

17th Annual
Delaware Emergency Medical
Services Oversight Council Report

2016

DEM SOC

The Honorable Jack Markell, Governor





DELAWARE EMERGENCY MEDICAL SERVICES OVERSIGHT COUNCIL

April 15, 2017



To the Citizens of Delaware:

On behalf of Governor John Carney, as the Chair of the Delaware Emergency Medical Services Oversight Council (DEMSOC), I am pleased to present the 2016 DEMSOC Annual Report.

DEMSOC is charged with the responsibility of monitoring Delaware's Emergency Medical Services (EMS) system to ensure that all elements of the system are functioning in a coordinated, effective, and efficient manner. The efforts of the EMS system are focused on improving the quality of life for the citizens of and visitors to Delaware by reducing morbidity and mortality rates and to ensure the delivery of high quality emergency care services. The continuous development and improvement of Delaware's EMS System is a high priority for DEMSOC's membership that includes professionals from multiple EMS provider agencies, representatives from agencies that frequently work with and support EMS, and private citizens knowledgeable in the delivery of EMS care. The Council meets quarterly to address current issues and promotes workable solutions to those issues.

The purpose of this year's DEMSOC report is to inform others about Delaware's Emergency Medical Services (EMS) system and heighten awareness of the issues that most directly affect the delivery of EMS service and the quality of EMS patient care. Throughout the year we have witnessed great achievements in the emergency services community and this report attempts to capture those successes as well as to build the framework for addressing system challenges, current and anticipated.

To support continued improvement in Delaware's EMS System, DEMSOC conducts a review every five years and the 2016 review was performed by the National Highway Traffic Safety Administration (NHTSA). This review revealed that Delaware's EMS system continues to make improvements, but more work remains to be done to keep the system operating at the highest level possible. The recommendations from the 2016 review can be found in the year's report and they will be utilized for future system improvements moving forward.

As you review this year's annual report, I encourage you to use the information provided to increase your awareness of the important role of Delaware's EMS system and ask for your continued support for the dedicated professionals and volunteers that work hard to ensure that our EMS system remains a leader among its peers.

Respectfully yours,

Robert A. Stuart, Chair
Director, Sussex County EMS



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Introduction

The Delaware Emergency Medical Services Oversight Council (DEMSOC) annual report represents an overview of the available information regarding the progress and state of Delaware's EMS system. The inaugural report published in 2000, enabled DEMSOC to establish a baseline from which to measure the impact of changes and growth in Delaware's EMS system. DEMSOC presents this annual report in accordance with Title 16, Chapter 97, §9703 of the Delaware Code.

It is DEMSOC's vision that Delaware's EMS system represents true excellence in out-of-hospital health care.

As you read the 2016 Annual Report, we are confident that you too will be proud of the State of Delaware's Emergency Medical Services current capabilities, and marvel at the progress that has been made in the previous 16 years. This report will focus on the data metrics from the Delaware Emergency Medical reporting System (DEMRS). The DEMSOC members are encouraged by the system's successes, optimistic about the future and are looking forward to continuing enhancements to the EMS services provided to the State in the years to come.

What EMS Does

The goal of Delaware's Emergency Medical Services (EMS) system is to provide the right level of care at the right place at the right time and transport to the appropriate care facility. This is accomplished through a well-coordinated tiered system of response that includes many agencies. Each agency has an integral role in providing the highest level of prehospital medical care to the citizens and visitors of the State.

EMS in Delaware includes:

- Public safety dispatch centers
- Ground and air ambulance services
- Fire services
- County paramedic services
- Law enforcement agencies
- Local and State EMS agencies
- Hospitals and specialty care centers
- Training institutions and organizations
- Citizen, professional, and technical advisory groups
- Other governmental and voluntary organizations

Who We Are:

- 1300 Certified First Responders
- 1497 EMT-Basics
- 303 Paramedics

- 215 Dispatchers
- 8 Medical Directors

EMS services provided to the State of Delaware include:

There are 54 Basic Life Support (BLS) ambulance agencies comprised of a combination of paid and volunteer EMS providers. Paramedic Advanced Life Support (ALS) services are provided state-wide by the three counties while the Delaware State Police Aviation Division is the primary provider of 911 air services with one private air medical service providing backup response. Additionally, the state is serviced by ten BLS inter-facility medical transport services, six ALS inter-facility medical transport services and one specialty hospital transport service. The units that respond to 911 calls for service receive their directions from certified dispatch centers located throughout the state.

- 135 BLS ambulances providing 911 services
- 99 BLS ambulances providing non-emergency services
- 21 Full Time & 3 Part Time ALS units providing 911 services
- 7 ALS Supervisor units
- 4 Air Medical helicopters providing 911 services
- 6 ALS agencies providing non-emergency services

The majority of 911, emergency patient transportation is provided by the volunteer/career BLS fire-based ambulance services and the Delaware State Aviation Division. ALS services are provided through a system of chase or intercept paramedic units operated by the three counties. These ALS units respond in conjunction with the BLS transport units. In 2016, the EMS system in Delaware responded to the following incidents: (information based on EMS patient care reports)

- 220885 Statewide Total Run Reports
- 133504 Non-trauma incidents
- 141152 Basic Life Support Incidents
- 31270 Trauma Incidents
- 79733 Paramedic Incidents
- 9599 Pediatric Incidents (0-17yrs)
- 4760 ALS Cardiovascular Incidents
- 300 Air Medical Transports

Delaware EMS System Oversight

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Delaware Emergency Medical Services Oversight Council (DEMSOC)

The Delaware Emergency Medical Services Oversight Council (DEMSOC) was formed pursuant to the Delaware Emergency Medical Services Improvement ACT of 1999 HB332). The council is charged with monitoring Delaware's EMS system to ensure that all elements of the system are functioning in a coordinated, effective, and efficient manner in order to reduce morbidity and mortality rates for the citizens of Delaware. It is also charged with ensuring the quality of EMS services in Delaware.

DEMSOC consists of 21 members appointed by the Governor. The Secretary of The Department of Safety and Homeland Security serves as the chairman. Also serving on the council is the Secretary of Delaware Health and Social Services, Rita Landgraf. DEMSOC includes representatives from the following agencies: the Governor's Office, each county government, the Delaware State Fire Prevention Commission, The Delaware Volunteer Fireman's Association and its Ambulance Committee, The Delaware Healthcare Association, The Delaware Police Chief's Council, The Delaware Chapter of the American College of Emergency Physicians, The State Trauma System Committee, The Medical Society of Delaware, The Delaware State Police Aviation Section, The EMSC Advisory Committee and the State EMS Medical Director. There is a representative for practicing field paramedics and three at large appointments for interested citizens, one from each county. The Office of Emergency Medical Services is assigned to Delaware Health and Social Services Division of Public Health and is the regulatory authority for the paramedic system and provides medical oversight to the state's EMS system.



Robert Stuart



Hon. Rita Landgraf



Wayne Smith



Lawrence Tan



Dr. Glen Tinkoff



Dr. Ross Megargel



Colin Faulkner



Sgt. Paul Shavack



Glenn Luedtke



Dr. Steve Murphy



Dr. Maria Carmen
G. Diaz



Mike McMichael



Dr. John Powell

Not Pictured: James Mosley, Paul Bernat, Alan Robinson, Joseph Zeroles, Drewry Fennell, Dana Bowerson, Member-at-large/Kent: vacant, Member-at-large/NCC: vacant

Delaware EMS Oversight

Delaware is a frontline leader in prehospital emergency care through comprehensive coordination, development and evaluation of the statewide emergency medical services system. The Delaware EMS system is a two tiered EMS delivery system with shared oversight of Basic Life Support services and personnel by the State Fire Prevention Commission and Advanced Life Support services and personnel by the Office of EMS within the Emergency Medical Services and Preparedness Section of the Division of Public Health within the Department of Health and Social Services.

The Office of Emergency Medical Services (OEMS) ensures the quality of emergency care services, including trauma and prehospital advanced life support capabilities, through the coordination and evaluation of the emergency medical services system. The Office of Emergency Medical Services is part of the Emergency Medical Services and Preparedness Section.

EMS Medical Direction is provided by emergency medical physicians that are employed by the Office of EMS. They provide medical direction to both Advanced Life Support (ALS) and Basic Life Support (BLS) services.

The Delaware State Fire Prevention Commission (SFPC) oversees Basic Life Support (BLS) services through the Ambulance Service Regulations. The BLS regulations address administrative, operational and provider requirements. This includes emergency as well as non-emergency ambulance services.

Delaware EMS Oversight Triangle



EMSPS works with a variety of federal, state, local, and private sector groups to ensure the state is prepared to deal with any public health emergency. This Section houses the *Office of Preparedness* (OP) and the *Office of Emergency Medical Services* (OEMS).

Office of Emergency Medical Services (OEMS)



The mission of the Office of Emergency Medical Services is to assure a comprehensive, effective, and efficient statewide emergency medical care delivery system in order to reduce morbidity and mortality rates for the citizens of Delaware. The OEMS ensures the quality of emergency care services, including trauma and prehospital advanced life support capabilities, through the coordination and evaluation of the emergency medical services system, within available resources.

Highlights for 2016

National Highway Traffic Safety Administration (5 year review of the Delaware EMS system)

In May of 2016, a review team from NHTSA came to Delaware to complete a review of the EMS system within the state. The team reviewed the following components of our EMS system: Regulation and Policy, Resource Management, Human Resources and Education, Transportation, Facilities (Hospitals), Communications, Trauma Systems (systems of care), Public Information and Education, Medical Direction, Evaluation and Preparedness

The review team was very impressed with the work that has been accomplished in Delaware:

“From a reduction of 56% of deaths due to trauma, to a cardiac arrest survivability rate of 22%, there is strong evidence that the EMS and trauma systems are benefitting the families of Delaware. These successes, and the answer to the question lie in the efforts and dedication of another family: Delaware’s family of emergency care providers. Delaware may be our nation’s second smallest state, but in its ability to provide care, it has proven to be enormous.”

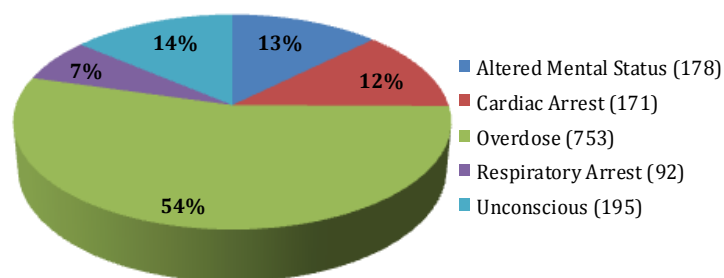
“Like families, systems of emergency care must be nurtured. They are fragile and subject to influence of many factors. Fiscal constraints, societal and demographic changes, political influences, and changes in the practice of medicine all can cause strain throughout the system. This is no less the case in the Delaware system, and future progress will rely on anticipating and managing the changes and strain before they occur. This will be no small task. But then again, Delaware is no small state.”

Naloxone program for BLS and Police agencies

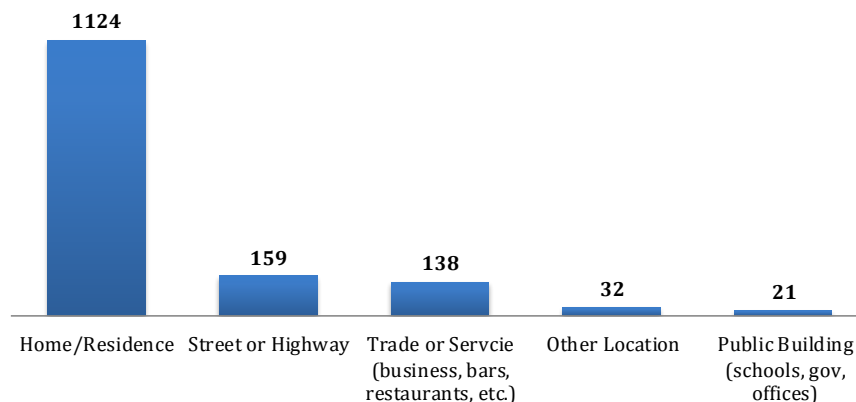
The issue of heroin and opioid overdoses has become a problem of epidemic proportions across the nation; unfortunately Delaware has not been spared the effects.

In an effort to better understand the overdoses that are occurring with the state, the OEMS reviewed data collected from the Delaware Emergency Medical Reporting System (DEMRS). It was found that there were over 1500 suspected overdose patients treated by EMS in 2016. This number has increased significantly from 2014 with just over 950 suspected overdose patients.

Overdose patients may present with “other” problems as reported by family members and bystanders.



OEMS also tracks the location (by type) in which a patient is found, below is the top five locations by type.

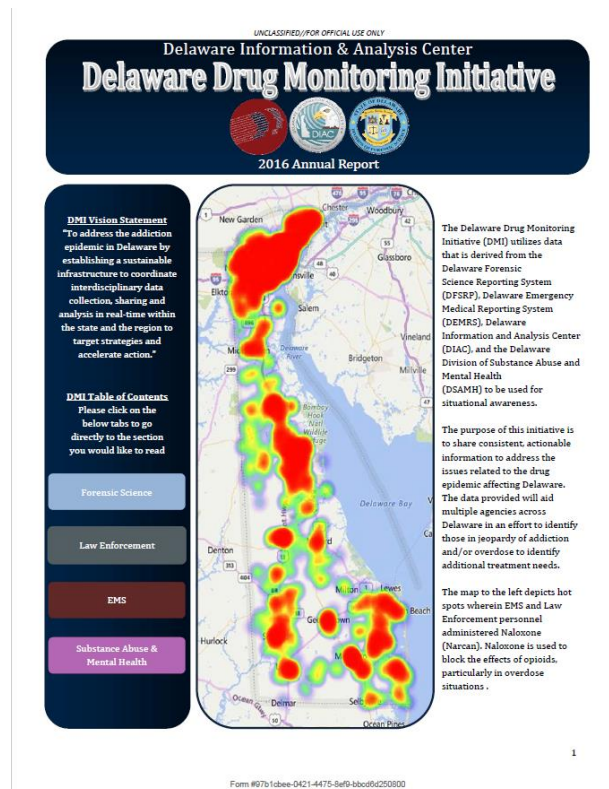


National Governor’s Association Learning Lab

During 2016 Delaware was one of four states selected to send a team to attend the “National Governors Association Learning Lab on State Strategies for Reducing Overdose and Deaths from Heroin and Illicit Fentanyl: Improving Information Sharing and Data Analysis between Law Enforcement and Public Health”. The Delaware Team consisted of representatives from Department of Health and Social Services, Delaware Substance Abuse and Mental Health, Office of Emergency Medical Services, Department of Safety and Homeland Security, Delaware Information and Analysis Center and Division of Forensics Sciences.

Three goals were identified for the state of Delaware;

1. **Develop a mechanism for gathering, analyzing and sharing actionable information with public health, law enforcement and other partners.** The Drug Monitoring Initiative report, was approved and a report that encompasses all of 2016 data from the various agencies (PH/EMS, DIAC, DFS, DSAMH).
2. **Formalize the Delaware HIDTA Action Committee with subgroups comprised of subject matter experts.** Delaware identified members as well as drafted bylaws for the Committee. In addition, the data sharing agreement has been completed and signed by the agencies listed above. The latter was a large goal and deliverable for NGA as part of this lab.
3. **Goal #3: Leverage resources to establish a sustainable infrastructure for information-sharing.** Delaware still needs to address an asset map from a statewide perspective, but has had success in completing the public health portion.



Healthcare Facility Evacuation Exercise

Healthcare Facility Evacuation Full Scale Exercise occurred in October of 2016 at Beebe Healthcare. The exercise was designed to identify gaps in the State of Delaware Healthcare Facility Evacuation Coordination Standard Operating Guide (Evac SOG) and the State of Delaware Mass Fatality Management Plan (Fatality Plan). This exercise provided participants with the opportunity to gain a better understanding of their roles, responsibilities, inter- and intra-agency relationships, and support needs for managing and conducting a healthcare facility evacuation.

Emerging Infectious Diseases

The OEMS which manages the Hospital Preparedness Program grant efforts has played an integral part in the planning and response for a potential Ebola patient should they present in Delaware. The OEMS is the lead Delaware agency for the Region III Ebola and Emerging Infectious Disease planning efforts. This has expanded to include planning for other High Consequence Infectious Disease. The OEMS role is predominately one of ensure the safety and health of the emergency responders. OEMS through the Healthcare Preparedness coalition has worked with the



acute care hospitals, EMS agencies, Homeland Security Department of Defense (National Guard and Dover Airforce Base) as well as regional partners to ensure the most appropriate response, and care for the patient and ensuring the safety of the providers.

Responsibilities of the OEMS also include:

Advanced Life Support Services (ALS): The OEMS ensures highly trained paramedics are providing quality emergency care to the citizens and visitors of Delaware. The OEMS is responsible for coordination of training, certification, financing, and oversight of the state's paramedic system.

Statewide Trauma System: This program is responsible for coordination of hospitals and provider agencies to ensure optimal care for trauma patients.

Prehospital Patient Care Reports: Delaware Emergency Medical Reporting System (DEMRS) is a comprehensive web-based EMS data collection and reporting system that provides convenient access to field providers and to the receiving facilities.

EMS Medical Direction: This program is responsible for providing medical oversight of the statewide EMS system (Advanced/Basic Life Support and Emergency Medical Dispatch), review and modification of the statewide standard treatment protocols; oversight of medical command facilities, conducting research and oversight of the statewide EMS quality assurance program.

Emergency Medical Services for Children (EMSC): The goal of this program is to improve emergency care for children in the State of Delaware through specialized activities. Safe Kids Delaware is one of the programs within EMSC.

Hospital Preparedness Program: The Office of EMS manages the Hospital Preparedness grant program funded by the Office of the Assistant Secretary for Preparedness and Response, (ASPR).

First State, First Shock Early Defibrillation Program: This program provides automatic external defibrillators to organizations within Delaware. This program is responsible for providing data collection, training, and prevention activities in support of initiatives to reduce cardiac arrest deaths in Delaware.

EMS Infectious Disease Exposure Monitoring: The need for an effective infection control program has always been an essential and integral part of the prehospital practice in Delaware because there is both the risk of healthcare providers acquiring infections themselves and of them passing infections on to patients. Preventative and proactive measures offer the best protection for individuals and organizations that may be at an elevated risk of exposure to these infectious diseases.

State Regulations promulgated through OEMS:

Delaware Medical Orders for Scope of Treatment (DMOST) Act: The purpose of House Bill 64: This Act authorizes the use of Medical Orders for Scope of Treatment in Delaware. This document, a “DMOST form,” will allow Delawareans to plan ahead for health-care decisions, express their wishes in writing, and both enable and obligate health care professionals to act in accordance with a patient’s expressed preferences. The statute authorizes a medical order which is transportable, standardized, and implements a patient's end-of-life care preferences.

Delaware Trauma System Regulation: The State Trauma System regulations were first promulgated in 1997 to add detail to the Trauma System enabling the legislation of 1996. Subsequent revisions were enacted in 1999 and 2001. The regulations include sections on the Trauma Center Designation Process, Trauma Center Standards, Triage, Transport and Transfer of Patients, and the Trauma System Quality Management Plan.

Air Medical Ambulance Service Regulation: The purpose of this regulation is to provide minimum standards for the operation of Air Medical Ambulance Services in the State of Delaware. These regulations intend to ensure that patients are quickly and safely served with a high standard of care and in a cost-effective manner.

Early Defibrillation Provider Regulation: The purpose of this regulation is to establish the criteria for training and the right for emergency responders to administer automatic external cardiac defibrillation in an out-of-hospital environment.

Advanced Life Support Interfacility Regulation: The purpose of this regulation is to permit the use of paramedics, under the oversight of the Division of Public Health, to manage patients while in transit between medical facilities or within a healthcare system. It includes approval of an organization to provide service using paramedics, as well as defining their scope of practice and medical oversight.

Organ and Tissue Donor Awareness Board: The Office of EMS provides staff support and represents Delaware Health and Social Services on the Delaware Organ and Tissue Donor Awareness Board (OTDAB). Created by Delaware Code, Title 16, Chapter 27, Anatomical, Gifts

and Studies, §2730, this Governor-appointed board has the responsibility of promoting and developing organ and tissue donor awareness programs in Delaware. These programs include, but are not limited to, various types of public education initiatives aimed at educating residents about the need for organ and tissue donation and encouraging them to become designated organ and tissue donors through the Delaware organ and tissue donation registry.

As of June 17, 2016, there were 532 Delaware residents waiting for an organ transplant with over 400 of those residents waiting for a kidney transplant. In the state of Delaware, 413,900 people with a driver's license or state identification card (51.46% of all) have designated themselves as organ and tissue donors as of December 1, 2016. In order to promote donor designation among Delaware residents, OTDAB partners with Gift of Life Donor Program and other supporting organizations on public education and awareness projects. The current goal is an increase of 10,000 donor designations by January 1, 2018. For more information, visit www.donatelifede.org

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Office of Preparedness

Planning

Mass Fatality Management Planning:

EMSPS in coordination with the Division of Forensic Science coordinated the revision of a Mass Fatality Management Plan. This plan spells out in great details the responsibilities of both Public Health and the Division of Forensic Science during a mass fatality large enough to exceed the normal capacity. EMSPS and DFS maintain resources and equipment to support a mass fatality event in Delaware. Components of mass fatality were also tested during exercise.

Continuity of Operations Planning:

The Emergency Medical Services and Preparedness Section assisted the Division of Public Health Section Chiefs to develop a Continuity of Operations Plan for their section. Each director identified mission essential functions, delegation of authority, order of succession, alternate locations, essential software and web-based programs and other business continuity elements to ensure minimal impact to section operations during an event causing a disruption of day-to-day activities. EMSPS drafted a more operational COOP plan which included back up facilities, equipment, and personnel. This plan was tested in a table top format.

Emerging Infectious Diseases

Ebola:

EMSPS has developed and tested an Ebola Concept of Operations Plan that details how to manage a suspected Ebola patient from initial monitoring to EMS transport and through hospital care. EMSPS has also purchased additional infection control supplies, supported the Lab with additional testing supplies, and paid for the translation of documents in to multiple languages. In addition, EMSPS supported more than 200 personnel for fit testing for using PPE in an environment with infectious diseases.

Zika:

The Division of Public Health received funding to help combat Zika by enhancing surveillance and response activities. This money has been used and will be used for community outreach, advertising, lab testing, and control measures. DPH created a Zika Action Plan which focuses on protecting the Delaware population, specifically pregnant women and their unborn babies from the consequences of Zika virus disease. This plan is organized in eight response domains that explain in detail the CDC recommended activities as adapted to Delaware. The Zika Action Team was assembled in spring 2016 and includes experts from each of the following response domains: coordination, general preparation, communication, laboratory, surveillance, vector control, pregnant women outreach, and blood safety. Ongoing efforts include coordination of Zika response between agencies; communication campaigns about mosquito control and education for target populations such as pregnant women and travelers; human surveillance of Zika cases and management of the Zika registry; laboratory testing according to CDC and DPH guidelines; vector control and mosquito surveillance performed by DNREC; and pregnant women outreach to promote Zika awareness by working with OBs and WIC clinics. Furthermore, screening of all

donated blood began on 11/18/16 per FDA guidance and there is ongoing communication with the Blood Bank of Delmarva to monitor screening results.

Mass Care and Vulnerable Populations

Sheltering:

As directed by the Delaware Emergency Operations Plan (DEOP), DPH is responsible for the medical component of shelter operations, including providing medical and support staff, medical equipment, and supplies. Delaware Medical Reserve Corps nurses and technicians, and Public Health nurses are relied upon to provide medical care assistance in emergency shelters. Training on medical protocols, shelter operations, and shelter support equipment is provided on an annual basis. DPH participated in the DEMA Functional Shelter Exercise in August 2016 that tested opening a shelter at a school and the operations of the shelter.

DHSS Mass Care Plan:

DPH worked with the Department of Health and Social Services (DHSS) to develop the DHSS Mass Care Plan that details the roles and responsibilities of the DHSS Divisions in supporting shelter operations. A workshop was conducted to present the final draft of the plan.

People with Access and Functional Medical Needs (PWA FMN) Committee:

The emergency preparedness planning for Persons with Access, Functional and Medical Needs (PWA FMN) Committee was established in the summer of 2013 to assist the Emergency Medical Services and Preparedness Section's Office of Preparedness best plan for the varied and unique emergency preparedness needs of Persons with Access, Functional and Medical Needs. The PWA FMN Committee includes state and local emergency managers, health and social service agencies, community organizations, advocates for people with disabilities, and those with disabilities themselves.

The group has now advocated and developed several mitigation projects. The genesis of these goals were part of the Health Equipment Subcommittee on Emergency Preparedness. The Health Equity committee has now agreed that the PWA FMN group mitigation projects include: development of the Preparedness Buddy Brochure planning tool for all populations; providing American Sign Language interpreters for meetings, trainings, exercises and Point of Dispensing (POD) events; establishing the Functional Information and Support Center (FISC) in the State Health Operations Center (SHOC) designed to provide access to a compilation of experts in various Access and Function Needs (AFN) areas to address unique needs of the AFN population; the FISC is further supported through established roles for AFN in mass care planning.

University of Delaware Partnership:

The Delaware Department of Health and Social Services, with funding from the Centers for Disease Control, partnered with the University of Delaware Center for Disabilities Studies to implement the Plan to Achieve Health Equity for Delawareans with disabilities. The work groups goals were: improve access to health care, inclusive health promotion, data monitoring and surveillance, emergency preparedness for people with disabilities, and inclusion policy. Development and implementation of a statewide plan for Health Equity included the PWA FMN Emergency Preparedness Work Group as a contributing partner.

Prescription Availability during Declared Emergencies:

After reviewing and evaluating existing legislation, regulations, policies and plans regarding the availability of prescription refills and related supplies during or preceding a declared emergency, a mechanism for refilling prescriptions during an emergency has been developed ready to implement. There is a policy in place for replacement of durable medical goods and specialty food and formulas.

DHSS Mandate:

A mandate has been established that disability service organizations contracted with DHSS are required to offer assistance to their clients in preparation of emergency plans for evacuation and sheltering in place.

Training and Technical Assistance System:

Establishment of a training and technical assistance system to build an adequate workforce that is skilled and culturally competent in meeting the needs of people with disabilities has been completed as of June 2016. This includes training for shelter workers and community service organizations and providing technical assistance to emergency planners regarding the inclusion of people with disabilities in response and planning exercises.

The group continues to identify and develop standards for accessible communication and messaging systems for use during emergencies.

Training, Education and Outreach***Northern and Southern Health Services Training Days:***

On September 21 and 22 the Emergency Medical Services and Preparedness Section's Office of Preparedness conducted two training events, one for Northern Health Services (NHS) employees and another for Southern Health Services (SHS) employees. The training days were focused on Point of Dispensing (POD) activities and how to effectively communicate at the POD with everyone, including clients with access and functional need. The University of Delaware presented material on ensuring effective communication to meet ADA guidelines. Another session was on communicating with patients who are deaf or hard of hearing. A third session was focused on how to work with a sign language interpreter, which was a scenario that included DPH employees at a POD working with a deaf person with and without an interpreter. A presentation on Autism was also provided from Autism Delaware for employees to gain more information on Group Home Clients with developmental disabilities at the PODs. A total of 94 employees attended for NHS, with a total of 110 registered for SHS. In addition, another 339 attended Family Emergency Preparedness training, Mental Health Support Following a Disaster training as well as SHOC 101.

Public Health Symposium:

EMSPS hosted the fifth annual Public Health Preparedness Symposium at the Delaware Technical Community College's Terry Campus in Dover, Delaware. The event was a success with 110 Federal, State, local and Non-Governmental Organizations (NGOs) stakeholders in attendance. This year's theme focused on mental health issues surrounding disasters. The keynote speaker, Dr. Christina Hernon, who was set the tone with her experience during the Boston Marathon

Bombing. Five breakout sessions and a panel discussion allowed participants to gain insight from other subject matter experts. Topic included program updates from the Public Health Preparedness and Hospital Preparedness Program Grants, Disaster Mental Health, Violent Intruder, Stop the Bleed, DE Autism, and the Delaware Medical Reserve Corps.

Exercises:

During the past year EMSPS participated in and hosted a number of exercises including a one day healthcare facility and fatality management evacuation full scale exercise and two eight hour Point of Dispensing full scale exercises, several Ebola exercises and a Continuity of Operations exercise for EMSPS. The section also participated in a DEMA Shelter Functional exercise as well as a City of Wilmington Communication Drill.

Community Outreach:

Community outreach for public health preparedness continues throughout the state. In 2016, there were over thirty events with approximated 14,843 in attendance, many of whom obtained outreach material. As part of the performance measures requirement from the CDC an online survey was distributed through Survey Monkey to find out how people use the emergency preparedness items that were distributed at health fairs and other outreach events.

PrepareDE.org:

On September 21 the Emergency Medical Services and Preparedness Section's Office of Preparedness and Delaware Citizens Corp held a press conference at Delaware Emergency Management Agency to roll out the updated the PrepareDE.org website to share preparedness messages and information, especially during disasters.

This newly revised website, PrepareDE.org is an inter-agency project collaboration with Delaware Emergency Management Agency – Citizen Corps, Delaware Division of Public Health's Office of Emergency Medical Services and Preparedness Section and the Office of Health Risk Communications. Funding for this project was provided from federal funds within the Office of Preparedness through the Public Health Emergency Preparedness (PHEP) grant.

PrepareDE.org provides information about and how to prepare for different types of disasters, such as damaging storms, flooding, severe heat or cold events, chemical leaks, and terrorist attacks. The website also shares preparedness tools and information about emergency alerts and how to stay informed during times of disasters. There are also instructions on how to prepare a household disaster plan and an emergency supply kit.

The website is now more user-friendly and technologically sophisticated. A new feature is its ability to do real-time translation of all content into nine languages: Chinese (simplified and Traditional), French, Haitian Creole, Hindi, Italian, Korean, Polish, and Spanish. The Delaware Citizens Corps has posted YouTube preparedness videos.

State Health Operations Center

State Health Operations Center (SHOC):

The State of Delaware Department of Health and Social Services, Division of Public Health (DPH), Emergency Medical Services and Preparedness Section's (EMSPS), Office of Preparedness directs public health preparedness and response during a public health emergency or a natural disaster with public health impacts. The State Health Operations Center (SHOC), in

collaboration with local, state, and federal partners, is the public health command center for state-level health and medical emergency response and recovery functions.

Roles in Public Health Emergencies:

The EMSPS is responsible for planning, coordinating, and participating in public health and medical information exchange during planned public health events, disaster incidents, and normal operations. The EMSPS monitors the status of the health system throughout the state by communicating with public and private entities before, during and after emergencies. The EMSPS also has a central role in coordinating, supporting, and reinforcing the health and medical preparedness, response, and recovery functions per the Delaware Emergency Operations Plan (DEOP).

Public Health and Emergency Medical Response Capabilities:

EMSPS further enhances preparedness efforts as they pertain to Medical Surge Capacities and Capabilities (MSCC). Through its Modular Medical Expansion System (MMES), DPH can provide prophylactic medications and/or vaccinations through its Points of Dispensing (POD); can provide an Alternate Care Site to assist hospitals during periods of medical surge; and can expand mortuary capacity within the state by 144 bodies. Other capabilities include, but are not limited to; redundant communications capabilities using 800 MHz radios; portable decontamination shelters in every hospital; stockpiled personal protective equipment; a mobile medical facility, and a statewide hospital evacuation plan.

Warehouse:

In order to support responder operations, a warehouse is used to store equipment for medical surge deployment, shelter operations, and PODs. Warehouse staff monitors inventory and routinely exercises equipment operation. The Warehouse Logistics Section supported multiple real-world and exercise events. The events included, NASCAR, Firefly music festival, a hospital evacuation exercise, DEMA shelter exercise, two Points of Dispensing exercises, and the Delaware National Guard 2016 Operation Joint Response Hurricane Evacuation Exercise.

A new inventory management system, provided by the Center for Disease Control and Prevention (CDC) at no cost to the State, was implemented to maintain inventory control of all medical equipment and supplies. Vehicles and equipment trailers are prepared in the event of rapid deployment. Additional supplies and equipment are added when a need is identified through After Action Reports from exercises and real events.

Closed Point of Dispensing Partnerships with Delaware Businesses:

The Emergency Medical Services and Preparedness Section has formed partnerships with several large businesses with the Division of Public Health to establish a Closed Point of Dispensing (POD) at their site to receive and dispense free antibiotics to their associates and family members during public health emergencies. To date, the Emergency Medical Services and Preparedness Section has agreements with fifteen businesses or organizations to provide medications to 173,961 employees and their families at Closed PODs. Closed POD partnerships increase the Division of Public Health's capabilities to rapidly dispense antibiotics to the general population. The Emergency Medical Services and Preparedness Section is developing a Closed Point of Dispensing distribution plan and is working with each Closed Point of Dispensing partner on a Closed Point

of Dispensing Plan for their business. EMSPS has assisted there organizations in developing and testing their Closed POD dispensing plans.

Public Health Emergency Assessments:

The EMSPS Office of Preparedness participates in numerous internal and external assessments of the Division of Public Health and its ability to respond to threats including natural disasters with public health impacts and public health emergencies such as infectious diseases. The activities include performance measures, capability planning guide assessments, the National Health Security Preparedness Index (NHSPI), the CDC Operational Readiness Review (ORR), site visits, and the completion of a public health hazard mitigation plan. This information allows the division to identify gaps, and then prioritize projects and funding in an effort to improve capabilities for public health response and recovery.

Delaware State Fire Prevention Commission (SFPC)

Submitted by the Delaware State Fire Prevention Commission



The State Fire Prevention Commission is charged with the protection of life and property from fire for the people of Delaware and to oversee the operation of the Delaware State Fire Marshal's Office and the Delaware State Fire School. The Commission has always been truly dedicated to the health and well-being of every man, woman and child in Delaware. And have done so, since 1955, with no compensation except for the knowledge that we have played a small part in making Delaware a safe and wonderful place to live.



Left to Right:
Joseph Zeroles
Ron Marvel
David Roberts, Chairman
Alan Robinson, Vice Chairman
Marvin Sharp
Lynn Truitt
Tom DiCristofaro

The Statutory responsibilities of the Delaware Fire Prevention Commission are to promulgate, amend, and repeal regulations for the safeguarding of life and property from hazards of fire and explosion. The Statutory responsibilities of the State Fire Prevention Commission may be found in Title 16, Chapter 66 & 67 of the Delaware Code and are summarized as follows but not limited to:

- The Commission consists of seven persons appointed by the Governor.
- They have the power to promulgate, amend and repeal regulations for the safeguarding of life and property from hazards of fire and explosion.
- Prior to promulgation, they shall hold at least one public hearing on each regulation, amendment or repealer and shall have the power to summon witnesses, documents and administer oaths for the purpose of giving testimony.
- They shall appoint the State Fire Marshal and State Fire School Director.
- The Commission shall have power to authorize new fire companies or substations; resolve boundary and other disputes; prohibit cessation of necessary fire protection services.
- The Commission is empowered to enforce its orders in the Court of Chancery.

Volunteer Ambulance Company Fund

The 147th General Assembly amended Title 11 section 4101; this amended Title established the Volunteer Ambulance Company Fund. Furthermore, the “State Fire Prevention Commission” (SFPC) was tasked with providing these funds to Volunteer ambulance companies on a proportionate basis across the state and this number being based on approved dispatched ambulance runs.

The SFPC developed the methodology and disbursement plan. Reports are pulled to show the ambulance runs per agency and statewide from the Delaware Emergency Medical Reporting System (DEMRS).

The DEMRS data shows all run types to include BLS Transport, Cancellation, Patient Refusal, Public Service, Standby Only, Agency/Assist, DOPA/DOA, Unable to Locate patients/scene, Termination of Resuscitation and Transfer of Care. In order to assure the validity of the information a Quality Assurance/Quality Improvement validation score of 85 percent is used as the minimum validity accepted as accurate reports. The reports mentioned above are entered by the providers who operate within the BLS system.

Since the inception of the fund, the SFPC has distributed \$3,505,059.00 for the period of December 24, 2014 until December 31, 2016. The funds are distributed on a bi-annual basis.

2016 Investigator II/Compliance Officer Statistics

Complaints Received.....	41
Investigations on Existing Cases.....	89
Interviews.....	10
New Ambulances.....	10
Ambulance Inspections.....	247

Ambulance Inspection Deficiency Notices:

Critical.....	2
Cautionary.....	16
Watchful.....	53

Delaware State Fire School (DSFS)



Introduction

Delaware Code, Title 16, Chapter 66, §6613-6618, mandates the Delaware State Fire School to: (1) provide firefighters with needful professional instruction and training at a minimum cost to them and their employers; (2) develop new methods and practices of firefighting; (3) provide facilities for testing firefighting equipment; (4) disseminate the information relative to fires, techniques of firefighting, and other related subjects to all interested agencies and individuals throughout the state; and (5) undertake any project and engage in any activity which, in the opinion of the State Fire Prevention Commission, will serve to improve public safety.



New Castle County Division



Kent County Division



Sussex County Division

The agency EMS objectives established to achieve the EMS goal are:

- To certify basic life support personnel as State of Delaware Emergency Medical Technicians.
- To provide BLS training to the first responders and citizens of Delaware.

2016 Accomplishments

Agency conducted EMS training in 2016:

Emergency Medical Technician – 8 classes – 211 students

Emergency Medical Technician Refresher – 20 classes – 330 students

Delaware Emergency Medical Technician Reciprocity – 9 classes – 66 Students

Emergency Medical Responder – 16 classes – 217 students

Emergency Medical Responder Refresher – 21 classes – 264 students

Continuing Education Programs – 170 classes – 2,640 students

Conduct training for 1450 EMTs of the updated EMS Standing Orders.

Transition to the NREMT National Core Competency Program for EMTs in the State

2017 Goals

To review, update, and develop DSFS Continuing Education Programs.

Conduct training for the 1500 Delaware EMTs and 2500 Emergency Medical Responders.

Provide students access to on-line CEU training.

Provide students blended learning EMS training programs.

Summary

To continue the Delaware State Fire School's vision for the EMS programs by providing quality education to willing individuals, creating partnerships among the various agencies and to always offer the most progressive EMS training available.



Grover P. Ingle - Delaware State Fire Marshal

The Delaware Office of the State Fire Marshal provides investigation, enforcement and technical service support to the citizens and visitors of Delaware. The agency operates three divisional offices located in New Castle, Dover, and Georgetown. The agency employs 54 fulltime employees and 5 part time employees.

In 2016, the agency moved forward with the continued need to promote the use of smoke alarms and residential fire sprinklers. The State Fire Marshal was tasked by the Delaware legislature to develop and implement the educating of new construction home owners and the availability of residential sprinklers in newly constructed homes. Brochures have been developed by staff to be given to all prospective new construction homeowners through the builder if requested by the home owner.

There were nine fire fatalities in 2016. Of those 9 deaths, 5 were in homes without an operating smoke alarm. The battle to equip all homes with operating smoke alarms continues. Three deaths were Line of Duty Deaths (LODD).

Deputy fire marshals investigated 50 incidents involving a fire related injury in 2016. Seventeen injuries were the result of smoke inhalation. Twenty-eight injuries were burns. There were five other injuries that involved lacerations (2), contusions (1), back strain (1), and medical evaluation (1).

In 2017, the Delaware State Fire Marshal and staff will continue to provide a fire safe environment for all citizens and visitors of Delaware. The Delaware Office of the State Fire Marshal is an independent State agency under the Delaware State Fire Prevention Commission. Join us at www.statefiremarshal.delaware.gov or email us at Fire.Marshall@state.de.us

Medical Direction

EMS Medical Direction

This program is responsible for providing medical oversight of the statewide EMS system (Advanced/Basic Life Support, and emergency medical dispatch), review and modification of the statewide standard treatment protocols, oversight of medical command facilities, conducting research and oversight of the statewide EMS quality assurance program.

Medical direction involves granting authority and accepting responsibility for the care provided by EMS, and includes participation in all aspects of EMS to ensure maintenance of accepted standards of medical practice. Quality medical direction is an essential process to provide optimal care for EMS patients. It helps to ensure the appropriate delivery of population-based medical care to those with perceived urgent needs. (National Highway Traffic Safety Administration).

Delaware's Emergency Medical Services (EMS) responds to and provides medical care to victims of illness and trauma through a statewide coordinated medical system of EMS responders. EMS responders include 911 dispatchers, first responders, Basic Life Support (BLS) providers, paramedics or Advanced Life Support (ALS) providers, and on-line emergency physicians who oversee individual patient care. All of these EMS responders are medically coordinated through protocols and training directed and overseen by a select group of Board Certified Emergency Physicians licensed in Delaware.

Delaware employs emergency physicians to devote part of their professional efforts to the State EMS system. They include:

- State EMS medical director
- State BLS EMS medical director
- County EMS medical directors (one for each county)
- County associate EMS medical directors (one for each county)

The BLS and county medical directors are accountable to the state EMS medical director. The medical directors meet regularly to review statewide treatment protocols, quality issues, new medical techniques and equipment in a continuing effort to provide the citizens of Delaware with the most up-to-date and appropriate EMS care possible. All EMS medical directors are required to take the National Association of Emergency Medical Services Physicians' (NAEMSP) Medical Directors course.

Delaware's EMS Medical Directors assure quality care to patients through interactions with other physicians, hospitals, citizen groups, and organizations such as, the American Heart Association and the Medical Society of Delaware. They perform retrospective review of aggregate patient care data from the providers to determine the effectiveness of the treatment protocols. Concurrent medical oversight occurs through interactions with EMS personnel during shifts in Delaware hospital emergency departments, medical director ride a longs with EMS providers and by real time monitoring EMS radio reports. High risk procedures and critical care cases are identified for automatic medical direction review.

2016 Accomplishments

The EMS Medical Directors reviewed, updated and implemented the Statewide Treatment Protocols for Basic Life Support (BLS) and Paramedics. A significant addition to these protocols was the inclusion of ketamine to the paramedics' protocols which allows for quick and safe sedation of severely agitated patient who present a threat to themselves, EMS providers and law enforcement. We also put into place a new Stroke Scale, the RACE scale for our EMS providers to help determine the severity of a patient's stroke. Allowing for the potential selection an appropriate receiving hospital facility. In the BLS protocols we moved nebulized albuterol from a pilot program to optional after review of Delaware data indicated that BLS albuterol nebulizer treatments were safe and effective.

The EMS Medical Directors have continued their involvement in EMS research to improve care in the Delaware and to across the country. There were five (5) studies presented during regional and national conferences.

The EMS medical directors participated in a three day review of Delaware's EMS system conducted by the National Highway Traffic Safety Administration (NHTSA). NHTSA did recommend additional resources be allocated for Quality Assurance and Quality Improvement, that the State work with local resources to develop an EMS Medical Director Fellowship Training Program to insure that Delaware has a group of well-trained physicians to direct the EMS system into the future, that the EMS medical directors be provided malpractice coverage and EMS medical directors' compensation packages become competitive.

