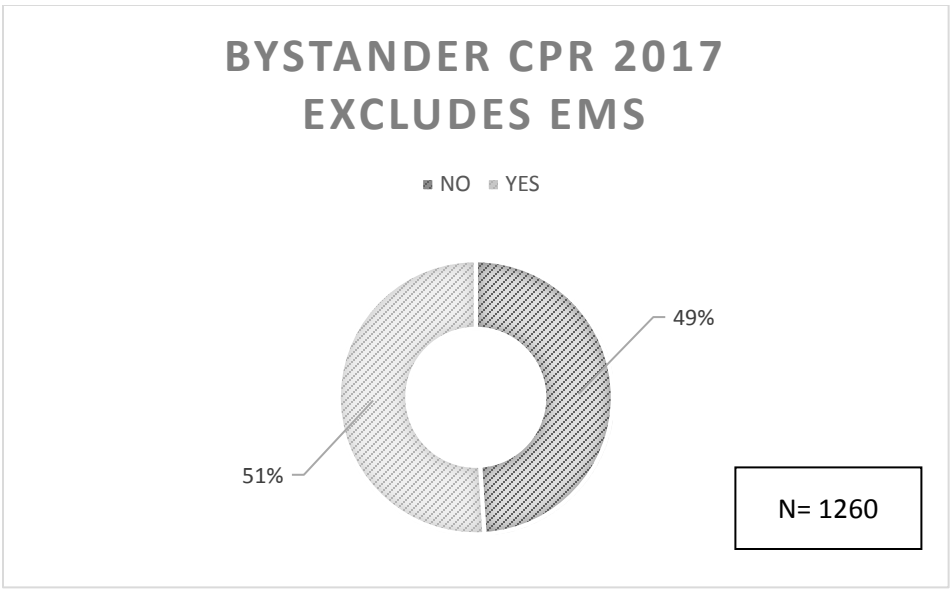
*CARES Registry Utstein Data Obtained Via Annual Reports Available, https://mycares.net/sitepages/data.jsp


RESUSCITATIONS BY DIVISION 2017
Total
1600
1400
1200
1000
800
600
400
200
0
544
(37%)
890
(63%)
1423
EMSA Eastern Division
EMSA Western Division
Combined

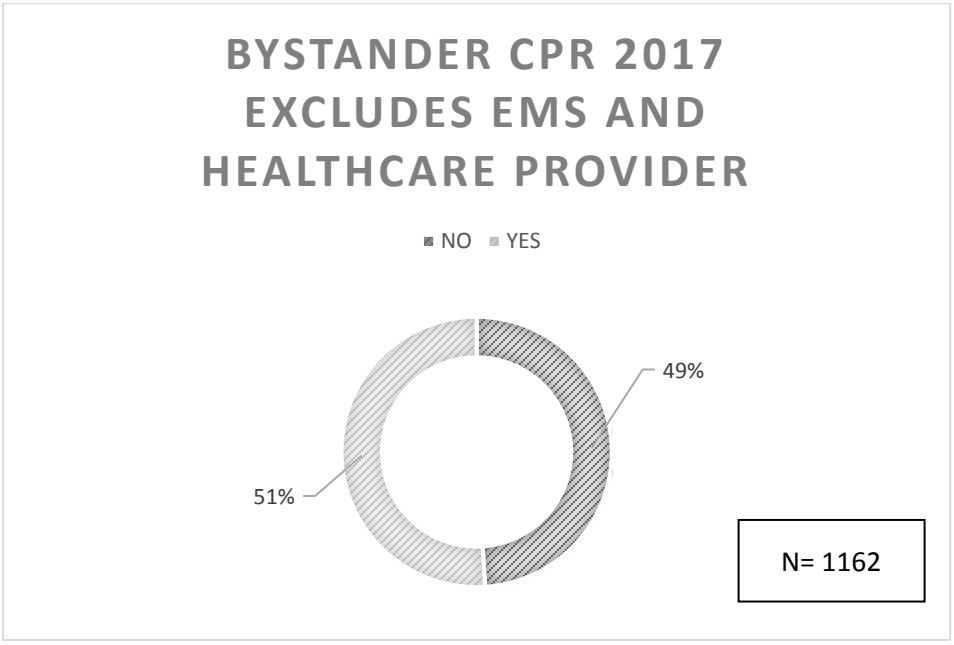

ANNUAL RESUSCITATIONS INITIATED
1500
1450
1400
1350
1300
1250
1200
1150
1271
1382
1323
1451
1423
2013
2014
2015
2016
2017


Resuscitation Precipitating Events, 2017
Acute Cardiac Event
Hypoxia
Drug/OD
Trauma
Cancer
Metabolic
Sepsis
End Stage Renal Disease
Intracranial Event
SIDS
Pulmonary Embolus
Diabetes
Alzheimers Disease
Hanging
Exsaguination
Choking
Pneumonia
Liver Disease
Seizure
Intoxication
Toxic Agent
Smoke Inhalation
Hypothermia
Drowning
Other (specify)
Ruptured Aortic Aneurysm
Electrocution
Hyperthermia
Anaphylactic Reaction
756 (53%)
110 (7.7%)
79 (5.5%)
73 (5.1%)
59 (4.1%)
56, 3.9%
45
35
26
18
18
16
16
15
14
13
12
11
9
9
6
6
6
5
4
2
2
1
1
0
100
200
300
400
500
600
700
800


Resuscitations, Destination Count 2017
Not Transported 217
ST JOHN MEDICAL CENTER 178
ST FRANCIS HOSPITAL 164
INTEGRIS BAPTIST MEDICAL CENTER 159
INTEGRIS SOUTHWEST MEDICAL CENTER 143
OU MEDICAL CENTER 109
OKLAHOMA HEART HOSPITAL NORTH 92
SSM HEALTH ST ANTHONY HOSPITAL 81
HILLCREST MEDICAL CENTER 79
OKLAHOMA HEART HOSPITAL SOUTH 34
INTEGRIS DEACONESS 32
INTEGRIS HEALTH EDMOND 31
OSU MEDICAL CENTER 27
THE CHILDRENS HOSPITAL 25
HILLCREST SOUTH HOSPITAL 17
OU MEDICAL CENTER EDMOND 14
INTEGRIS CANADIAN VALLEY HOSPITAL 11
ST FRANCIS HOSPITAL SOUTH 2
OKLAHOMA CITY VA HOSPITAL 2
NORMAN REGIONAL MOORE 2
ALLIANCE HEALTH- MIDWEST 2
NORMAN REGIONAL HEALTHPLEX 1
MERCY HOSPITAL - OKLAHOMA CITY 1
0
50
100
150
200
250

