DEMSOC 2014
The 15th Annual Delaware Emergency Medical Services Oversight Council (DEMSOC) Report
The Honorable Jack Markell, Governor
April 15, 2015

To the Citizens of Delaware:

On Behalf of Governor Jack Markell and the Delaware Emergency Medical Services Oversight Council (DEMSOC), I am pleased to present the 2014 DEMSOC Annual Report.

Created in 1999 in response to House Bill 332, DEMSOC, otherwise known as the EMS Improvement Act, promotes the continuous development and improvement of Delaware’s EMS System. DEMSOC membership includes professionals from several 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 support workable solutions to those issues.

The purpose of this report is to inform others about Delaware’s Emergency Medical Services (EMS) system and increase 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 EMS community and this report attempts to capture those successes as well as to build the framework for addressing the challenges that lie ahead.

As you review this year’s annual report, I encourage you to use the provided information 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,

Lewis D. Schiliro, Chair
Cabinet Secretary
Department of Safety and Homeland Security
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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 2014 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 14 years. 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 and the right time. 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:

- 1,426 Certified First Responders
- 1,533 EMT’s
- 279 Paramedics
- 130 Dispatchers
- 8 Medical Directors
EMS services provided to the State of Delaware include:
There are 58 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 State Police Aviation Division provides the majority of 911 aero-medical services with assistance from one inter-facility service. Additionally, the state is serviced by eleven BLS inter-facility medical transport services, 5 ALS inter-facility medical transport services and 2 specialty hospital transport services. The units that respond to 911 calls for service receive their direction from certified dispatch centers located throughout the state.

- 135 BLS ambulances providing 911 services
- 109 BLS ambulances providing non-emergency services
- 19 Full Time & Part Time ALS units providing 911 services
- 5 ALS Supervisor units
- 4 Air Medical helicopters providing 911 services
- 5 ALS agencies providing non-emergency services

The majority of 911, emergency patient transportation is provided by the volunteer 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 2014, the EMS system in Delaware responded to the following incidents: (information based on EMS patient care reports)

- 197,490 Statewide Total Run Reports
- 123,182 Non-trauma Incidents
- 29,481 Basic Life Support Incidents
- 126,296 Trauma Incidents
- 71,193 Paramedic Incidents
- 9,563 Pediatric Incidents
- 5,362 ALS Cardiovascular Incidents
- 236 Air Medical Transports
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, Lewis Schiliro, 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.
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.
The 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.

Responsibilities of this agency 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: The EMS Data Information Network (EDIN) system was replaced in March of 2013 by the Delaware Emergency Medical Reporting System (DEMRS). 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 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 exposure to these infectious diseases.

**State Regulations promulgated through OEMS:**

**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 DHSS 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, accessed by adding the notation on one’s driver license or state identification card.

As of March 31, 2014, there were 635 Delaware residents waiting for an organ transplant, slightly lower than the total of 644 waiting in 2013. In the state of Delaware, 389,940 or 50.46%, of people with a driver’s license or state ID have designated themselves as organ and tissue donors as of January 1, 2015. In order to promote donor designation among Delaware residents, OTDAB partners with the Gift of Life Donor Program and other organizations on public education and awareness projects each year. The goal is to achieve an increase of 10,000 donor designations by January 1, 2016. For more information, visit [www.donatelifede.org](http://www.donatelifede.org)
Office of Preparedness

The mission of the Office of Preparedness is to develop, implement and maintain a comprehensive program to prepare for, mitigate against, respond to, and recover from public health threats and emergencies.

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. 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.

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. Public Health nurses and Medical Reserve Corps volunteers continue to receive annual training on medical protocols, shelter operations and shelter support equipment.

Department of Health and Social Services (DHSS) Disaster Committee: The Department of Health and Social Services Disaster Committee has representatives from each Division that participate in emergency planning and response for health events. Each Division is in the process of finalizing formal emergency operations plans for their staff and facilities. In conjunction with the Office of Preparedness, a formal training video was developed and is available for all DHSS employees to reinforce their role in public health events.

Persons with Access and Functional Medical Needs (PWAFMN) Committee: The Office of Preparedness established a committee to identity vulnerable populations in the state of Delaware and develop specific mitigation strategies to enhance emergency planning, response and recovery to meet the unique needs of the disability community and other vulnerable populations. The committee working with state and local emergency managers, community organizations, state and local agencies, a local university, community members, and advocacy groups has decided to focus on the two areas which include outreach and creating a support network to assist vulnerable populations in disaster.