Legislation for an Inclusive Stroke System of Care was passed and signed into law which is a substantial win for Delaware stroke patients. For many years, there was little that the healthcare system could do for patients who suffered debilitating strokes. Over the last decade, new techniques for reversing strokes became available in most Delaware hospitals. Recently, very high tech, manpower intensive and systematically expensive advanced techniques of stroke care with very remarkable improvement in outcomes have become available in the world. Delaware is fortunate to have those services available at Christiana Hospital and in several nearby large cities. Previously, the EMS medical directors would simply designate which hospitals certain patients should be transported for their best outcome. With the complexities and ever changing resources available at our community hospitals and with our very fast State Police Helicopter transport capabilities, we are now able to develop an Inclusive Comprehensive System of Stroke Care to bring all of the hospitals in Delaware, neurologist, emergency medicine specialist, EMS physician specialist, nursing specialists, rehabilitation specialists and EMS providers together to develop and monitor patient care protocols that deliver the right patient to the right facility in the right time for the best possible outcome.

2017 Goals

DMOST: This legislation was passed and signed into law in 2015, regulations have been written and EMS implementation occurred in the spring of 2016. DMOST allows patients and their physicians to quickly identify their wishes as to their desired level of care as they approach their anticipated death. This allows for a standard process and the development of an easily recognized and interpreted document for EMS and emergency medicine providers to know at the critical point of time as to an unresponsive patient's desire for full resuscitation or some lesser level of care. In

the absence of a DMOST document requesting a lesser level of care, emergency care providers must assume that an unresponsive patient wants everything done possible to maintain their life. While this legislation has been in place and implemented almost one year ago, our EMS providers are not seeing these documents in the field and emergency medicine physicians are not seeing these documents in the emergency departments. Instead, we are now seeing “home grown” documents coming from nursing facilities, home nursing groups and palliative care groups. The EMS medical directors hope to encourage administrators of these groups to push for wider utilization of the DMOST form.

Mobile Integrated Healthcare - Community Paramedicine: As hospitals become increasingly responsible for a patients’ outcome after discharge from the hospital and in an attempt to prevent emergency department visits and hospital readmissions there is a movement across the country to move back to medical home visits. In an effort to make home visits available to a large number of patients, physicians’ extenders are being utilized across the country. These physician extenders come in many varieties from nurse practitioners and physician assistants, respiratory therapist, to care managers and social workers, to paramedics and EMTs and to home health aides. In Delaware, as across the country there is a strong interest in utilizing paramedics and EMTs for a number of these patient care missions due to their familiarity with the prehospital environment and equipment. In Delaware however, to utilize paramedics and EMTs for non-emergency work under the control of non-emergency physicians will require a change in the Delaware EMS legislation.

Interfacility Critical Care Transports: While Delaware has a very good interfacility critical transport company serving patients across the state, they are unable to meet the needs of all of our patients. We hope to develop standards of care for interfacility transports of critically ill and injured patients in cooperation with our current critical care transport providers, EMS agencies, nursing agencies and medical facilities to insure the safe and timely transportation of critical patients from facilities to area tertiary referral centers. These protocols will need to establish training curriculum, required equipment, and medical orders for treatment. In many systems, there is a merger between BLS, paramedics and critical care nursing which may require enabling legislation to establish state and medical oversight of the program.

Ems Safety

A Culture We Can Live With

The Delaware Office of Emergency Medical Services (OEMS) is committed to insuring the safety of EMS providers throughout the state and providing information for agencies to insure a safe working environment and provide information relative to on-going training for their EMS providers, both career and volunteer.

Every day, EMS workers face a multitude of safety risks confronted just by doing their job. Risks of injury from lifting patients and equipment, exposures to infectious disease, hazardous environments, and emergency vehicle operation are a threat to all of us. Many agencies have initiatives to increase responder awareness and promote best practices. These agencies include The US Department of Transportation (DOT), The US Occupational Health and Safety Administration (OSHA), The National Association of Emergency Medical Technicians (NAEMT), The International Association of Fire Chiefs (IAFF), The National Fire Protection Association (NFPA) and many others. The result of their efforts are a number of excellent training resources and educational documents that help ensure that we enjoy a healthy rewarding career serving others.

One challenge that presents to the EMS industry relates to accurate reporting mechanisms. Our nation's EMS system is not a "one size fits all" model. Some EMS responders fall under the realm of firefighters. Others may be included in statistics related to health care providers. Variations in classification and industry descriptions creates difficulty in fully assessing the extent of the problem.

In 2014, the National Institute of Occupational Safety and Health reports that 21,300 EMS workers were injured on the job. The majority of those injured were male. Our youthful responders are not immune to the risk of injury - slightly more than half of all injuries involved responders less than 35 years of age. The NIOSH data show that most injuries involve strains and sprains caused by overexertion. What is particularly interesting is that the report goes on to mention that the most common sources producing the injury were the EMS worker themselves or the patient. This tells us that commitment to personal safety such as maintaining proper weight and fitness can pay off in the prevention of personal injury. Maintenance of situational awareness is paramount to safe scene management. Training such as the Defensive Tactics for EMS (DT4EMS), gives providers hands-on training in techniques to protect them from assault.

Our strength lies in the number of exceptionally talented people and organizations whose passion leads them to make our job safer. As EMS providers, we must work towards creating a culture of safety in our organizations. A culture of safety for ourselves, our patients, and our community. EMS providers are encouraged to read "Strategy for a National EMS Culture of Safety", a document produced from a joint effort between NHTSA, the EMS for Children (EMSC) Program, and the American College of Emergency Physicians (ACEP) (www.ems.gov/safety.html).

EMS System Evaluation

EMS System Evaluation 35

EMS Patient Care Report 36

Clinical Performance 37

Response Time Performance 41

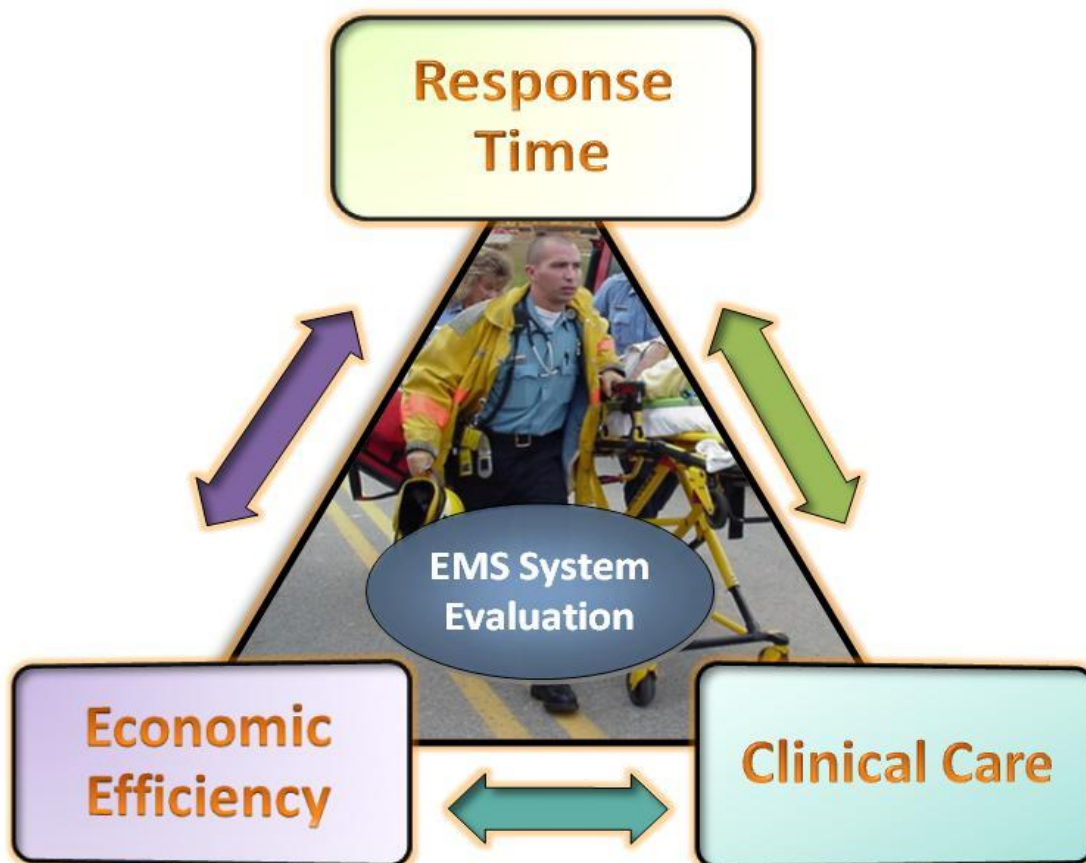
EMS System Cost 45

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System Evaluation

Evaluation is the essential process of assessing the quality and effects of EMS, so that strategies for continuous improvement can be designed and implemented. (National Highway Traffic Safety Administration)

The National Association of Emergency Medical Services Physicians (NAEMSP) has identified three related variables for measuring EMS system performance; clinical performance, response time reliability and economic efficiency. These variables are interdependent for overall system success. Focusing the majority of resources on any one variable is done at the expense of performance potential in the other variables. For example, extreme cost cutting measures will have a detrimental impact on clinical performance and response time reliability. Also, if a system places all of its efforts on response time performance there will be a significant increase in costs as well as a decrease in clinical performance.



Prehospital Patient Care Report

In Delaware, data from the Delaware Emergency Medical Reporting System (DEMRS) is a comprehensive electronic patient care report (ePCR) producing data system which provides convenient access to the field providers for input of pertinent patient data in a timely fashion while concurrently standardizing EMS service provider data into a statewide data collection and reporting system. DEMRS provides services to all private/public/volunteer EMS/ALS/BLS services including but not limited to ALS providers, BLS providers, first responders, Trooper medics, AI duPont Hospital for Children, Wilmington Hospital, St Francis Hospital, Christiana Hospital, Beebe Healthcare, Nanticoke Hospital, Milford Hospital, Kent General, billing companies and inter-facility transport services. This allows DEMSOC a continued review of operational and clinical data for the ALS and BLS providers during emergency and non-emergency transports.

The current requirements for patient care report completion is that every attempt shall be made to complete the ePCR prior to leaving the receiving facility. In the absence of extraordinary circumstances an ePCR should be submitted to the receiving facility within four (4) hours of patient disposition. EMS providers must complete and submit an ePCR to the receiving facility prior to going off duty.

Enhancements to our system:

The State of Delaware has brought DE TRAC online. This is a web-based Patient Tracking System from Image Trend that fulfills the requirements that have been defined by Delaware's Division of Public Health, Emergency Medical Services and Preparedness Section (EMSPS). The Office of EMSPS administers the program and has been successfully utilized during multi-jurisdictional exercises as well as at Mass Gathering events for the successful real-time tracking of patients from incident to final destination.

The Computer Aided Dispatch (CAD) integration is operational in all three counties. This critical interface allows call data to be transferred from the CAD systems to the DEMRS system without the advent of human interface and possible errors in data.

The Update on Our Evolving Prehospital Patient Care Reporting System:

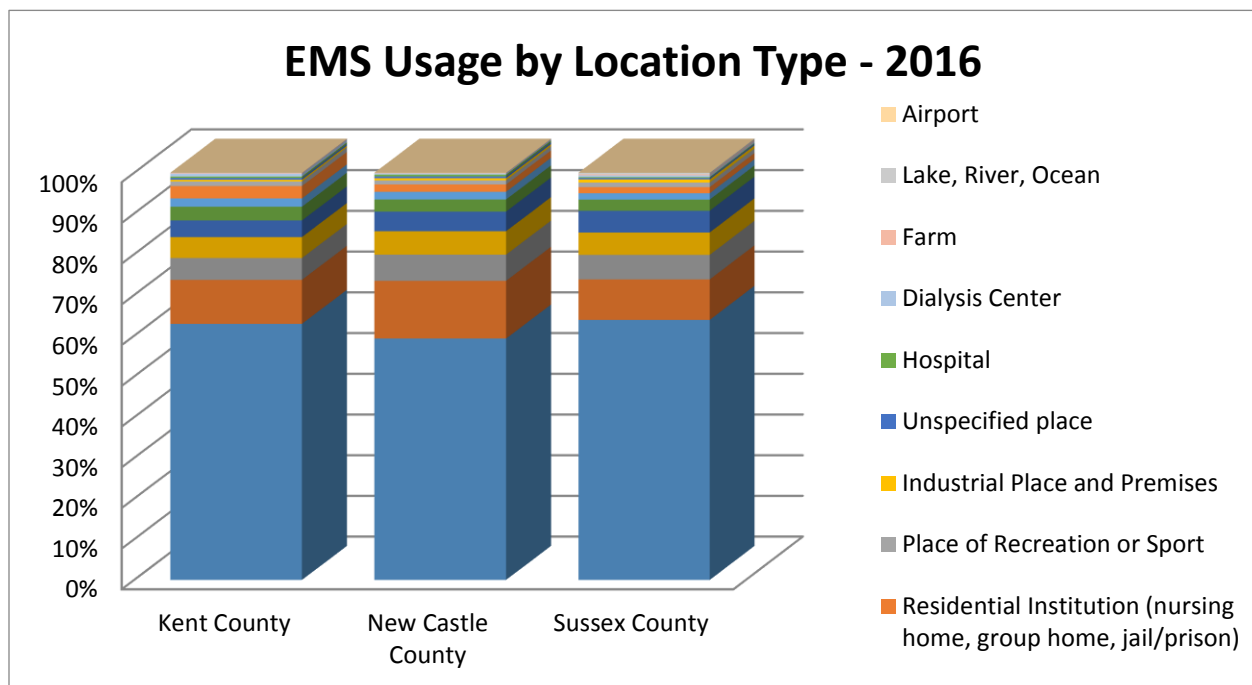
The Delaware Emergency Medical reporting System (DEMRS) is going to be transitioning to an updated operating system called ELITE (projected incorporation will be early 2018). This new operating system will provide enhancements for the patient care providers while entering patient care reports.

Clinical Performance

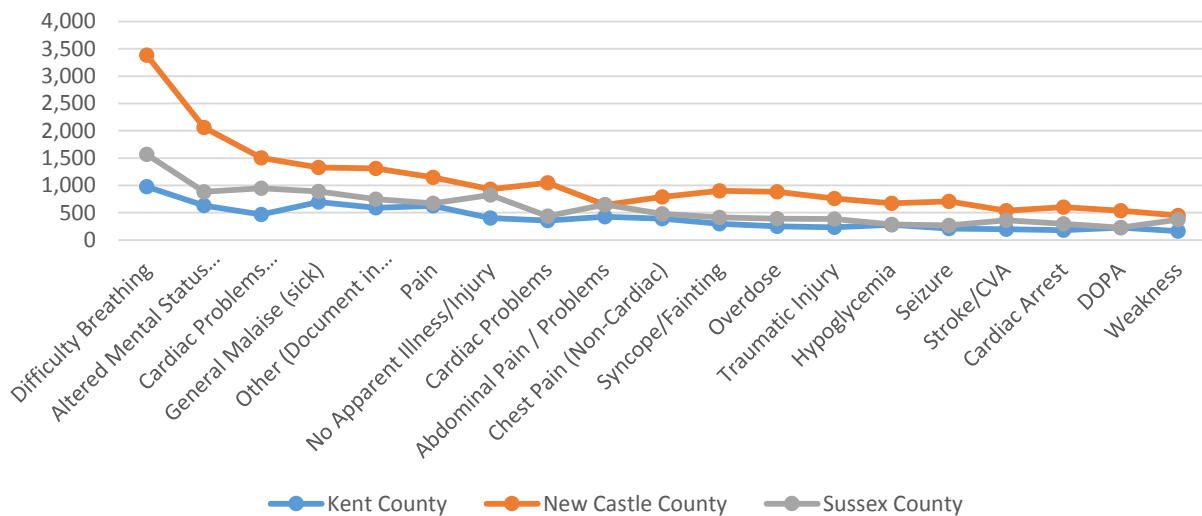
EMS systems were originally developed to reduce fatalities from traumatic injuries, especially from motor vehicle crashes. It was noticed during military conflicts that patients had better outcomes when injuries were quickly stabilized in the field and the patient was then transported to a care center. The original EMS system mimicked this with the vast majority of the emphases placed on traumatic injuries. As the science and practices of prehospital care progressed over the years, so did the scope of the EMS provider. The evolution of evidence based practices with cutting edge technologies work in tandem to improve the clinical outcome for all types of patients. The EMS system is inclusive of many different disciplines; trauma, cardiac care, medical care, pediatric care, medical transportation, public health and domestic preparedness just to highlight a few.

EMS provides care for those with perceived emergency needs and, when indicated, provides transportation to, from, and between health care facilities. Mobility and immediate availability to the entire population distinguish EMS from other components of the health care system (National Highway Traffic Safety Administration).

(All data used for this section and throughout the report were, unless noted otherwise, extrapolated from the Delaware Emergency Medical Reporting System (DEMRS). Please note for this report, Advanced Life Support (ALS) and BLS data are reported separately. While reading this report please do not combine the ALS and BLS data. Doing so would lead to inaccurate totals.)

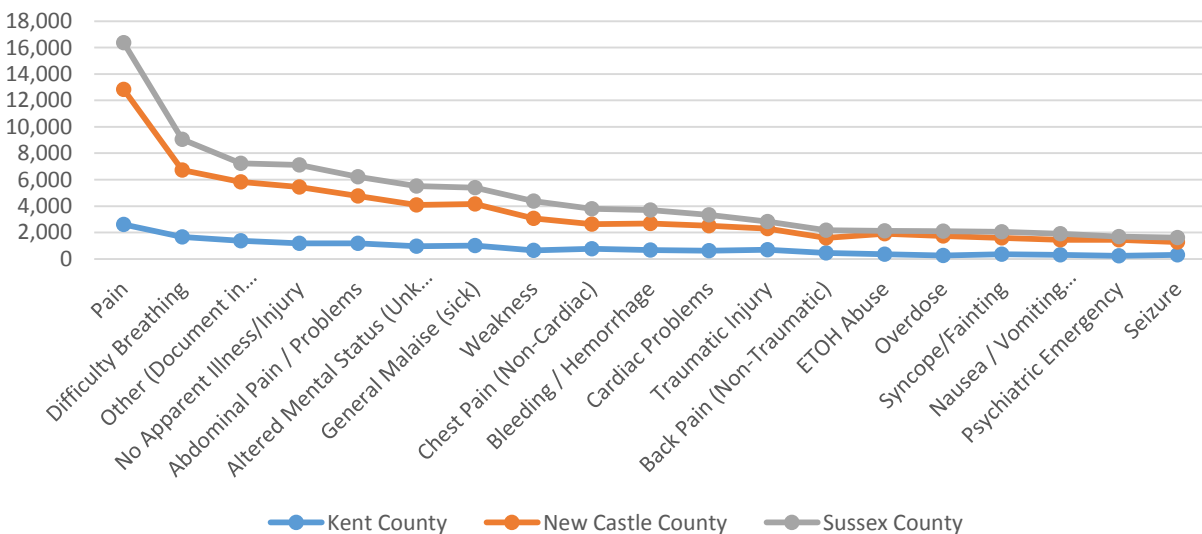


Most Common Patient Presentation by Primary Impression, ALS 2016

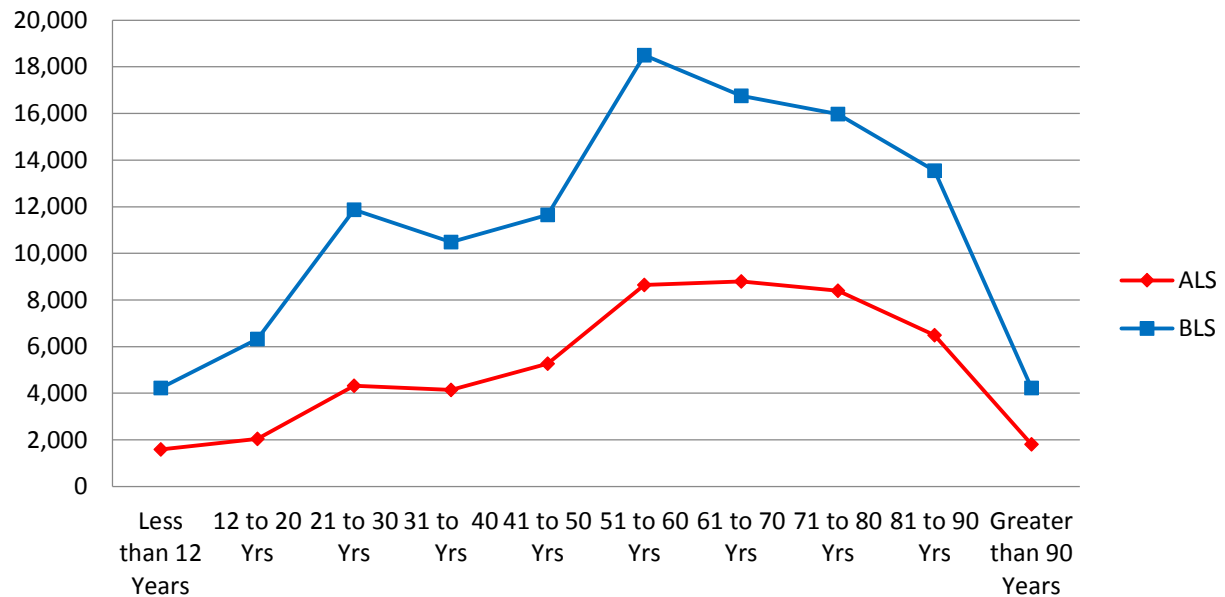


Primary Impression is the EMS provider's evaluation of the patient based on: signs, symptoms, patient's chief complaint and other factors. These graphs do not take into account the type of patient (medical, trauma). The primary impression of other is defined in the patient narrative and not able to query.

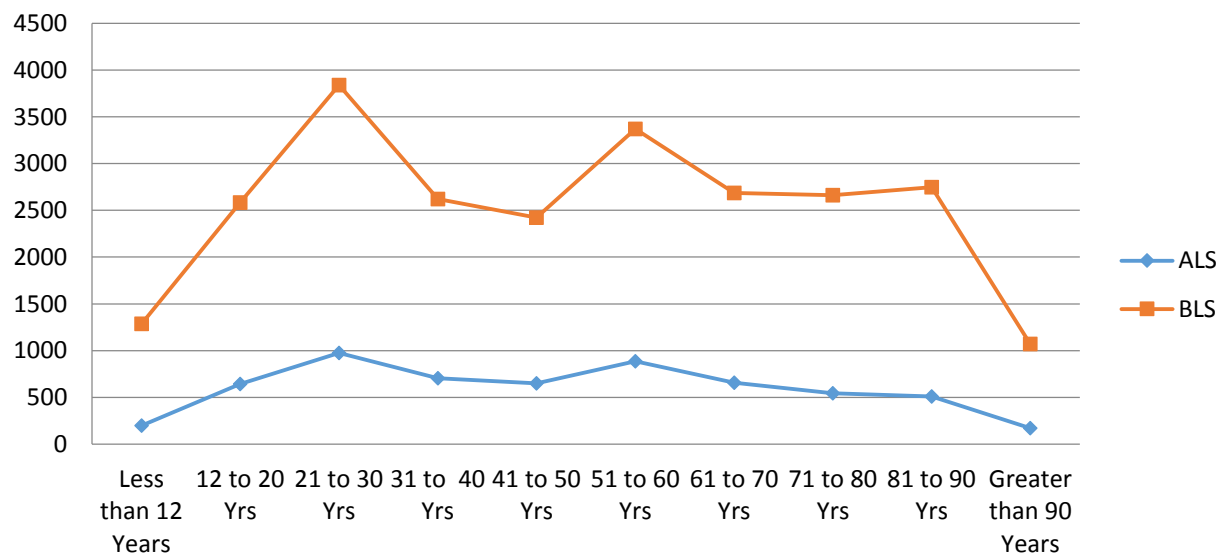
Most Common Patient Presentation by Primary Impression, BLS 2016



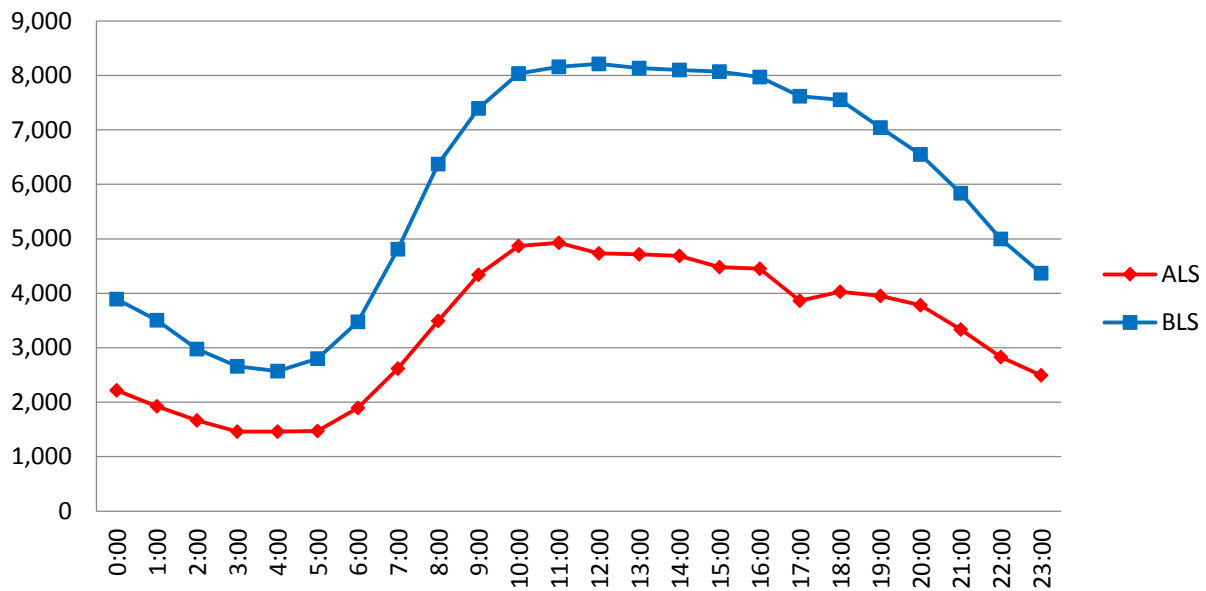
ALS and BLS Patient Age Comparison - 2016



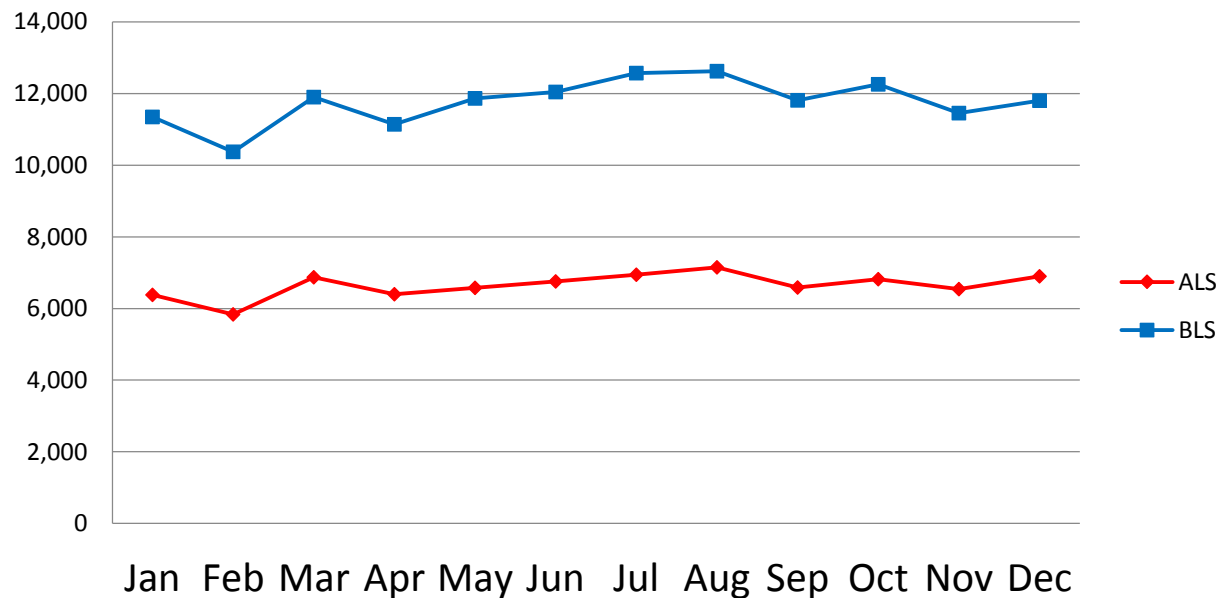
ALS and BLS Patient Age Comparison - 2016 Possible Injury Patients



Time of Day When EMS Incidents Occur - 2016



ALS/BLS Incidents by Month - 2016



Response Time Performance

The Delaware EMS system measures response time performance in fractiles. Fractile response refers to how the response time is measured against an established performance goal. For example, if a response goal is 8 minutes, the fractile response time is a percentage of the responses within that 8 minute goal. A 90% fractile response indicates that 90% of the time the response time was within 8 minutes or less. Numerous factors affect response time performance including geography, baseline resource availability, and call volume and deployment strategies.

The response time goals for the Delaware EMS system adopted by the EMS Improvement Committee are based on cardiac arrest survival research. These response goals are nationally recognized and cited by both NFPA (1710) and the American Ambulance Association guidelines. It is recognized that these are ideal goals. Response time performance measure is one of several performance goals and is not a single predictor of the health or success of an EMS system.

The performance goals for Delaware's EMS System recognizes that not all emergencies are life threatening and do not require maximum resource response. The Emergency Medical Dispatch system is a systematic approach (protocol) that assists dispatchers in identifying which 911 calls require maximum response, and identifies calls as:

Alpha – Requires a BLS response. Example is a minor burn.

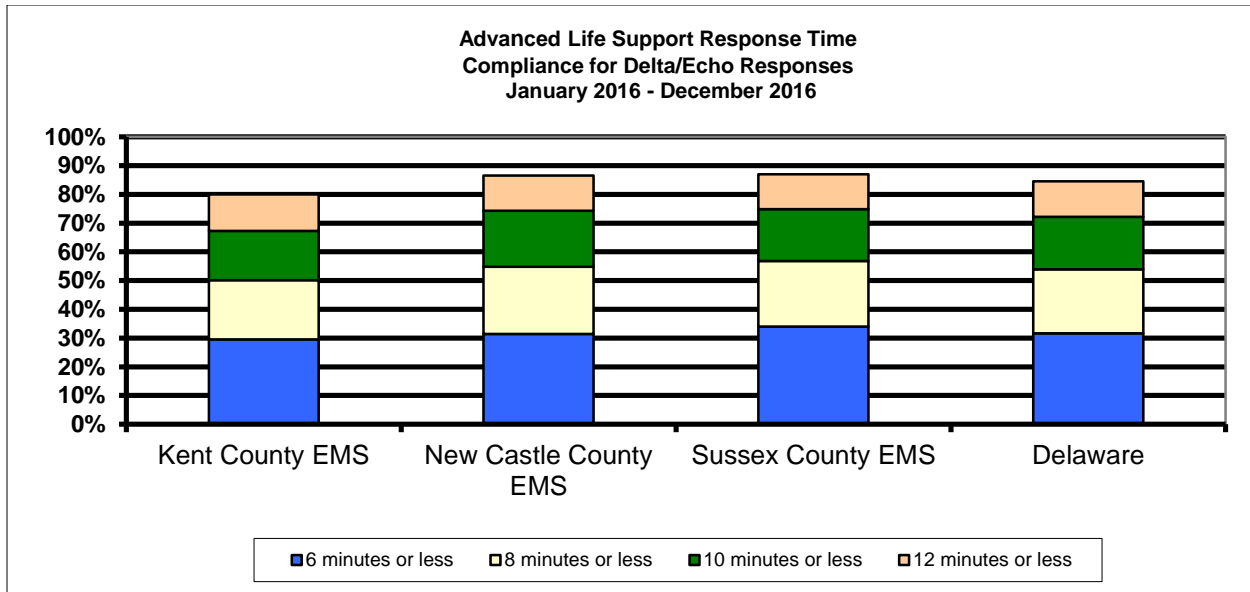
Bravo – Requires a BLS response. Example is with unknown patient status.

Charlie – Requires ALS and BLS response. Example is burns with difficulty breathing.

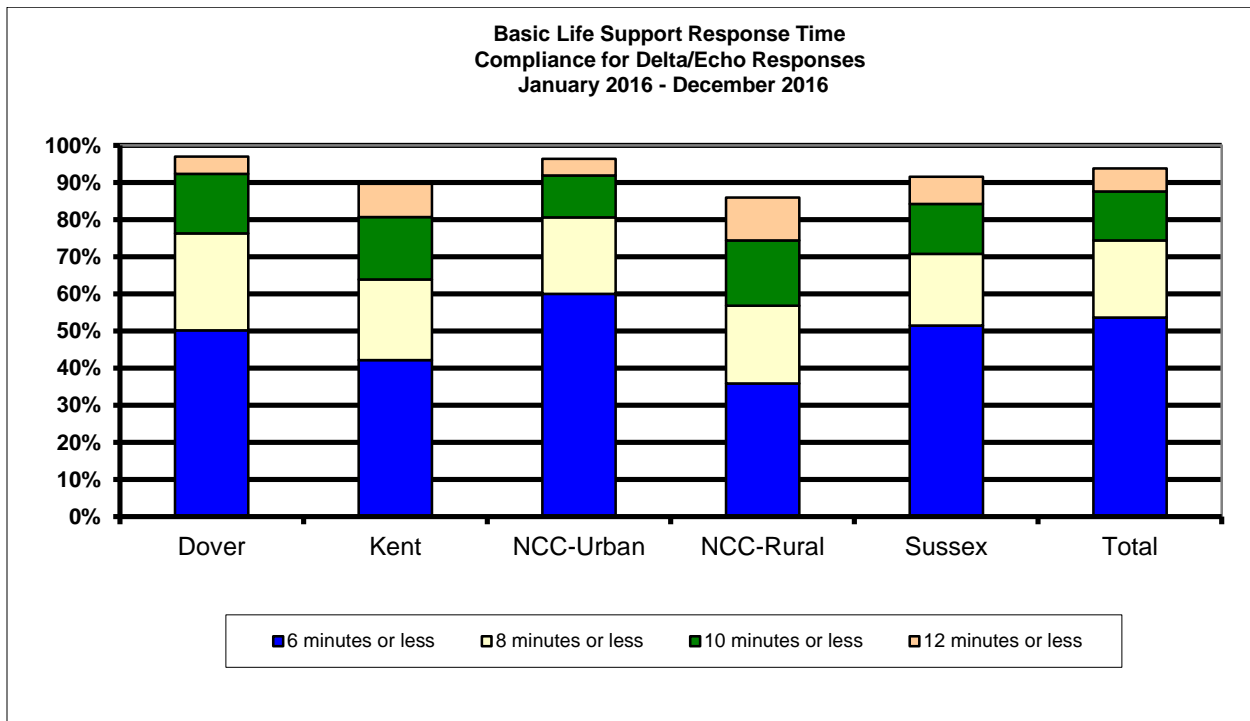
Delta – Requires ALS and BLS response. Example is an unconscious burn victim.

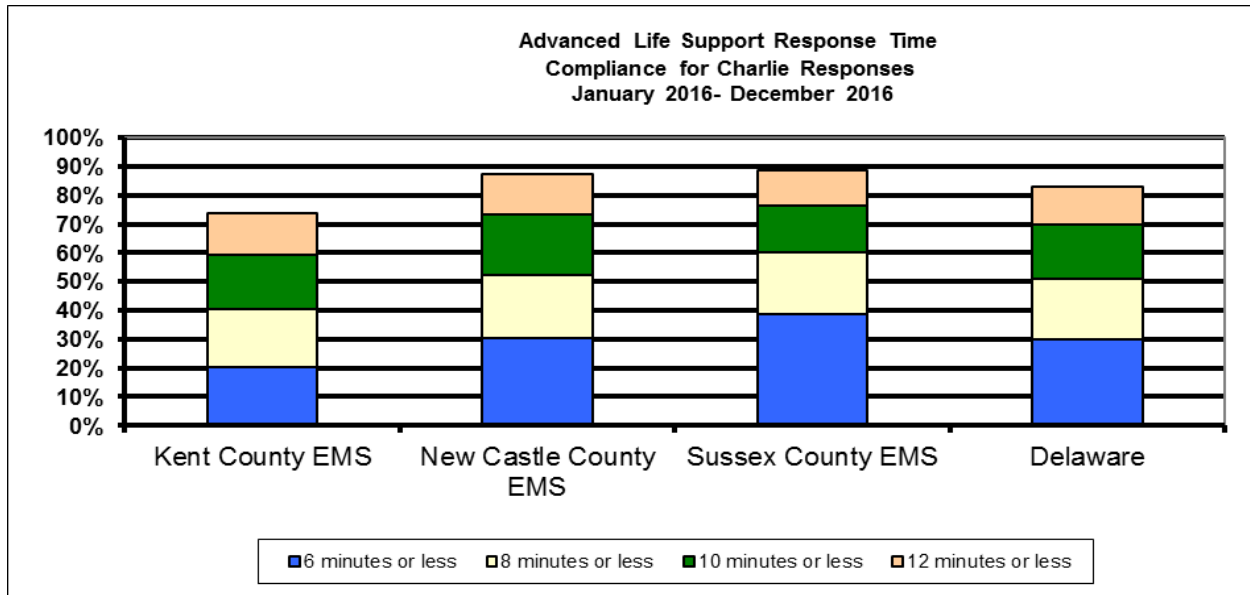
Echo – Response type not addressed in the legislated response time goals, but it requires a maximum response to include available first responders. Example would be a cardiac arrest.

Omega – Response type not addressed in the legislated response time goals. An example of an Omega response is a dispatcher, while remaining online with the caller, connects to a poison control center for instructions.

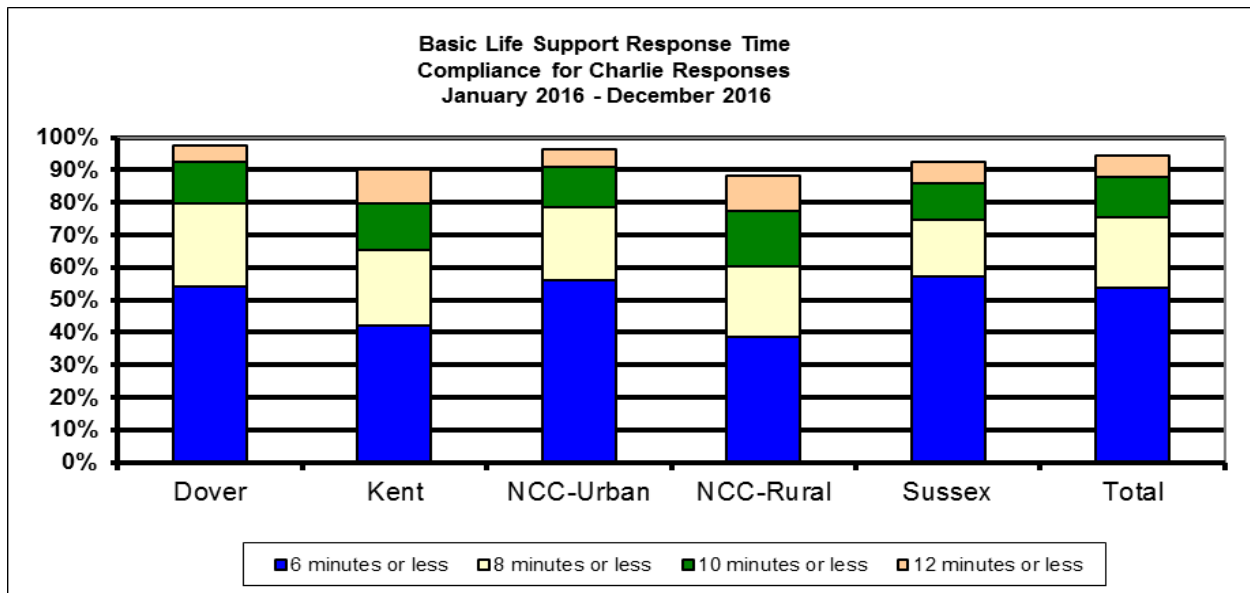


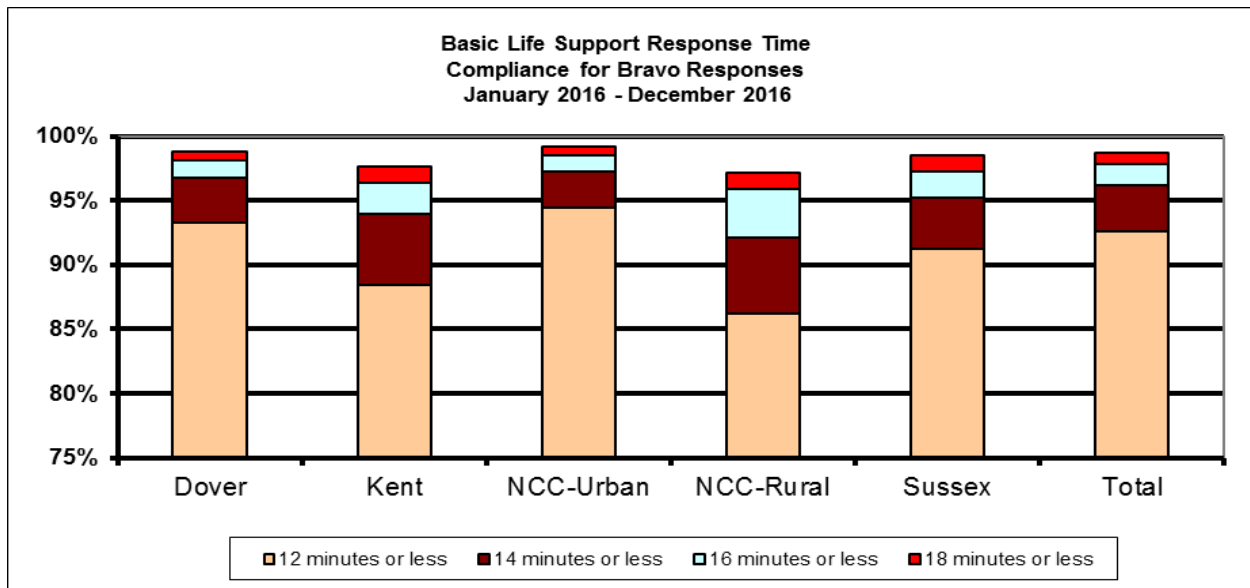
Goal: Each Advanced Life Support (ALS) paramedic agency within the Delaware EMS system provide an ALS paramedic unit, as defined by recognized state standard, on the scene within 8 minutes of the receipt of Delta calls on at least 90% of the time. BLS ambulance unit on scene within 10 minutes of the receipt of Delta calls on at least 90% of the times in urban areas and 70% of the times in rural areas.