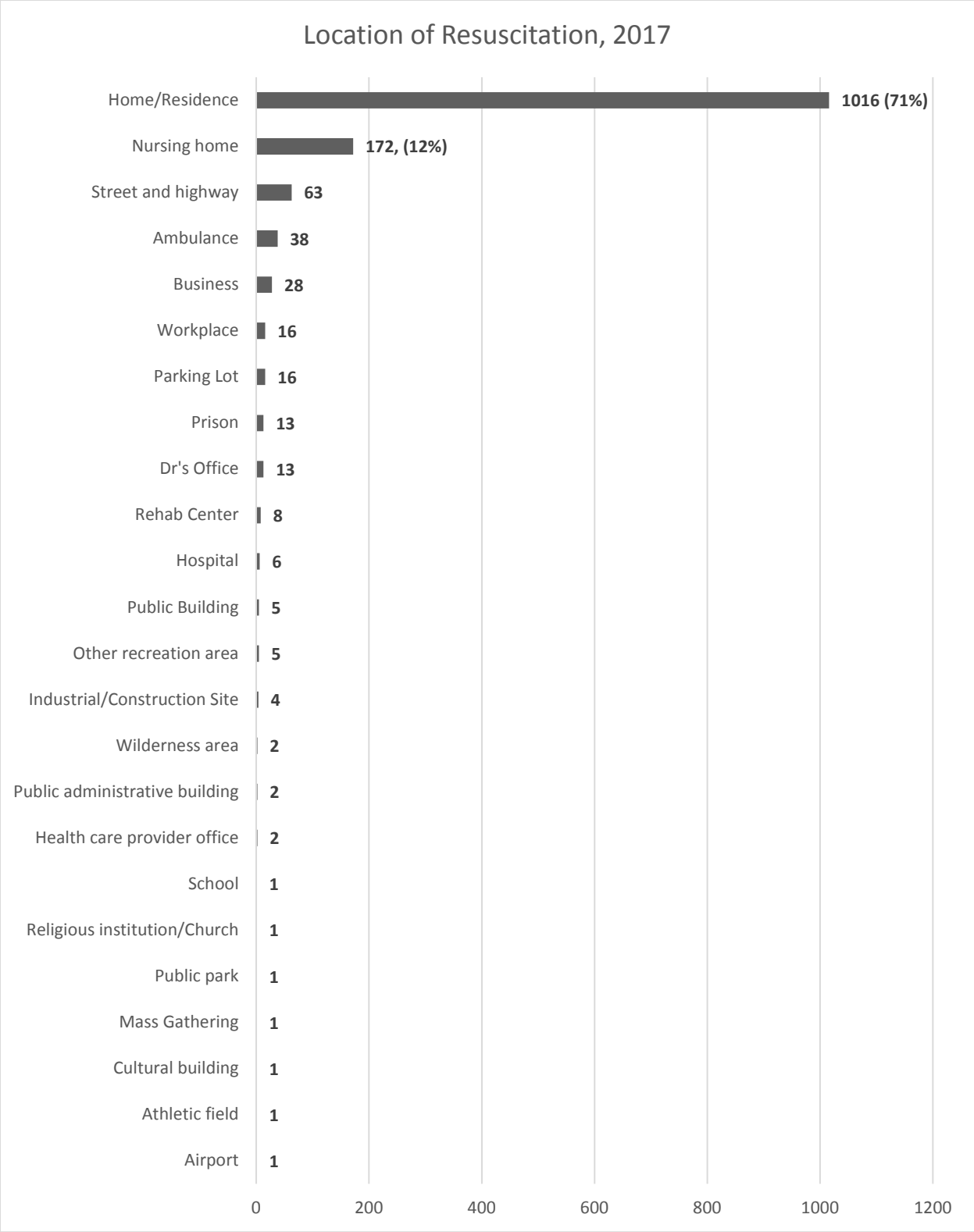


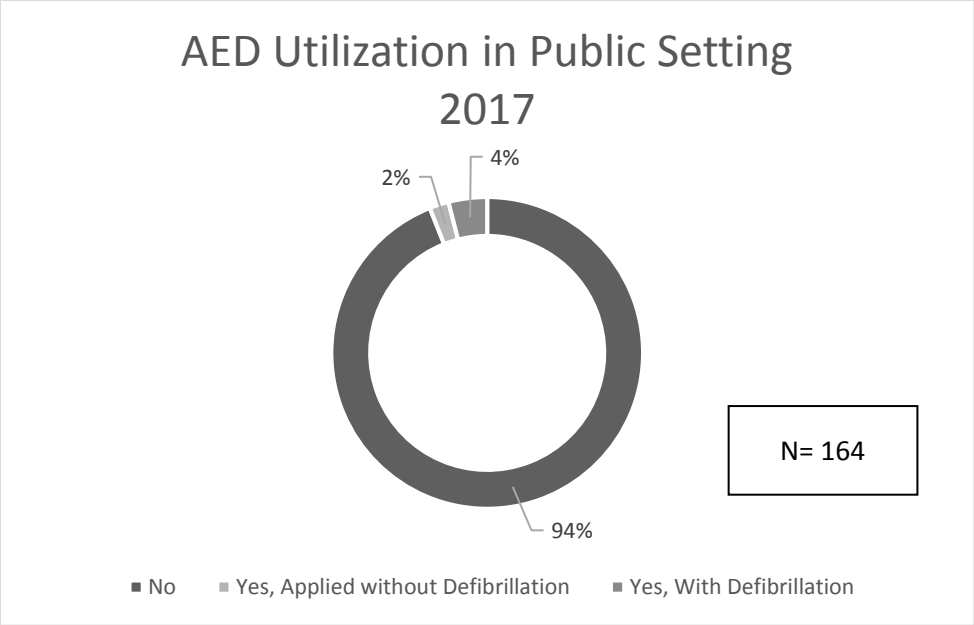
*Excludes Incidents where EMS witnessed the cardiac arrest.