Community Outreach: Community outreach for public health preparedness continues throughout the state. In 2014 there were over forty-two events with 18,400 who attended and obtained outreach material and another 120 who attended training for Family Emergency Preparedness and SHOC 101. 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.

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.

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 Symposium: The EMSPS held the third annual Public Health Preparedness Symposium in October 2014 to share information on programs, inform stakeholders on progress, share best practices, obtain feedback, and direct future goals for preparedness programs. One hundred and fourteen stakeholders from Federal, State, local and Non-Governmental Organizations (NGOs) were provided information on our programs, best practices, and future goals. Topics included the Hospital Preparedness Program (HPP), Public Health Emergency Preparedness (PHEP) program, potential hazards, mitigation and recovery activities. A keynote speaker addressed the emergency management cycle. Previous disasters were discussed allowing participants to formulate methods for recovery after an event. The partners were also offered the opportunity to question a panel of experts concerning Ebola.

Exercises: During the past year EMSPS participated in and hosted a number of exercises including a one day healthcare facility evacuation functional exercise and two day Receipt, Stage, Store (RSS) full scale exercise. The EMSPS and Delaware Medical Reserve Corp (DMRC) participated in US Postal Service Bio-Hazard Detection System Alert full scale exercise. The EMSPS also participated in: mass casualty exercise tabletop exercise held at the Dover Air Base and hurricane recovery full scale exercise hosted by Delaware Emergency Management Agency (DEMA).

Ebola: The threat of Ebola virus disease (EVD) is a top national public health priority. The Office of Preparedness began monitoring the Ebola outbreak in West Africa in March, 2014. As the outbreak unfolded and more information became available, the EMSPS began to make preparations to ensure the health and safety of Delawareans should an EVD case be diagnosed in Delaware. After the first case of EVD was diagnosed in the United States, EMSPS and DPH leadership activated to SHOC Level 1 on October 1, 2014 to indicate a higher level of awareness.
Subsequently, EMSPS coordinated with various sections within Public Health and outside stakeholders to prepare for an Ebola patient by ensuring DPH could identify a patient through surveillance and active monitoring, conduct contact tracing, prepare the EMS transport and healthcare systems, enforce quarantine of exposed individuals, waste management and decontamination of property, and if necessary, properly handle the disposition of a deceased.

**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.

**The Arrival of the AMBUBUS:** The EMSPS office in a cooperative agreement with Delaware Emergency Management Agency was able to secure the funding and acquire a 72 passenger Blue Bird Bus. The Bus was converted to an AMBUBUS by the incorporation of First Line Technology equipment. The AMBUBUS has been outfitted to carry 12 supine patients and has seats for 12 others. This new asset to the Delaware arsenal of Disaster Response Units enables the platform availability for the movement of multiple patients from a Hospital or Long Term Care Facility during periods requiring evacuation and relocation. The addition of this resource enhances the emergency medical system by reducing the required number of ambulances required during evacuations.
Delaware State Fire Prevention Commission (SFPC)
Submitted by the Delaware State Fire 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.

Left to Right:
Richard Toulson
Marvin Sharp
David Roberts, Chairman
Alan Robinson, Vice Chairman
Ron Marvel
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.
Delaware State Fire School (DSFS)
Submitted by Robert Newnam

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.

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.

Agency conducted EMS training in 2014:
Emergency Medical Technician – 8 classes – 193 students
Emergency Medical Technician Refresher – 17 classes – 305 students
Emergency Medical Responder – 14 classes – 225 students
Emergency Medical Responder Refresher – 27 classes – 390 students
Continuing Education Programs – 200 classes – 2,802 students
Developed and conducted Law Enforcement Emergency Medical Responder Course
Updated along with OEMS the State EMS Education Standard and Policy

To conduct training for the 1500 EMTs of the updated EMS Standing Orders.
Enhance the on line 24 hr. Refresher day 1 instruction and update the classroom sessions.
Review, update and development of DSFS Continuing Education Programs.

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.
Office of the Fire Marshal (OFM)

In 1953, at the urging of the Volunteer Fire Service, the State Legislature created the Office of the State Fire Marshal and directed that regulations, reflecting nationally recognized standards, be promulgated to enhance life safety and property conservation for the citizens of Delaware.