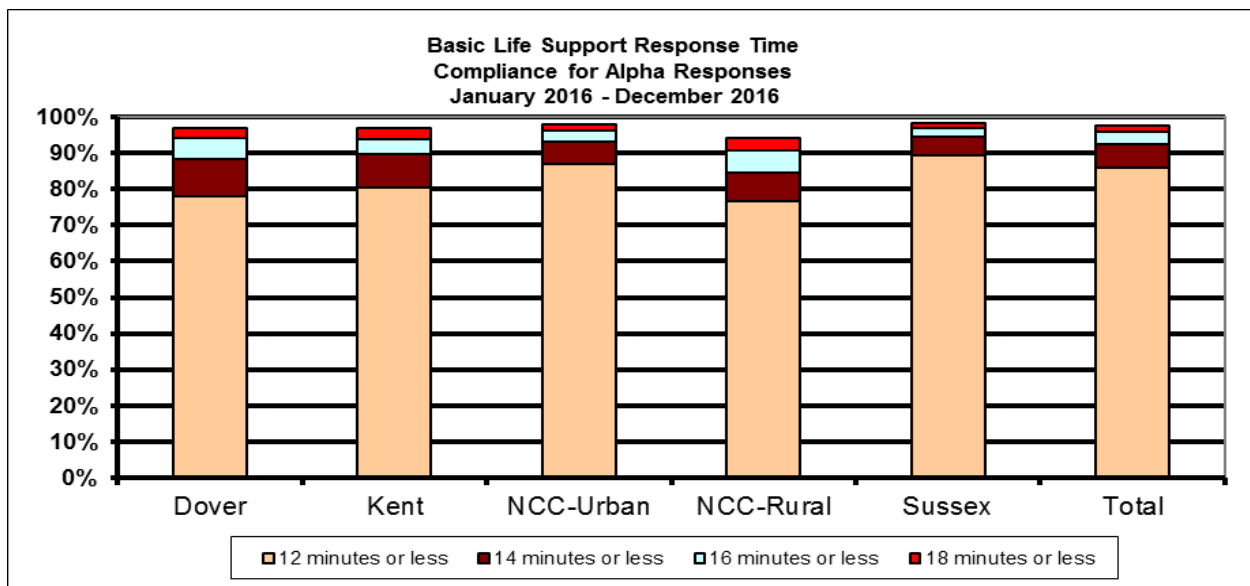


Goal: Each Advanced Life Support (ALS) paramedic agency within the Delaware EMS system provide an ALS paramedic unit, as defined by recognized state standard, on the scene within 8 minutes of the receipt of Charlie calls on at least 90% of the time. BLS ambulance unit on scene within 12 minutes of the receipt of Charlie calls on at least 90% of the times in urban areas and 70% of the times in rural areas.



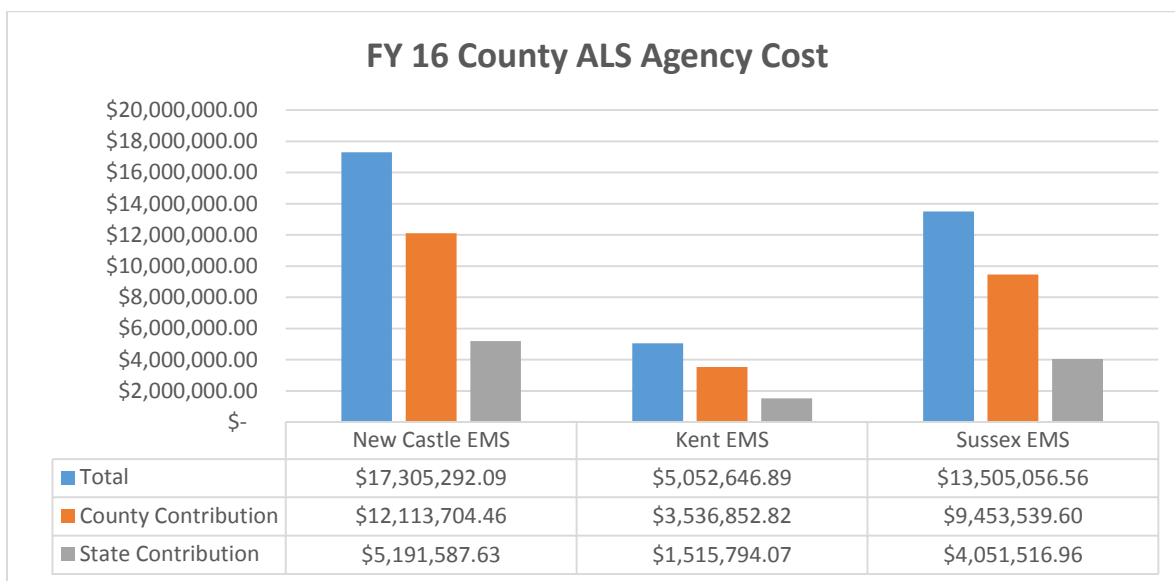


Goal: BLS ambulance unit on scene within 12 minutes of the receipt of Bravo calls on at least 90% of the times in urban areas and 70% of the times in rural areas.



Estimate of EMS System Cost

The Statewide Paramedic Services Act of 1990 was adopted to establish a framework for the creation of an effective and efficient means for the provision of advanced life support services to the citizens of the State regardless of their economic status, who require such services without prior inquiry as to the patient's ability to pay. The statewide paramedic funding program was established for the purpose of state participation with the counties in the financing of the statewide paramedic program. The counties are reimbursed through the State's Grant in Aid funds for portions of their expenditures for delivery of paramedic services. By law, the State of Delaware is obligated to reimburse the three counties to operate paramedic services. The law stipulates that these costs must have been incurred by the county for the direct costs to operate paramedic services. Upon inception of the Paramedic Services Act of 1990 the reimbursement level to the counties was 60 percent and has been gradually reduced to the current level of 30 percent in Fiscal year 2011.



House Bill 332 outlines the requirement for EMS agencies to report cost. “All components of the EMS system should report revenues and expenses so that the system can be continually evaluated for its cost effectiveness. Members of the General Assembly, the Governor, the public and other policy makers should know the costs of Delaware’s EMS system in order to measure its effectiveness”.

Basic Life Support (BLS) Program Cost

"Commission responsibilities have changed with the passing of legislation via the Ambulance and EMS Task Force. A committee has been working diligently to meet the requirements of HB 266 section 39 that requires the State Fire Prevention Commission and Department of Insurance to submit a report concerning the cost of an ambulance run. This year's reporting cost will not be available due to the task at hand, which will be used to create legislation to enact such a method by the General Assembly for the cost.

-David J. Roberts, Chairman Delaware State Fire Prevention Commission

New Castle County Paid Personnel by Agency

<u>Agency Name</u>	<u>phone number</u>	<u>Total Pd personnel</u>	<u>Shifts covered</u>
*Aetna Hose Hook & Ladder	454-3310	8 FT - 40 PT	24 hour coverage
*Belvedere Fire Co. 30		1 FT - 15 PT	12H
*Brandywine Hundred Fire Co. 11	764-4901	8 FT - 4 PT	24/7
*Christiana Fire Co. 12	737-2433	10 FT - 45 PT	24/7
Claymont Fire Company 13	798-6858	3 FT - 30PT 0VOL	24/72
Cranston Heights Fire Co. 14	998-3140	7 FT - 39 PT	24/7
Delaware City Fire Company 15	834-9336	4 FT - 15 PT	24 On ~ 72 Off
*Elsmere Fire Co. 16	999-0183	4 FT - 15 PT	24/7
Five Points Fire Company 17	994-2245	2 FT - 18 PT	24/7
*Goodwill Fire Company	328-2211	6 FT-10 PT	24/7
Hockessin Fire Co. 19	239-5279	10 FT - 23 PT	24/7
Holloway Terrace Fire Co.	654-2817	25 PT	24/7
MillCreek Fire Company 21	998-8911	10 FT - 18 PT	24/7
*Minquedale Fire Company 22	652-0986	8 FT - 12PT	24/7
Minquas Fire Co. 23	998-3474	2 FT 30 PT	24/7
Odessa Fire Co. 24	378-8929	20 PT	24/7
Port Penn Vol. Fire Co. 29	834-7483	4 FT - 30 PT	24/7
Talleyville Fire Co.	478-1110	11 FT- 20 PT	24/7
*Townsend Fire Co. 26	378-8111	2 FT	10H
Volunteer Hose Company	378-7799	9 FT 20 PT	24/7
Wilmington Fire Department 100	571-4410	172	24/72
*Wilmington Manor Fire Co.	328-3209	10 FT - 21 PT	24/7
*based on 2015 report			

Kent County Paid Personnel by Agency

<u>Agency Name</u>	<u>phone number</u>	<u>Total Pd personnel</u>	<u>Shifts covered</u>
Bowers Fire Co. 40	335-5966	14PT	12H
Camden-Wyoming Fire Co. 41	697-3201	7FT-19PT	24/7
Carlisle Fire Company 42	422-8001	2FT-19PT	24/7
Cheswold Fire Co. 43	736-1516	5FT-21PT	24/7
Clayton Fire Co. 6	653-7317	0	0
Felton Community Fire Co. 48	284-4800	6FT-13PT	24/7
Frederica Vol. Fire Co. 49	335-3235	8PT	12H
Harrington Fire Co. 50	398-8931	2FT- 30PT	12H
Hartly Fire Co. 51	492-3677	1FT 8PT	8H
Leipsic Fire Co. 53	674-0829	10EMT 15 Drivers VOL	
Magnolia Vol. Fire Dept. 55	335-3260	33PT	24/7
*Marydel Fire Co. 56	492-9917	VOL 7EMT, 6EMR	24/7
Smyrna American Legion 64	653-6465	7FT- 20PT	12H
South Bowers Fire Company	335-4666	60 VOL	
*based on 2015 report			

Sussex County Paid Personnel by Agency

<u>Agency name</u>	<u>phone number</u>	<u>Total Pd personnel</u>	<u>Shifts covered</u>
Blades Fire Co.	629-4896	4FT - 8PT	24H
Bridgeville Fire Company 72	337-3000	2FT- 15PT	12H
Dagsboro Fire Co. 73	732-6151	4FT - 5PT	24/7
Delmar Fire Co.	846-2530	8FT - 8PT	24/7
Ellendale Fire Co. 75	422-7711	3FT - 20PT	24/7
Frankford Fire Co. 76	732-6662	4FT - 5PT	24/7
Greenwood Fire Co. 78	349-4529	1FT - 30PT	12H
*Gumboro Vol. Fire Co. 79	238-7411	6FT - 0PT	12H
Laurel Fire Dept. 81	875-3081	7FT - 10PT	24/7
Lewes Fire Dept 82	645-6556	13FT - 20PT	24/72
Memorial Fire Co. 89	422-8888	2FT - 4PT	24/7
Mid Sussex Rescue Squad Inc.	945-2680	10FT - 25PT	
Millsboro Fire Co 83	934-8359	10FT - 16PT	24/72
Millville Vol Fire Company 84	539-7557	15FT - 23PT	24/72
Milton Fire Co. 85	684-8500	5FT - 12PT	24/7
Rehoboth Beach Vol. Fire Co. 86	227-8400	15FT - 30PT	24/7
Roxana Vol. Fire Co. 90	436-2300	7FT - 20 PT	24/72
Seaford Vol Fire Co. 87	629-3112	10FT - 23PT	24/7
Selbyville Fire Co. 88	436-8802	4FT - 4PT	
*based on 2015 report			

Aviation and Dispatch Center Cost

Delaware State Police Aviation:

Total Costs:	\$5,341,400.00
Personnel:	\$3,981,000.00
Contractual	\$1,047,500.00
Supplies & Materials	\$312,900.00

Dispatch Centers

New Castle County 911 Center (*Fire/EMS Only*):

Total Costs:	\$5,534,120.00
Personnel:	\$5,503,582.00
Equipment:	\$5,000.00
Training:	\$25,538.00

Kent County 911 Center:

Total Costs:	\$2,610,400.00
Personnel:	\$2,091,000.00
Equipment:	\$116,800.00
Training:	\$10,000.00

Sussex County 911 Center:

Total Costs:	\$2,198,789.00
Personnel:	\$1,934,249.00
Equipment:	\$212,727.00
Training:	\$19,395.00

Seaford 911 Center:

Total Costs:	\$637,708.00
Personnel:	\$600,252.00
Equipment:	\$37,456.00
Training:	\$0.00

Rehoboth 911 Center:

Total Costs:	\$582,041.00
Personnel:	\$533,021.00
Operational:	\$22,921.00
Training:	\$1,271.00

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Celebrating
The Delaware Trauma System's 20th Anniversary
1996 - 2016
Oct. 11, 2016 – 11:00 a.m.
Legislative Hall Dover, Delaware
Recognizing our EMS system of trauma care, saving lives since 1996

Introduction

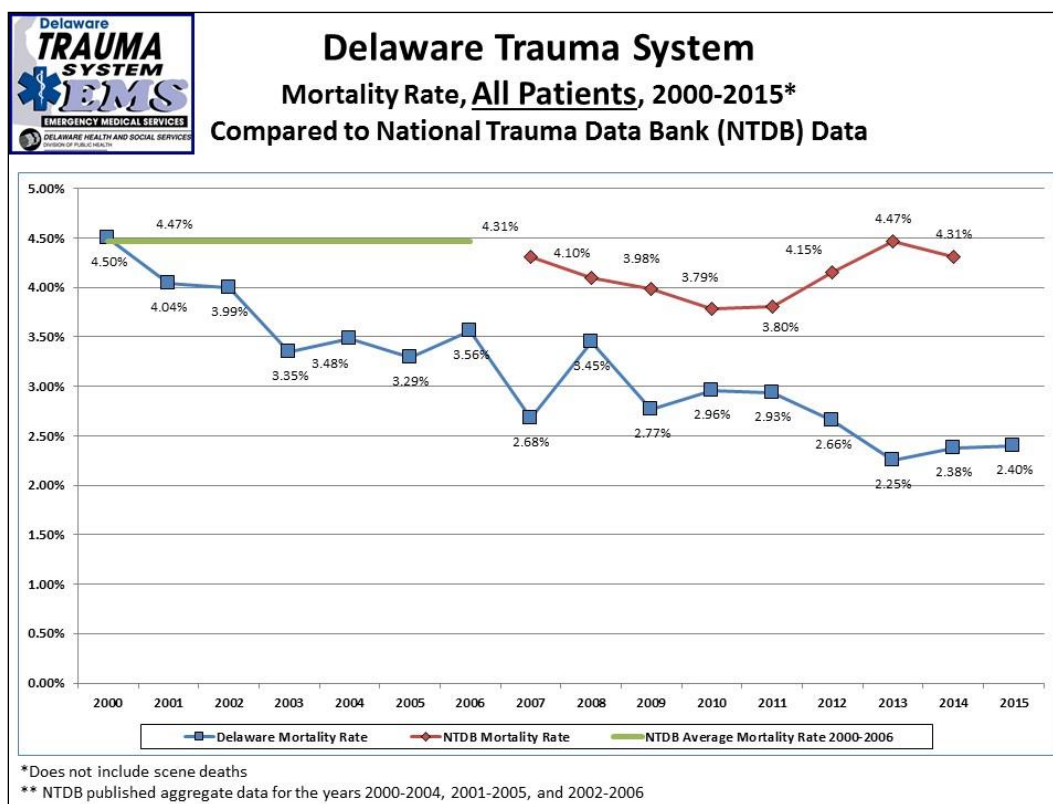


June 30, 2016 marked the 20th anniversary of the passage of legislation creating Delaware's Statewide Trauma System. The passage of this enabling legislation was the first step in systematically improving the care provided to the injured of our state. Today's Delaware Trauma

System is comprised of a network of professionals who work together to ensure that trauma patients receive appropriate and expedient emergency medical care. The success of the statewide Trauma System is the result of much hard work by many people and agencies. As Lead Agency, the Division of Public Health's (DPH) Office of Emergency Medical Services (OEMS) provides oversight of the Trauma System, from the time a traumatic incident occurs through the full continuum of care.

With the guidance of OEMS and the dedication of many individuals statewide, Delaware has developed one of the nation's few truly inclusive statewide Trauma Systems, in which every acute care hospital participates in the Trauma System and has met the standards for state designation as a Trauma Center. Most importantly, this means that no matter where in the state people are injured, they enter a system of care that follows the same guidelines, regulations, and standards and makes sure they are cared for in the facility best able to manage their injuries. *Since July 1996, over 101,000 people have been cared for by Delaware's Trauma System.*

As seen in the following graph, not only has the mortality rate decreased by 53% since the official implementation of the statewide Trauma System in 2000, but the rate has consistently been lower than the national mortality rate for injured persons.



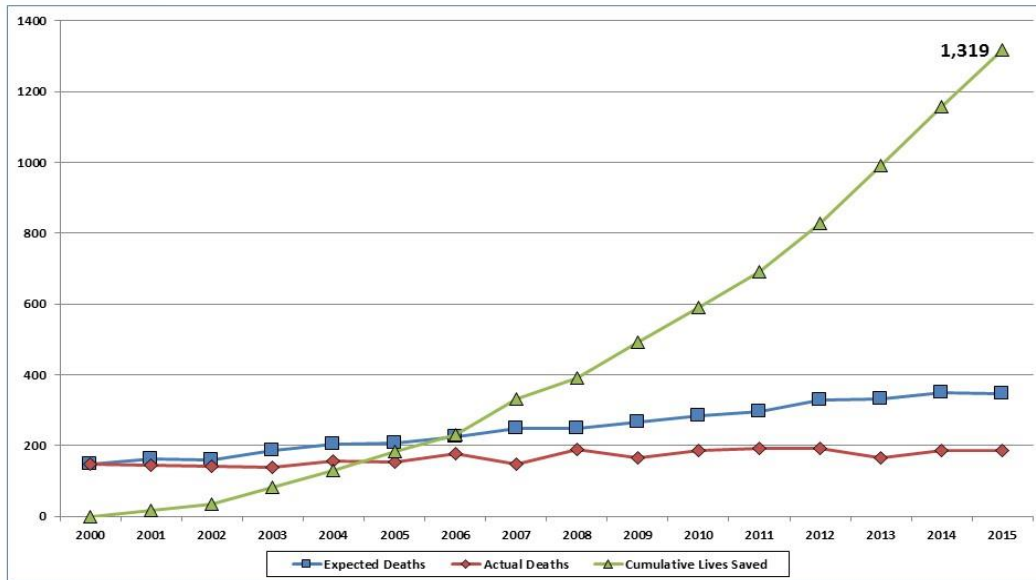
This data translates into human lives saved. As shown in the graph below, an additional 1,319 injured people survived since the Delaware Statewide Trauma System was implemented.



Delaware Trauma System

Cumulative Number of Lives Saved By the Trauma System*

1,319 Lives Saved, 2000-2015**



* Calculation based on 2000 mortality rate of all hospitalized patients
 ** Does not include scene deaths

And so on October 11 the Trauma System celebrated its successes and thanked the leaders who have been consistently involved in its implementation and growth since 1996.



The Delaware Trauma System Saves Lives

When someone is seriously injured, minutes can be the difference between life and death. To increase the chance of survival and reduce the chance of permanent disability, in 1996, Delaware created an integrated, statewide trauma system that begins with a 9-1-1 call and does not end until after the patient receives high quality hospital care.

The DHSS Division of Public Health Office of Emergency Medical Services, (OEMS) oversees the system from the time traumatic incidents occur through the full continuum of care. The Delaware General Assembly and then-Governor Thomas Carper created the Delaware Statewide Trauma System via legislation in July 1996.

The Delaware Trauma System members include 9-1-1 Emergency Communications Centers, Emergency Medical Service (EMS) providers of Basic and Advanced Life Support, fire and police agencies, air medical transport, hospital emergency trauma teams, operating rooms, and intensive care units.

The state's trauma system is credited with saving 1,319 lives, caring for 101,000 seriously injured people since 2000, an almost 50 percent decrease in the mortality rate in that time.

For more information about the Delaware Trauma System, visit <http://dhss.delaware.gov/dhss/dph/ems/trauma.html> or call the Office of Emergency Medical Services at 302-223-1350.



AGENDA

Welcoming remarks: Injury as a Public Health Challenge

Karyl T. Rattay, MD, MS
 Director
 Division of Public Health
 Delaware Health and Social Services

Remarks from a Recovered Trauma Patient

Melanie Pertain, RRT
 Registered Respiratory Therapist
 Christiana Care Health System

Delaware's Trauma System: Then and Now

Linda Laskowski Jones, MS, APRN, ACNS-BC, CEN, FAWM, FANN
 Vice President
 Emergency & Trauma Services
 Christiana Care Health System

Remarks: A System For the Good of All the People

Rita Landgraf
 Secretary
 Delaware Health and Social Services

Presentation of Tributes for Continuous Service to Delaware's Trauma System, 1996-2016

Remarks: Why Delaware Needed a Trauma System

The Honorable Bruce C. Ennis
 Senator
 Delaware General Assembly

Immediately following: photo of attendees on Legislative Mall, near the first responder vehicles. (If inclement weather, on inside stairs.)

Linda Laskowski Jones, MS, APRN, ACNS-BC, CEN, FAWM, FANN, V. P. Emergency & Trauma Services, Christiana Care Health System, spoke on *Delaware's Trauma System, Then and Now*.



Senator Bruce C. Ennis, sponsor of the Trauma System enabling legislation, talked about *Why Delaware Needed a Trauma System*. Representatives Ruth Briggs-King, Dave Wilson, and Harvey Kenton spoke about the value of the Trauma System.



In the next photo, attendees representing the agencies that make up the Trauma System posed for a group photo following the event. Some of the awardees are shown with the plaques they were presented to recognize their 20 years of service to development of the system.



The number of Delaware residents injured seriously enough to require hospitalization continues to rise in Delaware. Trauma System Registry records show that 7,905 citizens and visitors to Delaware were injured seriously enough to require hospitalization in Delaware hospitals in 2015 and of these, 361 sustained fatal injuries. Our Trauma System cares for more patients each year.

American College of Surgeons review teams visit each Level 1, 2, and 3 Trauma Center and report to the Division of Public Health on the facility's compliance with the Trauma Center Standards before a hospital can be designated as a Delaware Trauma Center. Reviews must be successfully completed every three years in order for a hospital to retain its state Trauma Center designation status. Current Trauma Center designations are:

REGIONAL LEVEL 1 TRAUMA CENTER:

- *Christiana Hospital, Christiana Care Health System*

A Regional Resource Trauma Center has the capability of providing leadership and comprehensive, definitive care for every aspect of injury from prevention through rehabilitation. It also serves as the lead Trauma Center for the Trauma System.

PEDIATRIC REGIONAL LEVEL 1 TRAUMA CENTER:

- *Nemours / Alfred I duPont Hospital for Children*

A Pediatric Regional Resource Trauma Center has the capability of providing leadership and comprehensive, definitive pediatric trauma care for the most severely injured children within its geographic area. It assumes a leadership role in the care for injured children within its local, regional, and statewide Trauma Systems.

COMMUNITY LEVEL 3 TRAUMA CENTERS:

- *Bayhealth Kent General Hospital*
- *Bayhealth Milford Memorial Hospital*
- *Beebe Healthcare*
- *Nanticoke Memorial Hospital*

- *Saint Francis Healthcare, provisional*
- *Wilmington Hospital, Christiana Care Health System, provisional*
- *Peninsula Regional Medical Center (Salisbury Maryland) via reciprocity*

A Community Trauma Center is capable of providing assessment, resuscitation, stabilization, and triage for all trauma patients, arranging for timely transfer of those patients requiring the additional resources of a Regional Trauma or Specialty Center, and delivering definitive care to those whose needs match the resources of this facility. *Reciprocity* means that Delaware's Division of Public Health has accepted the Trauma Center designation conferred by Maryland.

2016 Accomplishments

Research has shown that the coordination of resources which takes place as a Trauma System develops can result in dramatic reductions, up to 50%, in preventable deaths due to injury (Mann NC, Mullins RJ, MacKenzie EJ, et al. Systematic review of published evidence regarding trauma system effectiveness. J Trauma. 1999;47(3 suppl):S25-S33).

Delaware's Statewide Trauma System has saved lives for over 20 years. Many of its leaders have been at the forefront of the growth and evolution of this system of time-critical care during that entire time period, and even longer. Two new systems of care, the Delaware Pediatric System and the Delaware Stroke System, have been modeled after this successful initial system. And in 2016 two Trauma System Participating Hospitals made the commitment to become Level 3 Trauma Centers, a benefit not only to their communities but also to the Trauma System overall.

The National Highway Traffic Safety Administration (NHTSA) review team for Delaware's May 2016 EMS System Reassessment site visit said this in their final report:

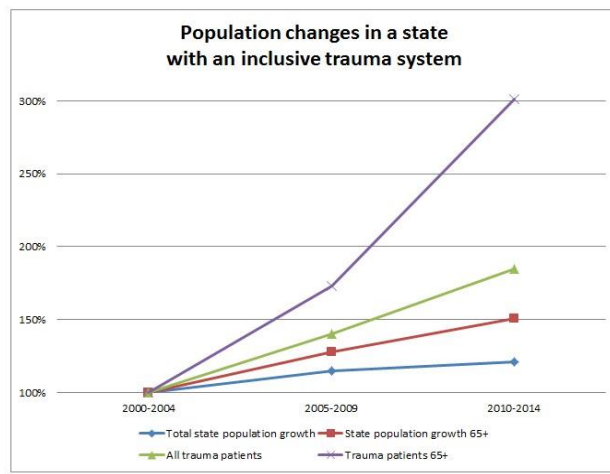
"The Trauma System is justifiably a point of pride for the state of Delaware. The success of the system to get the right patient to the right care at the right time is measured not only in national accolades but also in the salvaged lives of the citizens of Delaware. The outcomes of this comprehensive, voluntary, inclusive system, now in its 20th year, are a testament to the network of professionals and organizations willing to collaborate in the tough job of saving injured lives."

2017 Challenges

Financial support for the Trauma System

Lack of any funding support for our Trauma System continues to be a challenge. This issue has never been pursued to the legislative level. While Delaware hospitals have to date been motivated to "do the right thing for their communities", they are facing the same financial challenges as Trauma Centers across the country---increasing patient volumes, managed care, lifestyle preferences of physicians that do not wish to take trauma call, malpractice insurance costs, uncompensated care, and expectations of physicians for payment to participate in trauma programs. Some Delaware Trauma Centers are finding a source of reimbursement through billing for trauma activations and substance abuse Screening and Brief Intervention and Referral programs. A Legislative Team has been formed by the hospital representatives on the Trauma System Committee to look more closely at this issue.

More resources are needed to maintain the same level of optimal care for the rising number of injured in our state. More injury prevention work needs to be done to provide effective education to the public so they can avoid situations that can cause injury.



Despite a two-fold increase in geriatric trauma patients, mortality of these patients decreased from 6.6% (n=243) in 2000-2004 to 5.2% (n=332) in 2005-2009 to 3.5% (n=391) in 2010-2014 ($p < .001$). Length of stay also decreased from 5 days (3-8) in 2000-2004 to 4 days (3-6) in 2010-2014 ($p < .001$). Trauma evaluations of elderly patients increased at twice the rate of the general population. Despite the increasing burden of geriatric trauma, care in a maturing inclusive trauma system was associated with decreased mortality and length of stay.

Injury hospitalizations have increased faster than the population growth over the first 15 years of the Trauma System's development.

There is no indication that this pattern will change in the near future.

Recommendations for the Trauma System in the 2016 NHTSA visit report include:

- Use the success of the Delaware Trauma System at saving lives as a compelling example of the system's value for critically needed funding.
- Assign additional personnel for trauma registry data analysis and injury prevention functions.
- Trauma System stakeholders should review the system using the Benchmarks, Indicators, and Scoring tool (HRSA) – done March 2017.

Summary

Supporting the statewide Trauma System and its injury prevention programs as part of the state's economic responsibility will yield a substantial return through decreased injury-related deaths and permanent disabilities with loss of productivity, and will result in a healthier and safer Delaware. Delaware's Statewide Trauma System continues to mature, with the same goal it has had since it was born...saving lives.



Emergency Medical Services for Children

Introduction

Delaware was awarded its first EMSC grant through HRSA's Maternal and Child Health Bureau in 1997. The Delaware EMSC program works to support a high quality emergency care system that provides optimal care for ill and injured children. It implements and evaluates the EMSC Performance Measures as directed by the federal program. These Performance Measures include:

- online and offline medical direction/control available 24/7;
- ambulances with essential pediatric equipment;
- pediatric training and education for prehospital providers;
- hospitals ready to treat and stabilize pediatric patients;
- hospital transfer agreements and guidelines in place to safely transfer pediatric patients;
- hospitals recognized based on the level of pediatric emergency care standards met.

The Delaware EMSC Advisory Committee is chaired by a pediatrician who advises on program development and represents the EMSC program on the Delaware Emergency Medical Services Oversight Council (DEMSOC). EMSC promotes the medical home concept, encourages cultural diversity and cultural competency in the healthcare workforce, and plans methods of integration of EMSC priorities into statutes, regulations, and everyday healthcare practice.

Approximately 30 million children are evaluated in emergency departments (ED's) each year in the United States. Children account for approximately 10% of all Emergency Medical Services (EMS) transports. Since the needs of children treated in the prehospital setting are different from those of adults, prehospital care providers must have appropriate equipment and training, along with safe and effective protocols to treat children (Foltin, G. L., Dayan, P., Tunik, et al. 2010. Priorities for pediatric prehospital research. *Pediatric emergency care*, 26(10), 773-777).

Children account for nearly 25% of ED patients, and the vast majority are not seen in children's hospitals (Institute of Medicine Committee on the Future of Emergency Care in the US Health System. 2006. Hospital-based emergency care: at the breaking point). While as many as 50% of U.S. hospitals see fewer than ten pediatric patients per day, all hospitals can and should be pediatric ready (Remick, K., Snow, S., & Gausche-Hill, M. 2013. Emergency department readiness for pediatric illness and injury. *Pediatric emergency medicine practice*, 10(12), 1-13). According to the self-reported 2013 National Pediatric Readiness Project survey, in 2012 Delaware had a total of 452,061 Emergency Department visits, of which **89,388**, or 19.8%, were pediatric patients.

All ED's must have the staff, policies, equipment, and supplies in place to care for children. Children respond differently than adults to illness and injury. They have unique physical, emotional and physiological needs that require a specialized approach to care.

Unintentional injuries remain the leading cause of death for Delaware's children, despite an encouraging 30% decline in this rate between the 2001-2005 and 2007-2011 5-year reporting

intervals. But, from 2007 to 2011, there were still 278 children and adolescents between the ages of 1 and 19 who died in Delaware, representing 0.7% of total deaths that occurred during that time.

2016 Accomplishments

In 2016, the State EMSC Advisory Committee and EMSC Program focused on the following activities:

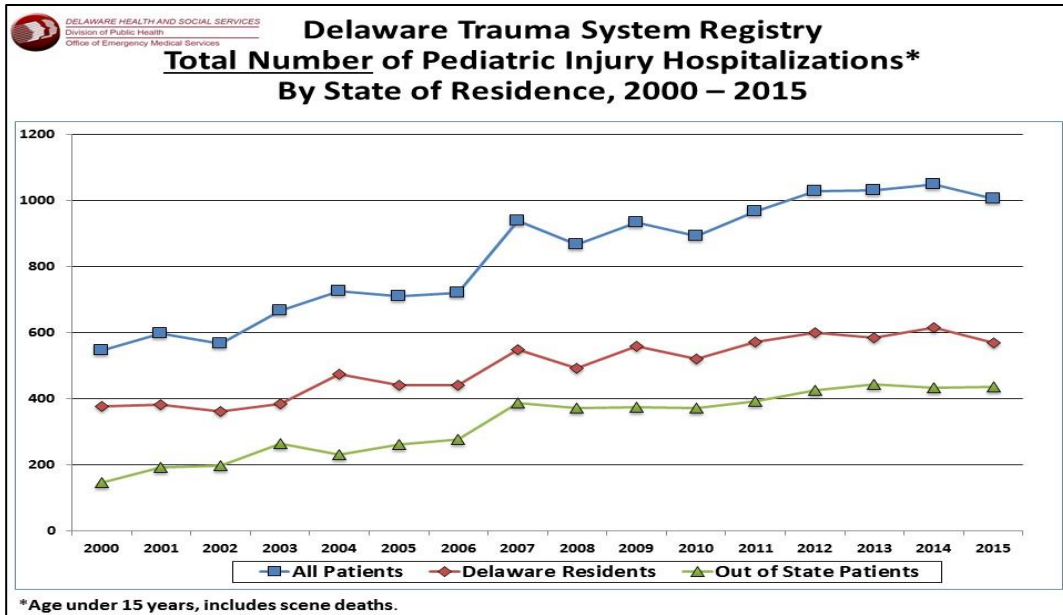
Pediatric System and Pediatric Emergency Care Facility (PECF) Recognition Program

In 2016 the EMSC program moved into the third phase of development of the Statewide Pediatric System through the PECF Recognition Program. The recognition program was developed using state-defined criteria based on national guidelines that address the qualifications of hospital providers of pediatric care, the availability of pediatric equipment and policies, and the development of a formal hospital pediatric quality improvement program. Every Delaware acute care hospital that treats children **voluntarily chose to participate in this program**, making Delaware one of only a few states with an inclusive Pediatric System. Delaware hospitals are recognized as PECF Level I-IV, with one Level 1, one Level 2, and six Level 3 recognized facilities along with two level IV tentative in the System. The initial term of recognition was effective through December 31, 2014. Reapplications were received in September 2014 and second site visits to reconfirm the PECF recognitions were conducted through early 2015. Two Level IV applications were submitted in December 16, 2016 with site visits upcoming March 2017, as well as progress reports were submitted with revisions made on recommendations per the site visits.

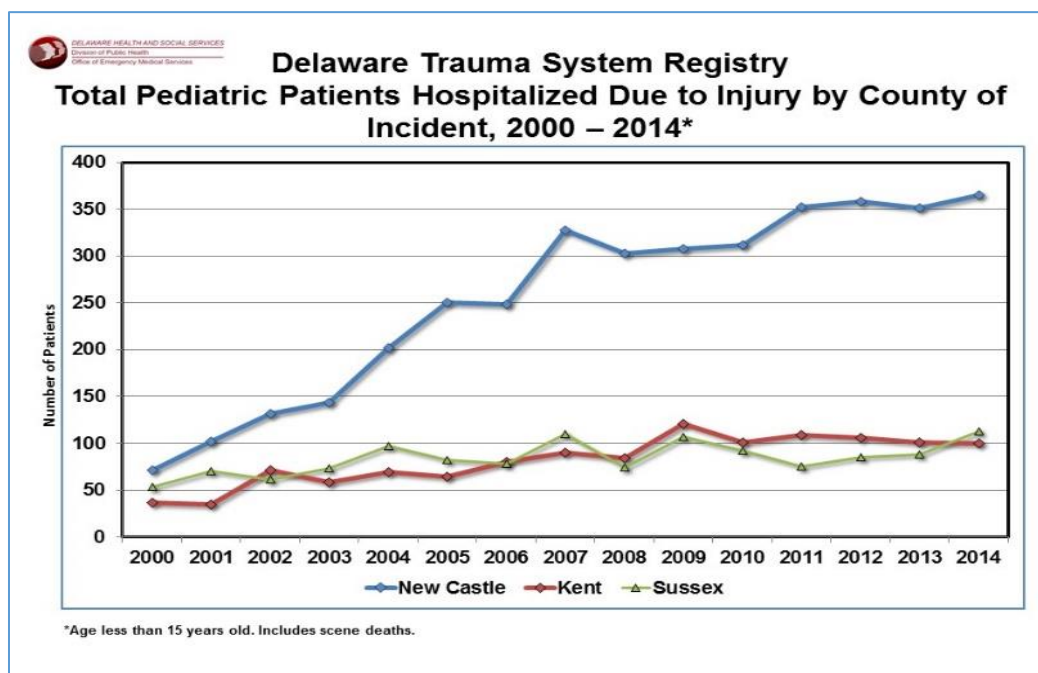
The EMSC Quality Program has been collecting pediatric quality indicator data from the hospitals, including ED documentation of children's weights in kilograms and of immunization status, and use of and time to corticosteroid administration for pediatric asthma patients as well as pain being added in the third quarter. The PECF Program has assisted hospitals by providing a forum for hospital pediatric leaders to network and learn best practices. In 2014, Delaware hospital representatives began presenting an educational case review to colleagues at each Quality Program meeting in order to share unusual cases or learning opportunities and thereby improve emergency care for children in our state. As well as providing five intensive one day hands-on courses that was designed for ALS/BLS providers who wanted experience managing pediatric scenarios. The expectation is that the Pediatric System developed through the PECF Recognition program will assist in reducing the morbidity and mortality rate of children in Delaware over time.

Data

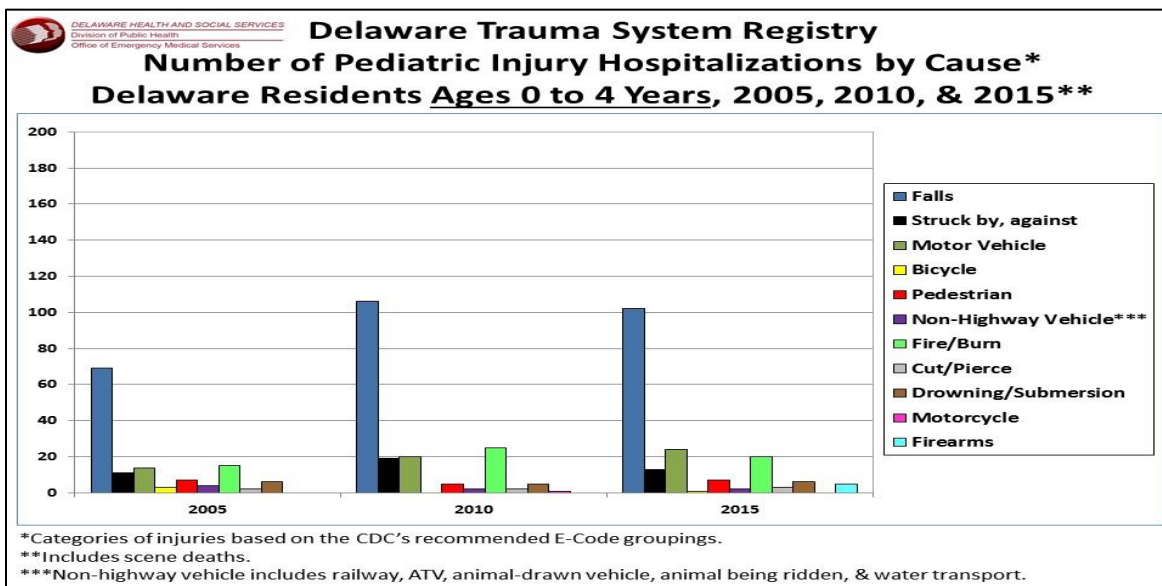
Graph 1: *Total Number of Injured Children Requiring Hospitalization in Delaware Hospitals from 2000 to 2015.* Despite injury prevention and public education efforts, the number of children injured seriously enough to require hospitalization continues to rise in Delaware. There is much more work to be done. Delaware's hospitals treat children from other states, both at Nemours/Alfred I duPont Hospital, which also serves nearby Pennsylvania, New Jersey, and Maryland, and in the resort areas as vacationers spend time in our state.



Graph 2: *Total Pediatric Patients Hospitalized Due to Injury by County of Incident from 2000 through 2014.* The graph below illustrates where the incidents that brought children to Delaware Trauma Centers occurred (note that the scale of graphs 1 and 2 are different to show more detail in graph 2). Data is presented in numbers of incidents and does not take into consideration the difference in population among the three counties.



Graph 3: *Number of Pediatric Injury Hospitalizations among Delaware Residents Ages 0 to 4 by Cause in 2005, 2010, and 2015.* Delaware Trauma System Registry data shown in the graph below illustrates the mechanisms of injury which led to the greatest number of injury hospitalizations in Delaware in the years 2005, 2010, and 2015. Falls accounted for the largest portion of pediatric injury hospitalizations within this age group in all years shown. This graph uses a different scale than graph 4 in order to show more detail.



2017 Challenges and Goals

The goals of the Delaware EMSC program are to ensure continuous improvement of the state EMS System by integrating EMSC priorities into all aspects of that system. The program's goals include providing appropriate training of pre-hospital and hospital staffs, ensuring ED's and ambulances have essential pediatric equipment, and monitoring the timely and safe transport and transfer of pediatric patients within the Pediatric System. It is vital to maintain a system that is prepared to provide optimal care for pediatric patients statewide. Through continued partnership and coalition-building, the Delaware EMSC Program will achieve and sustain its goal of assuring optimal emergency care for all children in the state.

The Pediatric System's Pediatric Emergency Care Facility Recognition Program will grow in 2017 to include Delaware's two Freestanding Emergency Departments as Level 4 PECF's. Both the Christiana Care Middletown location and the Bayhealth Smyrna location will have site visits in March as part of the process of recognizing them in the PECF program. We will also be implementing Metrics 1-3 per the National Pediatric Readiness Project starting this year.

Summary

Delaware EMSC has had successes to be proud of in 2016. Although EMSC has made great progress over the years, much remains to be done to ensure children consistently receive optimal emergency care. Through its programs and projects, the EMSC program will continue to aid in reducing death and disability of children in Delaware.

Cardiovascular Care

Following the lead of the American Heart Association (AHA), Delaware Public Health and our partner healthcare organizations continue to advance heart health in the First State. According to the AHA, there were greater than 350,000 out of hospital cardiac arrests (OHCA) in 2016. The national overall survivor rate is 12%. Heart disease and stroke remain the two most common cardiovascular diseases in Delaware. Cardiovascular disease refers to a multitude of diseases and can be caused by a multitude of medical conditions from hypertension to diabetes. Delaware Public Health continues to educate the citizens of Delaware on ways to improve their heart health. A large majority of these diseases are preventable through public education and awareness. Reducing the risk factors of cardiovascular disease can be accomplished by creating overall health awareness and by emphasizing healthier individual lifestyles. By continuing the emphasis on education and awareness as well as improving treatment the combined efforts of multiple agencies in Delaware will be able to make major contributions in reducing the risk factors associated with cardiovascular disease.

Delaware EMS agencies responded to over 6000 patients with cardiovascular related complaints annually. Our communities have been and will continue to be retiree destinations due to many benefits associated with living in Delaware. Delaware as well as most states have a native aging population due to the baby boomer generation. Due to these two factors a large number of Delaware hospitals have expanded their cardiovascular care programs. Delaware EMS systems insure a continuum of care for patients transported by EMS through integration with these hospitals. Recent improvements in cardiac protocols have enabled cardiac patients to be treated quicker and more aggressively to improve patient outcomes.