*Excludes incidents where EMS witnessed the cardiac arrest

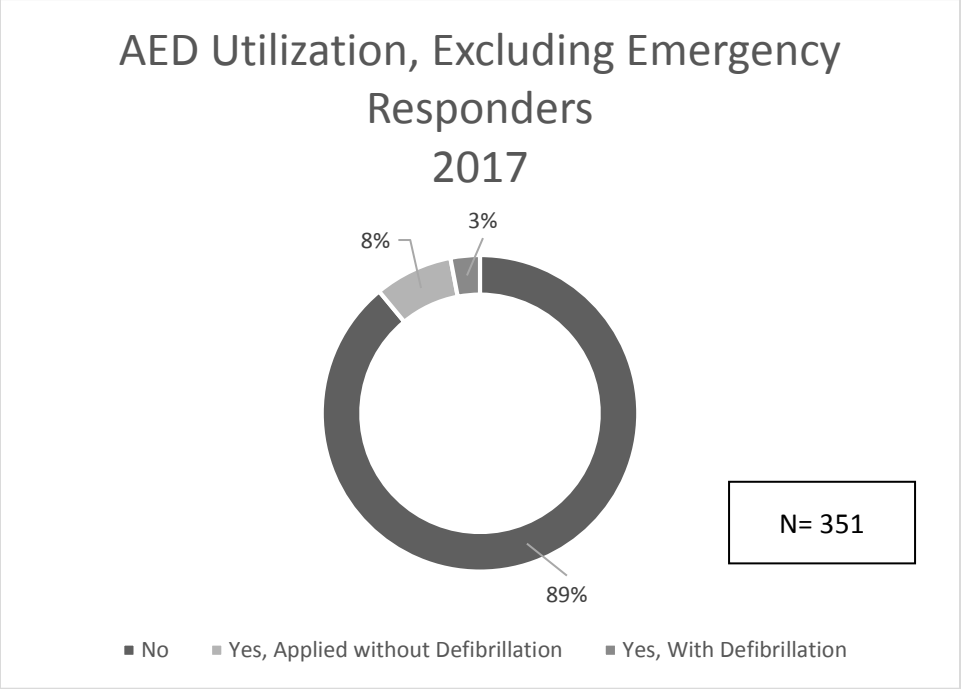
**Excludes incidents where bystander CPR was performed by a healthcare provider (i.e. Nursing Homes, Clinics, etc.)


Location of Resuscitation, 2017
Home/Residence
1016 (71%)
Nursing home
172, (12%)
Street and highway
63
Ambulance
38
Business
28
Workplace
16
Parking Lot
16
Prison
13
Dr's Office
13
Rehab Center
8
Hospital
6
Public Building
5
Other recreation area
5
Industrial/Construction Site
4
Wilderness area
2
Public administrative building
2
Health care provider office
2
School
1
Religious institution/Church
1
Public park
1
Mass Gathering
1
Cultural building
1
Athletic field
1
Airport
1
0
200
400
600
800
1000
1200



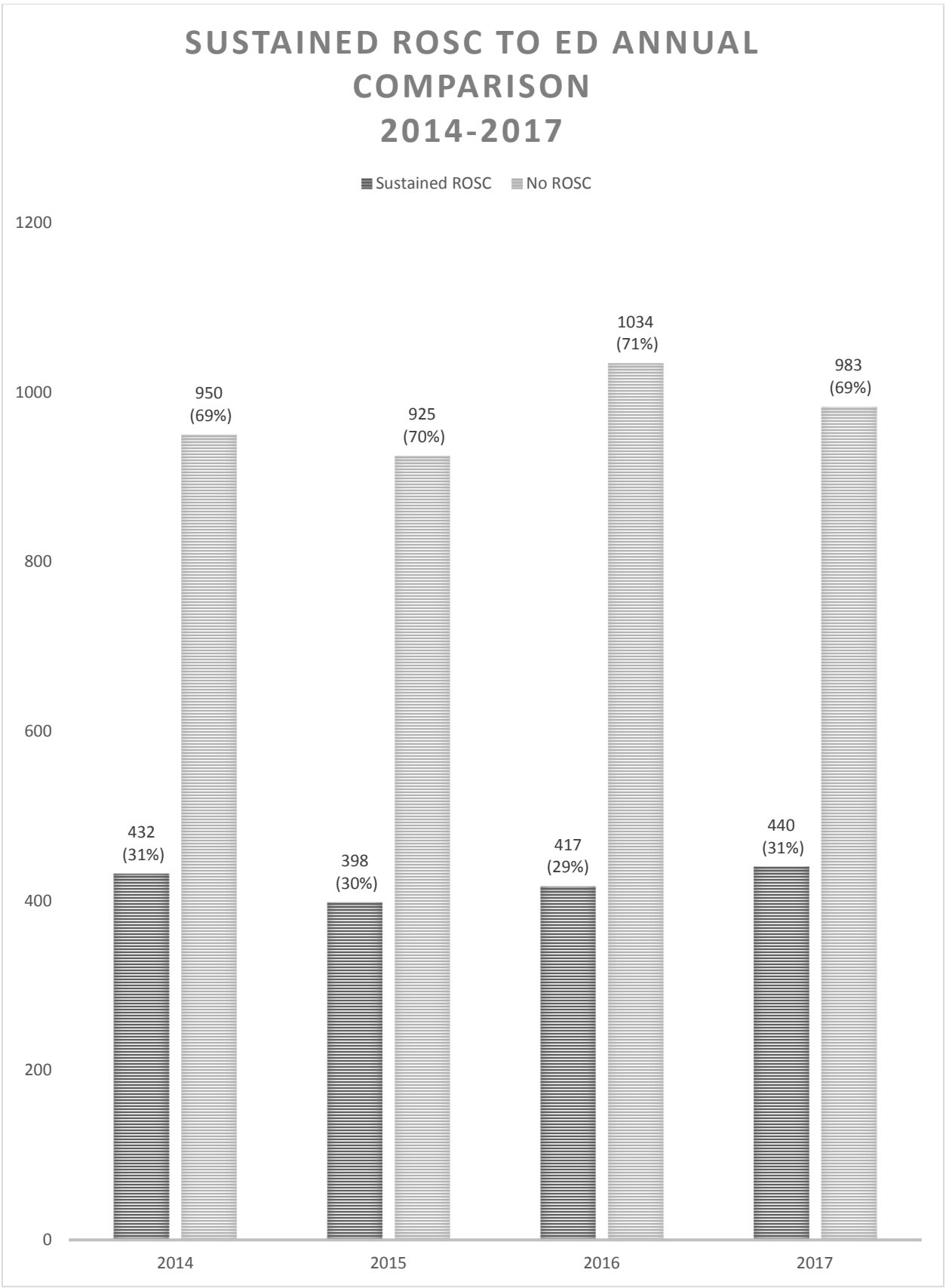
*Excludes utilization by EMS, Healthcare Providers (Clinics, Nursing Homes)