The State Fire Marshal's Office functions as an independent state agency under the State Fire Prevention Commission, which promulgates the State Fire Prevention Regulations, as enforced by the State Fire Marshal's Office. As the law enforcement agency charged by state statute with the suppression and investigation of arson, the State Fire Marshal's Office provides the lead role in fire and arson investigations, statewide. The agency is charged with assisting the Chief of any fire department on request, inspections and code enforcement in health care facilities, educational occupancies, public assembly, public accommodations, flammable and combustible liquids, flammable gases, explosives and fireworks.

The State Fire Marshal's Office is responsible for the comprehensive compliance with the state statute for the installation of smoke detection devices in all residential occupancies, which will greatly reduce the likelihood of injuries and deaths from fire.

The objective of the State Fire Marshal's Office is to provide a fire safe environment for the citizens of Delaware and all who visit and carries out its mandate for Public Service, through the work of three divisions, Administration, Field Operations & Technical Services.

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<td>Number of Smoke Inhalation Injuries</td>
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New Castle County Division

Fire Marshal’s Office

Sussex County Division
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 review aggregate patient care data from the providers to determine the effectiveness of the treatment protocols. Retrospective medical oversight occurs through interactions with EMS personnel at hospital emergency departments [24] and subsequent to problem case identification. Certain high risk or intensity cases are routinely identified for automatic medical direction review.
2014 Accomplishments
During 2014 the EMS Medical Directors performed their biannual review and update of the BLS and Paramedic Standing Orders.

- A significant update to the Paramedic Standing Orders included the adoption of the CDC’s National Trauma Triage Protocol.
- The BLS Standing Orders underwent a complete re-write initiated by the BLS Provider Committee and then a detailed review by the EMS Medical Directors.
  - The new BLS Standing Orders include many more specific protocols that had previously been included.
  - We moved naloxone, a heroin reversing agent, from a pilot to a volunteer protocol that has been adopted by many BLS ambulance companies.
  - This year we also added a BLS pilot albuterol protocol to allow BLS companies to begin provide relief to respiratory distress patients.

The EMS Medical Directors developed a protocol for police agencies to administer naloxone to potential heroin overdose patients. This protocol allows for the administration of a spray of intranasal naloxone and the use of a talking auto injector (needle) naloxone system.

During the national concern over the potential for importation of the Ebola virus, the EMS Medical Directors were involved in monitoring the situation and developing protocols for prehospital patient evaluation and transportation to an appropriate healthcare facility.

The EMS Medical Directors were significantly involved in monitoring and advocating for our EMS providers during an unusually early and severe influenza season. As all of the EMS Medical Directors are practicing emergency medicine specialists, they were all on the front line of patient care as the influenza season began and were able to provide an early warning to Delaware’s Department of Health regarding the arrival, progression and severity of the influenza epidemic.

The EMS Medical Directors have been involved in EMS research to improve care in the Delaware and to across the country.

2015 Goals
Systems of Care Development: Delaware is fortunate to have a well-developed inclusive Trauma System and an inclusive Pediatric System. It is now time to develop a comprehensive, inclusive Cardiac-Stroke System. A Cardiac-Stroke System will allow appropriate regionalization of heart and brain care, getting the right patients to the right hospital facility in the right time by utilizing the many talents of our EMS providers, administrators and many nurse and physician specialist available in Delaware. A Cardiac-Stroke System will improve patient outcomes from heart and brain attacks through multi-discipline, cooperative processes that will allow us to maximize our resources and talents, not overloading our tertiary referral centers and not moving patients far from their families unless they have conditions that are more appropriately handled by infrequently required technology.
DMOST: This legislation, if passed, will allow 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.

Photo submitted by SCEMS
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.

On average, over 25,000 EMS workers are injured annually and there is a strong impetus from many agencies to stem the increase in EMS worker injuries. 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 intense interest of these many agencies in the safety and welfare of emergency services workers indicates the magnitude of the number and type of injuries sustained by the nation’s EMS workers.

Almost on a daily basis we hear of the Line of Duty injury or death of a brother or sister EMS worker somewhere in the United States. According to the National Institute of Occupational Safety and Health’s latest available statistics (2011), over 27,800 EMS workers were injured on the job. Delaware has suffered its share of tragedy over the past few years with the loss of a paramedic and an EMT to Line of Duty deaths. The Federal Bureau of Labor’s Census of Fatal Occupational Injuries latest available statistics show 19 EMS workers were killed in the line of duty in 2012. These are everyday news events in the United States and many EMS agencies are now making worker safety their number one priority and prevent such tragedies.