Cardiac Alert/Code

Delaware's Advanced Life Support protocols continue to emphasize the rapid recognition of symptoms associated with cardiac events. Patients receive rapid 12 lead EKG analyses and recognition of the area of myocardial infarction. This allows an early recognition of AMI/heart attack by paramedics and allows early notification of the appropriate care facility. By expediting the care of the cardiac patient, our system reduces the time from symptom onset to cardiac catheterization. In many cases, this time is an average of 60 minutes or less. Upon arrival at the emergency department, many patients go directly to the catheterization lab saving critical minutes and preserving cardiac muscle.

Stroke

Stroke is another cardiovascular event in which time is critical. Rapidly identifying the victims of stroke allow EMS to triage patients to an appropriate stroke center for prompt therapy. Recent information separates out patients suffering from occlusions of the large cerebral vessels. Our most recent revision of state EMS protocols includes the use of the Rapid Arterial occlusion Evaluate or RACE score to assess stroke patients. The RACE score allows providers to triage out patients who are potentially suffering from large vessel occlusions. Research is showing that this subset of patients benefits from specialized endovascular treatment such as the Solitaire Stent Thrombectomy – a method to remove the impairing blood clot.



First State/First Shock CPR and AED Program



The establishment of the First State/First Shock Program was envisioned by William Stevenson to reduce mortality and morbidity from sudden death cardiac arrest. That vision continues today and the First State/First Shock Program continues to provide Semi-Automatic External Defibrillators (SAED) to the public and public safety agencies. Funding and support is provided by the Health Fund Advisory Committee.

The availability of Public Access SAED's in locations of high potential for sudden cardiac arrest continues to be the focus of the First State/First Shock Program. The most significant relationship to the AED program is that the improvements in CPR will only yield positive results when coupled with early defibrillation. The primary goal of the First State/First Shock program is to provide quick response and treatment of cardiac arrest victims. Quick response and treatment has been proven to increase survivability of victims of out-of-hospital cardiac arrest. Increasing the availability of Semi-Automatic External Defibrillators by the strategic placement of these devices provides for enhanced accessibility by the general public.

The Delaware Office of Emergency Medical Services (OEMS) is charged with "Coordinating a statewide effort to promote and implement widespread use of semi-automatic external defibrillators and cardio-pulmonary resuscitation...." (*DelCode Title 1, Chap. 97*)

Since the beginning of the First State/First Shock program in 1999 the program has been committed to the following goals:

- Insuring First Responders and police vehicles are Semi-Automatic External Defibrillators (SAED) equipped, the first responder response capability has been identified as the primary goal nationally. Biphasic and pediatric capability have become the national standard.
- Decreasing death and disability in Delaware by decreasing time to defibrillation and CPR in cardiac arrest patients, the use of hands only CPR to the public and high performance CPR to the trained first responder are the focus of the future of CPR
- Promoting heart health and early detection of the signs and symptoms of heart attack
- Increasing public accessibility to throughout the state with the continuing efforts to make SAED's available through the First State/First Shock Program
- Increasing the number of Delawareans trained in Cardio-Pulmonary Resuscitation and SAED use through coordinated training efforts at all levels from churches, schools, first responders and state agency participation.
- The new Delaware Emergency Medical Reporting System (DEMRS) will provide better event tracking and patient outcome to guide future efforts

2016 Accomplishments: Continuing the First State/First Shock Program in light of severe reductions in funding due to the national recession. OEMS continues to work with program partners to insure that issued SAED's are functional and to assist with expiring equipment replacement coordination.

In calendar year 2016, the Office of Emergency Medical Services was able to distribute 79 SAED units. 10 of the units were issued to police, fire, and rescue agencies. 69 of the units were distributed to agencies requesting SAED's that qualified for the Public Access Defibrillation program. The Office of Emergency Medical Services has been able to place over 3300 units in service for public access and police, fire and rescue agencies since 1999.

2017 Challenges: Funding for the First State/First Shock program has been significantly reduced from \$200,000 in FY 2011 to \$59,900 in FY 2016. This results in limited SAED placement opportunities and eliminates the replacement of aging SAED units. As with any publicly funded program its existence is at the mercy of state funding priorities. The access to Public SAED's in locations of high potential sudden cardiac arrest coupled with fast and efficient CPR have been shown to improve survival of these sudden cardiac arrest patients.

The demand for the replacement of aging SAED's is a rapidly increasing and an ongoing challenge. The elimination of one of the current models in service will have a huge impact in the next several budget cycles. There are nearly 1500 LP-500s that were distributed by the First State First Shock program and are no longer be supported by the manufacturer, Physio-Control.

Prior to the placement of SAEDs the prognosis for cardiac arrest victims was poor with an estimated 1% to 5% with return of spontaneous circulation. For victims of cardiac arrest the return to spontaneous circulation rate in Delaware is 50%. This is a 16% increase from 2014. Delaware has made tremendous strides in strengthening the early defibrillation link in the Chain of Survival. The First State/First Shock program administered by OEMS is certain that by continuing to place SAEDs for general public access and with first responders and continue to provide CPR/AED training, we will continue to see an increase in the cardiac arrest survival rate in the State of Delaware. The replacement of aging and soon to be obsolete SAEDs will have to become a major initiative to continue these improvements.

	Number of Cardiac Arrests	Patients Pronounced Dead by Paramedics	Patients Transported to Hospital	Patients that experienced a return of circulation
2004	780	170	610	158(26%)
2005	752	185	585	170 (29%)
2006	756	166	590	190 (32%)
2007	756	151	605	215 (36%)
2008	745	117	628	222 (35%)
2009	773	119	654	261 (40%)
2010	850	131	717	252 (35%)
2011	893	136	756	273 (36%)
2012	882	173	709	253(36%)
2013	978	185	793	317 (40%)
2014	1019	287	732	324 (44%)
2015	1060	301	759	390 (51%)
2016	1125	374	751	374 (50%)

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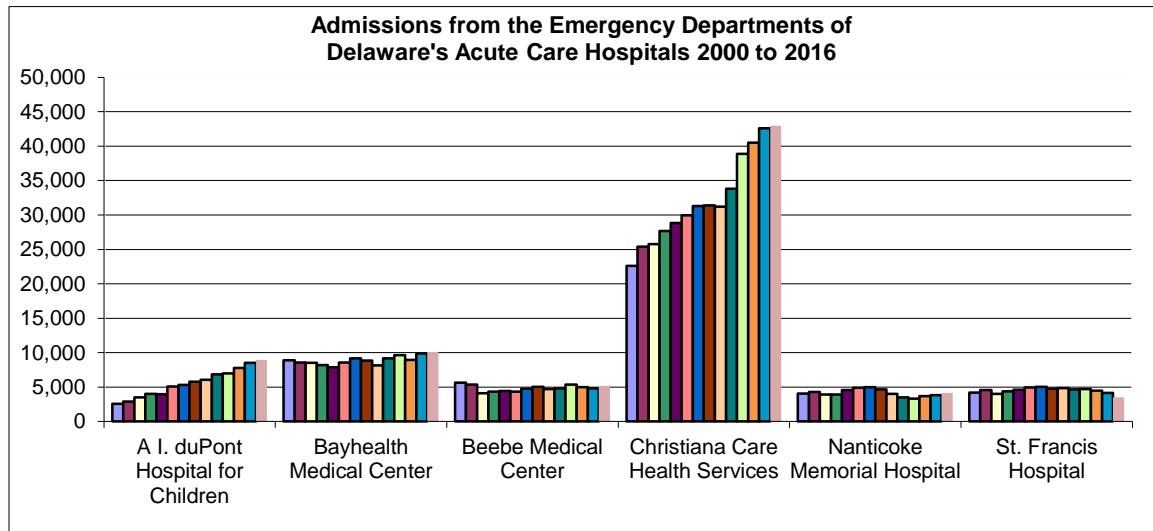
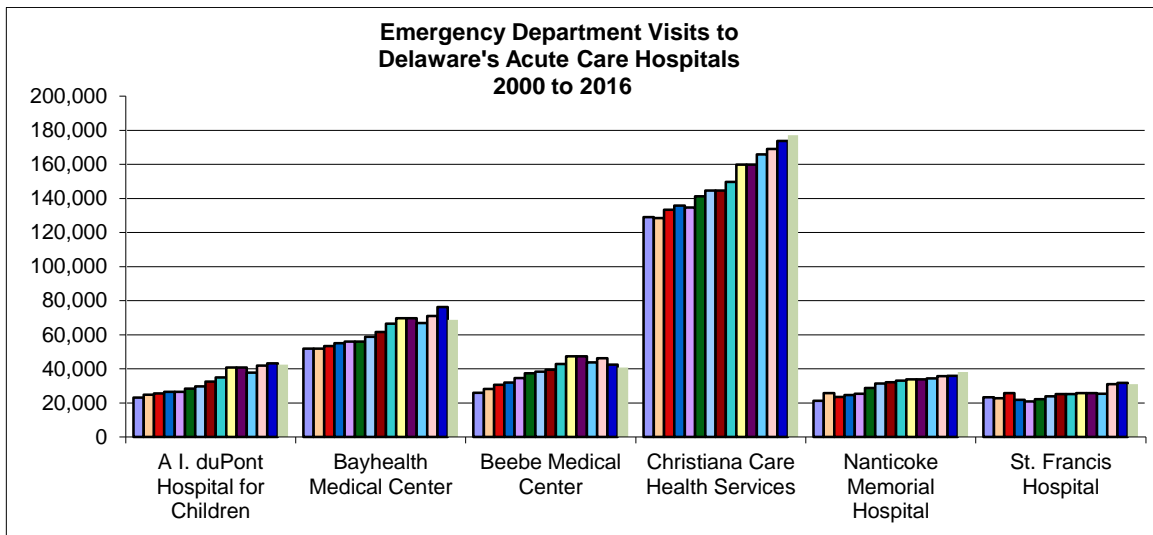
EMS Interfacility Transport 73

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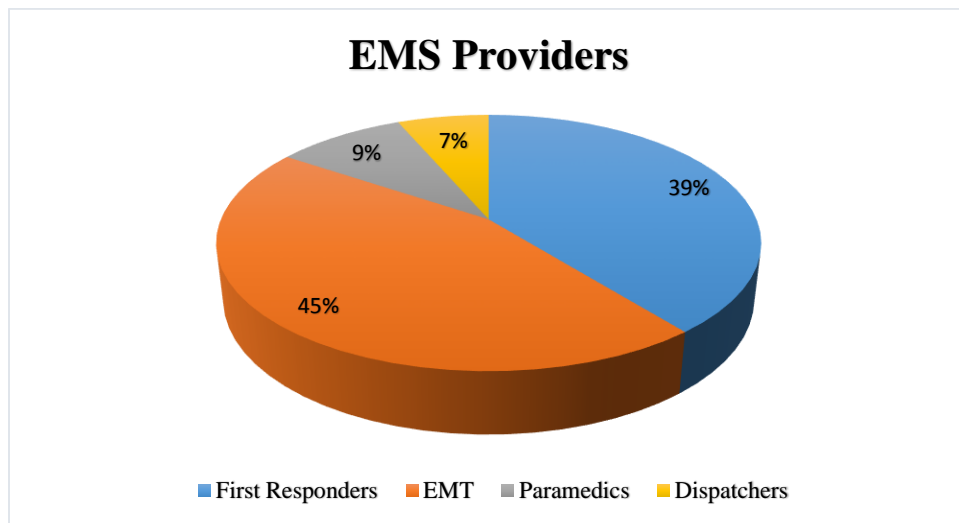
Emergency Department and Hospital Diversion Data

As submitted by Yasmine Chinoy

Information provided by the Delaware Healthcare Association indicates there were 422,730 visits to the Delaware acute care hospital emergency departments in 2016. This is an increase of 148,199 (53.98 %) hospital emergency department visits statewide from the same period in 2000. In addition, there were 76,084 patient admissions from the emergency department for 2016, an increase of 28,072 (58.47%) from the same period in 2000.



Human Resources and Workforce Development



Above is a graph that shows the percentage of prehospital providers. These are the individuals that are responsible for “taking the calls”. In addition to the prehospital providers, Medical Control Physicians are an integral part of the system. The medical control physicians give “on-line” medical direction to the providers and are the receiving physicians within the emergency rooms of the state.

Work continued in 2016 on recruitment and retention of EMS providers. There is a national shortage of EMS providers. Although Delaware is also affected by a shortage of EMS providers, the agencies across the state have worked hard to improve recruitment and retention, compensation, work conditions, training and diversity. The demand for EMS services is also expected to increase as the state’s population ages. The Delaware Population Consortium projects that from 2010 and 2040, Delaware’s population will increase 18.7%. Sussex County is expected to see the largest percent increase in population by 30%. Kent County's population is projected to reach 204,465 by 2040, an increase of 26%. New Castle County is expected to grow by 12.6% over the same period, adding 67,634 to reach a 2040 population of 606,477.

While the aging population is increasing, the volunteer population is beginning to decrease. Information from the National Registry of Emergency Medical Technicians shows that the majority of EMS responders nationwide are between the ages of 20-45. Many people within this age range are finding it more difficult to volunteer their time with the increases in dual income and single parent families, and the fact that many people are working longer hours.

DEMSOC created a workforce diversity subcommittee in 2006 to address issues with the recruiting and retention of a more diverse EMS workforce. As part of this effort, the Office of Emergency Medical Services is working with technical high schools throughout the state to develop the EMS program to increase the availability of training and allow students to transition to the Delaware Tech program upon graduation.

Education and Training

Delaware recognizes three levels of Emergency Medical Services training. They are First Responder (FR), Emergency Medical Technician – Basic (EMT-B), and Nationally Registered Emergency Medical Technician – Paramedic (NREMT-P). Registration through the National Registry of Emergency Medical Technicians (NREMT) is offered for each of these levels.

To comply with the new EMS Agenda for the Future, A Systems Approach and depending on the level of certification, the designation has changed over the last five years. The National Registry of Emergency Medical Technicians, The Delaware Office of Emergency Medical Services and The Delaware State Fire School continue their commitment to implementing the EMS Agenda of the Future. Outlined below are the processes EMS providers must follow with the dates which they must have completed the transition.

Transition from First Responder to Emergency Medical Responder

Personnel certified at the First Responder level are regulated by the Delaware State Fire Prevention Commission. The Delaware State Fire Prevention Commission does not require NREMT certification at this level, however it is highly encouraged. The lead agency for First Responder education is the Delaware State Fire School. All NREMT First Responders and state certified First Responders will have the new designation of Emergency Medical Responder. First Responders had until September 30, 2016 to complete the transition.

Transition from EMT-Basic to EMT

Personnel certified at the Emergency Medical Technician-Basic level are regulated by the Delaware State Fire Prevention Commission. NREMT certification is required to obtain initial Delaware EMT-B certification and although NREMT certification is not required to maintain Delaware EMT-B certification, it is highly encouraged. The lead agency for Emergency Medical Technician-Basic education is the Delaware State Fire School. All NREMT – Basics and state certified EMT-Basics will have the new designation of Emergency Medical Technician (EMT). All NREMT-Basics had until March 31, 2016 to complete the transition.

Transition from NREMT-Paramedic to Nationally Registered Paramedic

Personnel certified at the National Registry of Emergency Medical Technician-Paramedic level are regulated by the Delaware Office of Emergency Medical Services. The lead agency for initial paramedic education is Delaware Technical and Community College, Terry Campus. National certification is required to obtain and maintain certification by the OEMS and licensure by the Delaware Board of Medical Licensure and Discipline. Each Advanced Life Support (ALS) agency is responsible for the continuing education and transition education of their paramedics with oversight from the OEMS. All NREMT-Paramedics must complete the transition by March 31, 2017.

National Continued Competency Program (NCCP)

The State Fire Prevention Commission adopted the National Registry of EMTs National Core Curriculum Program (NCCP) for EMTs and EMRs in the State of Delaware. This program changes requirements for recertification at both levels. This streamlines the recertification process into three categories consisting of National, Local and Individual.

Paramedic Education

Delaware Technical Community College offers paramedic education as part of a two-year Associate of Applied Sciences degree. The program is structured and staffed to produce graduates to help meet the paramedic staffing needs of the Delaware paramedic services and the State Police. The curriculum consists of approximately 2,000 hours of classroom, simulation lab, clinical and field internship experiences which follows the National Paramedic EMS Education Standards. Throughout the program, an emphasis is placed on helping paramedic students develop sound decision making and leadership skills as part of their clinical practice.

The Delaware Tech Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). The program has continuously maintained this accreditation since 1999 and is the only accredited paramedic program in Delaware.

2016 Accomplishments

During 2016, with the help of the additional funding to run a second class of paramedic students, the program had a total of thirty-three active students. There were seventeen new students who entered the program and fourteen who graduated and entered the workforce.

The fourteen graduates took and passed their National Registry of EMT's Paramedic examination, maintaining a one hundred percent pass rate of this exam by our program graduates since our first class took the exam in 2000.

In the classroom, we have integrated high fidelity simulation into the program curriculum and utilize it extensively incorporating best practices into the curriculum. This has been done to both prepare our students to meet the new National Registry of EMTs paramedic certification requirements that took effect in 2016 as well as prepare them to enter their field internship. Our faculty were invited to present and share our experiences utilizing high fidelity simulation in paramedic education at HPSN World 2016. This was an international conference held in Tampa Florida.

Also in 2016, the paramedic program initiated the process for reaccreditation. This process was initiated with the submission of an extensive self-study report. This report will be followed up with a site visit by a team from CoAEMSP in 2017.

2017 Challenges and Goals

Challenges:

The paramedic program faces one main challenge to meeting our mission in 2017. The ability of the program to produce enough paramedics to meet the staffing needs of the Delaware paramedic services, with the available resources in the state, requires running two classes a year. In order to do this, additional funding is required to support the cost of two full time faculty and several adjunct clinical instructors needed to run the class. All of the full time faculty teaching in the program are experienced, Master's prepared paramedics. All of the adjunct faculty are practicing paramedics. The program received supplemental funding in FY17 to continue to run a second class of students. The college has requested that this funding continue in the FY18 state budget.

Goals:

The paramedic program's primary mission continues to be producing skilled prehospital providers who will serve the citizens of the State of Delaware. Our two primary goals in 2017 are to continue to produce competent entry level paramedics and to complete the reaccreditation process by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

The program will admit two classes of paramedic students in 2017, one in January and a second in May. These classes will graduate in 2018.

The re-accreditation process that was initiated in 2016 will be complete in 2017. A team from the Committee on Accreditation of EMS Education Programs conducted a site visit of the paramedic program in February 2017. The paramedic program will be presented for reaccreditation by CAAHEP in October 2017.

EMS Preparedness

Delaware's Emergency Medical providers are well trained and very prepared to respond to almost any type of situation that presents itself. The arena of EMS Emergency Preparedness focuses on giving our responders additional information in order to be ready for special circumstances with unusual threats. Efforts to prepare include planning and training. The focus is an all-hazards approach, preparing our emergency services for situations involving areas including terrorism, acts of violence, or other natural and man-made disasters.

Hazardous Materials Response

OEMS participated in the ninth annual State of Delaware Hazardous Materials Training Workshop. This two-day workshop focused on providing instruction to those who respond to hazardous materials incidents in the state. Sessions are conducted on risk-assessment, air monitoring, hospital decontamination, and other response topics. OEMS offered two training sessions aimed at the medical management of patients exposed to hazardous materials.

OEMS presented a half-day session providing a general overview of hazmat medicine. The program reviewed various types of injury patterns that are common with exposures to each hazmat classification. Assessment, decontamination, and treatment pearls were shared for patients exposed to asphyxiants, cholinergic inhibitors, radiologic materials, explosives, corrosives, and a number of other toxidromes.

Technical Assistance

Since 2007, the Office of Emergency Medical Services, working with the Office of Public Health Preparedness and the Delaware State Fire School has contracted a senior paramedic to provide EMS agencies with technical assistance on domestic preparedness issues. This position continues a number of projects to assess current preparedness efforts and plan for future preparedness initiatives.

The goal of OEMS domestic preparedness efforts is to increase the readiness of all Delaware responders to prepare for an all-risk response. This includes incidents of terrorism, hazardous materials releases, active threat situations, specialized and technical rescue, severe weather events, mass illness outbreaks and mass casualty situations. Efforts will be made to increase the interagency operability between EMS and other state response and preparedness agencies.

The potential for major events remains and so must our efforts to continually train to meet the needs of the responders in the state. Keeping an eye on situations throughout the world allow us to maintain a sense of vigilance. As we learn from the best practices of other emergency responders world-wide, we continue to look at our training, equipment, and medical protocols in Delaware. Our providers must always be prepared to make a safe response and deliver their high-quality out-of-hospital care in potentially hostile conditions.

EMS Interfacility Transport

Interfacility transport services are an important part of any well designed EMS system. The EMS system is often thought of as the 911 emergency response service, but the 911 emergency response service is just one part of the whole EMS transport system. The 911 transport system is not staffed to provide transport services for the non-emergent patients and remains available for emergencies as they arise. Interfacility transport services fill this important role allowing the 911 emergency response units to remain available for emergent request for service.

There are three types of ground Interfacility transport ambulances in Delaware:

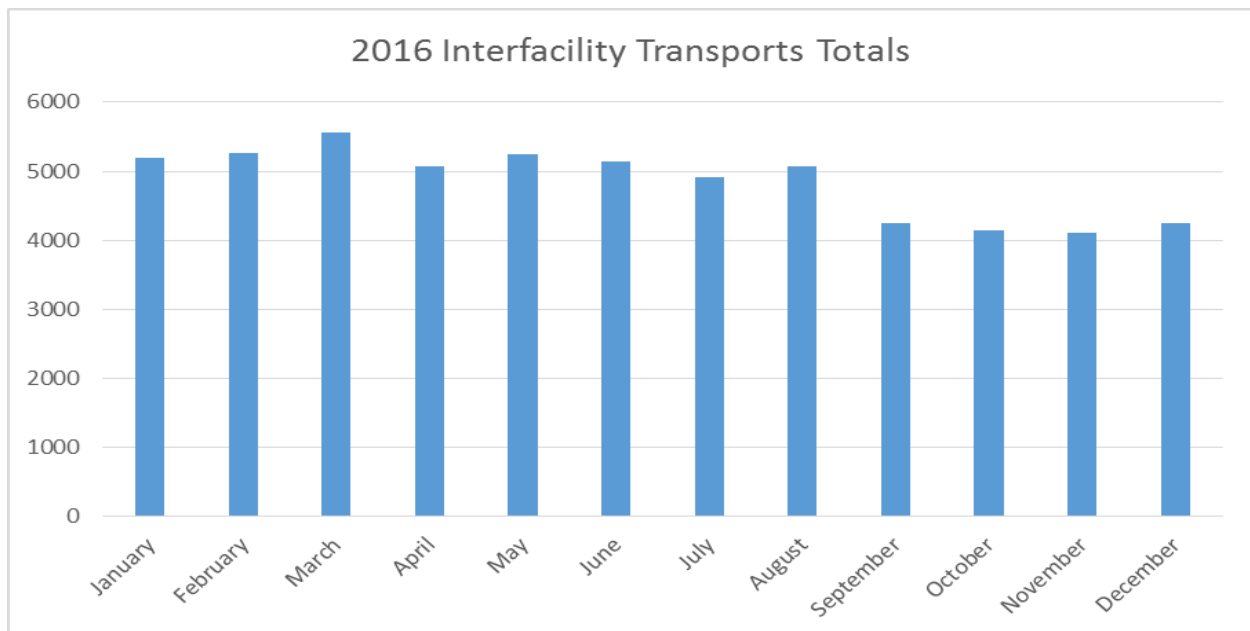
- **Basic Life Support (BLS):**
 - Ambulances are staffed with Emergency Medical Technicians (EMTs). EMTs provide basic care and patient monitoring including oxygen therapy, bandaging and splinting, etc.
 - Interfacility transport EMTs have the same scope of practice as 911 EMTs and utilize the same statewide treatment protocols.
 - Delaware has 10 Basic Life Support Interfacility agencies with a total of 99 BLS Interfacility ambulances and 135 911 ambulances licensed and operating in Delaware:
 - Christiana Care
 - Delaware Park
 - East Coast Ambulance
 - GEM
 - Hart to Heart
 - LifeStar
 - Mid-Atlantic
 - Prime Care
 - St. Francis
 - Urgent
- **Advanced Life Support (ALS):**
 - Ambulances are staffed with at least one Paramedic and one EMT. Paramedics provide advanced life support care and monitoring including ACLS. The EMT provides support to the Paramedic.
 - Interfacility transport paramedics have the same scope of practice as 911 paramedics and utilize the same statewide treatment protocols.
 - Delaware has six paramedic Interfacility agencies licensed and operating in Delaware:
 - Christiana Care Lifenet
 - Hart to Heart
 - Life Star
 - Mid-Atlantic
 - St. Francis
 - GEM

- **Hospital Based Transport Team:**

- Ambulances are staffed with transport team personnel and at least one EMT from the transport service. The transport team personnel are staffed with specialty care personnel typically representing at least one Registered Nurse, one Respiratory Therapist, and may include a Physician.
- The transport team is able to perform procedures and assessments authorized by a prescribing practitioner and overseen by the medical facility. The EMT provides support to the transport team.
- Delaware has two hospital based transport teams:
 - Christiana Care Specialty Care Transport Unit
 - AI duPont Hospital for Children

Interfacility ambulance services can be used for the following types of Patients:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Facilities requesting non-emergency patient transportation • Skilled Nursing Facilities • Physician Offices • Clinics • Acute Care Hospitals | <ul style="list-style-type: none"> • Home/Hospice Care Facilities • Board and Care Facilities • Urgent Care Centers • Custodial Care Centers with a prescribing practitioner including jails, rehabilitation centers, etc. |
|--|--|



New Castle County

Advanced Life Support 77

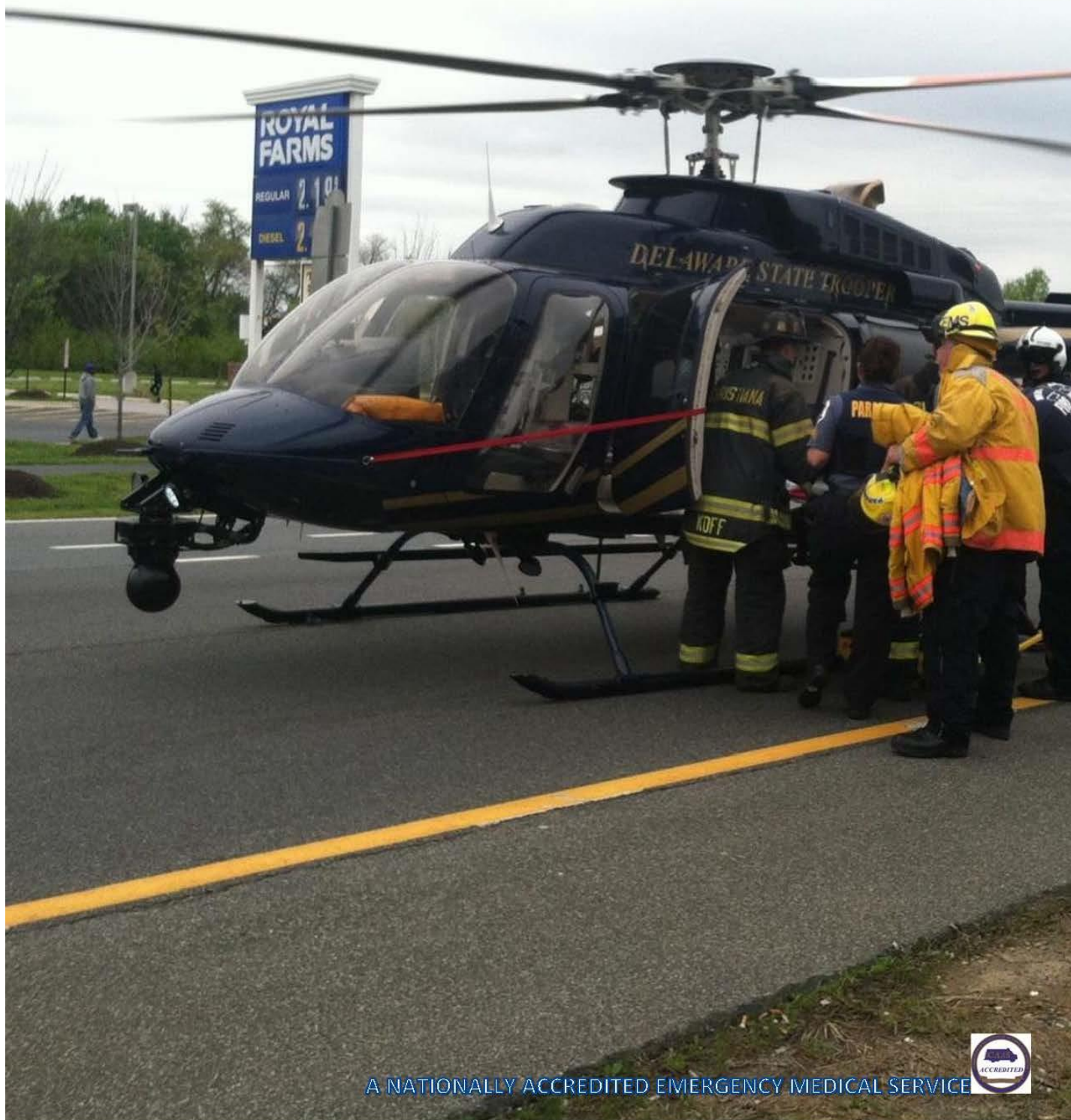
Report submitted by Chief Lawrence Tan

Communication Center 99

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NEW CASTLE COUNTY EMERGENCY MEDICAL SERVICES 2016 ANNUAL REPORT



A NATIONALLY ACCREDITED EMERGENCY MEDICAL SERVICE





New Castle County Emergency Medical Services Division

OVERVIEW

Introduction

The mission of the New Castle County Emergency Medical Service, as an essential component of the New Castle County Government, is to provide efficient, compassionate, and high quality emergency medical care to the visitors and residents within New Castle County. Our delivery of paramedic service directly impacts the quality of life for all who reside, visit, and work in New Castle County.

The New Castle County Emergency Medical Service is a county municipal "third service" paramedic agency within the County Department of Public Safety. New Castle County EMS has the distinction of being the "First Paramedic Service in the First State" and remains the only EMS agency to be nationally accredited by the Commission on Accreditation of Ambulance Services (CAAS).

New Castle County EMS operates in a "tiered response" configuration, and responds with basic life support (BLS) ambulances from the volunteer fire service, career fire departments, private ambulance service providers, and specialized BLS providers, such as the University of Delaware Emergency Care Unit, a student operated ambulance.

In 2016, New Castle County EMS deployed nine (9) paramedic units during its high call volume period during the day and eight (8) paramedic units during non-peak operating hours at night. The EMS Division field supervision includes two (2) Paramedic Sergeants on a 24-hour basis. An EMS Lieutenant serves as the shift commander on a 24-hour basis. Both Paramedic Sergeants and the on duty EMS Lieutenant are equipped as advanced life support responders.

Our personnel strive to demonstrate their commitment to our motto "Excellence in Service" each and every day, because "Our Mission is Your Life."

Further information regarding the New Castle County Paramedics is available on our web site at: www.nccde.org/ems, or follow us on [Facebook](#) (New Castle County Paramedics).



A NATIONALLY ACCREDITED EMERGENCY MEDICAL SERVICE



ORGANIZATION

Emergency Medical Services Division

The Emergency Medical Services Division is a component of the New Castle County Department of Public Safety with the Chief of Emergency Medical Services reporting to the Director of Public Safety, who is appointed by the County Executive. The service is divided into two components: the Operations Branch and the Administration/Special Operations Branch. Each branch is commanded by an Assistant Chief.

The Operations Branch is primarily responsible for the delivery of pre-hospital care, and consists of four shifts, or platoons, that provide 24-hour service on a rotating shift schedule. A fifth shift, commonly referred to as the "Power Shift" provides additional advanced life support capability during peak call volume periods.

The Administration/Special Operations Branch is primarily responsible for the support services component of the agency, including Recruitment and Applicant Processing, Quality Improvement and Training/Continuing Education, Fiscal Management and Procurement.

New Castle County Emergency Medical Services



Chief Lawrence E. Tan
*Commanding Officer
Emergency Medical Services Division*



Assistant Chief Mark P. Allston
Administration/Special Operations Branch



Assistant Chief Mark R. Logemann
Operations Branch



Captain Dawn E. Gulezian
*Executive Officer
Office of the EMS Chief*



S/Lt. Joseph J. Dudley
*Executive Officer
Administration/Special
Operations Branch*



Lt. Martha L. Russ
*Executive Officer
Operations Branch*



Lt. Christopher A. Johnson
*Recruitment, Applicant
Processing, Field Training*



S/Lt. Karl E. Hitchens
*Quality Improvement,
Continuing Education*



S/Lt. Louis J. Rombach
Platoon I



Lt. Michael R. Nichols
Platoon II



Lt. Kelli A. Zullo
Platoon III



Lt. Michael A. McColey
Platoon IV

OPERATIONS

Paramedic Service Operational Demand

New Castle County EMS has a clearly defined call volume pattern that begins to increase at approximately 0600 hours each day, reaches a peak at approximately 1100 hours, then steadily declines until after midnight. Utilization of “power shift” units, such as Medic 9, provides an opportunity to increase paramedic staffing during high call volume times each day. Additional paramedic units have been placed in service for special circumstances, including inclement weather conditions and other events that could potentially impact paramedic service delivery in New Castle County.

In 2016, the EMS Division deployed eight (8) paramedic units and two Paramedic Sergeants on a 24-hour basis, seven days a week. A ninth paramedic unit is added during peak call volume periods on a “power shift” configuration (0700-1900 hours) seven days a week. Additional paramedic units will be deployed as certified staff becomes available.

Paramedic Incidents by Hour of Day - CY 2016



This chart illustrates the New Castle County paramedic call volume during calendar year 2016 by hour of day. The use of “power shift” paramedic units allows the EMS Division to apply resources during higher call volume periods. The “power shift” consists of 12-hour rotations from 0700 to 1900 hours.

Source: New Castle County Computer Aided Dispatch (CAD) System

History of Annual NCC*EMS Incidents



New Castle County EMS continues to see an increase in demand for paramedic-level service in New Castle County. The aging of the population and opioid epidemic are two factors that are contributing to the annual rise in paramedic incidents. A recent statewide study of a three month period in 2016 revealed a 26% increase in emergency medical services calls related to overdose activity.

The Emergency Communications Center will prioritize emergency medical incidents in accordance with a national set of criteria. It is routine for the communications center to reassign paramedic units from a lower priority incident to a higher priority medical incident.

The New Castle County Paramedics responded to 33,426 incidents during calendar year 2016. Many of the incidents involved a response by more than one New Castle County paramedic unit.



The map to the left depicts hot spots where EMS and law enforcement personnel administered Naloxone (Narcan). Naloxone is used to block the effects of opioids, especially in overdose situations. Statewide, there was a 26% increase in EMS calls related to overdose activity from April 1, 2016 to June 30, 2016. From May to June there was a 96% increase in Narcan administration in Delaware.

The impact on New Castle County EMS is best illustrated by the following data for the same period:

- 21% of the Narcan administered statewide occurred in Wilmington
- 14% of the Narcan administered statewide occurred in Newark
- 47% of all drug arrest activity reported statewide by law enforcement agencies occurred in New Castle County

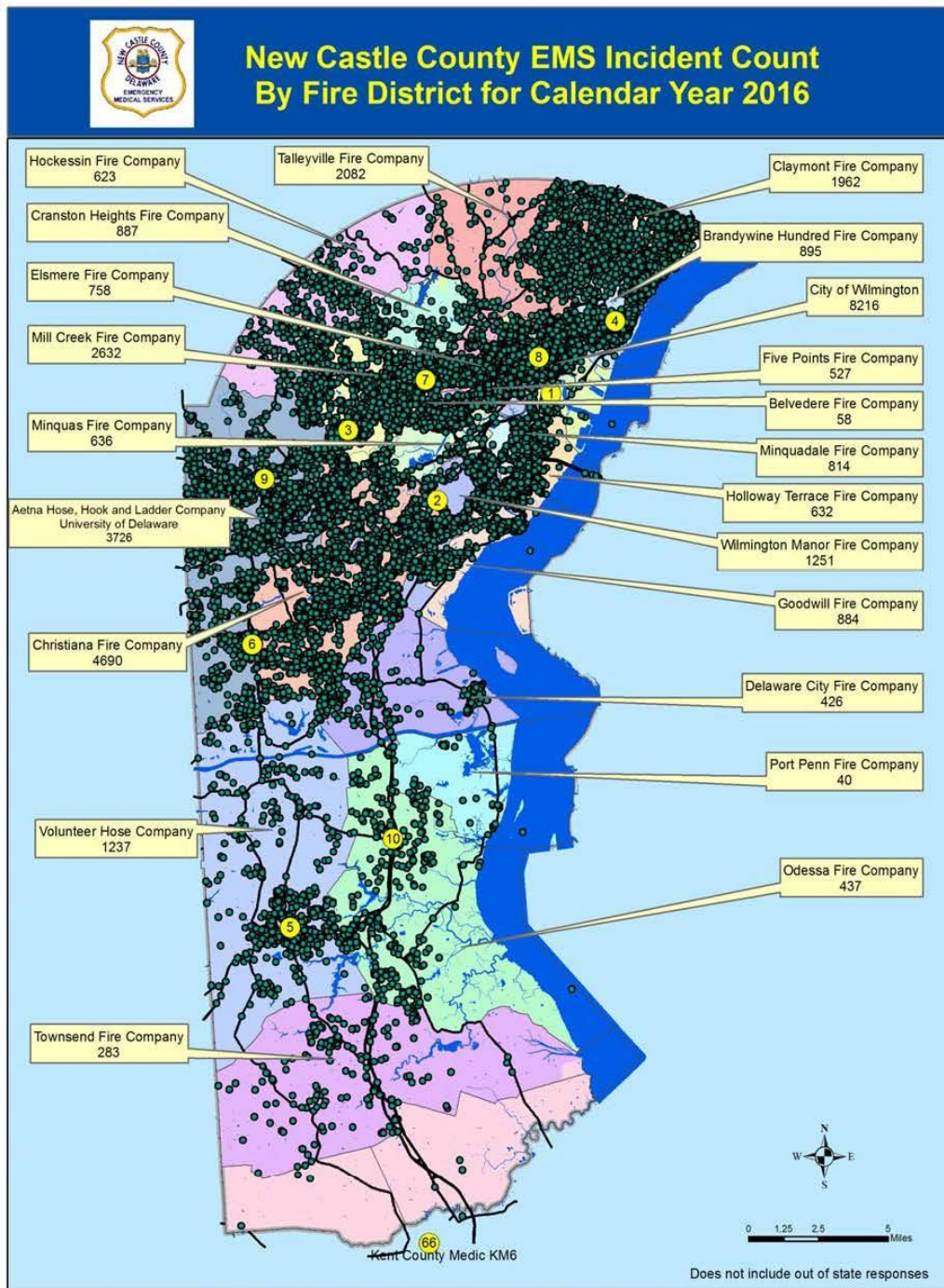
Source: Delaware Drug Monitoring Initiative



January 26, 2016: New Castle County Paramedics responded to a crash with a subject trapped on Interstate 95 at Route 141 (Basin Road). Paramedics, as the highest trained medical providers at a scene, will coordinate the delivery of care throughout a rescue effort and during transport to the appropriate receiving hospital.

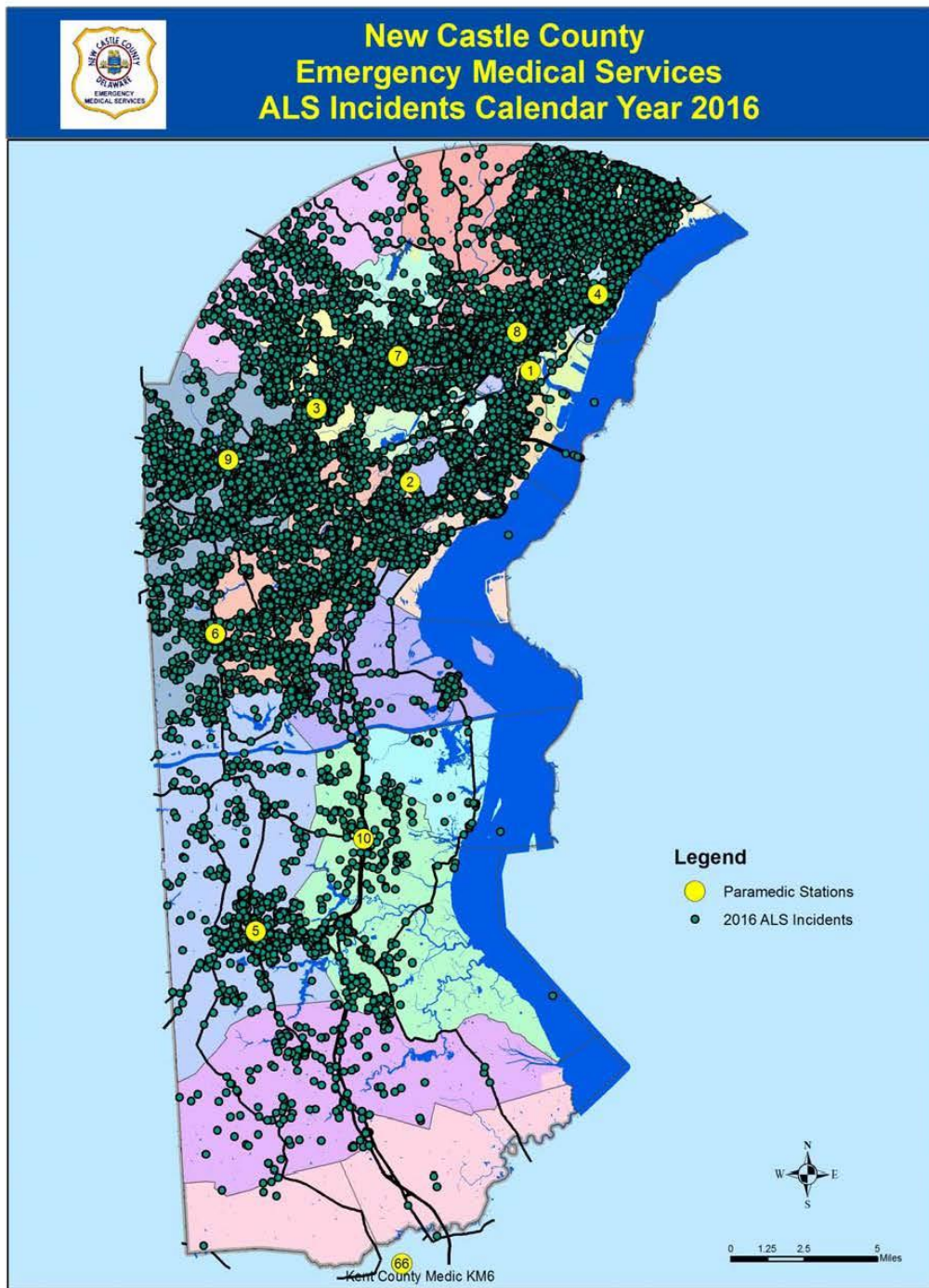


February 24, 2016: The New Castle County Paramedics hosted the Fourth Annual New Castle County Sudden Cardiac Arrest Survivor's Reunion at the Laird Performing Arts Center at the Tatnall School. The event recognized emergency medical services and advanced life support paramedics that contributed to the survival and successful hospital discharge of patients that experienced an out-of-hospital sudden cardiac arrest. The 2016 event recognized 281 individuals that contributed to a strong "chain of survival", including 32 citizens, 6 communications personnel, 31 law enforcement officers, 139 fire service personnel and 53 New Castle County Paramedics.