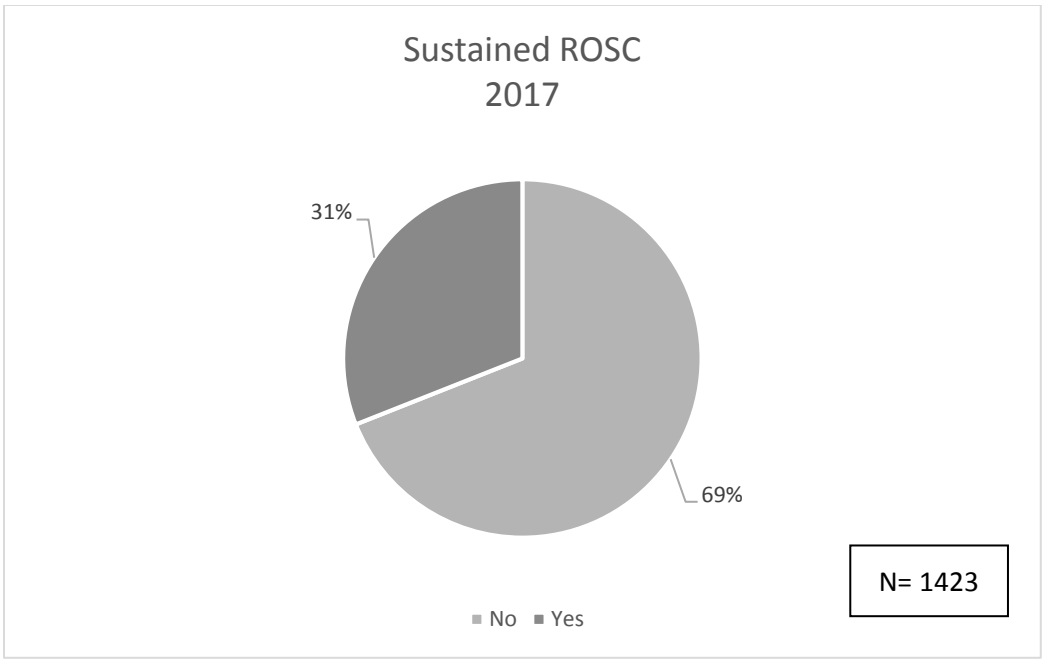
**Includes only incidents in Public Setting (i.e. excludes ambulance, nursing home, clinics, etc.)

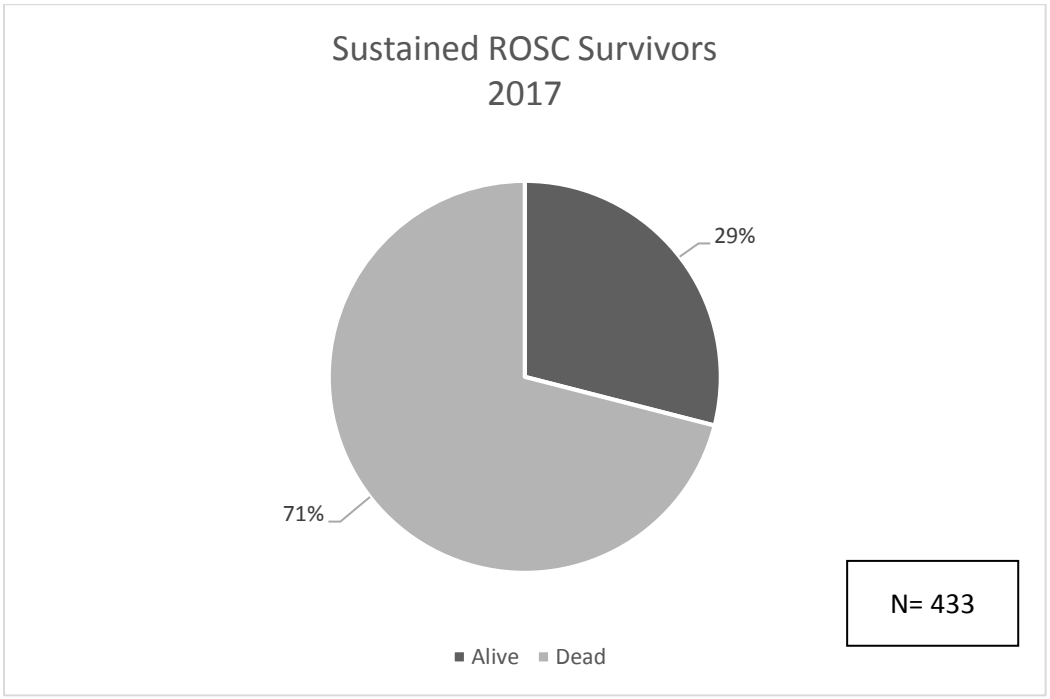


*Excludes Emergency Responders (i.e. System Credentialed Providers)