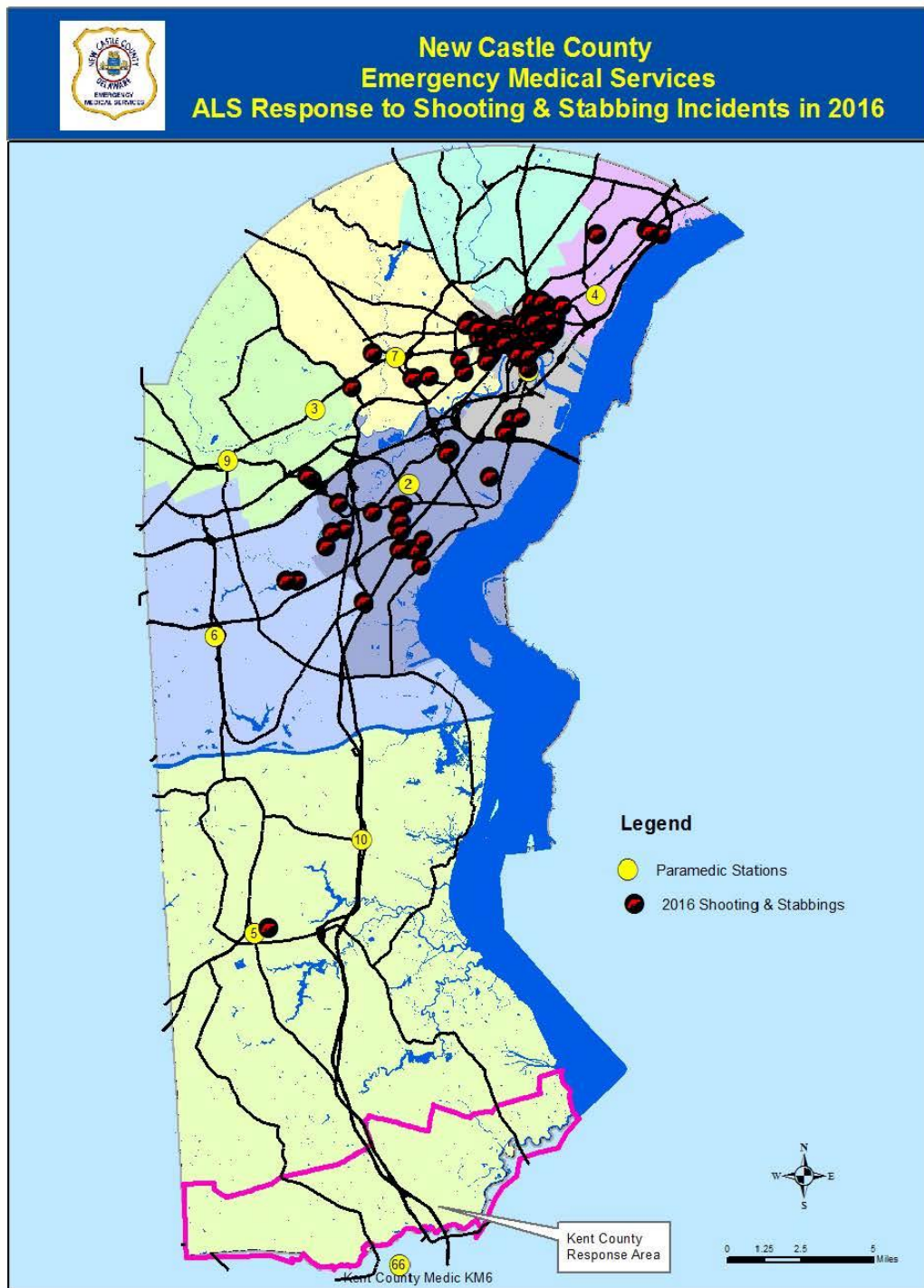
This map illustrates the number of New Castle County Paramedic incidents that occurred in each fire company district during calendar year 2016. The New Castle County Paramedics work closely with the fire company and other basic life support ambulances on a daily basis. County paramedics augment the basic life support capabilities of the ambulances by providing out-of-hospital advanced life support care for patients requiring paramedic services.

Source: New Castle County Computer Aided Dispatch (CAD) System



This map illustrates all of the New Castle County Paramedic incidents that occurred during calendar year 2016. Each point indicates an advanced life support incident for New Castle County EMS. The yellow circles depict the current location of New Castle County Paramedic stations or deployment points.

Source: New Castle County Computer Aided Dispatch (CAD) System



This map illustrates New Castle County Paramedic responses to shootings and stabbings during calendar year 2016.

Source: New Castle County Computer Aided Dispatch (CAD) System



New Castle County Paramedics routinely work with the Delaware State Police Aviation Section for aeromedical transport of patients from emergency scenes. The Delaware State Police provide advanced life support air transport capability throughout Delaware. A New Castle County Paramedic will sometimes join the state police paramedic during transport of critically injured or ill patients.

New Castle County Paramedic Unit Activity

PARAMEDIC UNIT	2016
Medic 1 (Wilmington)	5,572
Medic 2 (New Castle)	5,083
Medic 3 (Newark)	4,371
Medic 4 (Brandywine 100)	4,410
Medic 5 (Middletown)	1,977
Medic 6 (Glasgow)	3,792
Medic 7 (Prices Corner)	4,586
Medic 8 (Wilmington)	5,446
Medic 9 (12 hour/day unit)	2,287
Medic 10 (Special Duty)	13
Medic 11 (Special Duty)	74
Medic 12 (Special Duty)	7
Medic 13 (Special Duty)	3
Medic 20 (Special Ops)	50
ALS Bike Team	5
MEDCOM	4
Single paramedic ALS responses	3,594
TOTAL RESPONSES	41,274

New Castle County EMS Supervisor and EMS Staff Activity

EMS SUPERVISOR/STAFF	2016
EMS HQ Staff (Chief & Asst Chiefs)	160
EMS Lieutenants	407
Paramedic Sergeants	3,970
TOTAL STAFF RESPONSES	4,537

Top 10 Reasons for Dispatch of a New Castle County Paramedic Unit

TYPE OF INCIDENT	2016
Difficulty Breathing	6,592
Chest Pain/Heart Problems	4,221
Interfacility Transport	3,572
Sick Person	3,298
Syncope/Unconscious Person	2,688
Stroke/CVA	1,071
Diabetic Problems	1,021
Motor Vehicle Collision	975
Overdose/Poisoning	795
Cardiac/Respiratory Arrest/Death	716



September 7, 2016: New Castle County Paramedics work with personnel from the Aetna Hose, Hook and Ladder Company of Newark and Christiana Fire Company to extricate the driver of a tractor trailer that crashed and overturned on Interstate 95 at Route 896 (South College Avenue). Heavy rescue equipment was required to free the trapped driver, before he could be transported by helicopter to the Christiana Hospital.

ADMINISTRATIVE ACTIVITY

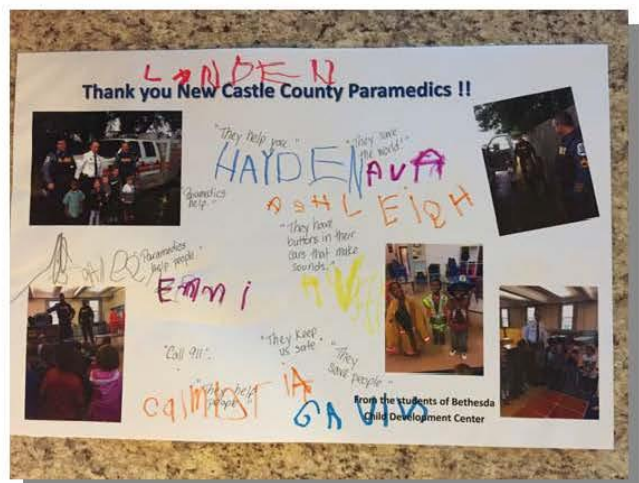
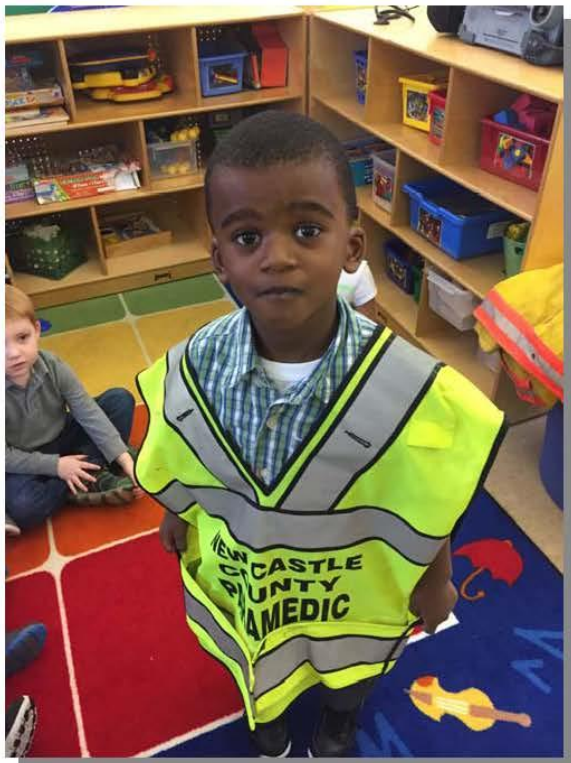
Public Education/Injury Prevention Programs

New Castle County EMS continued to provide a number of public education activities to support its delivery of emergency medical care. Public education is a secondary function within the EMS Division, and is not supported by a full time assignment. A robust public education program can support the delivery and performance of an EMS system by improving the speed of public access and prompting appropriate bystander response before EMS arrives on scene. New Castle County has documented that bystander CPR performed during cases of sudden cardiac arrest is at a rate below the national average of reporting jurisdictions. In New Castle County, the initiation of bystander CPR before EMS arrives gives the patient a 3 times greater chance of survival.



November 9, 2016: The New Castle County Paramedics continue to provide outreach activity to even the youngest citizens. Early exposure to paramedics may plant the seed for some to eventually consider a career in emergency medical services. There's also no substitute for a heartfelt "thank you" from our youngest citizens.

Here, the New Castle County Paramedics visited the Bethesda Child Development Center Pre-School program to let the children see some paramedic equipment and vehicles.



ACCOMPLISHMENTS

NCCo EMS Successfully Renews National Accreditation



December 2016: In December 2009, New Castle County EMS became the first service in Delaware to obtain national accreditation by the Commission on Accreditation of Ambulance Services (CAAS). New Castle County EMS has maintained their accreditation, and most recently received a perfect score on their site visit assessment in December 2016.

The full, three-year renewal of their national accreditation verifies that the New Castle County Paramedics are compliant with over 100 standards deemed essential to a modern emergency medical service. The accreditation is considered the “gold standard” for an EMS agency.

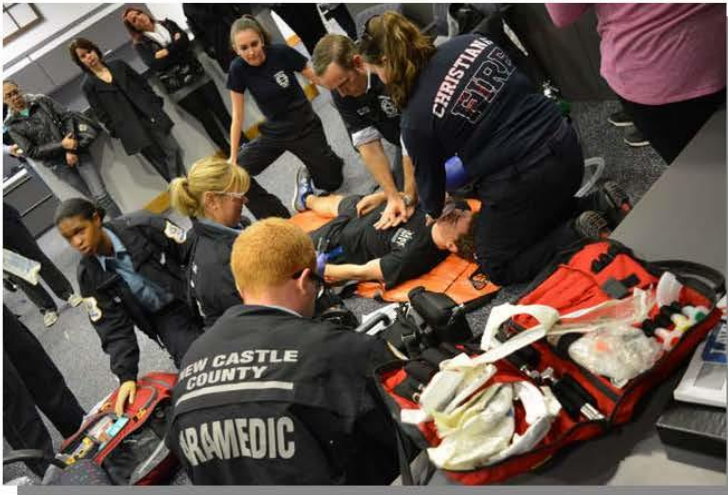
Start of 2nd New Castle County Paramedic Academy Class



March 14, 2016: The EMS Division, after successfully graduating the first Paramedic Academy Class from the initial training program, with 100% of the graduates successfully achieving certification as Nationally Registered Paramedics.

The 2nd New Castle County Paramedic Academy Class began training in March 2016, and is expected to complete their formal paramedic training and certifications by March 2017. The members of the class will then be placed in the EMS Division field evaluation phase for integration into field operations while gaining full certification as State of Delaware paramedics.

NCC*EMS Participates in AtTack Addiction “Reality Tour”



Paramedics from New Castle County EMS have been active participants in the AtTack Addiction “Reality Tour.” The Reality Tour is a drug awareness and prevention program developed to illustrate the life experiences encountered by a teen addicted to drugs and alcohol. The program is conducted by the advocacy group AtTack Addiction, through a partnership between law enforcement, fire service EMS personnel and the New Castle County Paramedics. The public safety personnel role play a response to an overdose emergency, and demonstrate the medical care they would provide to an overdose victim.

The New Castle County EMS participants in the “Reality Tour” were recognized as the Paramedics of the Year for 2016 by the Kiwanis Club of Wilmington.

NCC*EMS Staff Graduate from Leadership Development Program



January 19, 2016: The Emergency Medical Services Division had additional members of the staff successfully complete the Command and Leadership Academy offered hosted by the New Jersey State Association of Chiefs of Police. The curriculum was developed through the United States Military Academy at West Point, with a focus on leadership as a science with logic, critical thinking, methodology and vision. Lt. Michael McColley and Lt. Michael Nichols were recognized following their graduation from the program.



May 12, 2016: Lt. Kelli Zullo (center left) and Paramedic Sgt. David Aber (center right) were recognized for their successful completion of the Command and Leadership Academy. The New Jersey Association of Chiefs of Police conducts two cohorts at the New Castle County Department of Public Safety Headquarters each year. The New Castle County cohort is the only training site that has representatives from law enforcement, emergency communications, emergency medical services and the fire service participating together in the 14-week program.

NCC*EMS Provides “Paramedic Assist” Programs



New Castle County Paramedics continue to provide “Paramedic Assist” presentations for members of the basic life support EMS community. The “Paramedic Assist” presentation provides an orientation to the vehicles and equipment carried by the New Castle County Paramedics. Program participants are awarded continuing education credits through the state Office of Emergency Medical Services.

Here, Paramedic Cpl. Brianne Sullivan provides an orientation to a paramedic unit during a “Paramedic Assist” presentation at the Townsend Fire Company in June 2016.

Department of Public Safety Awards Ceremonies



March 15, 2016 & November 30, 2016:
The New Castle County Department of Public Safety hosted two awards ceremonies to recognize exemplary performance by all components of the department.

The Emergency Medical Services Division recognized the following paramedics during 2016 with official commendations:

*Assistant Chief Mark P. Allston
Assistant Chief Mark R. Logemann
S/Lt. Louis J. Rombach
P/Sgt. Richard Moerman, Jr.
P/Sgt. Abigail E. Haas
P/Sgt. Isaac J. Hankins
P/Sgt. Peter T. Small
P/Sgt. Autumn M. Tuxward
Paramedic S/Cpl. Robin K. Brown
Paramedic S/Cpl. Christopher W. Reed
P/Cpl. Ronald P. Iocono
P/Cpl. Matthew V. Mitchell
P/Cpl. Keely S. Warrick
Paramedic 1/C Laura E. Hill
Paramedic 1/C Michael P. O'Shaughnessy
Paramedic 1/C Julianne F. Santora
Paramedic 1/C Michael C. Schusteritsch
Paramedic 1/C Dana D. Bowerson
Paramedic 1/C Jessica A. Duncan
Paramedic Craig J. Lindell
Paramedic Christopher Boyles
Paramedic Hilary R. Olnier
Paramedic Nicholas W. Scull
Paramedic Kevin M. Prins
Paramedic MaryKate E. Selner*



NCC*EMS Paramedic Recognized by Trauma Survivor's Foundation



February 25, 2016: Paramedic S/Cpl. Lorraine K. Williams was recognized by the Trauma Survivor's Foundation with a Public Safety Award in recognition of her outstanding service to the public. S/Cpl. Williams has been an active participant in the New Castle County Critical Incident Stress Management (CISM) Team, which provides peer support to responders involved in significant incidents.

NCCo EMS Chief Joins in Recognizing State Senator Bruce Ennis



May 23, 2016: Chief Lawrence Tan (right) joined Chief Colin Faulkner (left) of Kent County Department of Public Safety and Director Robert Stuart (center right) of Sussex County EMS in recognizing State Senator Bruce Ennis for his leadership in the development and support of the statewide paramedic services program. The joint ALS chiefs are pictured with Senator Ennis and a copy of House Combined Resolution 75, which recognized his efforts in supporting the EMS system in Delaware.

NCC*EMS Conducts Recruitment at Del Tech



April 7, 2016: The New Castle County Paramedics participated in a Career Fair and Recruitment Drive at the Delaware Technical and Community College Terry Campus in Dover. New Castle County Paramedics provided information regarding emergency medical services careers and opportunities with the New Castle County Government.

NCC Council Recognizes EMS Division Retirements

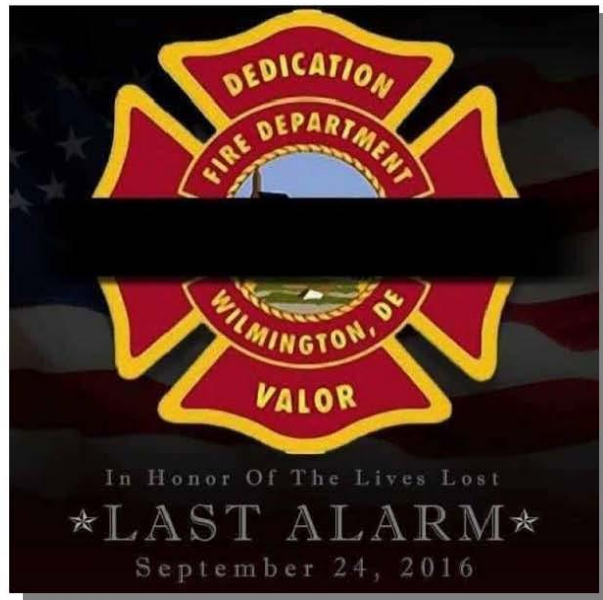


March 8, 2016: The New Castle County Council presented Council Resolutions to Paramedic Corporal John P. Lloyd and EMS Assistant Chief Daniel G. Seador in recognition of their retirements.

County Council Public Safety Committee Co-chairs Councilman J. William Bell and Councilman Jea P. Street were joined by Council President Christopher Bullock in recognizing the Emergency Medical Services Division personnel for their decades of service to the citizens of New Castle County.



In Memoriam



The New Castle County Paramedics offer their deepest sympathy to the Wilmington Fire Department on their tragic loss of three members of the department from a fire on September 24, 2016. We stand together with our public safety colleagues in recognizing their ultimate sacrifice.

We also offer our sincere thanks to the Kent County EMS, Sussex County EMS, Cecil County (MD) EMS, and the Longwood Fire Company (PA) for their assistance in enabling us to continue to support the Wilmington Fire Department and our own personnel during the subsequent memorial services, while maintaining our 911 services to the public.

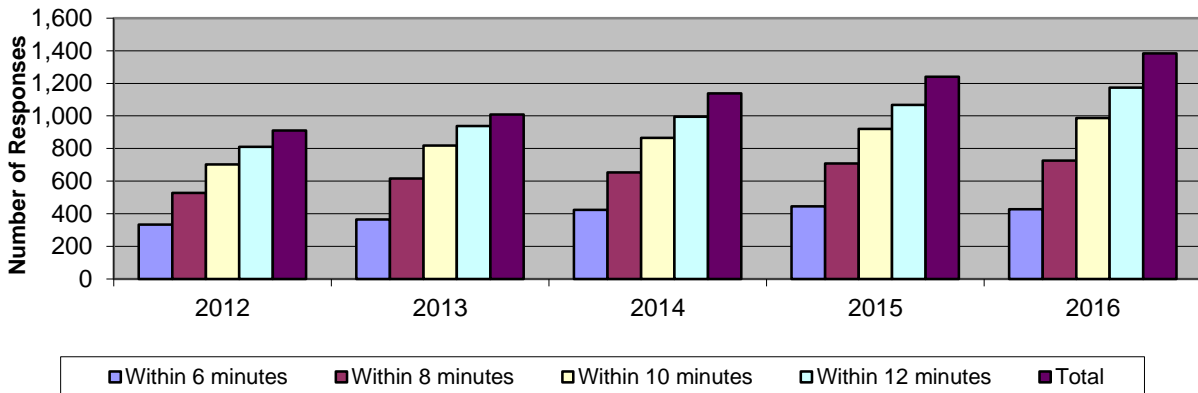


Our Mission is Your Life

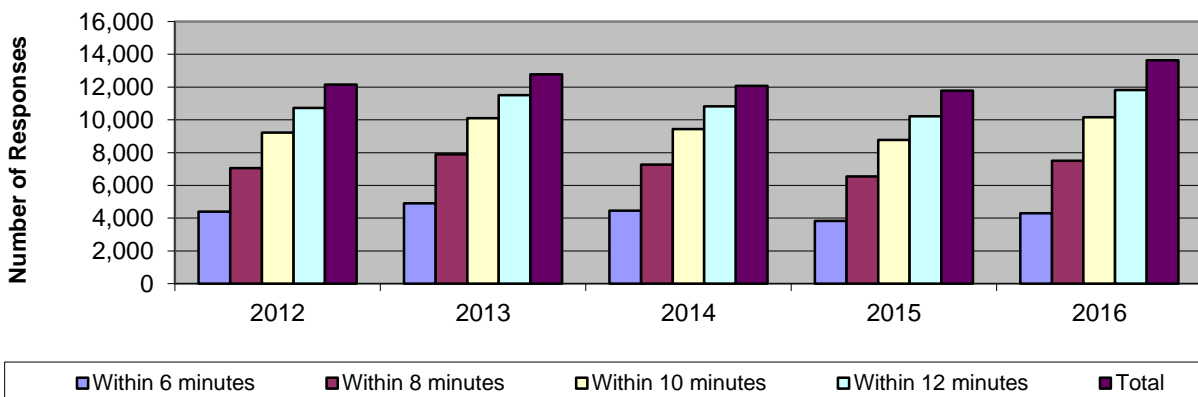


www.facebook.com/ncc.paramedics

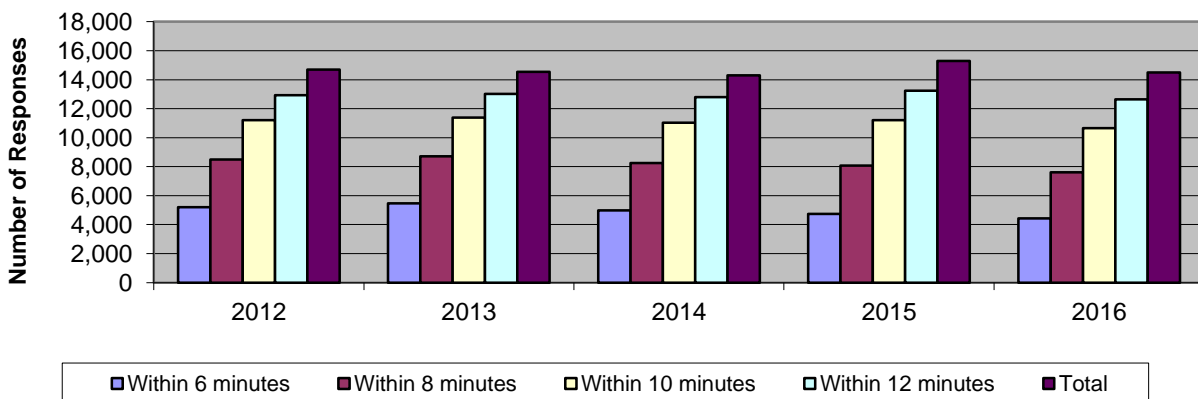
Echo Level Response, NCC EMS



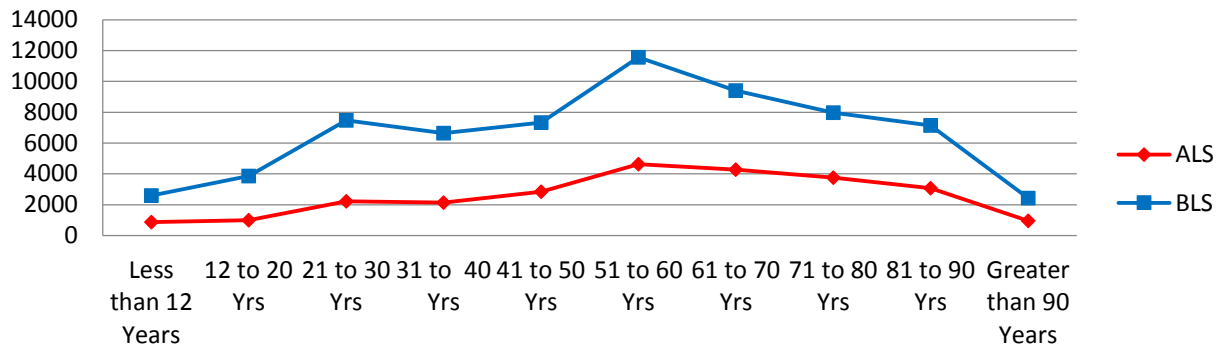
Delta Level Response, NCC EMS



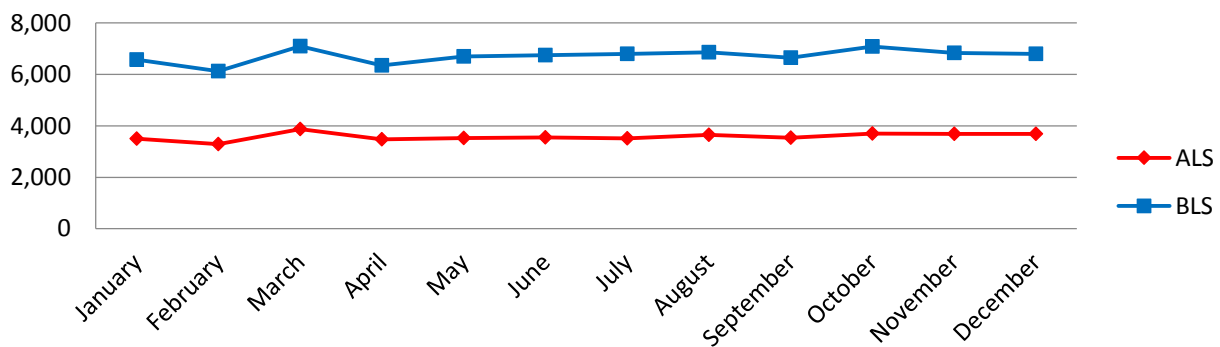
Charlie Level Response, NCC EMS



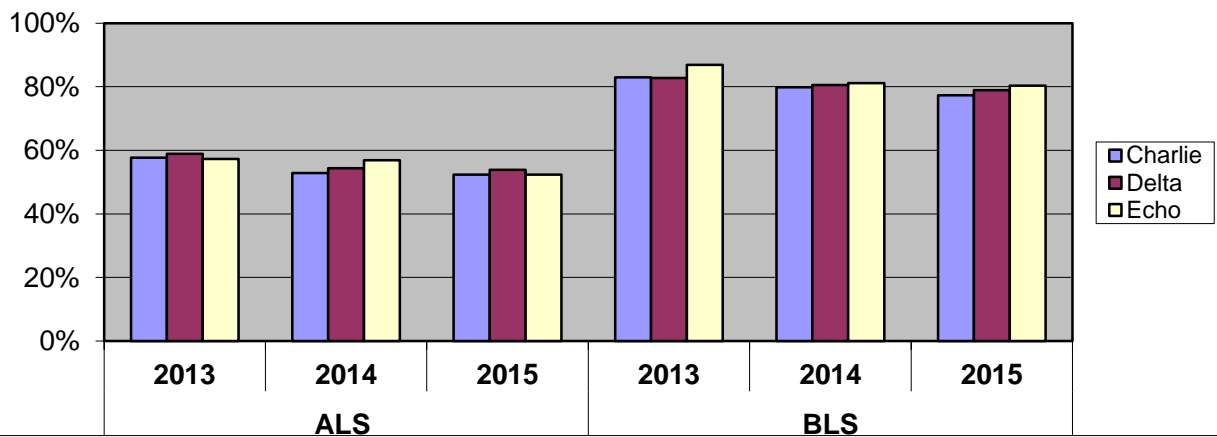
ALS and BLS Patient Age Comparison - 2016 New Castle County



ALS/BLS Incidents by Month - 2016 New Castle County



Percentage When New Castle County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2016



Communications Center

New Castle County

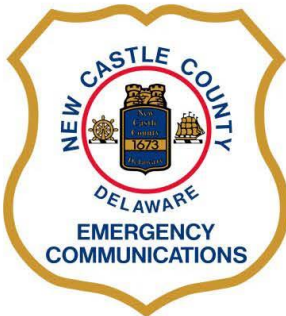
Submitted by Chief Jeffrey P. Miller



The New Castle County 9-1-1 Emergency Center receives 9-1-1 calls through a variety of phone exchanges and numerous cell towers throughout New Castle County. The total number of 9-1-1 calls processed in year 2016 was 394,930. Another 92,045 non-emergency calls were also processed by our Public Safety Operators. The Center dispatched or processed a total of 140,379 fire/medical incidents and 279,155 police incidents in year 2016. New Castle County Emergency Communication Center handled over 37.7% of the 1,047,348 total 9-1-1 calls in the State of Delaware for 2016.

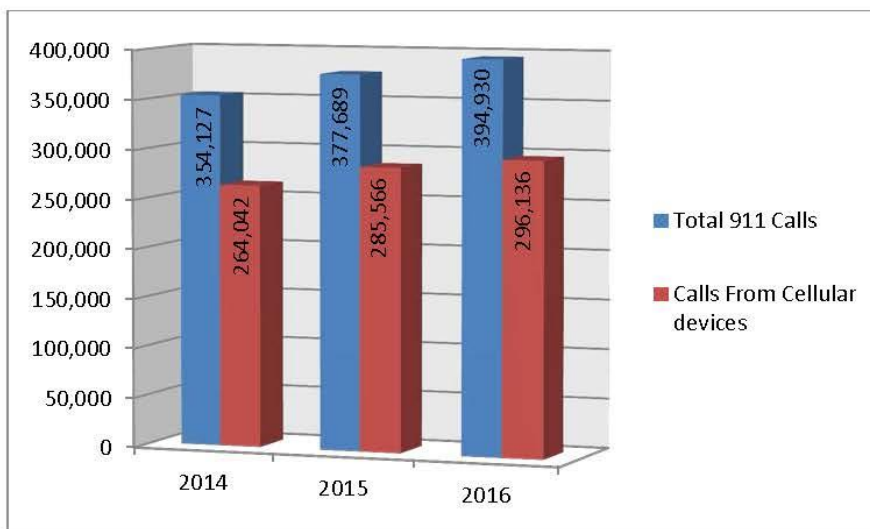
The New Castle County Emergency Communications Center is a 24-hour operation that operates 365 days a year. We provide Fire/EMS Communications to the City of Wilmington, twenty-one New Castle County Volunteer Fire Companies, six fire brigades, and the New Castle County Paramedics. Additionally, we provide Police Communications service to seven police agencies within New Castle County. The Center is staffed by twenty-seven full and part-time Public Safety Operators, twenty-four Police Communications personnel, twenty-one Delaware State Police Communications personnel, eighteen full-time Fire/Medical Communications personnel, and an administrative staff of seven personnel.

Emergency Medical and Fire Dispatch

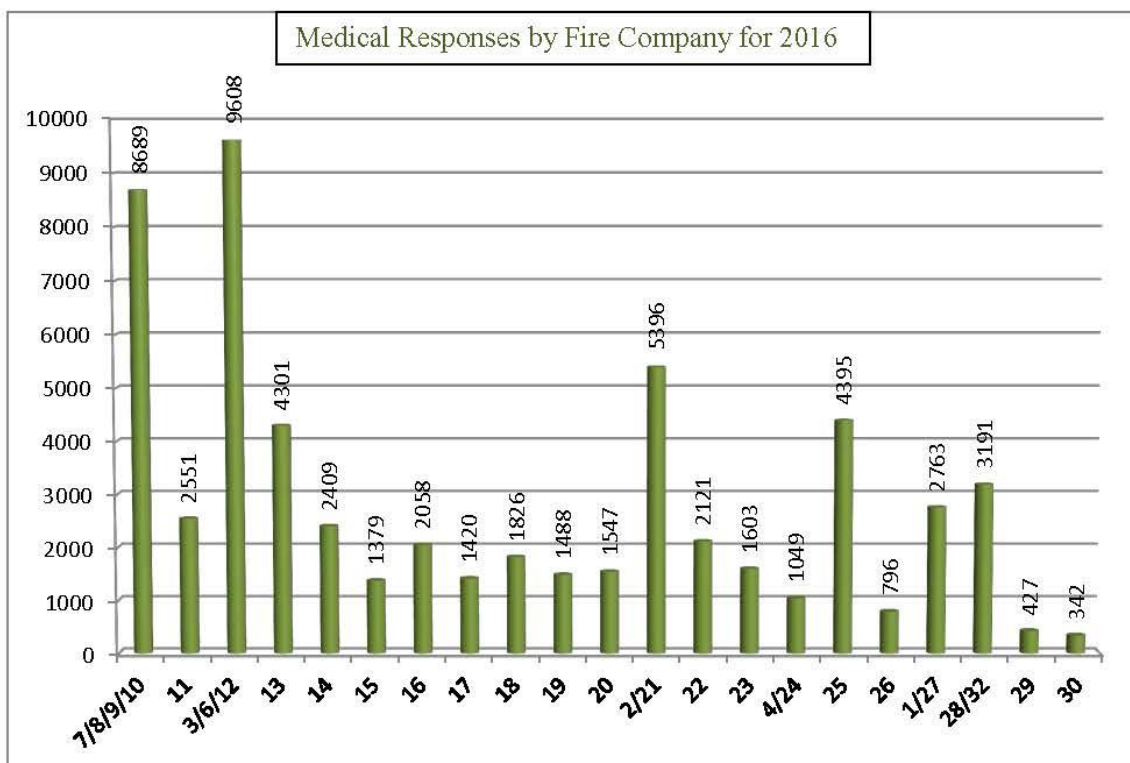


The New Castle County Emergency Communications Division utilizes a national protocol system to triage incoming emergency calls to determine the appropriate level of service. Each of our 911 professionals are trained to provide pre-arrival instructions in CPR, child birth, persons choking, persons trapped in a house/building fire, persons in a car sinking in water and persons involved in hostage situations along with others.

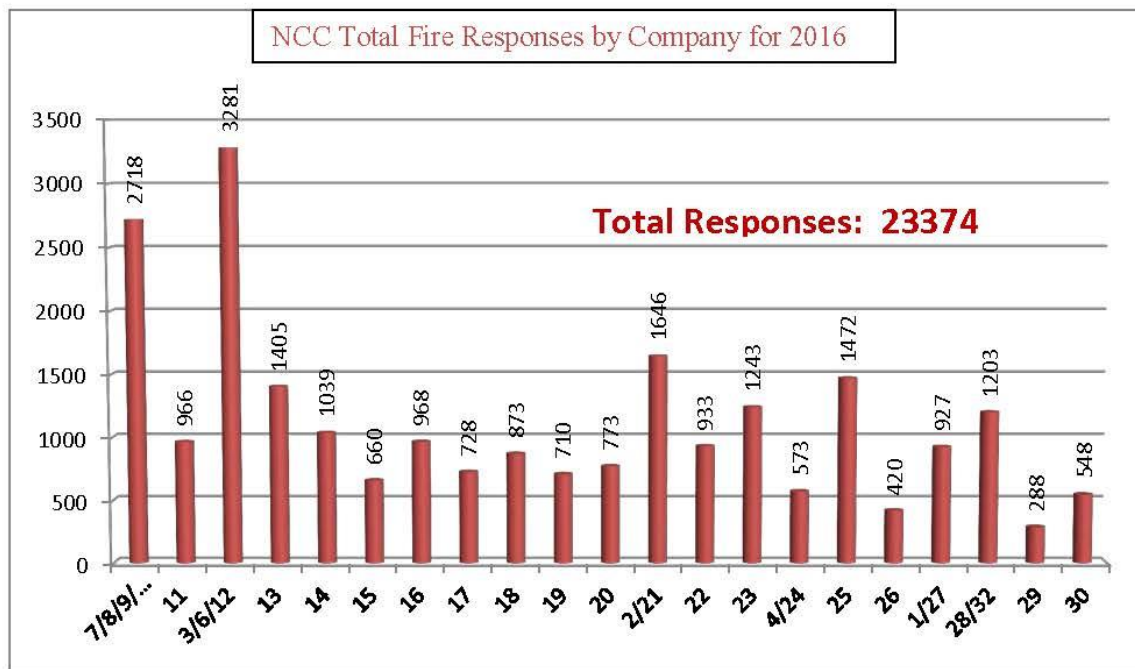
Each of our 911 professionals participates in numerous hours of continuing education opportunities in an effort to remain proficient in each protocol (fire, police, and medical) and to maintain their certifications in each protocol.



*This information provided by West/Intrado.



*This information provided by Tyler/New World Systems



*This information provided by Tyler/New World Systems

Mobile Communications Unit

New Castle County continues to utilize our mobile communications van. We strive to keep it current in the ever-changing technology environment while keeping it maintained in a state of readiness to respond in a moment's notice. The communications van continues to respond on all multiple alarm fires, fire fatalities and other major incidents.



2016 Year in Review

2016 again proved a busy year for New Castle County. The Fire & Medical section handled communications for approximately 91 working fires along with 20 plus special operations and significant rescue callouts.

On January 12th, 2016 we received a residential fire with children trapped. 1 adult and 1 child were transported while two children were reported DOA at the scene.

On January 19th, 2016 we received a residential fire with a subject reported trapped inside the residence. Fire department personnel arrived with heavy fire conditions. One victim was pronounced DOA at the scene.

On January 28th, 2016 we received a call for multiple patients with seizure like symptoms. EMS and Fire department personnel arrived on scene and confirmed four patients with C.O. related symptoms. Readings were approximately 630 ppm. All four patients were transported to Christiana Hospital.

On March 25th, 2016 we received a call with police on scene at an apartment building with 4 DOA's with unknown reason or source. CO readings in excess of 300 ppm initiated a level 1 SERT. No other victims were located in the other apartments located in the building.

On May 6th, 2016 we received a call from two subjects that were stranded on the jetty at the C&D Canal due to high tide. Both subjects were picked up by fire department personnel in a Marine Unit and returned to Delaware City. Additionally, on this date we received a call that a 23 foot boat had sunk in the Delaware River in the area of Augustine Beach. Fire department personnel in a Marine Unit responded and located 3 people and a dog floating on a raft. All subjects were transported to shore.

On June 4th, 2016 we received a call of a vehicle into a residence. Fire department personnel along with the NCC Collapse Response Team responded and located an occupied vehicle under a collapsed two car garage. The occupant was extracted and transported to Christiana Hospital with non-life threatening injuries.

On July 16th, 2016 severe storms passed through New Castle County. We received numerous reports of trees and wire down along with lightning strikes.

On September 24th, 2016 we received calls for a residential fire. WFD units were dispatched and the first arriving unit reported heavy fire from the rear of the residence. As additional resources were dispatched a "May-Day" was declared for firefighters that fell thru the first floor into the basement and were trapped. Three WFD firefighters made the ultimate sacrifice.

On October 25th, 2016 we received several calls of a sailboat overturned in the Delaware River in the area of Battery Park. Fire department personnel in a Marine Unit were dispatched and located two persons in the water wearing life jackets. Both subjects were transported to shore with non-life threatening injuries.

These events are just the some of the highlights of our 2016 year in review. We continue to receive calls for every type of event. These events include but are not limited to highly technical rescue; such as high angle, confined space, water rescues, shootings and drug overdoses and bomb threats.

Summary

The New Castle County Emergency Communications Division continues to lead the First State with implementing and embracing new technologies to improve our customer experience.

We continue to integrate with our communities providing Public Education/Outreach specific to the proper use of 911, the availability of Smart911, and our mission. Our workforce continues to be involved in the several workgroups we have available, this allows them to become more involved in the multiple functions of the 911 Center. Seven Communications Division personnel were assigned to a train-the-trainer course that has enabled us to have our own in-house training team allowing us to certify all new hires in the Priority Dispatch forty-hour Telecommunicator course. Grant Funding provided by Council allowed us to conduct a public outreach session providing an educational opportunity to more than twenty (20) perspective Public Safety Operators giving them the fundamental job responsibilities while also providing a certification in that career field.

We continue to see a reduction in our call answer times. An enhancement to our phone system on June 29th, 2016 has resulted in a 6% improvement in our call answer times; moving us closer to our goal of all calls being answered ten (10) seconds or less 90% of the time. As we continue to fill vacancies in our Public Safety Operator section of the 911 Center due to promotions we are confident we will be able to achieve this goal. All of this would not be possible without the continued support of the administration of New Castle County.

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Kent County

Advanced Life Support 107

Report submitted by Chief Colin Faulkner

Communication Center 125

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Kent



County

Department of Public Safety

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KENT COUNTY DEPARTMENT OF PUBLIC SAFETY

The Kent County Department of Public Safety is directly responsible for the management of three Divisions which include 911 Communications, Emergency Medical Services, and Emergency Management/Homeland Security/Terrorism/Preparedness and Response. Additionally, our partnerships extend broadly into the emergency response community and private entities as well which enable us to provide the high level of preparedness, response, and mitigation services our citizens and visitors have become accustomed to.

Our 911 Center is a state of the art operation with highly trained and qualified professionals managing a myriad of calls and processing these calls through national accreditation standards for emergency medical and fire dispatch. Additionally, our 911 Center is a joint center with the Delaware State Police and works in unison with the State of Delaware to maintain consistent interoperability capabilities and as such, improved service and rapid response to all. Next Generation 911 is now emerging in our 911 Center and as such, we will be able to accommodate texting 911 and streaming videos. The next generation project and the efforts of our 911 staff to fully implement this technology along with maintaining national accreditation standards for EMD and EFD is reflective of the continued professionalism of our 911 staff over the years, and will continue into the future. One year ago SMART911 was added to our 911 capabilities and has been well received by our citizens. This serves as a valuable tool for the deployment of resources and the preparedness of responders with a direct benefit to the sick and injured or victims of crime or in need of fire service. Our 911 Center continues to maintain the highest quality operations maximizing on the best technology has to offer and the most capable of communicators available. Our 911 Center is well poised for meeting the needs of our emergency responders and our public by continually incorporating cutting edge technology while providing the most capable personnel available.

The Kent County Paramedics deploy from four different locations throughout our County and along with a Power Unit, provide coverage for all of our citizens and visitors in an expeditious manner. In addition to providing top level trauma and medical care to our citizens and visitors, we also support the following special operations response teams including; SWAT High Angle Confined Space Rescue, and Hazardous Materials/Decontamination. These teams are derived from

a high level of dedicated Kent County Department of Public Safety personnel all of whom support these areas outside of their standard deployment obligations.

Our Department over the years is increasingly challenged with high density mass gatherings and has a team assembled along with support from our neighboring county agencies that utilize specialized response ‘gators’ an ‘bike’ responders. These vehicles allow us to navigate through crowds while minimizing the danger which would be created by standard response vehicles. Kent County 911 Communications and our Emergency Management Division combine their efforts with venue sponsors to assure a high level of coordinated response consistent with national standards for the services we provide. It is our goal to maintain the current excellent preparedness levels we have reached and to continually assess each large scale event for our best pre-emptive response. It is our hopes that in the near future, response obligations and deployment profiles will be established on a state wide level as a standard so that all venue operators and emergency personnel can provide a safe environment with a template based coordinated response. We currently do not have this in the State of Delaware but as the resident experts in deployment to mass gatherings and as a hallmark of the most required of preparedness options; such a framework would assure a reduction in morbidity and mortality rates should an untoward event ever occur.

Future challenges exist for our services including funding, growth, and particularly in our EMS Division, the acquisition of qualified personnel. Understaffing because of a non-existent ‘ready-pool’ of paramedics creates excessive overtime and results in excessive continuous hours worked.

The Kent County Department of Public Safety continues to work with partner agencies, both public and private concerns, as well as all levels of government. It is always our standard to insure that we provide the highest level of service delivery while maintaining integration and interoperability capabilities in the most modern manner possible.

Goals, Initiatives and Accomplishments

2016 marked the 25th year of Operations for Kent County Department of Public Safety, EMS division. Our coverage area is approximately 798 Square miles. We proudly serve the citizens and visitors to Kent County with units in Harrington, Frederica, Dover, and Smyrna. This past year we were able to add KM 10- a single medic unit pilot unit in Frederica Delaware.

Mission

Our mission is to be a leader in meeting the present and future health care needs of the citizens and visitors in our community through a network of high quality advanced life support services, education and prevention programs which share common goals and values.

Values

Service: We are committed to help the sick and injured by providing superior service to our patients and our community with skill, concern and compassion.

Quality: Because our patients are our primary concern, we will strive to achieve excellence in everything we do.

People: The men and women who are our paramedics, and those associated volunteers, physicians, nurses and students are the source of our strength. They will create our success and determine our reputation. We will treat all of them with respect, dignity and courtesy. We will endeavor to create an environment in which all of us can work and learn together.

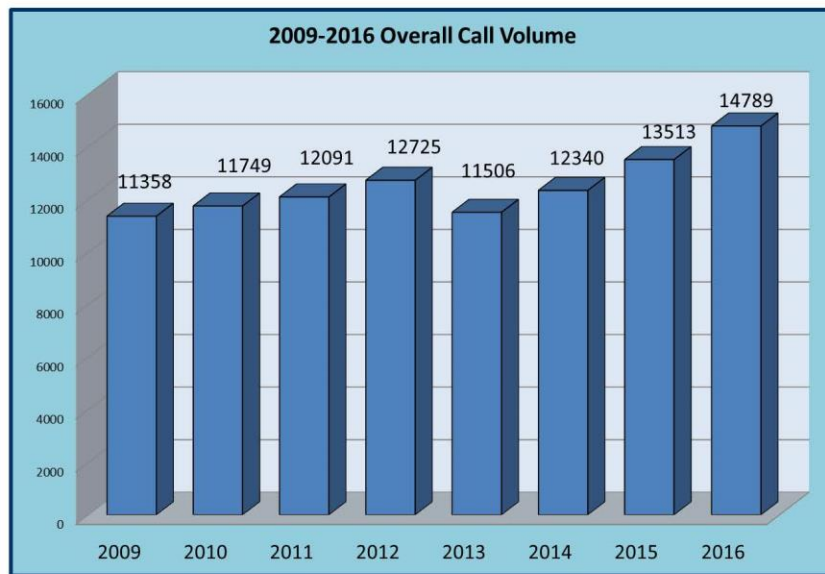
Stewardship: Fulfilling our mission requires that we use our resources wisely and with accountability to our publics.

Integrity: We will be honest and fair in our relationships with those who are associated with us, and other health care workers as well.

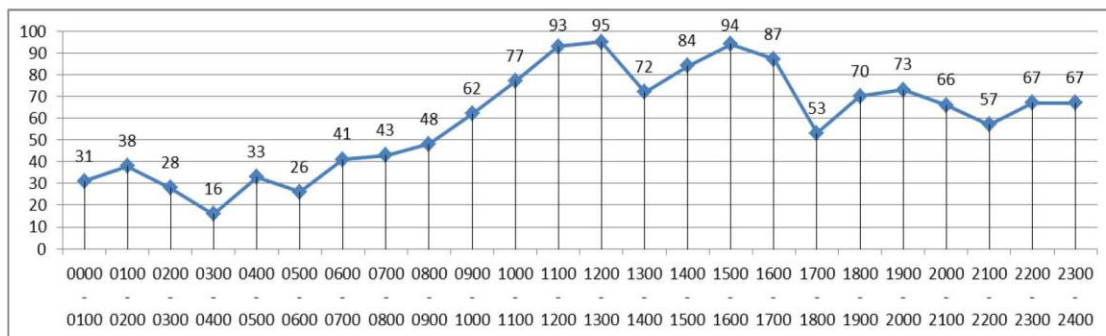


Operations

The EMS Division was the busiest it has ever been in 2016. In 2016 we had 14789 dispatches, as compared to 13,513 for the year 2015. 2016 will, if history repeats, be busier yet. In order to effectively handle the ever increasing call volume, cover increasing numbers of special events, and to enhance our service to the citizens of Kent County a number of goals have been set.



Call Volume by Hour of Day



Special Operations



Special Operations encompasses the response categories of Mass Casualty Incident (MCI), Hazardous Materials Incidents (Hazmat), Technical Rescue Operations (confined space, high angle, trench, collapse), Explosive Ordnance and Tactical EMS Support (EOD/SORT), Fire Ground Support (Rehab), All-Terrain Medical Response (Bikes & Medic-Gator), Maritime Operations, and Weapons of Mass destruction (WMD/CBRN) preparedness and response.

In keeping with the National trends, Special Operations activity within the Department continues to gain a more “global” or “all-hazards” capability in that equipment, materials, and personnel are utilized for multiple response strategies with key personnel with more highly focused training serving as response leaders.

This section of the report will update the current status of each of these response categories as a result of equipment procurement, training of personnel, and activity over the past year. Further, an outline of future needs and initiatives will be presented.

Mass Casualty Incident (MCI)

The Department MCI Plan identifies staged levels of response based upon assessed patient populations. The key operational point identified is early activation of the MCI response. The plan allows for any component of the system to “make the call”, therefore, Department Dispatchers, Medics, Supervisors, or Administration can all initiate the MCI Response Plan. The MCI Response Plan has been presented to and endorsed by the Kent County Fire Chiefs with

regard to the automatic response levels. The Kent County MCI Plan is consistent with other County and State MCI Plans.

Equipment: Each Medic Unit carries Triage Kits and limited additional supplies to be used for patient care. The Supervisor’s unit (KM5) is equipped with an MCI Command Kit to facilitate orderly control of the medical branch of the incident. All units have updated contact lists for local and regional medical facilities. Critical data is kept both in hard copy and electronically in the unit MDT. The Special Operations trailer is equipped to support triage and treatment of up to 50 patients, has its own electrical power supply, and has additional components of the Treatment Area Command Kit, TVI Shelter with air heater unit, Chemical Personal Protection Kits (PPE), and Nerve Agent Antidotes Kits (NAAKs). TANGO-1 may be deployed for additional ALS resources and initial hazmat/radiological



survey. The Decon Support trailer may also be deployed for further sheltering and electrical supply. The Mobile Command Post may be deployed for extended operations.

Training: All Medics are trained in START Triage. Medics continue to train on the MCI Plan which gives Medics guidelines for determining the level of response necessary and emphasizes the need for the first-on-scene Medic crew to initiate the MCI response. "Trailer Day" drills continue in which all Medics are annually familiarized with the response support units and complete hands-on practical evolutions with the equipment.

Exercises

EMS participated in a full scale Active Shooter / Hazmat exercise in conjunction with DAFB. EMS participated in a functional exercise with DIS.

During training sessions Medics who are less experienced with MCI Command roles are tasked with accomplishing such an assignment. Supervisors are being included in functional and full-scale exercises in compliance with the NIMS.

Mass Gatherings

The Department prepares for several Mass Gathering activities each year. Notably, the NASCAR races at Dover Downs, the FireFly Music Festival, the Delaware State Fair, the Bike-to-the-Bay, and the Amish Country Bike Tour present the venues for the largest populations. There are occasionally other events (VIP appearances, DAFB Air Show, Chicken Festival, etc.) which also require Mass Gathering preparations. Response may be limited to assigning a Bike Team to the venue or expanded to establishing an entire communications center with dozens of support units on site.





The All-Terrain Medical Response remains equipped with one trailer now housing the Bikes and one Medic-Gator and two additional trailers which house a Medic-Gator each. All trailer units can be pre-deployed in support of larger events. These units include the Spec Ops, Decon Support, and a second MCI Support trailers along with the County Decon Units and TANGO-1. Additional ALS gear sets have been established to support each of these units. The Base Camp shelter can be deployed to serve as dedicated medical surge capacity. The Mobile Command Post is a self-contained communications center which can be deployed to any site as needed.

A number of Medics are trained to operate the Bikes and an increasing number trained to operate the Gators (the primary means of covering large venues). All Medics are introduced to towing a support trailer. The Gators, Primary and secondary MCI trailers were used to cover Spring and Fall NASCAR races, FireFly, Safe Summer Day, and the Governor's Fall Festival. The Spec Ops trailer was pre-deployed for the State Fair. The Base Camp shelter was deployed for both NASCAR events.

Maritime Response

Kent County's primary response jurisdiction extends well into the Delaware Bay and includes a busy anchorage. Currently the Medics are taken to vessels via VFD Rescue Boats. Occasionally the Coast Guard assists with aviation support.

Equipment: There is no specialized equipment currently in service to support maritime response.

Training: The Little Creek FD has a Company specific training available to Medics.

Activity: There was one response by Medics with Little Creek to the Delaware Bay in 2016.

Hazardous Materials Response (Hazmat)

The Department's response continues to be one component of a multi-agency response plan. Supported primarily and in depth by the Little Creek VFD, the group response for hazmat incidents is currently initiated by a responding fire line officer. The mission of the Hazmat Group remains primarily the provision of decontamination services. Following a request by DNREC and the support from the Department Chief, an expansion of the mission has been to develop a limited number of personnel capable of assisting DNREC in entry operations as a medical component of the entry team.

Equipment: The State of Delaware Hazardous Materials Decontamination trailer, tow vehicle, and the Decon Support trailer remain housed at Little Creek VFD. TANGO-1 operates from KCDPS Headquarters. Due to the adjusted operations in Sussex County, equipment in Kent has



been reconfigured to allow a 3-tiered support response ranging from man-power assist to full team and equipment response.

Training: Regular training sessions are held on the third Tuesday night each month (with few exceptions). As new equipment arrives it is introduced through these regular training sessions. Currently there are six Medics trained to the Hazmat Technician level which qualifies them to assist the entry team.



Activity: Decon responses have included 11 deployments mostly in support of DSP and DNREC involving "Meth-Labs". There was one response in support of DNREC/EOD for dredged munitions. The unit(s) participated in displays 2 times. The units were pre-deployed in support of the NASCAR races and FireFly (total of 12 full days).

Due to the continued and superlative support from the Little Creek VFD, there exists a lesser demand for Medics to operate the Decon Line. Therefore,

Medics are focusing more towards the medical management of hazmat patients and the ToxMedic Protocols have been slightly expanded.

Technical Rescue

The Kent County Technical Rescue Team is spearheaded by the Cheswold FD with support from several Kent County FDs. Currently there are 8 Medics training with the team. Technical Rescue encompasses trench, collapse, confined space, high angle, and swift water rescue operations along with urban search & rescue (USAR). The primary response area is Kent County with assisting teams in New Castle and Sussex counties. The "Second Due" area for the Kent team extends to the Chesapeake Bay including Caroline, Talbot, and Queen Anne counties in Maryland (dual response with Anne Arundel).

Equipment: The team equipment is based at Cheswold FD and Hartly FD and is comprised of a custom heavy rescue unit with additional equipment contained in a support trailer. All rescue operations equipment is compatible with the other two county's equipment. Each team member has a "go bag" with some personalized gear. Some specialized medical equipment has been placed in service. Hartly FD has placed in service a "Light & Air" unit which has been included with the initial response of the Team. This unit also tows the Support Trailer for the Team. TANGO-1 is attached to this team response. Additionally, equipment and supplies have acquired for the establishment of a mobile "Base Camp" to address the logistical needs of an extended operation.

Training: The majority of active team members are trained to the Technician level for Trench and Collapse rescue; all are Operations level for all disciplines. Several team members have completed large animal rescue training.

Activity: There were 3 responses. The Team presented a trench rescue demonstration for an association of private contractors. The team participates in annual trench and collapse weekend exercises. Several in-house trainings were held.

As the team increases in number and equipment inventory, continuing training will have to occur. Exercises testing extended operations and the establishment of a "base camp" continue.

EOD/SORT Response

Response: Medic Units are routinely dispatched to support EOD/SORT operations. Bomb Technicians are medically monitored before and after entry evolutions. Medics stand by in safe zones for certain law enforcement operations. Tactical Medics operate as integral members of a Tactical Team.

Equipment: Specialized equipment has been obtained for direct support of SWAT Medics. Tactical Body Armor, rescue litters, radio microphone equipment have been added to the inventory. Regular duty body armor and ballistic helmets are standard uniform for all medics.



Training: Five medics have completed Basic and Advanced Tactical EMS training and are embedded with the STAR Team in Smyrna the Dover PD team, and the Milford PD team. All current Kent County Paramedics received refresher briefings regarding EOD operations as part of the 2-year refresher cycle. Medics routinely receive refresher training regarding the assessment and treatment of blast and burn injuries. The Tactical Combat Casualty Care (TCCC) course was conducted with 9 Kent Medics completing the training.

Activity: Monthly training with both teams continues. There were more than 150 hours of training activity. There were 16 missions.

SORT Activity and Summary for 2016

For year 2016, Kent County SWAT-Medics have logged close to 80 man hours supporting our three Law Enforcement agencies on active missions. This is significantly down from last year; mostly due to Milford team's lack of missions compared to last year.

Operations for the team for 2016:

Supported Smyrna Police STAR Team, Milford Police SOG Team, and Dover Police Sort Team on 16 missions.

- 5 missions were in support of the Smyrna STAR Team only
- 0 missions were in support of the Milford SOG Team only
- 8 missions were in support of the Dover SORT Team only
- 1 mission was in support of a joint mission with Smyrna's and Dover's Teams
- 1 mission was in support of a joint mission with Milford's and Smyrna's Teams



- 1 mission was in support of a joint mission with all 3 teams

Supported the teams noted above in

- 13 Search Warrant executions
- 3 Arrest Warrant executions
- 0 Barricaded subjects

Training for the team for 2016:

- 102 hours of training with the Smyrna STAR team
- 39 hours of training with the Milford SOG team
- 56 hours of training with the Dover SORT team



In addition to this monthly training, SORT participated in an Active Shooter exercise with Dover Police SORT and Capital Police at the Governor's Manor (Crisis Negotiation Team).

Fire Ground Support

Medics are routinely dispatched to multiple alarm working fires and many "occupied high density residential" locations. Many times this response is merely a stand-by; however it is not uncommon for the Medics to assist in rehab services or conduct medical assessment and monitoring of firefighters.

Equipment: Cyanokits are available to support the Smoke Inhalation Protocol for fire ground support operations. All of the support trailers have sheltering, heat, and lighting capability. The Special Operations unit "TANGO-1" is in-service and offers a "bridge" in support equipment between the Medic Unit and the support trailers. The Spec Ops trailer has additional IV supplies, cots, sheltering, and heating capability.

Training: Specific training to support the new protocol has been completed. Medics are capable of deploying shelters and other support equipment.

Activity: Call volume varies from year to year. Some Fire Departments have added Medics to the initial dispatch for known working building fires or for residential complexes. Weather continues to be a factor during the extremes of heat and cold.





All-Terrain Medical Response

The Specialize bikes and Medic-Gator are pre-deployed to many events each year. While the units are capable of emergency response, the application of these assets remains as support to in-progress incidents. The units are housed in the ATMR trailers which require transport to the scene.

Equipment: All response vehicles (Crown Vics excluded) are equipped to tow the trailers. A solar battery charging system was installed for the Gator. The two additional Medic Gators and trailer are in service.

Training: The Bike Team continues as before with several Medics trained to ride the units. Gator training has been completed and all medics are familiar with Gator unit operation. The Gators covered both the Spring and Fall NASCAR races and FireFly. The Gator was used at Safe Summer Day, the Governor's Fall Festival, and the Amish Country Bike Tour.



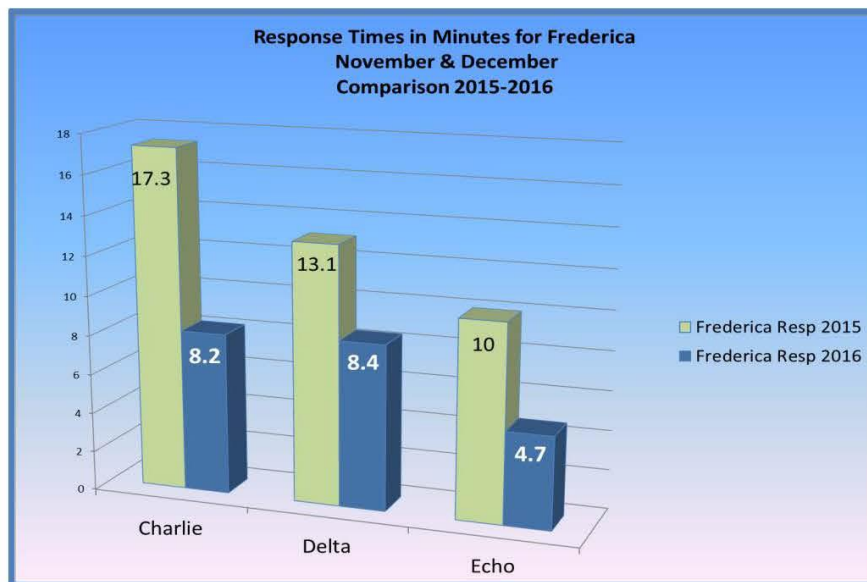
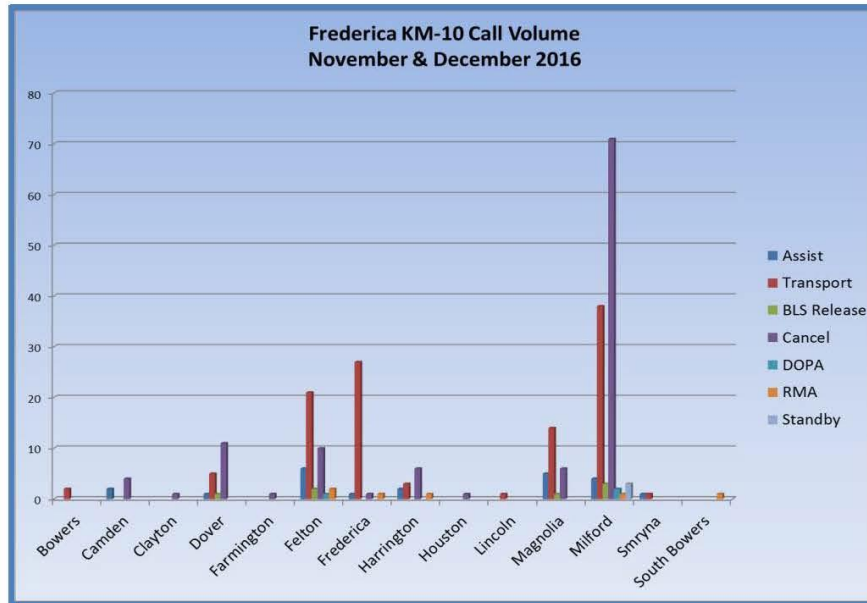
Community Involvement

KCDPS Paramedics participated in a number of community events in 2016. We covered 26 events including Firefly and NASCAR. Taught 10 CPR classes training 73 people. Did 9 Car seat checks at our NHTSA car seat check station. Conducted a Food drive for the Foodbank of Delaware.



2016 Southeast Corridor Pilot

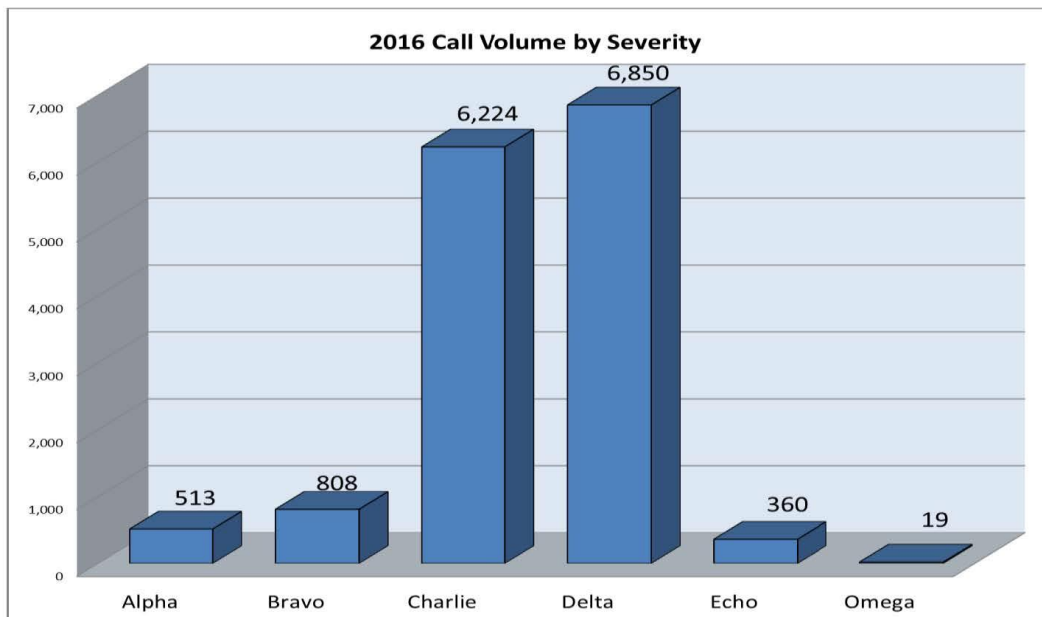
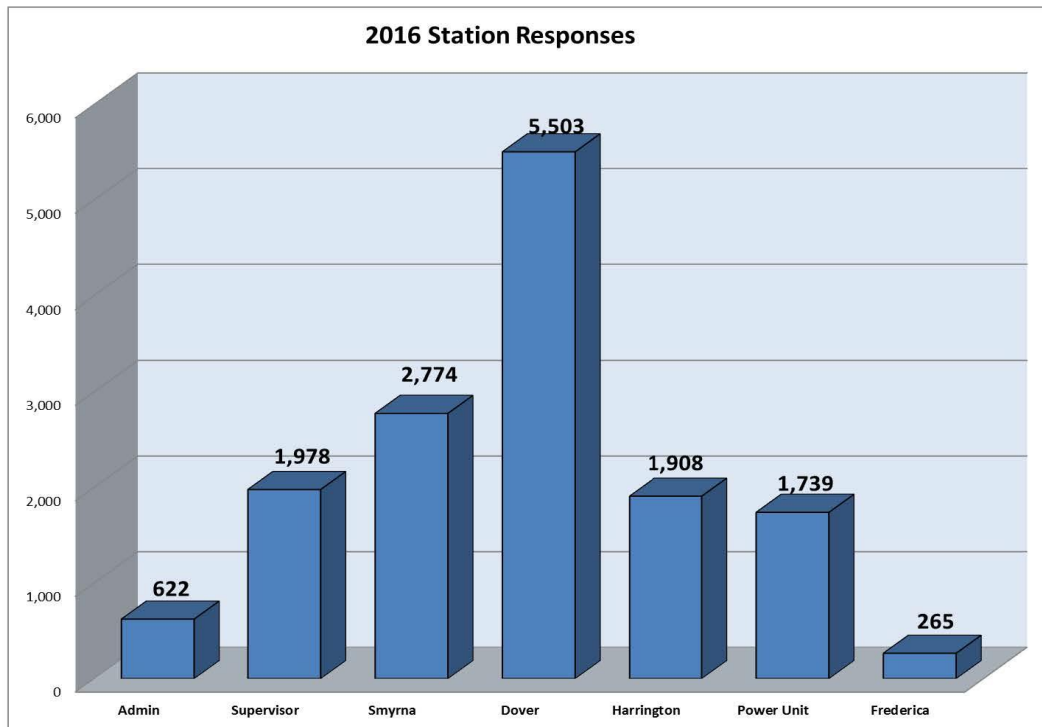
On November 1st 2016 Kent County placed KM 10 in service 24/7 at Station 49. This unit has, thus far, been a great asset to the Southeastern corridor of Kent County.

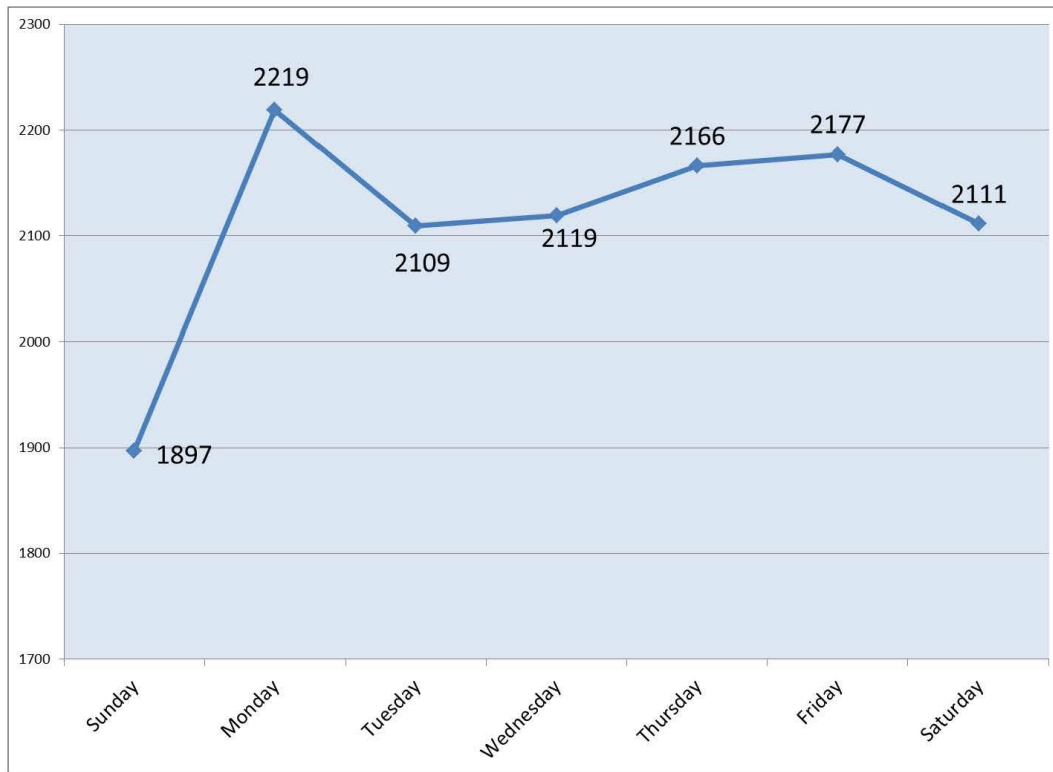


2016 Accomplishments

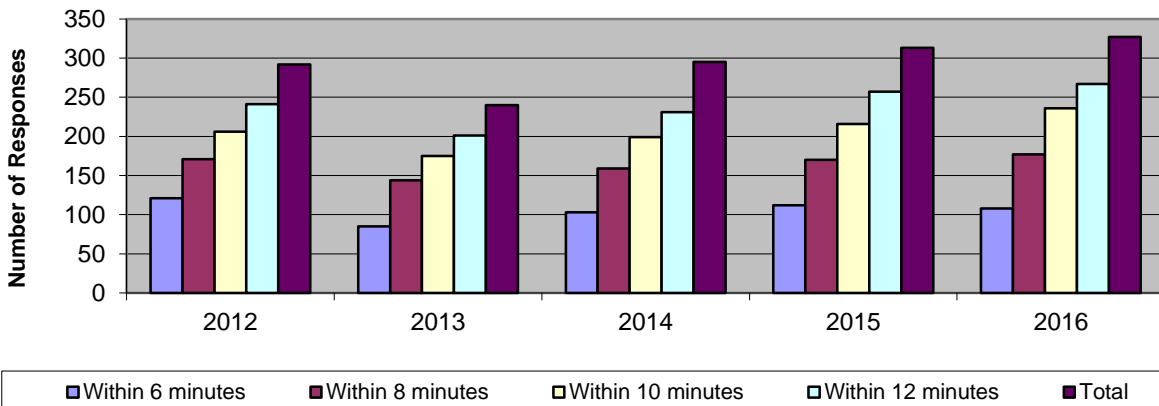
- The Addition of two FTO's
- A Telematics solution installed in all primary response vehicles
- BCON (Bleeding Control) taught to all County Employees
- CRASE (Citizen Response to Active Shooter)- Taught to all County employees
- Completion of Training Center Project
- Ensured compliance to a number of Federal guidelines regarding equipment PM, and testing of both medical and non-medical equipment.
- Secured purchase and conversion of two new vehicles.
- Held a food drive and delivered 2102 lbs of food to the Food bank of Delaware.
- Successfully provided medical coverage to the Firefly music festival where we saw over 660 patients in 4 days.
- Retained our NHTSA fitting station standing and provided car seat checks to the public
- CPR classes for the public.
- Continued to provide high quality refresher and Con Ed to our Paramedics.
- Continued to respond to calls in every part of the County in 10 minutes or less, and keep chute times at two minutes or less.
- Achieved recognition from the American Heart Association for 2016 in the Mission Lifeline EMS STEMI Quality Achievement Award.

2016 Operational Statistics

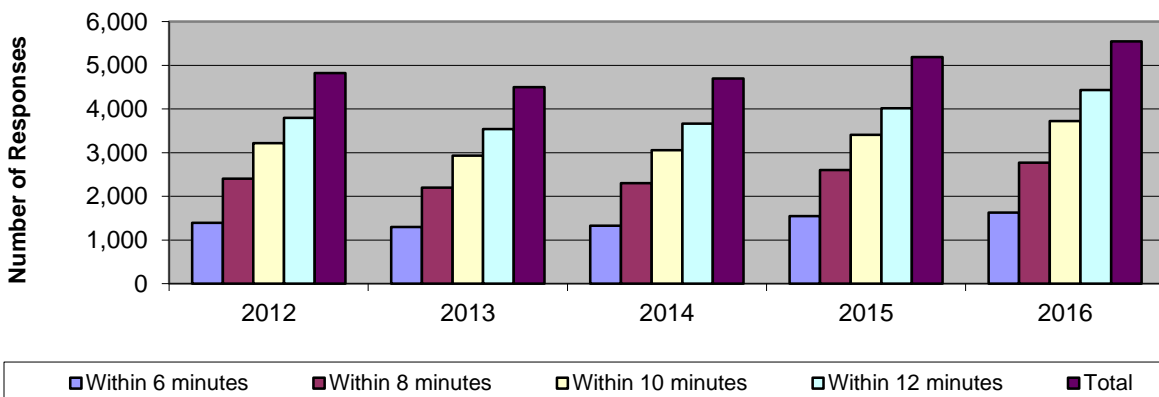




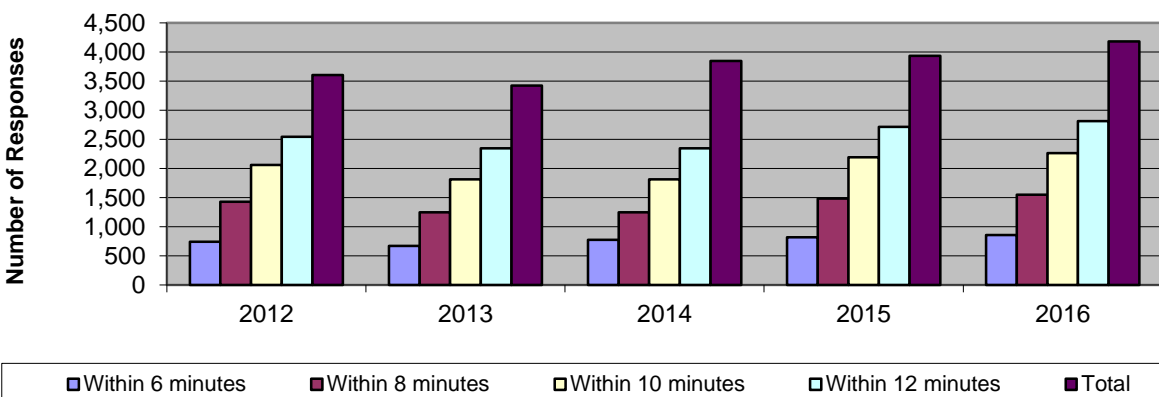
Echo Level Response, Kent County EMS



Delta Level Response, Kent County EMS

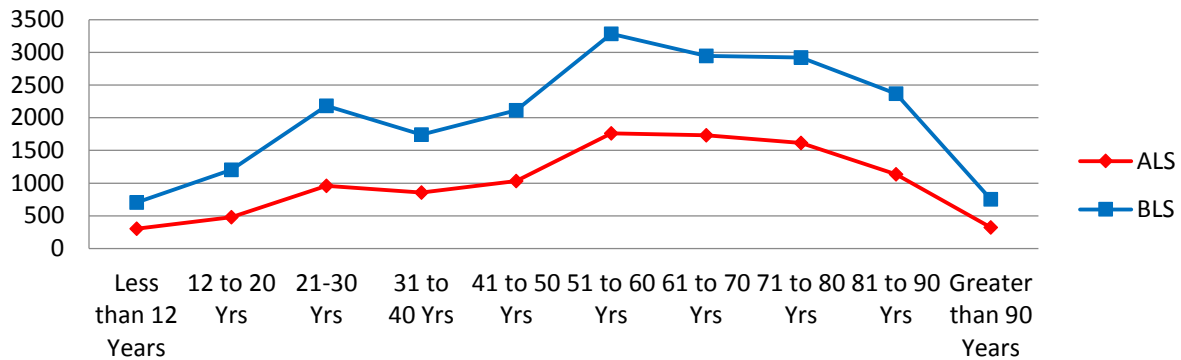


Charlie Level Response, Kent County EMS



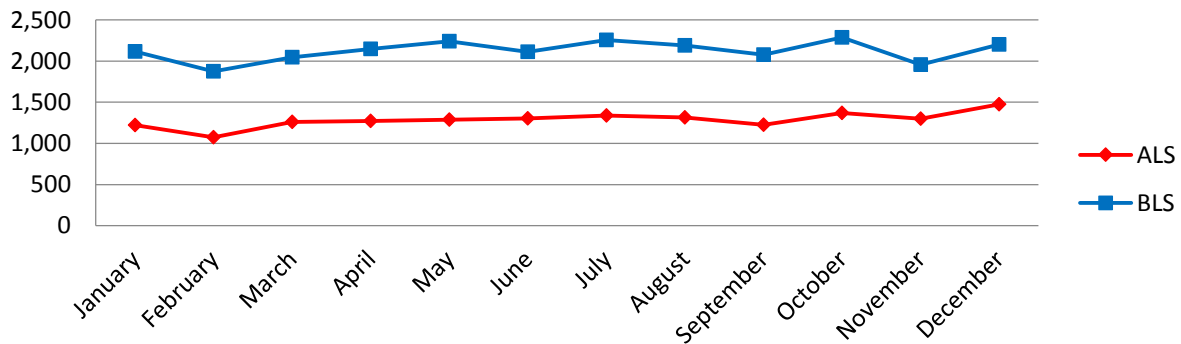
ALS and BLS Patient Age Comparison - 2016

Kent County

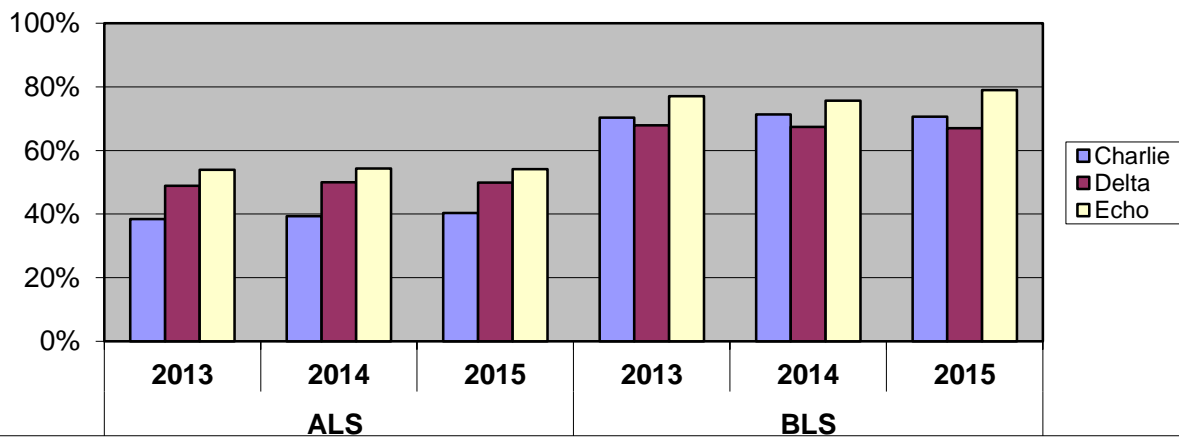


ALS/BLS Incidents by Month - 2016

Kent County



Percentage When Kent County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2016



Communication Center

Kent County

Submitted by Assistant Director Kevin Sipple



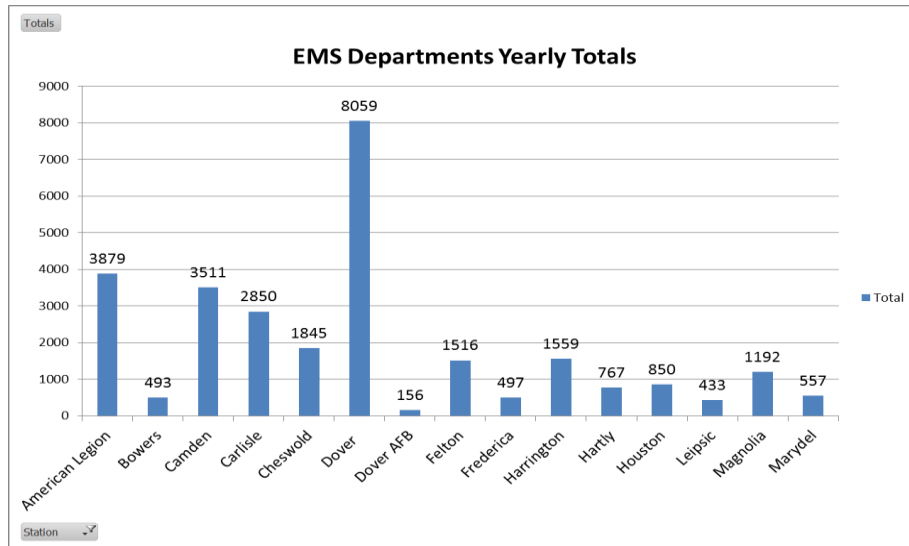
The Kent County Emergency Communications Center receives 911 calls through a variety of phone exchanges throughout Kent County, Northern Sussex County and Southern New Castle County. The total number of 911 calls processed in year 2016 was 92,734. Another 51,566 non-emergency calls were also processed by our dispatchers. The Center dispatched or processed 29,138 medical incidents, 6,489 fire incidents and 109,542 police incidents in year 2016.

Emergency Medical and Fire Dispatch

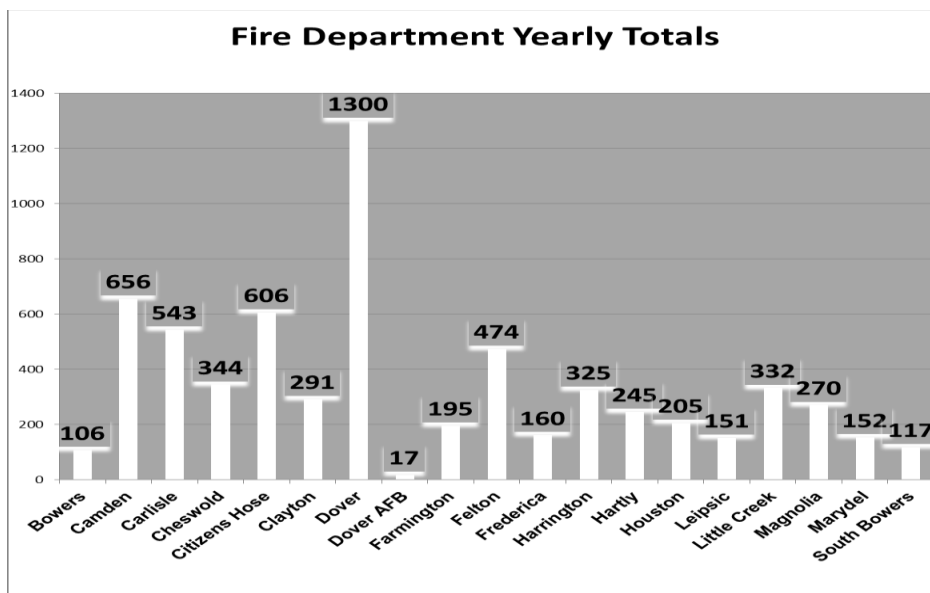


The Kent County Emergency Communications Center provides Fire/EMS Communications to eighteen Volunteer Fire Companies, two EMS Companies and the Kent County Paramedics. The Center is staffed with twenty-two Fire/EMS dispatchers and an Administrative staff of three personnel. The Delaware State Police Communications “KentCom” is also located in the Center with staffing of twenty-four Police dispatchers. All dispatchers are certified in the use of Emergency Medical/Fire Protocols and cross trained to assist with any activity in the Center.