**Excludes incidents that occurred in Ambulance Setting or Private Residence (i.e. No AED availability)

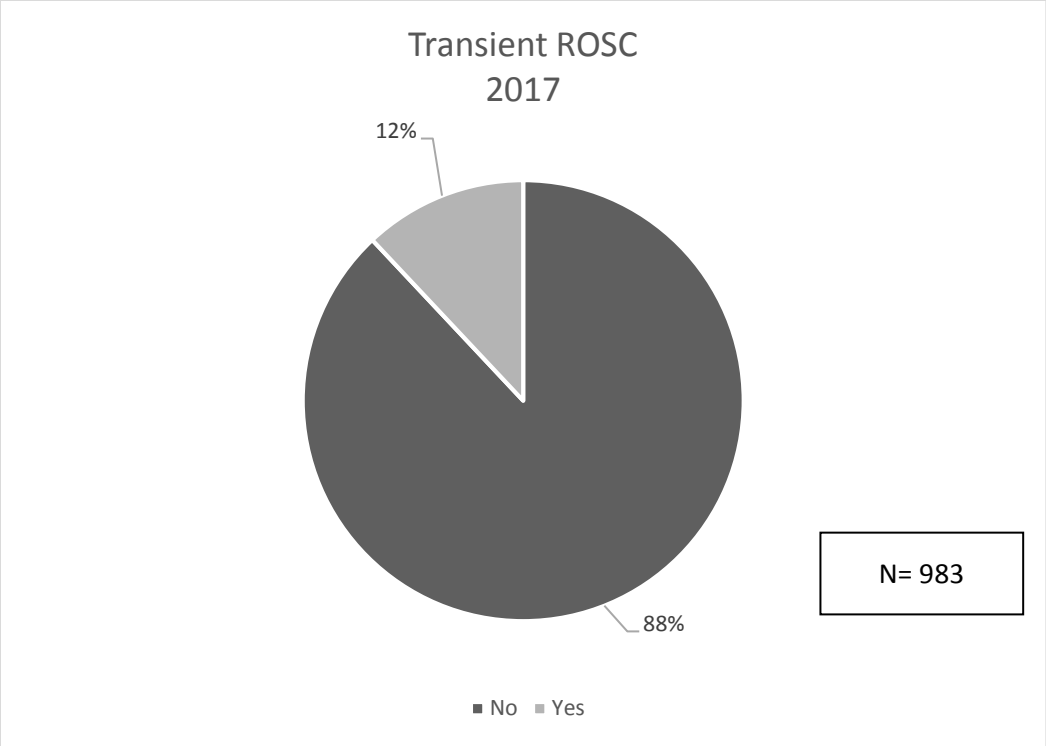

SUSTAINED ROSC TO ED ANNUAL COMPARISON
2014-2017
Sustained ROSC
No ROSC
1200
1000
800
600
400
200
0
432 (31%)
950 (69%)
398 (30%)
925 (70%)
417 (29%)
1034 (71%)
440 (31%)
983 (69%)
2014
2015
2016
2017

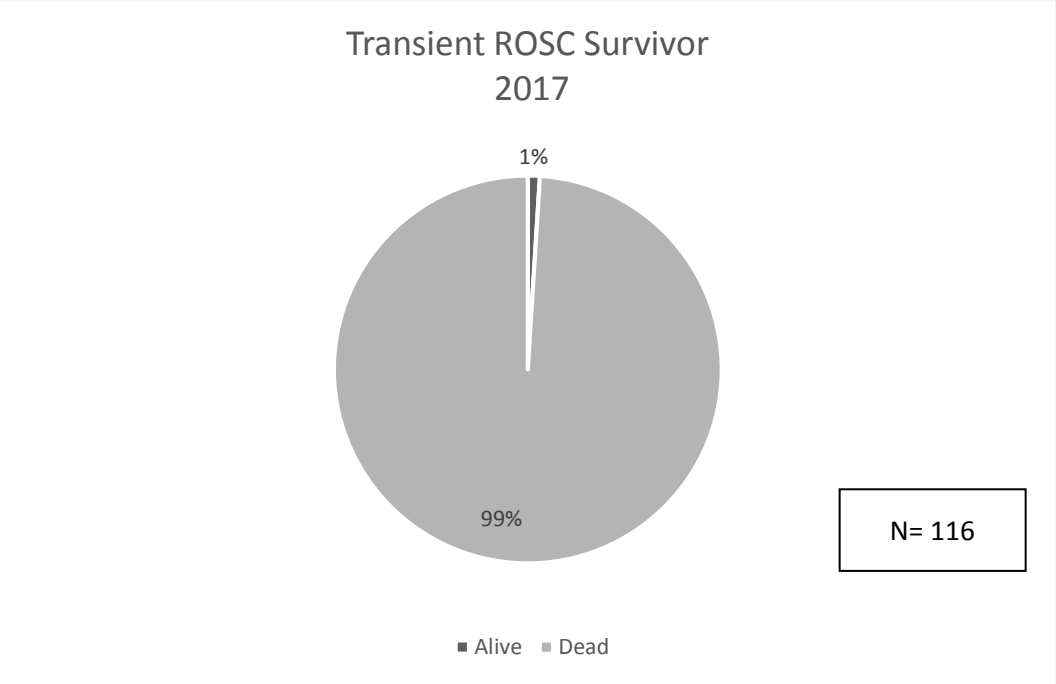




*ROSC is defined as any cardiac arrest patient that was delivered to the receiving facility with ROSC maintained, whether transient ROSC occurred or not.