The Kent County Emergency Communications Center was recognized as an Accredited Center of Excellence in Emergency Medical Dispatch by the National Academy of Emergency Dispatch in November 2000. We were the 49th agency in the world to become accredited in the use of Medical Protocols and have met the requirements ever since. We also utilize the National Academy of Emergency Fire Dispatch protocols and received accreditation status in November 2007 with Kent County being the only Dispatch Center to achieve this status in the State of Delaware and the 6th in the world. In 2016 we have again gained Re-Accreditation in EMD with the Priority Dispatch Emergency Medical Dispatch Protocols as required by Delaware Law.



This chart represents the total medical responses by Emergency Medical Services in 2016.



This chart represents the total fire related responses by Company in 2016.

Our agency, in a partnership with State 911 Board, continues to upgrade our Computer Aided Dispatch and Mobile Dispatch platform to a State-wide system providing interoperability across many of the Communications Centers in the State.



Smart911™

Kent County Levy Court continues to support Smart911. Smart911 is a free service that allows citizens to create a Safety Profile for their household that can include any information they may want 9-1-1 call takers and first responders to have in the event of an

emergency, then if they need to dial 9-1-1 their Safety Profile will immediately display on the call taker's screen saving critical seconds and even minutes in response to the emergency. Our division has provided many demonstrations and sign up events throughout the year promoting the use of the program.



Three of the biggest challenges Kent County Public Safety encounters three times a year is the NASCAR race, FireFly Musical event at the Dover International Speedway and the Delaware State Fair in Harrington, Delaware in July. The NASCAR/FireFly events bring over 130,000 people to our County mostly in the Dover area. Starting on Thursday of the event, Kent County provides trained dispatchers to answer and dispatch Fire/EMS calls to the emergency responders that are working. The Delaware State Fairgrounds encompass over 300 acres and features concerts, agricultural exhibits and other typical state fair demonstrations and events. During this 10-day event over 200,000 people visit the State Fair.

The Kent County Emergency Communications Division also maintains an Incident Communications Vehicle for on-scene command and control of emergency operations, thus allowing the County Public Safety Answering Point (PSAP) to continue with normal dispatching



functions. Maintained in a constant state of readiness at the Camden-Wyoming Fire Station, the Incident Command Vehicle may be utilized at Fire/EMS and police emergencies, civil disturbances, natural disasters and other scenes where emergency & tactical communications are needed. The Incident Command Vehicle is self-sufficient with its on-board generator, heater, air conditioner, computer aided dispatch system, high-band paging system, internet capabilities, cellular telephones, 800 MHz radio communications, recording capabilities and a radio inter-operability system.

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Sussex County

Advanced Life Support 131
Report submitted by Director Robert Stuart

Communication Centers 148

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SUSSEX COUNTY EMERGENCY MEDICAL SERVICES

CARING PEOPLE, QUALITY SERVICE



OVERVIEW

In 2016, Sussex County EMS (SCEMS) celebrated twenty-five years of providing Advanced Life Support (ALS) Service to the residents of, and visitors to, our community. We provide paramedic service to an area of nearly 1,000 square miles, including all of Sussex County and a portion of Kent County (primarily Milford), using eight specially designed ALS rapid response vehicles, each staffed by two paramedics, and one ALS First Responder unit during the peak call volume hours staffed with a single paramedic in Western Sussex County. These primary units are overseen by two District Supervisors. During the summer tourist season, an additional paramedic unit is placed into service to assist with the high volume of calls, particularly in the beach areas. Our paramedic staff is supported by administrative, clerical, technical support, and information systems personnel to ensure a constant state of readiness throughout the year. We work closely with fire department-based Basic Life Support (BLS) services, volunteer ambulance services, local hospitals, state and local police, and private aeromedical services, as well as taking part in the Delaware Statewide Paramedic Program.

“Caring People, Quality Service” is not only our slogan, but our commitment to the people of Delaware and to each of our patients.

Mission Statement

Sussex County EMS is:

A nationally recognized leader in mobile health care services committed to improving your quality of life.

We will accomplish this through:

- Quality, compassionate patient care
- Continuous quality improvement
- Proactive planning
- Innovative technologies and procedures
- The full spectrum of emergency medical services
- Comprehensive education and training for our personnel and the public

We Value:

- Kindness
- Professionalism in action and in attitude
- Respect, dignity & politeness
- A supportive, productive work environment
- Continuing education for personal and professional growth
- Honesty, trust, integrity in all our actions
- Individual creativity, initiative, and responsibility
- Fiscal responsibility
- Public trust and support

2016 ACCOMPLISHMENTS

FIELD OPERATIONS

Call Volume: Sussex County EMS experienced a 5% increase in responses in 2016. Over the past ten years, SCEMS has experienced a 65% increase in the number of responses to calls for service. Our department has eight paramedic units staffed with two paramedics in service 24 hours a day strategically positioned throughout the county in an attempt to minimize response time to calls for service. During the daytime hours of peak call volume an ALS First Response Unit, Medic 110, is placed in service with a single paramedic in Western Sussex County.

Due in large part to Sussex County's status as a summer vacation destination, SCEMS sees a substantial increase in call volume during the summer months, especially in the beach areas. For a number of years a single medic, Medic 109 an ALS First Responder Unit, has been deployed in Southeastern Sussex County during our summer weekends. The unit is staffed from 0700 until 1900. Due to increasing call volumes, in 2016, Medic 109 became a daily power unit from Memorial Day through Labor Day. This unit's coverage has proved invaluable in district coverage and reducing response times in the beach/tourism areas of Sussex County. Sussex County EMS continues to work hard at achieving state-set response time goals. Our near 1,000 square mile

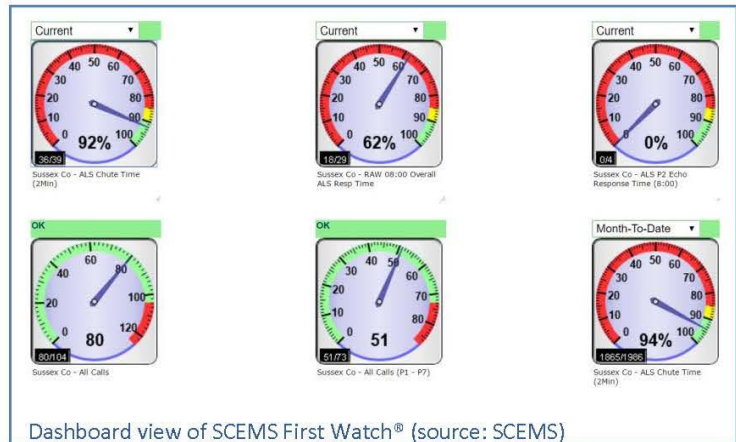
response district significantly impairs our ability to meet the determined response goals, but the below graphs demonstrate that we have shown significant improvement toward achievement in 2016. This is due to the addition of Medic 110 (single-medic power unit in Seaford) and the increased operational "splitting" of our dual paramedic units into single-paramedic units. This proactive measure ensures coverage when a neighboring district becomes empty. A backup paramedic unit is always sent to meet the two paramedic state mandate. To achieve this, we must maintain a dual fleet that is operationally ready at every station.

2016 Incident Responses

EMS 100 (Eastern Supervisor)	828
EMS 200 (Western Supervisor)	855
Medic 101 (Lincoln)	2,081
Medic 102 (Laurel)	2,277
Medic 103 (Dagsboro)	2,572
Medic 104 (Lewes)	3,425
Medic 105 (Millville)	2,091
Medic 106 (Long Neck)	2,643
Medic 107 (Bridgeville)	2,777
Medic 108 (Georgetown)	2,142
Medic 109 (Summer "Power Unit")	411
Medic 110 (Seaford "Power Unit")	1,456
Special Operations	170
Other (Administration)	109
Total	23,837

Incident Responses by Unit (source: Sussex County CAD)

First Watch Expansion: In early 2016 First Watch® was shared with Supervisors and staff to assist in monitoring out-of-chute times. First Watch® is operated through the Sussex County Emergency Operations Center and through a joint collaboration we are able to use the data to improve operational performance. It is our expectation that we will initiate response to incidents within 90 seconds (0700-2300) and 120 seconds (2300-0700). A dynamic dashboard which updates with each response was made available at Paramedic Headquarters and each District Supervisor office. Supervisors were encouraged to monitor trends and promote successes. When this was initially deployed our monthly chute time compliance was under 90%. Throughout the year we have improved that compliance to 95% for 2016. We are currently working on opportunities to further improve. On such idea, is station alerting systems that activate when the unit is assigned to an incident versus the current model, which activates only when the unit is dispatched. Depending on the nature of the incident we anticipate being notified earlier of impending calls. Another step taken is in the design of our stations. A team looked at our current station design and made suggestions to improve operational demands. All new stations are being built with those recommendations in place.



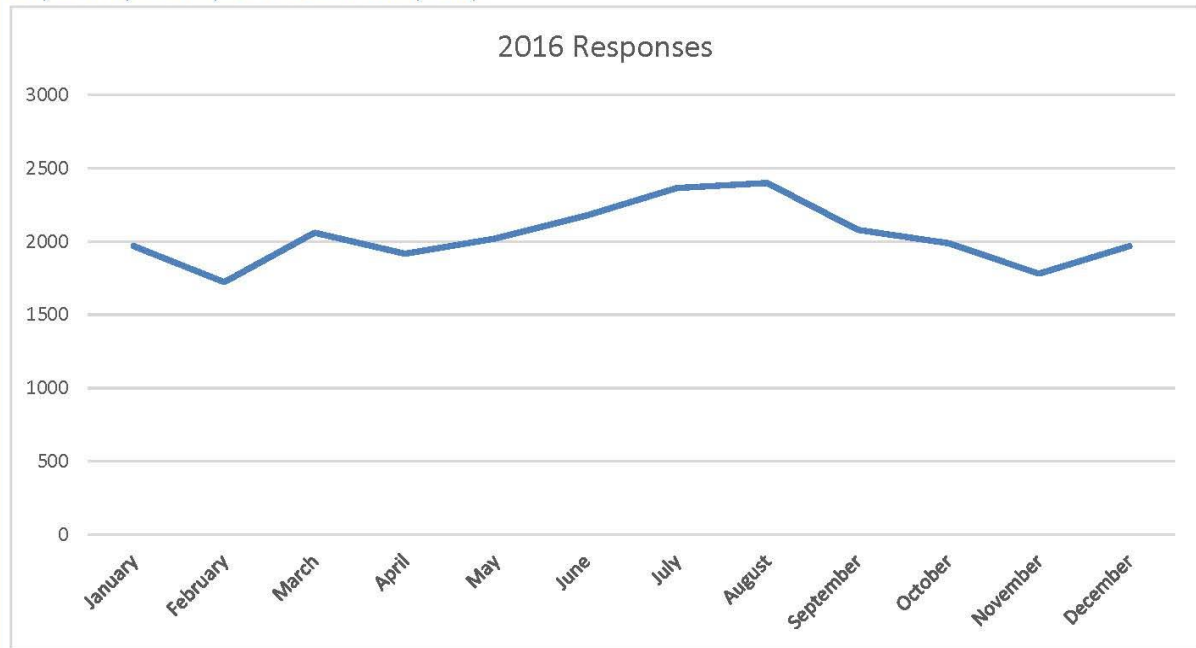
SCEMS Paramedics participate with Law Enforcement in Rescue Task Force Drills (source: SCEMS)

Active Assailant: SCEMS began training staff for active assailant responses. Through a collaborative effort with Georgetown Police Department, Ocean View Police Department and the Millville Volunteer Fire Department, all staff received an awareness class and were able to participate in several scenarios. Since that training SCEMS established a workgroup to develop internal policies, make equipment recommendations, and coordinate training.

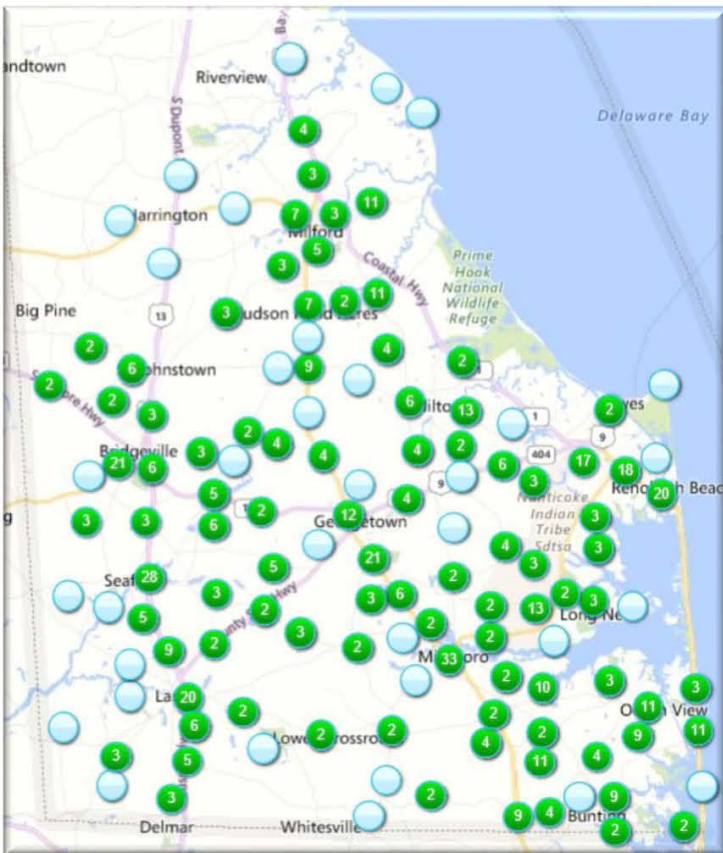
This workgroup attended the Advanced Law Enforcement Rapid Response Training (ALERRT) conference in Texas. In addition, SCEMS actively participates in a state-wide task force challenged to provide a best practices and training recommendations for public safety agencies across the state. SCEMS continuously monitors the global and local threat levels and works in conjunction with law enforcement to establish Rescue Task Force teams (RTF) when warranted. SCEMS is in the process of providing individual aid kits for the paramedics and Rescue Task Force response bags that can treat multiple injured patients in active assailant scenes.

2016 SCEMS INCIDENTS

Responses by Month (source: Sussex County CAD)



Sussex County EMS continues to see an increase in summer call volume. Our "shoulder" season of spring and fall has continued the trend of increased call volume as well.



Sussex County EMS responded to 621 motor vehicle, bicycle, and pedestrian accidents in 2016. The numbers in the green circles represent the number of different incidents at that particular location. The light blue dots are single incidents.

This map represents Sussex County EMS incidents where the provider entered a primary or secondary impression of "Overdose" and administered Naloxone (Narcan) to the patient. In 2016, there were 440 incidents matching this criterion. Many of our overdose patients are repeat customers that SCEMS has revived prior.

SCEMS has participated in numerous community outreach programs and community open forums to discuss the opioid epidemic currently facing Sussex County.

In addition, SCEMS has taught numerous Public Safety and Police Officer Narcan administration classes to state and local law enforcement and public safety officers.



PERSONNEL

Staffing: Sussex County EMS entered 2016 with no vacant paramedic positions. During 2016, SCEMS had 15 employees separate from the department and hired 10 new paramedics. Seven of the separated employees were retirees who attained 25 years or more of service. Two of our new employees were returning from previous SCEMS employment, and two were graduates from the Delaware Technical and Community College Paramedic Program. The remaining six employees were hired from other areas of the state or country.



A Shift (source: SCEMS)



B Shift (source: SCEMS)



C Shift (source: SCEMS)



D Shift (source: SCEMS)



SCEMS Uniformed Administrative Staff (source: SCEMS)



SCEMS Administrative Staff (source: SCEMS)



SCEMS Technical Services Staff (source: SCEMS)



SCEMS Information Technology Staff (source: SCEMS)

SCEMS Wellness Program: Sussex County EMS recognizes the stress EMS providers deal with every day and the cumulative effect of working in the emergency services profession as well as the compounding stresses that everyday life can bring.



Members of the SCEMS CISM team participate in a mock training debriefing (source: SCEMS)

SCEMS has established their own Critical Incident Stress Management (CISM) team which has been recognized by the International Critical Incident Stress Foundation, Inc. The CISM team members are available to employees, their families and the community SCEMS serves, working in harmony with existing support groups within the area. The team presents tips and guidance semi-annually at continuing education classes to educate and facilitate open discussion.

With the incorporation of mental health professionals and ongoing training, CISM has created a support network for our personnel to utilize. Services provided include one on one support and group involved efforts in addition

to immediate intervention and diffusion of significant or heightened incidents. Secondly, a Chaplain Committee was formed by members from each shifts, as well as the two department Chaplains. This non-denominational committee is focused on meeting the spiritual needs of staff members. The teams meet bi-monthly and receive on-going training from their mental health professional and our Chaplains. Thirdly, Sussex County has a comprehensive Employee Assistance Program that is available to all employees as well as their families. In addition, the Sussex County Fitness Committee continues to promote healthier lifestyles with monthly fitness challenges, recommendations for meal planning, and continued expansion of fitness equipment available to staff in each station.

Our organization is striving to create a culture where employees feel like their mental health and well-being is paramount, and that their overall safety and ability to function at their best is the organization's highest priority.

National EMS Memorial Bike Ride: In May of 2016, members of SCEMS, Sussex County BLS, and Beebe Hospital ED once again participated in the National EMS Memorial Bike Ride honoring those killed in the line of duty. The 7-day ride from Boston, MA to Arlington, VA, honors these EMS providers. The Sussex County participants were riding in honor of Sussex County Paramedic, Stephanie Callaway who was killed in the line of duty in June of 2008, and EMT Michelle Smith from Delaware City FD who died in the line of duty in December of 2008. SCEMS Paramedics Mike Milliken and Glenn Adams were remembered for their years of service helping others. The 2016 EMS Memorial Bike Ride traveled through Delaware on May 18 and 19 marking a memorable day for the riders. The Delaware portion of the ride began on May 18, leaving Claymont, DE stopping first at St Francis Hospital where breakfast was provided by the hospital staff. The ride then continued down Rt. 9 and along the coast of Delaware before making a stop at Delaware City FD to remember Michelle. They continued south and were hosted by Little Creek FD for lunch which was sponsored by the Kent County EMS Association. As the ride continued south Magnolia FD, Carlisle FD, and Lewes FD Station 2 hosted rest stops for the riders. The day ended with a State Police escort down Rt. 1 into Rehoboth Beach, where a ceremony was held to remember all the EMS providers that were being honored this year. The riders were amazed at the support from the BLS/ALS community, which included EMS vehicles staged around the Bandstand at the Boardwalk in Rehoboth. The next day started as the riders left Dewey Beach, rode through the Cape Henlopen State Park and to the Lewes FD Station 1, where they were provided breakfast sponsored by Beebe Hospital. After a good healthy breakfast, the riders were off to Maryland. They continued their journey through Delaware stopping again at Milton FD, Ellendale FD, and the last stop at the Greenwood FD. A huge salute and thank you goes out to all the Delaware Fire and EMS departments that made this event a great success by raising awareness of the dangers in our jobs.



Members of the NEMSMBR prepare to begin the East Coast Ride from Boston to Washington, DC (source: SCEMS)



SCEMS Admin and Sussex County Paramedic Association members with donated food for the Home of the Brave (source: SCEMS)

Sussex County Paramedic Association: Sussex County Paramedic Association had their second annual Gobble Gobble Give Thanksgiving Food Drive. As in last year's drive, the food was donated to the Home of the Brave. Home of the Brave is an organization that assists our veterans with transitional housing, food, employment assistance, counseling services, access to healthcare, transportation, and location of affordable housing. This year the Paramedic Association teamed up with the Sussex County Volunteer Firefighter Association to gather non-perishable food and toiletries. These items were then presented to the Home of the Brave at the Sussex County Volunteer Firefighter Association monthly meeting.

The Sussex County Paramedic Association had their second annual Toy Drive. Both years the toys were donated to a family in need that is associated with the Home of the Brave. This year the Paramedic Association adopted a 5-year-old girl and a 7-year-old boy. The Paramedic Association was extremely successful this year and was able to provide the children with coats, winter clothing, toy, educational tablets, new bedding and two bikes. These items were then later presented to the family.

SPECIAL OPERATIONS

Special Events Coverage:

SCEMS covers many large scale events throughout the year. Events are covered by traditional staffing, bike medics, and/or UTV's. SCEMS deployment and pre-planning of the events provides rapid response to on-site incidents. SCEMS medics are fully equipped anytime they deploy for special events.



Special Events Teams participate in the Rehoboth Polar Bear Plunge (source: SCEMS)

EMS Bike Team: The SCEMS bike team is comprised of fourteen members that are International Police Mountain Bike Association (IPMBA) trained. The team conducts semi-annual training and staffs multiple large scale events that are not readily accessible by normal emergency response modes. Team bikes are equipped to provide initial ALS care with a full complement of equipment staged with the event transport unit. The team's accessibility to high event population makes the bike team a valuable public education resource during events.



SCEMS bike team training (source: SCEMS)

Special Events	160
Bike Medic Events	11
<u>Public Education Events</u>	<u>29</u>
	210

Number of Special Events covered by both on-duty SCEMS units and Special Events Teams (source: SCEMS)



HazMat team training with Nanticoke Hospital and Fire Department partners (source: SCEMS)

Hazardous Materials Team (HazMat): The Sussex County EMS HazMat Team is part of the department's Special Operations Division. This specialized group of paramedics is responsible for maintaining competency and preparedness for hazardous materials incidents within Sussex County and neighboring jurisdictions. The team consists of twenty field paramedics and various supporting administrative personnel. Each of the team members are trained to the HazMat Technician level and have received specialized training in mass casualty incidents, toxicology, environmental monitoring, decontamination, and the Incident Command System.

In 2016, the SCEMS HazMat Team conducted in-house training exercises to further hone their skills and enhance their preparedness. The Delaware State Fire School provided HazMat Technician refresher training to the team and several members completed the IC-HOT course through the Center for Domestic Preparedness. Members of the team also provided content to the department's continuing education in regards to toxicology and HazMat awareness. Members also attend the annual Delaware HazMat Conference.

The Sussex County EMS HazMat Team participated in the annual disaster drills for Nanticoke Memorial Hospital, Beebe Healthcare, and several other agencies. During the disaster drill, team members observed and provided constructive feedback on decontamination procedures with discussion in regards to interoperability. The HazMat team also provided education to area Fire Department and BLS providers regarding their operations.



SCEMS HazMat Team training (source: SCEMS)

EDUCATION AND QUALITY MANAGEMENT

Continuing Education: SCEMS continues our tradition of providing high-quality continuing education for our staff. We have adopted a format of combined classroom education and scenario-based simulation team learning at our continuing education sessions. This approach to learning has been embraced by our staff and sets the standard for simulation based learning.



*SCEMS paramedics train with team based scenarios
(source: SCEMS)*

Daily Training: In addition to these classroom sessions, paramedics complete required daily training delivered via a newly implemented Learning Management System. This internet-based learning platform hosted by Cornerstone OnDemand allows for the deployment and tracking of distance learning content to include integrated learning from Lynda.com, a national leader in soft skill, leadership and computer program education. In addition, a team of 3 field paramedics create online training using Articulate Storyline that is sent to all SCEMS paramedics for “small-dose” learning on a weekly basis.

Simulation Program: In 2016 SCEMS had one of the most successful years of simulation to date. We organized simulation events throughout the year that saw nearly 100 % of our department having an opportunity to participate in a simulation. We utilized a Field Training Officer for each event that provided expert feedback to each member. This debrief came in the form of conversation as well as utilization of our Replay system that allowed members to view their own performance and critique each other. 2017 will see an all new set of simulations and opportunities. With an entirely new Quality and Standards team in place the future is bright.

Phoenix Ceremony: Each year, Sussex County EMS in partnership with the Sussex County Volunteer Ambulance Association, hosts the Sussex County Phoenix Award Ceremony at one of the fire departments within the county. This past year, the third annual event was held at Roxana Volunteer Fire Company on April 9, 2016. The purpose of the ceremony is to induct the survivors of cardiac arrest into the Sussex County Phoenix Club and give an opportunity for the survivors to meet their responders as well as responders to see that their career makes a difference in the lives of our citizens and visitors of Sussex County. The Phoenix Club inductees are members of an exclusive group of people who have been given a “second



SCEMS Crews train in our Simulation Lab (source: SCEMS)



Shown in the pictures are 3 cardiac arrest survivors that were inducted into the Phoenix Club, and the responders who saved their lives. (source: SCEMS)

chance at life” by surviving a cardiac arrest, similarly to the mythical bird phoenix – who is reborn out of its own ashes. The responders are the links in the “chain of survival” that can include any of the following personnel: The bystander who starts CPR and calls 911, the 911 dispatcher who gives CPR instructions via telephone, a police officer with an AED, the ambulance Emergency Medical Technicians with basic life support capabilities, and the Paramedics with advanced life support capabilities. At this ceremony, 116 responders, 12 Emergency 911 Dispatchers, and 9 civilians were recognized for their valiant efforts in saving the lives of twenty-three people in the year 2015.

EQUIPMENT AND LOGISTICS

Logistics: SCEMS has a 6-person logistics division that oversees and coordinates station, equipment, vehicle purchase, and maintenance. In 2016 they processed 1886 requests for service and repair through our electronic trouble reporting system (10% increase over the prior year). We continue to use Operative IQ as an electronic platform for field paramedics to inventory their equipment and to place station supply requests. In addition, our Logistics Division purchased, processed and distributed 28,883 consumable paramedic equipment soft goods in 2016. Below are accomplishments of the Logistics Division for 2016.

800 MHZ Radio Replacement Phase-In: We continue to phase-in to keep up with the radio end-of-life date established by Motorola. We are currently replacing XTS 5000 portables with APX 6000 radios. The XTS 5000 have an end-of-life date of December 31, 2018. We replaced 20 portable and 6 mobile radios this year.

Response Vehicle Purchases: SCEMS placed in service 5 new response trucks. These trucks are designed by a field-paramedic led truck committee. Our fleet drove 480,115 miles in 2016.

Rescue Task Force: SCEMS created and implemented Rescue Task Force gear for active assailant response. This gear was placed on all response trucks and includes “stop the bleeding” materials to treat numerous patients.

Special Operations Facility: Working with County Engineering for a Special Operations new facility in Georgetown that will be part of a combined services building housing EMS and county fleet maintenance and the county radio repair shop.

Dossier Fleet Management: SCEMS joined the county fleet management software, Dossier as a department user for daily management and fleet acquisition. Dossier allows SCEMS to collect and analyze historic vehicle maintenance and use data and has proven itself to be a powerful tool to track and schedule our vehicle maintenance.



Members of the Sussex County Council dedicate the new Medic 105 station (source: SCEMS)

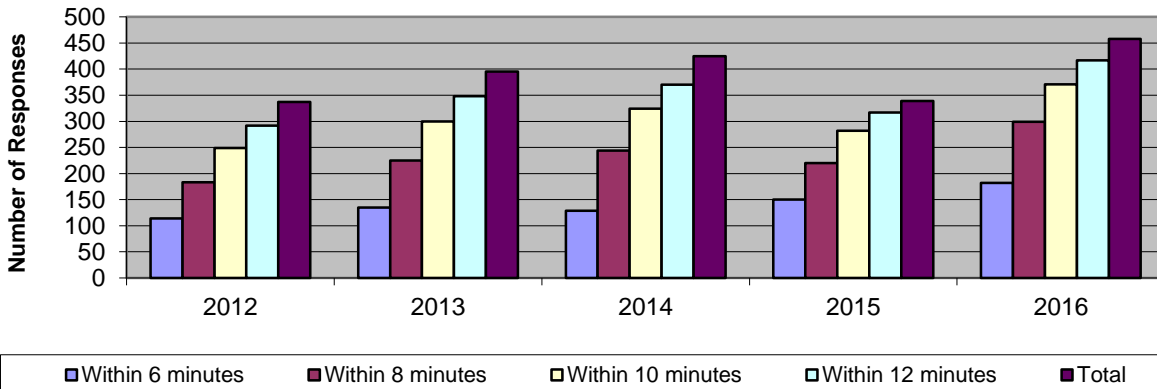


SCEMS Field Paramedic designed primary response vehicle (source: SCEMS)

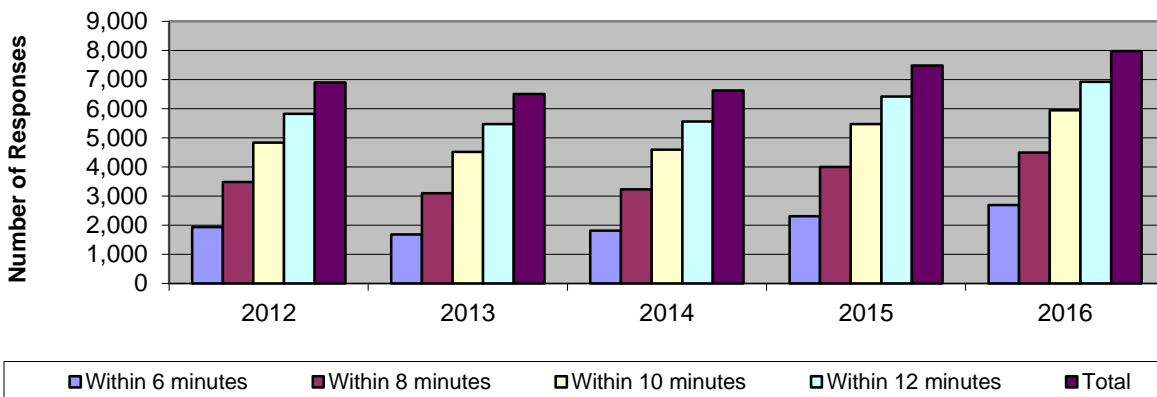
Paramedic Station 103: Sussex County EMS continues to explore owning our own Station 103 in Dagsboro. We have started the process of land acquisition and have started plans for moving our Special Operations vehicles and equipment to the Georgetown Airport in a large complex shared with Sussex County EOC Radio Maintenance and Sussex County Maintenance department.

Paramedic Station 104: During 2016, Sussex County purchased land on Plantations Road in Lewes to relocate the station that currently houses Medic 104 and the Eastern District Supervisor unit, EMS 100. Construction is under way for a 5000 square foot 1.2-million-dollar station to house the Medic 104 unit and the Eastern District Supervisor in the Rehoboth area. For many years the current station has been located in leased space within the Storage Solutions building in the Midway area. This is a less than optimal location due to the difficulty accessing Route 1. Construction of this new station should be completed by May 2017.

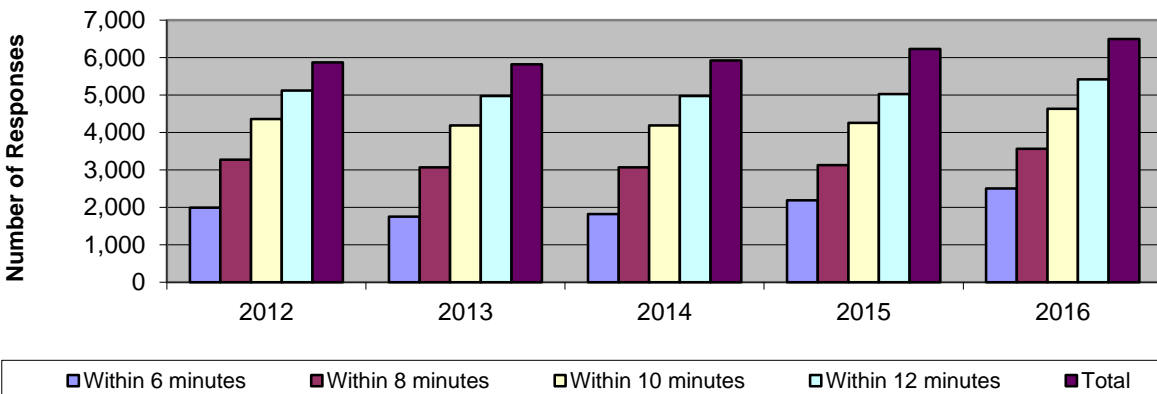
Echo Level Response, Sussex County EMS



Delta Level Response, Sussex County EMS

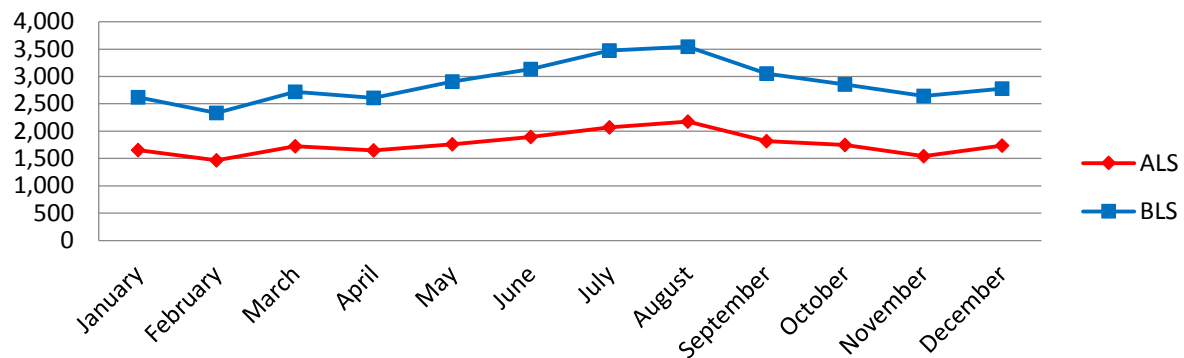


Charlie Level Response, Sussex County EMS



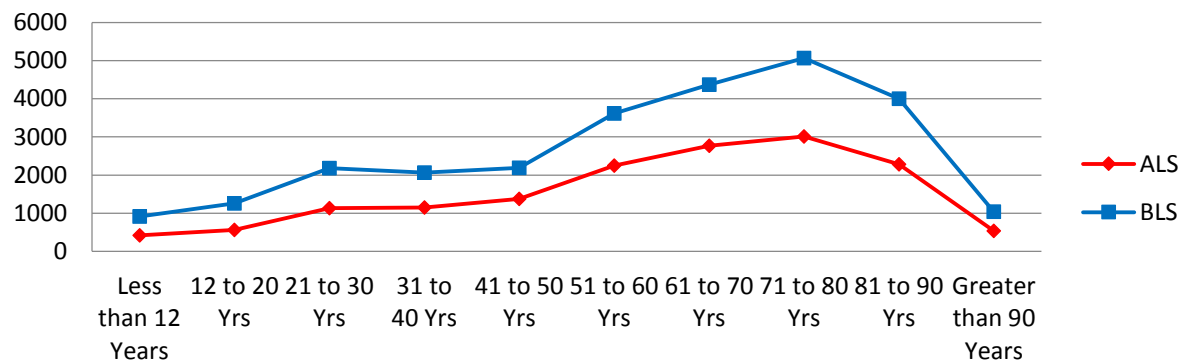
ALS/BLS Incidents by Month - 2016

Sussex County

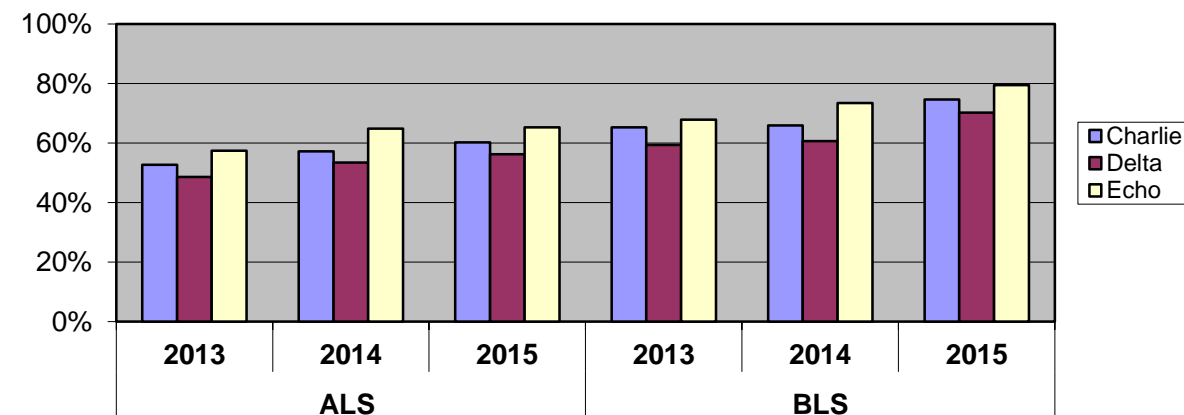


ALS and BLS Patient Age Comparison - 2016

Sussex County



Percentage When Sussex County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2016



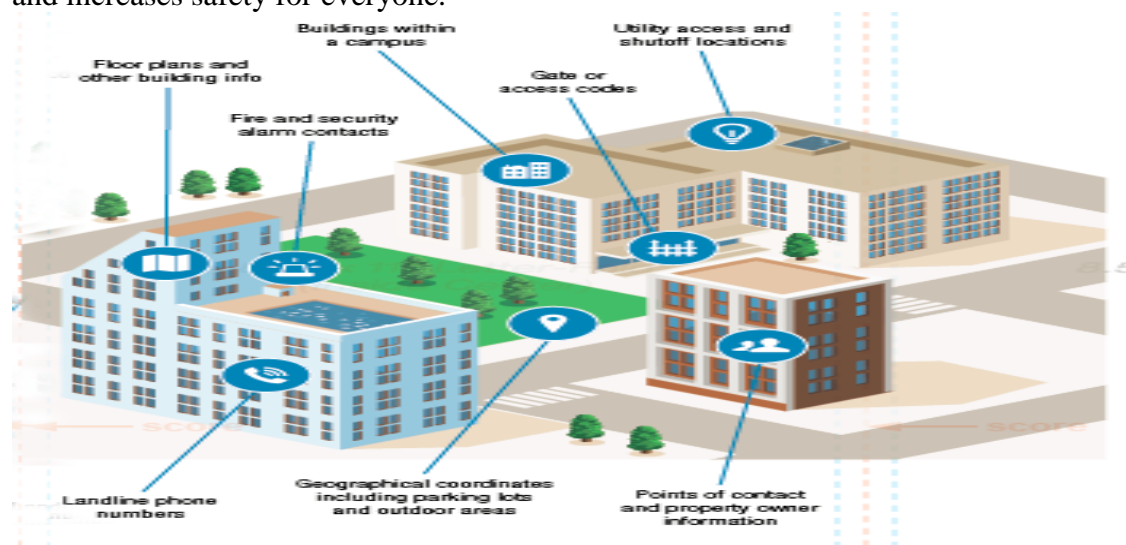
SUSSEX COUNTY EMERGENCY COMMUNICATION CENTER



The Sussex County Emergency Operations Center / Fire and Ambulance Callboard employs 22 full time and 3 part time Fire / EMS Dispatchers, 1 Quality Assurance Supervisor, and 1 Assistant Chief Dispatcher.

Phone Upgrade: Along with the other 911 agencies, Sussex County upgraded to the new West/Intrado phone system platform in February 2016.

Smart 911: The program was upgraded and the launched Smart 911 Facility which creates a detailed building and campus information connects instantly with 9-1-1 calls. It speeds response and increases safety for everyone.



Cad to CAD: Implemented the CAD to CAD connection between SUSCOM's New World CAD System and Sussex County's Tri-Tech CAD System. This allows information sharing between the two agencies. With this implementation, we are also able to share information with Seaford and Rehoboth Centers in a quick and efficient manner.

Computer Aided Dispatch System: In 2016 the Center updated to a new version of CAD which enhanced functionality for dispatcher performance.

EMS & Fire Mobile Project: The Center continues to support the Sussex County EMS and the Fire Service with Mobile Data Terminals.

Beta Test Site: Sussex County Emergency Operations Center / Fire and Ambulance Call Board remains a Beta Test Site for the National Academies of Emergency Dispatch. The site tests protocol changes and updates along with the testing for new protocols.

Diversion Reports: The Center compiles a diversion report for the three (3) hospitals in Sussex County as well as the two (2) hospitals in Maryland that border Sussex County.

Re-accreditation: The Center is accredited until 2018. We continue to work towards meeting and exceeding the standards set by the National Academy of Emergency Medical Dispatch.

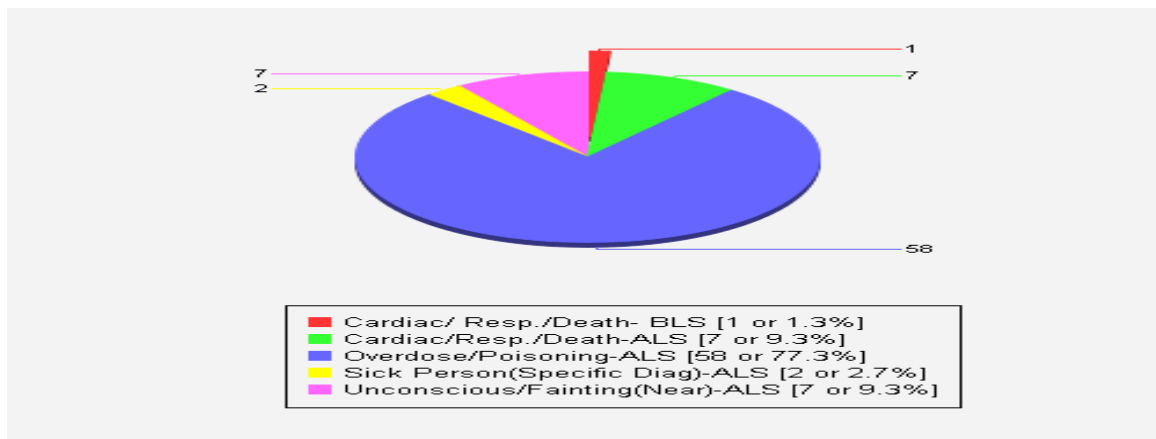
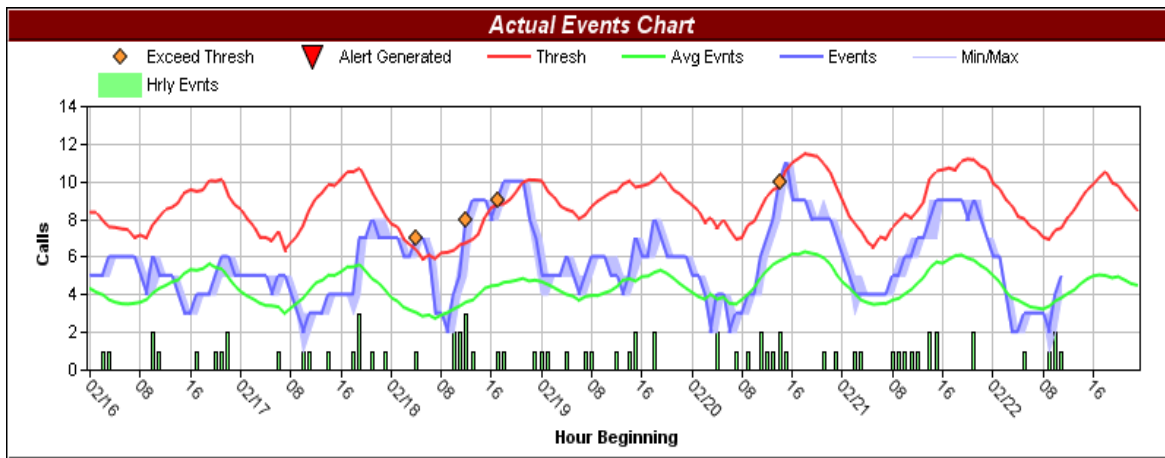
Regional Training Facility: The Sussex County Emergency operations Center continues to maintain our status as a regional training facility for the National Academy of Emergency Dispatch, offering the Emergency Tele-Communicator Course (ETC), Emergency Medical Dispatch (EMD), and other training for the entire region.