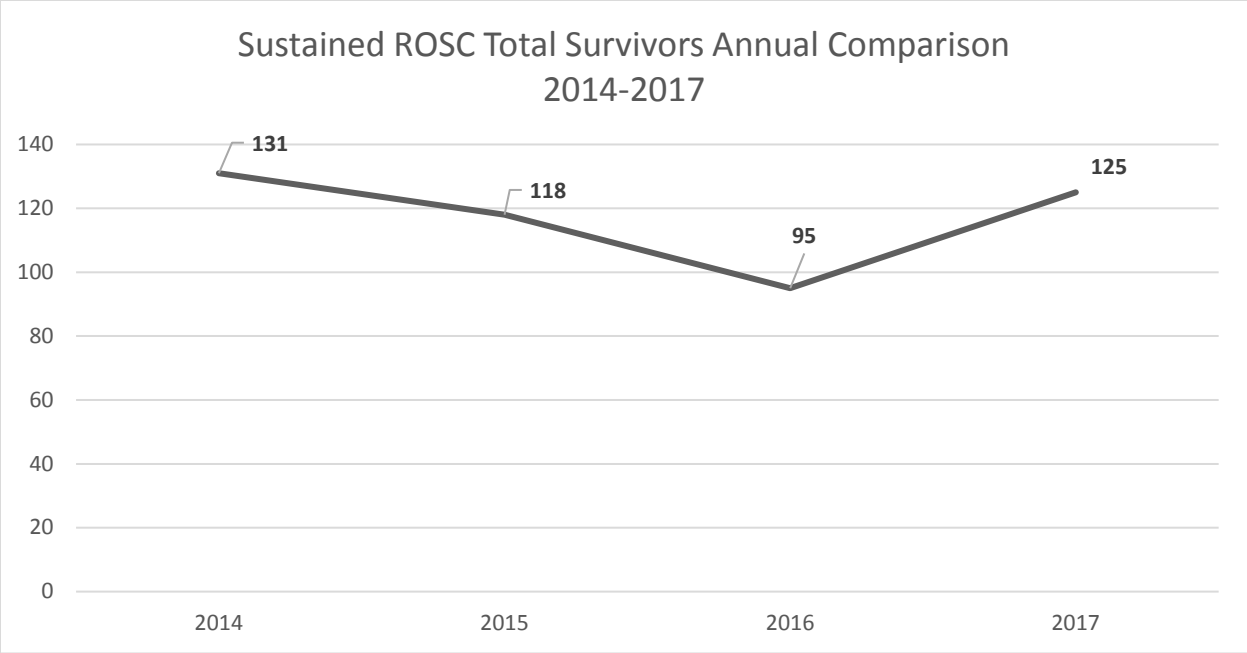
**29% of ROSC patients survived from hospital admit to discharge.

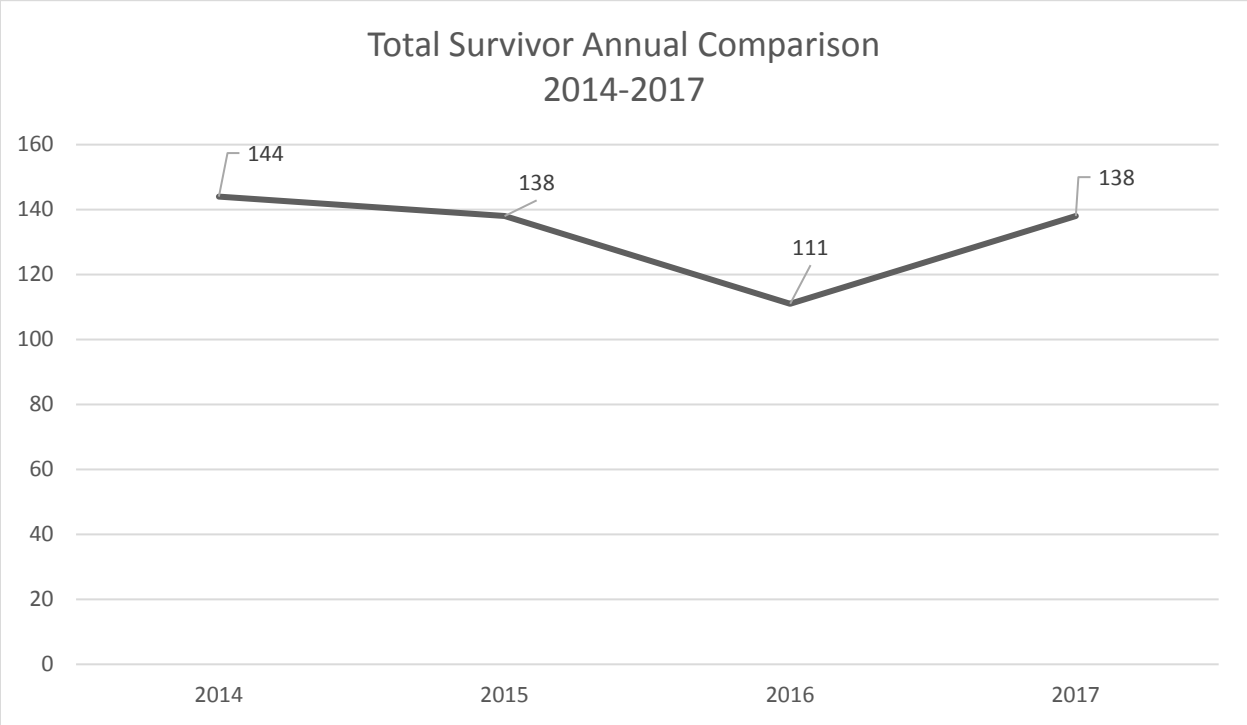


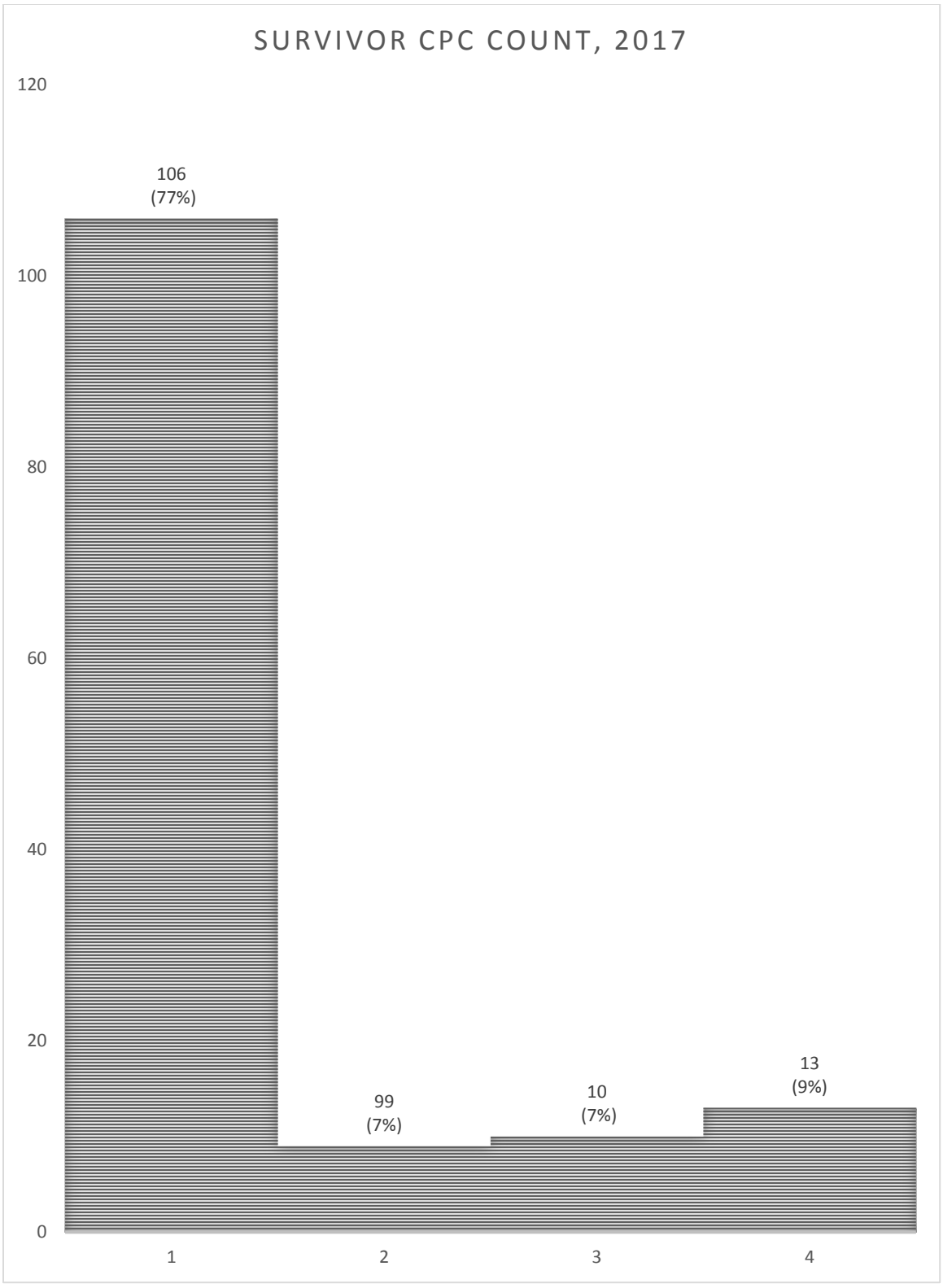


*Transient ROSC is Defined as any cardiac arrest patient that was a brief period of ROSC achieved, however was not delivered to the receiving facility with ROSC maintained.

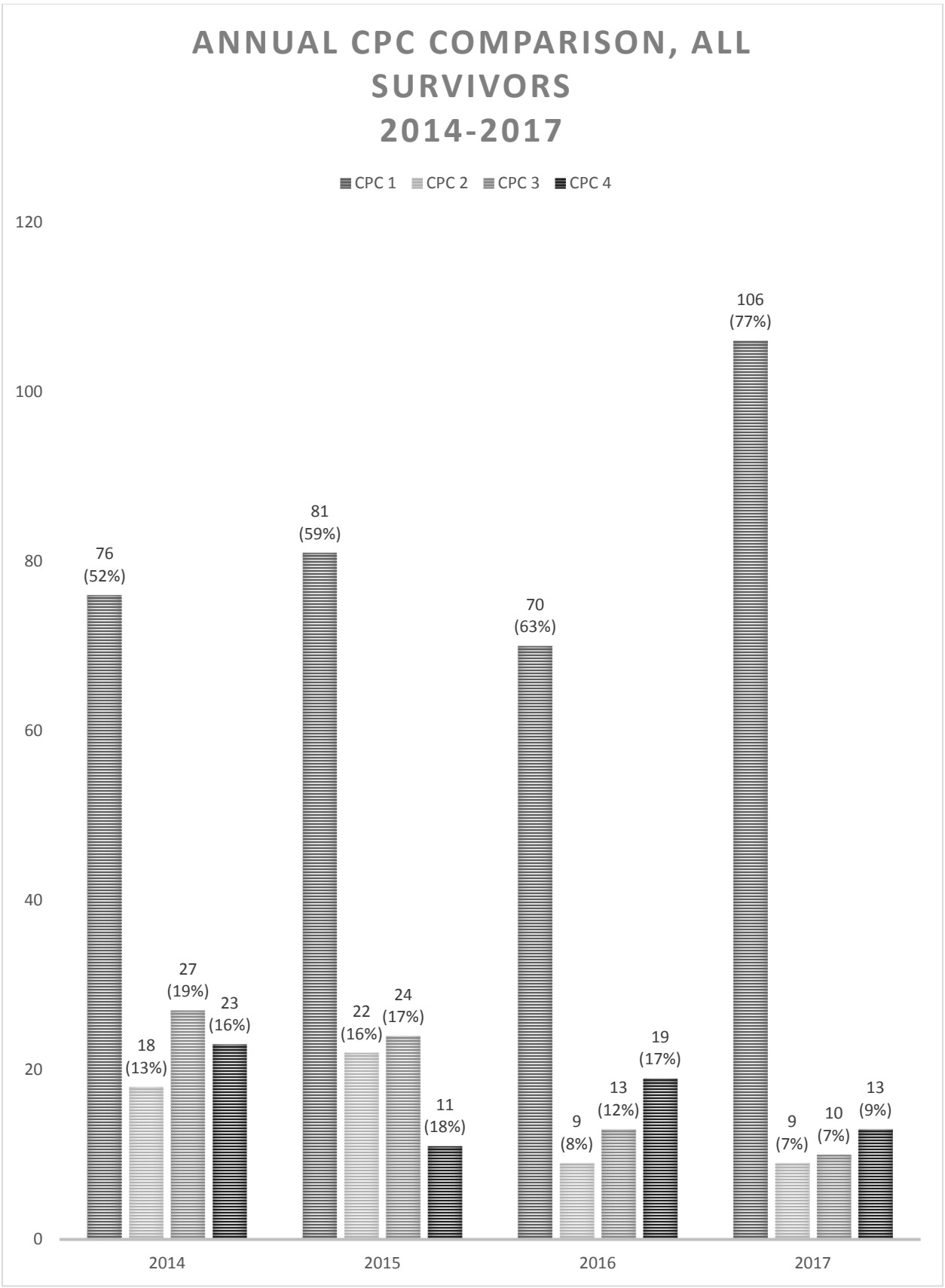
** 1% of transient ROSC patients survived from hospital admit to discharge.