Continuing Education: Sussex continues to provide a variety of continuing education classes to assist the dispatchers with their jobs. The courses are taught by our staff as well as various agency representatives, physicians, medics, and others that interact with our agency. To assist the dispatchers with continuing education and pertinent information, the County Implemented a Countywide Learning and Performance Center. Management, Middle Management and Supervisory personnel have either completed or are currently enrolled in the County's Professional Leadership Development Course.

911 Day – During previous annual 911 Day events, attendance had dropped due to State academic testing being held at the same time. Communications with the school districts allowed for us to change to a date that would work for us and the schools. 911 Day was moved from May to September.



First Watch: With this program, we have been able to expand its bio-surveillance to include tracking overdoses and specifically heroin.

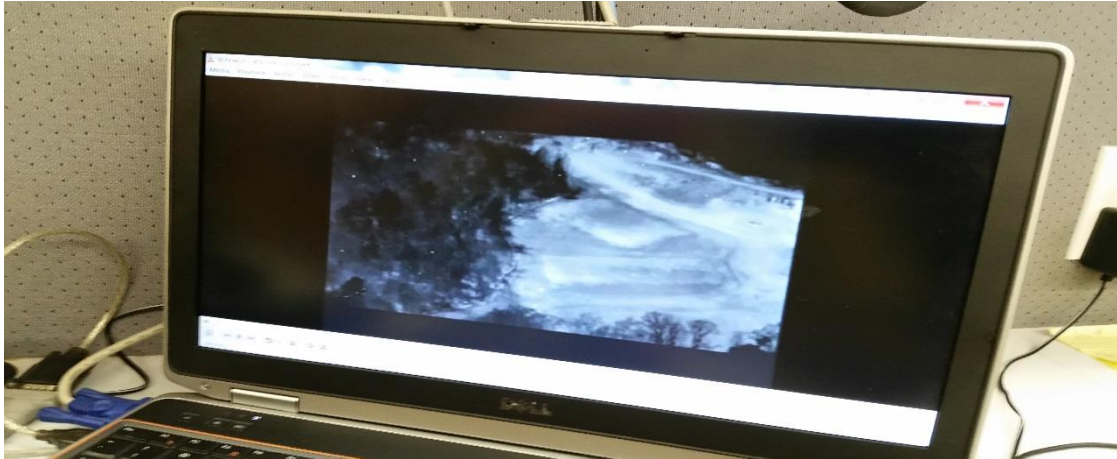


Mobile Command Post: Sussex County has a signed contract with Frontline for the build of a new mobile command unit.

In 2016 the current mobile command unit was deployed to Bethany Beach, Bridgeville, Rehoboth Beach and Lewes and to support special events throughout the County, i.e., marathons, triathlons, polar bear plunge, cycling events, and public safety awareness programs.



Aviation Video Down Link: Sussex County has worked closely with the Delaware State Police Aviation and Sussex County's IT department to establish a better connection and picture quality into the 911 center to be displayed for the dispatchers to have both visual and real-time access to scene conditions. They will be able to see conditions, safety issues, access points, etc. (the below image shows hot spots of a large marsh fire in Rehoboth that helped forestry strategically place fire breaks).



Rehoboth Beach Communication Center

Submitted by Tammy D. Ketterman

The Rehoboth Beach 9-1-1 Communications Center receives 9-1-1 calls through phone exchanges and cell towers in the Rehoboth area. The total number of 9-1-1 calls processed in year 2016 was 6,458. Another 43,503 non-emergency call were also processed by our Telecommunicators. The Center dispatched and/or processed a total of 3,413 EMS Incidents, 682 Fire Incidents, 3,599 Police Incidents, and 2,915 traffic stops in year 2016.

The Rehoboth Beach 9-1-1 Communications Center was recognized as an Accredited Center of Excellence in Emergency Medical Dispatch by the National Academy of Emergency Medical Dispatch on April 1, 2003 as the 79th agency in the world accredited; and then, re-accredited in August 2016 through 2019. Re-accreditation is August 2019. In 2016 the Center's overall EMD compliance rate was 98.66%.

The Rehoboth Beach 9-1-1 Communications Center operates 24-hours a day on a year-round basis. We provide Police Communications to the City of Rehoboth Beach and Fire/EMS Communications to the territory of the Rehoboth Beach Volunteer Fire Company. The Center is staffed by eight full-time Emergency Telecommunicators and one Communications Supervisor. The Center falls under the overall direction of the Rehoboth Beach Police Chief.

The Rehoboth Beach 9-1-1 Communications Center operated within the Rehoboth Beach Police Station until September 2015. The operation was moved to the Sussex County EOC, where it will remain until the completion of the new building. The Center utilizes a Positron Viper 9-1-1 Phone System, Nortel Administrative Phone System and changed in October to VOIP Ring Central phone system, Motorola Centracom Elite Radio System, Verint Recording System, which changed to Ring Central recording system, and New World AEGIS CAD System to process calls for service.

Major projects for 2016 focused on revision of the City and Center's Emergency Operations Plans, working with the 9-1-1 Administration on upgrades to our CAD System and continuing to work with the State 9-1-1 Board to upgrade the 9-1-1 system and change to Intrado for the 9-1-1 calls for the area. We continued to focus on training in 2016, we sent a Dispatcher to Washington DC for National Academy of Emergency Dispatch Conference. We will continue to focus on the above for the year 2017.

Picture submitted by Rehoboth Beach 9-1-1 Center



Seaford Police and E-911 Communication Center

Submitted by Anita Bell

The Seaford 911 Center receives approximately 12,000 emergency calls through various administration and 911 lines and is part of a state wide network of 9 PSAP's all working in conjunction with the goal of providing the very best service to our citizens and guests in our community. During 2016 the center dispatched or processed a total of 3858 fire/ambulance incidents and 12,797 police incidents. Seaford had a total of 52 scratched calls with a scratch rate of 1.5%.

In 2016, we completed being the first communication center in state to convert over to the new Intrado (West) phone system which is TEXT to 911 capable and has a new flex map with pictometry. On May 31, 2016, Seaford 911 converted from New World MSP to the New World CAD.net and installed mobile CAD units in Police, Fire, and EMS apparatus.

Our future challenges and goals are to go live throughout the state with TEXT to 911. We will continue to upgrade the New World CAD.net to further enhance the safety and response to the residents and the employees of the State of Delaware. We will start the EMD re-accreditation process that is due by February 18, 2017.

Seaford 911 Center operates 24 hours a day, 7 days a week providing Police, Fire, and EMS communications to the City of Seaford Police Department and Seaford Volunteer Fire Department and Seaford EMS, along with handling police administrative calls and after hour calls for City Hall. The Communications center is staffed with 7 full-time dispatchers, 2 part-time dispatcher and 1 Administrator/EMD-Q. The Seaford 9-1-1 Center operates within the Seaford Police Department and has 4 dispatch consoles, 1 of which is a fold down station for the SUSCOM and EOC.

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Aviation

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Delaware Air Medical Services

Introduction

Delaware's Division of Public Health first promulgated regulations for Air Medical Ambulance Services in 1993. The purpose of these regulations is to provide minimum standards for the operation of Air Medical Ambulance Services in the State of Delaware. It is the further intent of these regulations to ensure that patients are served quickly and safely with a high standard of care. Subsequent revisions in 2001 and 2002 described the air medical service application and state certification process and resulted in the emergence of a well-developed system of air medical transportation in the state.

Currently, air medical services may apply for any of three levels of State of Delaware interfacility transport certification and/or prehospital certification:

LIMITED STATE CERTIFICATION: Approval granted following satisfactory completion of the air medical program certification process to an air medical service wishing to provide one-way transport to or from Delaware only.

FULL STATE CERTIFICATION: Approval granted following satisfactory completion of the application process to an air medical service wishing to provide point to point transport service within the state of Delaware, in addition to one way transport to or from Delaware.

911 CERTIFICATION: Approval granted following satisfactory completion of the application process to an air medical service wishing to act as a supplemental resource to the Delaware State Police in carrying out prehospital scene missions in Delaware. These services may also apply for full certification to provide point to point transport service within the state of Delaware and one way transport to or from Delaware.

The initial certification period is three years, with recertification required every three years subsequently. Site visits are done as part of the certification process for services with 911 response certification.

Scene response – The **Delaware State Police (DSP) Aviation Section** has responsibility for primary scene response throughout Delaware and is certified for full and limited interfacility transport as a secondary mission when needed. Additionally, the following private air medical service is state-certified to be dispatched by the Emergency Operations Centers when DSP is not available to respond to a scene or when more than one aircraft is needed:

- *Christiana Care LifeNet, Newark and Georgetown DE*

Interfacility transfer – State-certified private air medical services are utilized as the primary transport services for patients who need to be transferred to a higher or more specialized level of care, either within Delaware or within the region, such as to an out-of-state burn center.

The following private air medical services have *full state certification* to perform point-to-point interfacility transports within Delaware as well as transports out of or into the state:

- ***Christiana Care LifeNet, Newark and Georgetown Delaware***
- ***JeffSTAT LifeNet, Philadelphia Pennsylvania***
- ***MidAtlantic MedEvac, Pottstown Pennsylvania and Hammonton New Jersey***
- ***PHI for Maryland ExpressCare, Baltimore Maryland***
- ***STAT MedEvac, Baltimore Maryland***

The following private air medical services have *limited state certification* to perform flights bringing patients either into or out of Delaware only:

- ***Atlantic Air Ambulance, Millville New Jersey***
- ***MedSTAR, Maryland and Washington DC***
- ***PennSTAR, Philadelphia Pennsylvania***
- ***Temple MedFlight, Doylestown Pennsylvania***

The following air medical services are available to our state through *Mutual Aid agreements*:

- ***Maryland State Police Aviation Section***
- ***New Jersey State Police Aviation Section***

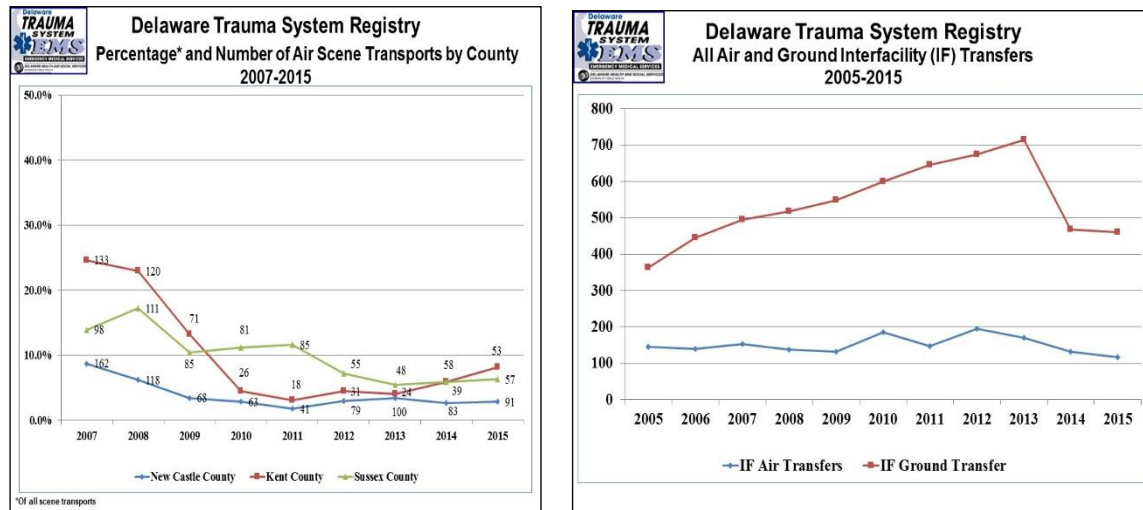
2016 Accomplishments

Delaware's air medical system has matured to include ten air medical services providing 24/7 emergency transportation for patients in need of specialty medical care after becoming injured or ill, either initially from the scene, or following assessment at a medical facility. The system has evolved from one part-time service to the current full complement of ten services with the levels of state certification described above.

Hallmarks of the development of this system include

- **1985** – Delaware State Police Aviation Section Air Medical Services Program initiated
- **2001** - Christiana Care LifeNet Air Medical Program began
- **2002** – First out-of-state private air medical services were certified for Delaware flights
- **2004** – Delaware State Police Aviation Program expanded coverage to 24 hours a day, 7 days a week, 365 days a year
- **2006** - Christiana Care LifeNet added a second site with aircraft and transport team in Sussex County for both scene transports and interfacility transfers
- **2013** - Nemours/Alfred I. duPont Hospital for Children reached Pediatric Level 1 Trauma Center status. Their transport team contracts with air medical services with full Delaware certification for air interfacility transports when they are needed.

Below left, annual trauma air scene transports by county. Below right, all interfacility transfers to tertiary care by year.



2017 Challenges

The Trauma System Quality Committee continues to work on data analyses to determine optimal distribution of patients throughout the Trauma System. This includes methods of identifying the most seriously injured patients, with utilization of air medical transport to move them directly to the Level 1 Trauma Centers from the scene, while triaging less seriously injured patients to the Community Level 3 Trauma Centers. The goal is to match the needs of each patient with the resources of Delaware's trauma facilities and move the patient to that facility as quickly as possible. **Trauma is a time-sensitive disease.**

Other resources being utilized include data analyses by professional researchers, national guidelines and documents, and participation on the Air Medical Committee of the National Association of EMS Officials.

Safety issues are a continuing priority of the air medical service providers and of the Office of EMS. All certified air medical services provide updated safety equipment and safety program and procedures information as part of their recertification process. Provision of regular helicopter safety inservices by air medical program staff for both scene providers and hospital staff is encouraged.

Summary

The scene and interfacility air medical transport services provided for the most seriously injured patients are an integral part of the Delaware Trauma System. Priorities continue to be safety, efficient and appropriate utilization, and *'Getting the right patient to the right facility in the right amount of time'*.

DELAWARE STATE POLICE AVIATION SECTION



For the Delaware State Police, 2016 marked the 46th year of the Aviation Section and the 31st year of our Trooper-Medic Program.

The Section consists of 32 pilots and medics providing 24-hour coverage from two locations (Georgetown and Middletown). During 2016 the Section flew 2,928 missions, transported 301 trauma patients and flew 1,324 hours. The Section currently utilizes 4 helicopters and 1 fixed wing aircraft, a Cessna 182 (1980).

The Aviation Section's primary missions are to provide rapid transport of critically sick or injured persons to medical facilities and to support law enforcement ground personnel in the apprehension of criminal suspects. The Section also conducts search and rescue operations, airborne security for visiting dignitaries, homeland security operations, photographic missions, narcotics interdiction, pursuit support and maritime security to name a few of the many missions.

Pilot and Medic Training

The Aviation Section continued its commitment to ongoing training for both the pilots and the medics. The pilots attended training at Bell Helicopter in the Bell 407 and Bell 429 aircraft. The training is essential in practicing emergency procedures of each aircraft and to keep each pilot proficient in the operation of each aircraft. In addition to the Bell Helicopter training, pilots and medics attended training with Priority One Air Rescue to train in hoisting and external loads. They also attended a tactical flying course, a crew resource management course, and monthly section training to work on such things as night vision goggle flying and instrument training.

In 2016, the Trooper Medics attended training to satisfy their continuing education credits needed to maintain their paramedic certifications. In addition to the current medics, one Trooper graduated from paramedic training.

Delaware Air Rescue Team

The DART continues to enhance its training and capabilities. The volunteer firefighters who are part of this program are extremely committed and have used the year to build experience and camaraderie. In 2016, training was focused on SAR operations in the Bell 429. This year while they continued training with that aircraft to maintain proficiency and certifications, they enhanced their training and capabilities in working with the Bell 407's and long line maneuvers with that aircraft.



DSP Tactical EMS Missions 2016

The DSP Tactical Medic Mission provides medical support for the Special Operation and Response Team and Explosive Ordinance Disposal Unit during high risk operations. The Tactical Trooper Medic mission also provided stand-by activity for week-1 at the Academy, Boxing night at the Academy, PT Applicant physical agility testing, EOD training and breaching. In 2016, the DSP Tactical Medics had a total of 100 activations.

2016 AED Deployments

Delaware State Police Aviation Section oversees the Division's AED program. In 2016 Troopers deployed their Automated External Defibrillator (AED) on 24 occasions, which met the criteria for download (pads-on-patient). Of the 24 deployments, 17 utilizations indicated AED analysis of the patient followed by "No Shock Advised" prompt and 7 utilizations where the Trooper

administered multiple shocks followed by the patient having a Return of Spontaneous Circulation (ROSC) arriving at the emergency room with a pulse.

Infectious Disease Exposures

For the 2016 calendar year the Delaware State Police had a total of 13 confirmed infectious disease exposures. Of the 13 reported, there were a total of 6 cases that did not meet the significant exposure criteria; however, these incidences were documented and placed on file.

2016 Summary

The Aviation Section continues to support State, Federal and local law enforcement by providing aerial assistance during vehicle and foot pursuits, traffic reconnaissance during large public events and motorcade route security during events involving visiting dignitaries and other important persons. Our section provides criminal reconnaissance and stand-by medical evacuation during high risk warrant executions to all law enforcement agencies operating in our state and surrounding area. The Aviation section also trains with the Special Operations Response Team (SORT), Explosive Ordinance Disposal for volatile situations that would require a rapid tactical insertion. The Delaware Department of Natural Resources and Environmental Protection Agencies also utilize the section for game and environmental violations. The Section continues its participation in the Open Water Rescue program, which involves a partnership between the State Police, the United States Coast Guard, the Delaware Fire Service, and rescue swimmers from area beach patrols, which is also referred to as the Delaware Air Rescue Team (DART). Aviation, at EMS request, provides air medical transport for seriously injured and ill persons. Organ transplant recipients are also transported, at request, by our section to hospitals within or outside of our State borders. The Aviation Section continues to look forward and provide effective and efficient aeromedical, law enforcement, search and rescue, and homeland security operations to the residents and visitors of Delaware.



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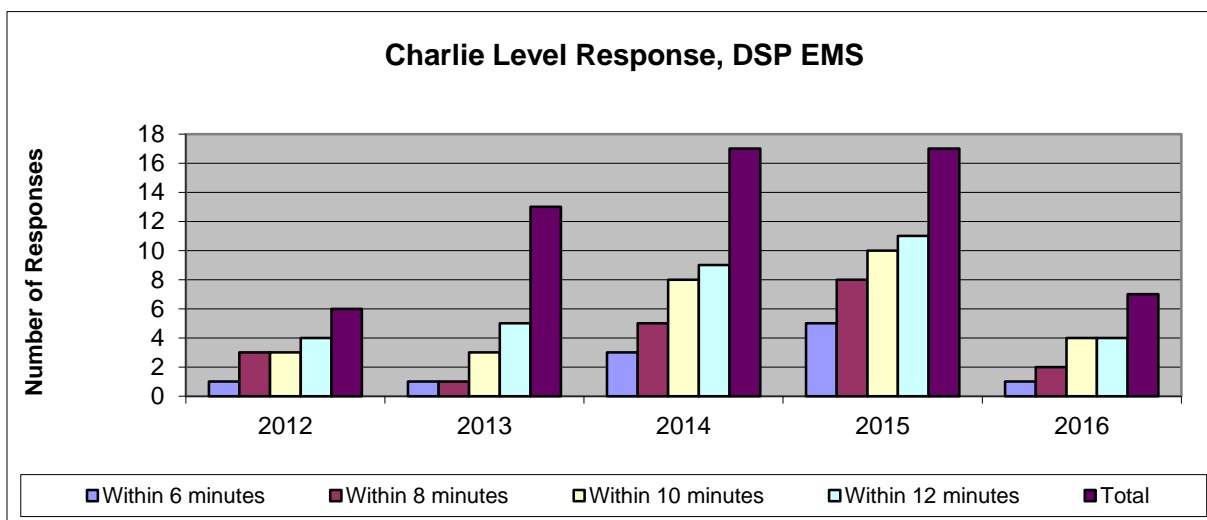
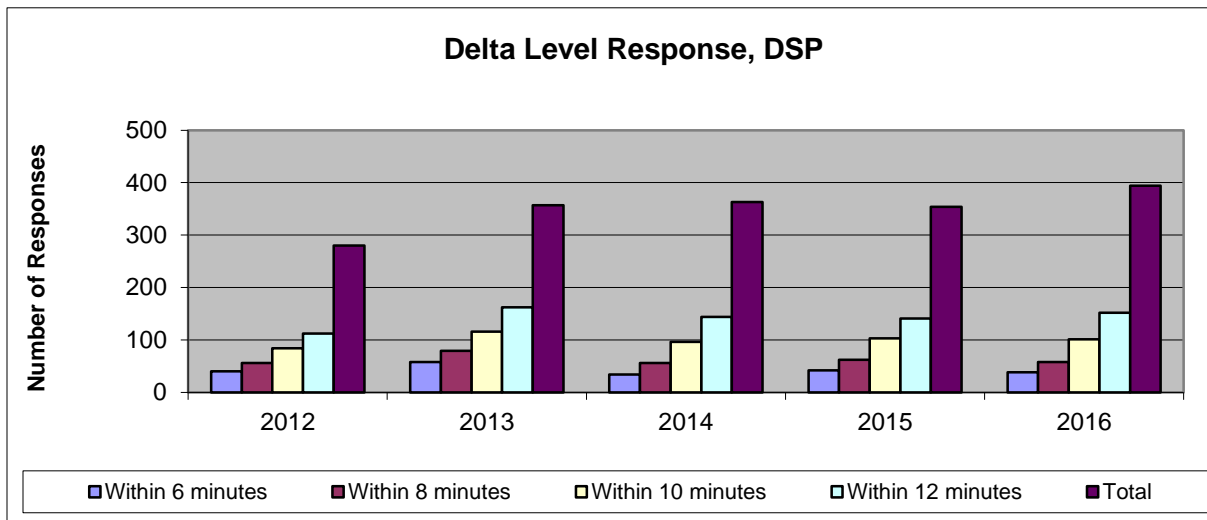
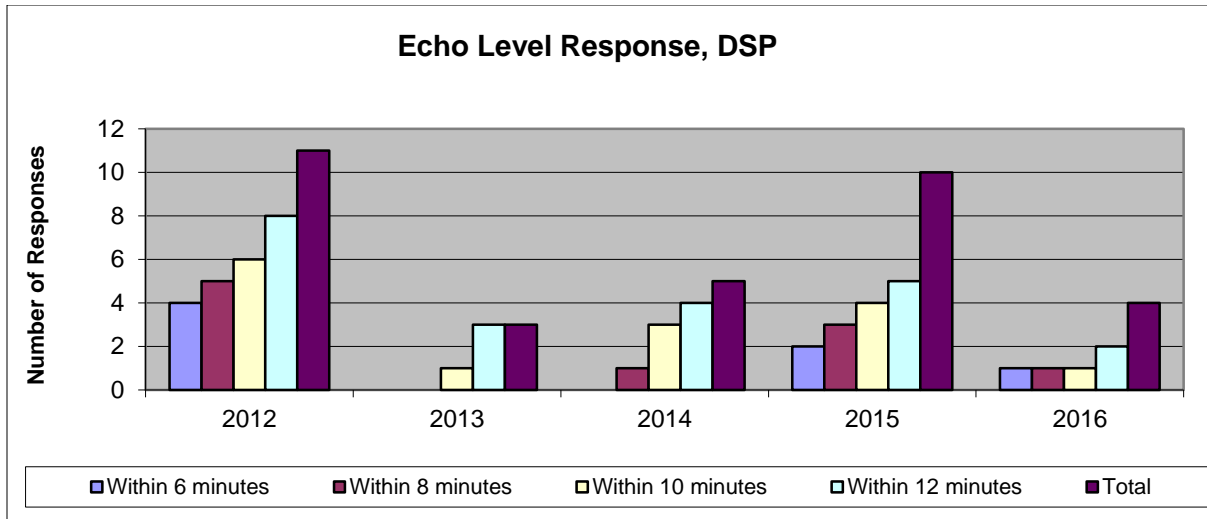




Photo submitted by Jeff Cox

Christiana Care/LifeNet
Submitted by Carol Faedtke, RN, BSN, MJ
Critical Care Transport Manager



Photo submitted by Heather Orkis

Christiana Care/LifeNet has been an integral part of emergency and interfacility transport since the spring of 2001. With bases in New Castle and Sussex counties, the LifeNet aircraft are available to support not only the hospital and EMS agencies in Delaware, but also Pennsylvania, New Jersey, Maryland and Virginia.

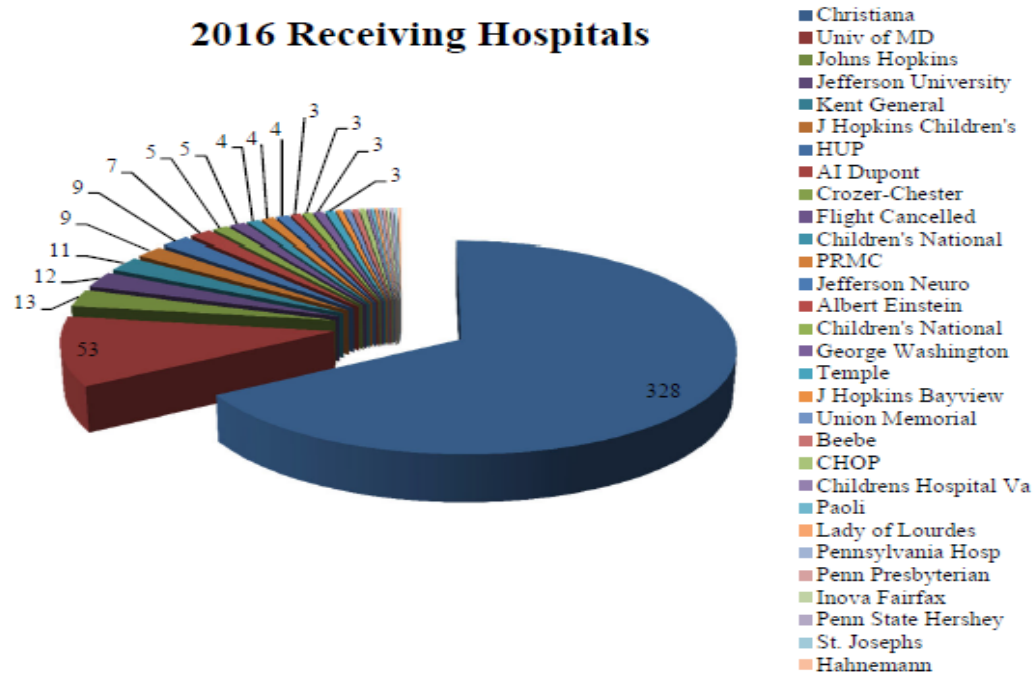
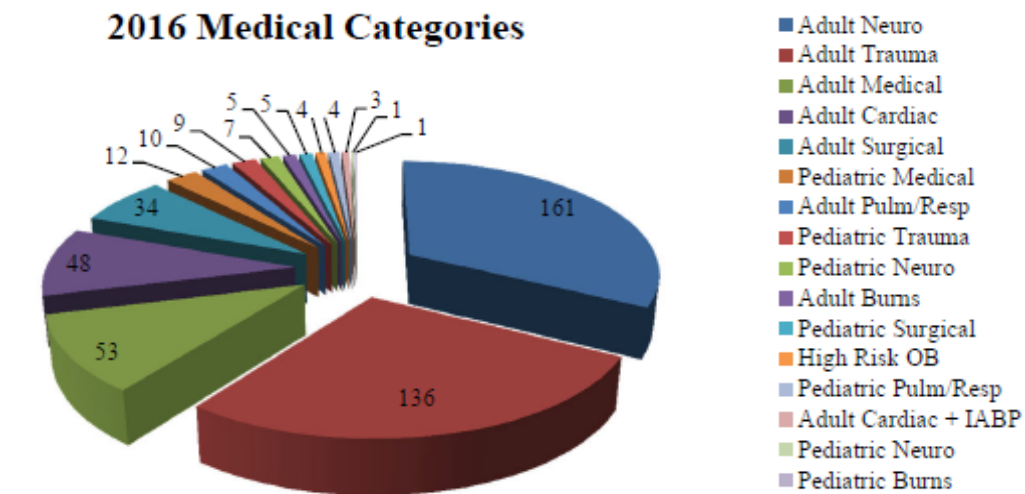
Our highly skilled and critically trained flight nurse and paramedic are equipped to maintain or adjust life sustaining treatments begun at the referring hospital. Extensive protocols, readily available medications, advanced invasive monitoring capabilities, and on line medical direction, allow the crew to deliver uninterrupted quality critical care during transport.

Christiana Care/LifeNet has been awarded and maintained accreditation by the Commission on Accreditation of Medical Transport Systems (CAMTS) since April of 2006. This certification indicates that the aviation and patient care systems have completed multiple rigorous site surveys and found to meet or exceed the nationally established standards for critical care transport programs.

Accomplishments

493 missions were completed in 2016 with referrals from 17 area hospitals across 4 states and received by 30 major specialty centers in Pennsylvania, Maryland, the District of Columbia, New Jersey and Virginia. LifeNet also provided support to EMS agencies in New Castle and Sussex counties and transported 11 patients to the trauma center.

Transports by diagnosis



LifeNet 6-1 and 6-4 are frequently requested to attend community programs throughout the tristate area. In 2016, 30 educational outreach appearances were provided for local businesses, schools, EMS agencies and scouting organizations. LifeNet crew members also attend professional conferences to highlight our program and speak with attendees on the benefits of aeromedical transport.



Photos submitted by crew





Photo submitted by Rick Culver

Program Goals for 2017

Christiana Care/LifeNet will begin the recertification process for CAMTS this fall, making it the 5th time our program will be surveyed since our start up in 2001.

Members of LifeNet and CareNet, our mobile intensive care transport service, will be providing educational opportunities to our hospital and prehospital colleagues throughout the year.

Summary

Christiana Care/LifeNet's medical crew, pilots, mechanics, medical leadership and program director will continue to provide aeromedical services to our community by being prepared to delivery high quality critical care when our patients need it most.

Prevention

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Led by Delaware's Division of Public Health/Office of Emergency Medical Services, Safe Kids Delaware is a member of Safe Kids Worldwide, the nation's preeminent organization solely dedicated to the prevention of unintentional childhood injuries. Founded in 1988, Safe Kids Worldwide is made up of more than 600 coalitions across the United States, as well as partners in 23 other nations. At the local level, Safe Kids Delaware was established in 1989 to educate the public on a variety of child injury prevention topics. By partnering with numerous community, civic, and state organizations, Safe Kids Delaware provides both classroom and real life educational programs to further the overall goal of reducing childhood injuries.



2016 Accomplishments

Safe Kids Delaware continues to work with a variety of organizations across the state to promote changes in the public's attitudes and behaviors, and to support legislation aimed at reducing unintentional childhood injuries. Over the past year, Safe Kids Delaware has continued to expand its outreach throughout the state. Through three county chapters, Safe Kids Delaware participated in 220 events reaching a total of over 40,000 people. These events covered many safety areas including Fire Prevention, Car Seat Safety, Water Safety, Poison Prevention, Bicycle Safety, Pedestrian Safety, Teen Driving Safety, Fall Prevention, Halloween Safety, Bus Safety, ATV Safety, Concussion Awareness, and Gun Safety. And the annual Safe Kids Delaware/Emergency Medical Services' Childhood Injury Prevention Conference in June had over 100 registrants in attendance to learn about trending injury prevention topics.

2017 Challenges

With active committees now serving all three counties, 2017 will bring the challenge of building additional partnerships statewide. With limited funding available and the need for injury prevention efforts constantly increasing, cost-sharing with like-minded agencies has often been a successful path to reaching our goals.

Summary

Unintentional injuries are a leading cause of death and hospitalization for children. According to the Delaware Trauma System Registry, injury hospitalizations among Delaware's children under age 15 have risen 9 percent over the last 5 years. The leading causes of injury hospitalizations in this age group have consistently been falls and highway incidents. Violent injuries such as those involving firearms and stabbings lead to longer hospital stays, and motor vehicle crashes are responsible for a higher number of severe injuries. The data also show a great need for injury prevention education on playground safety. It will take everyone's efforts to reduce these numbers and keep our children safe. Safe Kids Delaware is always grateful for new volunteers. The contact address to volunteer is SafeKids@state.de.us.

"Injury prevention is not about watching your kids every minute of the day or wrapping them in bubble wrap. It's the opposite. Injury prevention is about creating an environment where kids can explore and take chances while minimizing the serious injuries and deaths that we can prevent."

Kate Carr, CEO
Safe Kids Worldwide

Infection Disease Control

In Delaware infection control is an integral part of pre-hospital practice. Infection control is intended to reduce the spread of diseases and infections from patient to provider and from provider to patient.

Delaware's infection control program includes pre-hospital care providers (EMT's, paramedics and first responders), firefighters and law enforcement personnel. All pre-hospital providers may request notification concerning an exposure to an infectious disease. Every emergency medical care facility and agency (volunteer or career) shall appoint a designated infection control officer (DO) responsible for guiding providers through the infection control reporting process. In addition, Delaware is one of few states that conduct mandatory source testing.

Diseases are normally caused by bacteria and viruses and can be spread by human to human contact; human to animal contact; contact with a contaminated surface; airborne transmissions through tiny droplets of infected agents suspended in the air and by such common methods as food and water. Delaware has policies and procedures in place to minimize the risk of infection and reduce the occurrence of exposure to infectious agents. Pre-hospital and hospital medical environments require higher levels of preventative methods and disease management due to the elevated risk of spreading infectious diseases in these settings.

Preventative and proactive measures offer the best protection for individuals and agencies that may be at risk for elevated exposure to infectious diseases. A viable infection control program must be an effective and integral part of the pre-hospital practice due to the elevated risk of exposure to pre-hospital providers. Since 1993, Delaware has reviewed 280 potential exposures reported by pre-hospital providers and in 2016 reviewed 22 reported cases. This number is down from the 28 reported exposures in 2015. The table below represents the type of exposures reported in 2016:

<i>Type of Exposure for 2016</i>	<i>Reports</i>
Inhalation: coughing, sneezing, confined proximity	8
Ingestion: splash/spray, hand-to-mouth contact, mouth-to-mouth contact, etc.	3
Percutaneous: medical sharps, hollow-bore needle, bite, etc.	1
Mucocutaneous: oral, nasal, ocular	6
Cutaneous: non-intact skin, intact skin with large fluid volume	4

Infectious diseases are a threat and require aggressive methods of protection. Due to ever evolving changes in the environment and lifestyles new diseases and mutations of known diseases are discovered at a rate of approximately 20 to 30 per year. Delaware ambulances are equipped with the latest personal protection equipment and alternative products are constantly reviewed in order to keep abreast of the latest methods to reducing risks of exposure to infectious diseases.

All agencies are required to provide education and training to their personnel in infectious disease policies and universal precautions. This training gives providers an overview of common diseases that have a potential for transmission and the latest methods to reducing risk of transmission.

Delaware Coalition for Injury Prevention

Introduction

Injury prevention focuses on public education and increasing public awareness of prevention strategies. This is the role of the injury prevention component of the Delaware Trauma System. The goal of the Trauma System is to decrease death and disability from injury. In 2015, **180 persons died instantly from their injuries** in Delaware. No amount of Trauma System resources, specialists, organization, or planning could have saved these lives. The solution to effectively decreasing this kind of injury death lies in prevention of the injury entirely, or in decreasing its intensity through safety measures such as wearing seatbelts or decreasing speed. Teaching people to make safer choices and to use safer habits can be the key to decreasing the number of these scene deaths. Injury prevention addresses the public education needs that can impact the statistics on scene deaths, as well as decrease the numbers of injured overall. In response to Delaware Title 16, Chapter 97's public information, prevention, and education mandate, the Office of EMS staffs the *Delaware Coalition for Injury Prevention* and the *Safe Kids Delaware* program.

Violence and injuries can affect everyone regardless of age, race, or economic status, despite the fact that many injuries and acts of violence are preventable. In the first four decades of life, more Delawareans die from injuries than from any other cause. And deaths are only part of the picture. Each year, many more people are injured and survive with lifelong disabilities. Injuries have physical, emotional, and financial components that impact the lives of individuals, their families, and society. Injuries also place a burden on hospital Emergency Departments (ED's) and the trauma care systems, accounting for approximately one third of all ED visits and 8% of all hospital stays (<http://www.cdc.gov>). Throughout the lifespan and wherever they live, Americans are at risk for disability or death due to injury. No age or location is "safe" when it comes to injury and violence. But injuries have associated risk factors which can be predicted and modified. Therefore, injuries must not be viewed as random accidents, but as **preventable occurrences in need of organized efforts to save lives**. Development of these prevention efforts is the goal of Delaware's Coalition for Injury Prevention.

2016 Accomplishments

The Delaware Coalition for Injury Prevention began meeting in 2004. Approximately 40 agencies from all areas of the state are current members. The Coalition is continuing to work to fulfill its mission of protecting Delawareans from injury through public education. This program is committed to supporting statewide injury prevention efforts through development of partnerships, provision of training and technical advice, encouragement of interventions at multiple levels, and analysis of data to support planning and evaluation of interventions.

The Coalition's goal is that through their efforts, its vision of safe communities in Delaware will be realized, as measured by fewer injuries, fewer risk-taking behaviors, safer environments, and reduced incidence of injury-related disabilities. Through effective surveillance, partnerships, interventions, training, and evaluation, the Coalition's goal is to teach Delawareans that injuries are preventable so they will choose to reduce their injury-related risks.

In 2016 the Coalition began developing a safety station educational activity for elementary age children. The program will involve various topics and safety experts and be replicated so as to be

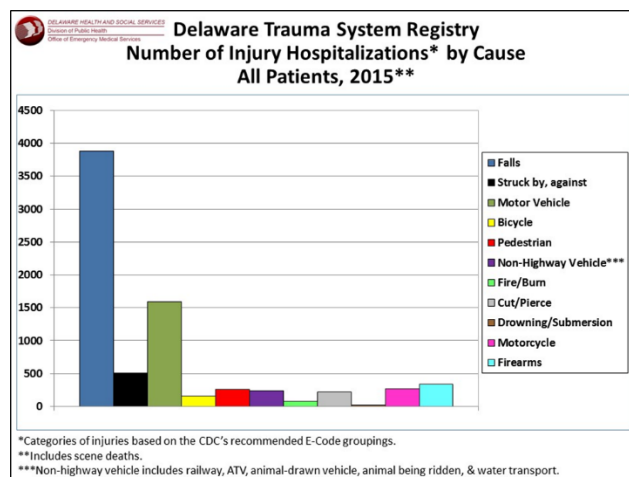
available in all three counties for use at activities such as schools and summer camps. Topics include pedestrian, fire, and water safety, how to call 911, seatbelt use, and safety around dogs.

2017 Challenges

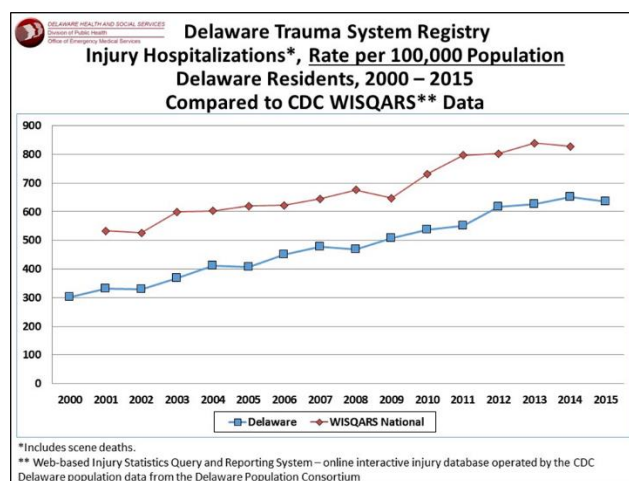
The first challenge for injury prevention efforts is to be successful in getting the message to the public in such a way that messages are heeded and injuries and injury-related deaths decrease. In order to accomplish this, support and adequate funding are needed. Injury prevention is low in the political hierarchy and there is little monetary support available, which remains a problem for the Coalition. Nevertheless, the Coalition will continue to utilize prehospital and Delaware Trauma System Registry data to target injury prevention efforts. Graph 1 illustrates the types of injuries that led to hospitalizations in Delaware in 2015. Falls caused over half of the injuries leading to hospitalization, and motor vehicle incidents were the second leading cause of injury hospitalizations in 2015. Graph 2 illustrates that while injury hospitalization population-based rates in Delaware have stayed below the national rate provided by the CDC, they have increased by over 100 percent in the last 16 years. Both violent injuries and pedestrian injuries are significantly high in Delaware, with the city of Wilmington recently ranked third among 450 cities of similar size in number of violent injuries. With this in mind, in 2017 the Coalition will hold a strategic planning session to plan multifaceted methods of working to decrease injuries in our state.

Summary

Injury prevention is vital work. In their May 2016 review of Delaware's EMS System, the National Highway Traffic Safety Administration recommended support for the Office of EMS Injury Prevention program through the addition of a fulltime Injury Prevention Coordinator and an Injury Epidemiologist to lead the effective use of injury data to plan and evaluate prevention initiatives. Should there be a successful Trauma System funding initiative in the future, funds to support and enhance injury prevention will be included in the request. Meanwhile, dedicated injury prevention leaders statewide continue to support this program and work toward its vision of a safe, injury-free Delaware.



Graph 1: Number of Injury Hospitalizations by Cause in 2015.



Graph 2: Injury Hospitalization Rates per 100,000 for Delaware Residents Compared to National Rates from 2000-2015

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Thank You

The Delaware Emergency Medical Services Oversight Council (DEMSOC) would like to express a sincere thank you to all the agencies that submitted reports for this year's DEMSOC report.

Office of EMS, Office of Preparedness, Department of Safety and Homeland Security, SFPC, DSFS, DVFA, State Fire Marshal's Office, Delaware Technical and Community College, New Castle County EMS, Kent County EMS, Sussex County EMS, Delaware State Police, Delaware Healthcare Association, E911 Board, Emergency Medical Services for Children, Safe Kids Delaware, Delaware Coalition for Injury Prevention, DE Trauma Committee, NCC Dispatch, KC Dispatch, SC Dispatch, Rehoboth Dispatch, Seaford Dispatch, CCHS LifeNet.