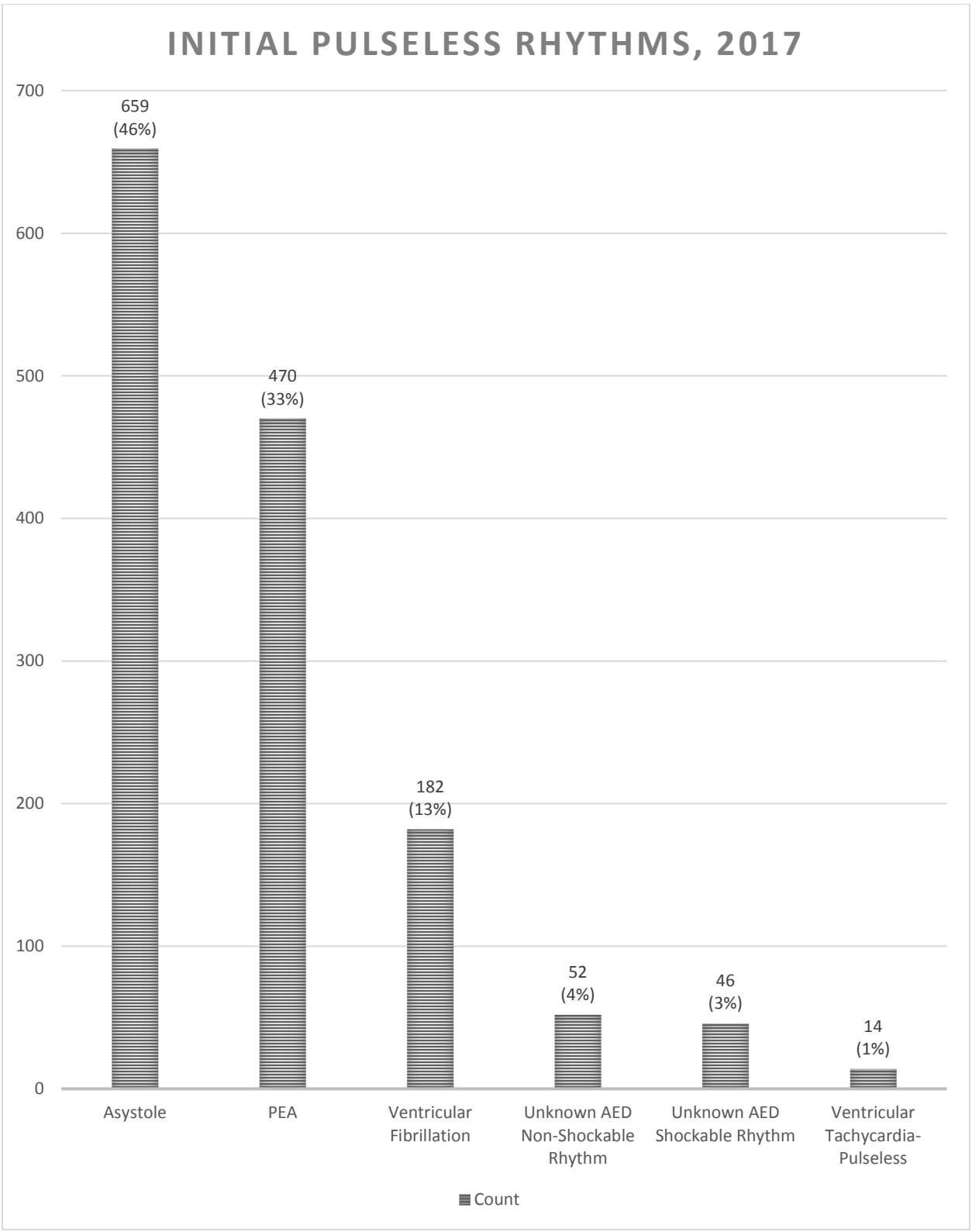

Sustained ROSC Total Survivors Annual Comparison
2014-2017
140
120
100
80
60
40
20
0
131
118
95
125
2014
2015
2016
2017


Total Survivor Annual Comparison
2014-2017
160
140
120
100
80
60
40
20
0
144
138
111
138
2014
2015
2016
2017



*Includes all cardiac arrest patients for year 2017


ANNUAL CPC COMPARISON, ALL SURVIVORS 2014-2017
CPC 1
CPC 2
CPC 3
CPC 4
120
100
80
60
40
20
0
76 (52%)
18 (13%)
27 (19%)
23 (16%)
81 (59%)
22 (16%)
24 (17%)
11 (18%)
70 (63%)
9 (8%)
13 (12%)
19 (17%)
106 (77%)
9 (7%)
10 (7%)
13 (9%)
2014
2015
2016
2017


INITIAL PULSELESS RHYTHMS, 2017
700
600
500
400
300
200
100
0
659
(46%)
470
(33%)
182
(13%)
52
(4%)
46
(3%)
14
(1%)
Asystole
PEA
Ventricular Fibrillation
Unknown AED Non-Shockable Rhythm
Unknown AED Shockable Rhythm
Ventricular Tachycardia-Pulseless
Count

Initial Pulseless Rhythm