“Situational awareness” continues to be the key buzz phrase in EMS. EMS workers must face the hazards of hostile and unknown environments, communicable diseases, hazardous materials and violence. EMS workers are continually faced with other hazards while driving emergency vehicles, lifting and carrying. The attitude of many EMS workers towards the daily hazards they face is, “It comes with the territory” or “It comes with the job”, so we live with it. The agencies focused of emergency worker safety are striving to change the attitudes of not only the EMS workers, but agency administrators themselves.

Industry is also doing its part by trying to produce equipment contributing to a safer working environment. Realizing the dangers involved in emergency vehicle operations, ambulance manufacturers are attempting to produce a safer mobile environment for EMS workers. Manufacturers of stretchers have produced power stretchers to assist in preventing back injuries.

EMS is a dangerous occupation. The OEMS encourages all agencies and EMS providers to address the issues of occupational safety and occupational health programs. The OEMS will continue assisting agencies in conducting programs focused on reducing work related injuries.
EMS System Evaluation

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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 1st responders volunteer/paid fire companies, county ALS, paramedics, Trooper medics, AI duPont Hospital for Children, Wilmington Hospital, St Francis Hospital, Christiana Hospital, Beebe Healthcare, Nanticoke Hospital, Milford Hospital, Kent General, billing companies & 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.

Enhancements to our system:
The Critical Care module allows the functionality and coverage required to interface Image Trend proprietary software for Critical Care patient data reporting requirements. This module is increasing the data collection and has aided in increasing the regulatory oversight required of the agencies involved with this type of patient care.

The State of Delaware has obtained a web-based Patient Tracking System from Image Trend that will fulfill the business requirements that have been defined by Delaware’s EMSPS. The Division of Public Health’s, Emergency Medical Services and Preparedness Section (EMSPS) administers the program and has been BETA tested numerous times to achieve optimum performance. The full activation is scheduled for 2015 and will be a part of the daily operations of EMS, and hospitals; the system will also be used by the Division of Public Health, and as part of State Health Operations Center.

The Computer Aided Dispatch (CAD) integration is a critical interface that will allow 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 DEMRS system has been updated to receive CAD information and presently the Office of EMS is working with the CAD vendors that operate within the Public Safety Access Points (PSAP) to transmit the data.

The Update on Our Evolving Prehospital Patient Care Reporting System:
The Delaware Emergency Medical reporting System (DEMRS) replaced the electronic EMS Data Information Network (EDIN) in March 2013. The data from both systems were used in the compilation of data for the DEMSOC report. The DEMRS system is ever evolving; as enhancements come available they will be reviewed for application and capability to further empower the users to seamlessly feed information to and from the field or hospital to allow for documentation and tracking of the patient care continuum.
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 a combination of the EMS Data Information Network (EDIN) and 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.)

![EMS Usage by Location Type - 2014](image)
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.
Time of Day When EMS Incidents Occur - 2014

ALS/BLS Incidents by Month - 2014
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, 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.

*Photo submitted by Rehoboth Beach Fire Company*
**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. This information will be Available for next year's report."

-David J. Roberts, Chairman Delaware State Fire Prevention Commission
## New Castle County Paid Personnel by Agency

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>Phone Number</th>
<th>Total Pd Personnel</th>
<th>Shifts Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Aetna Hose Hook &amp; Ladder</td>
<td>454-3310</td>
<td>8 FT - 40 PT</td>
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<td>764-4901</td>
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<td>737-2433</td>
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<td>24/7</td>
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<td>798-6858</td>
<td>9FT - 30PT 8VOL</td>
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<td>998-3140</td>
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<td>Five Points Fire Company 17</td>
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<td>24/7</td>
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<td>Holloway Terrace Fire Co.</td>
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<td>24/7</td>
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<tr>
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<td>24/7</td>
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<td>Minquadale Fire Company 22</td>
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<td>8FT - 12PT</td>
<td>24/7</td>
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<td>998-3474</td>
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<td>834-7483</td>
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<td>Talleyville Fire Co.</td>
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<td>10H</td>
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<tr>
<td>Volunteer Hose Company</td>
<td>378-7799</td>
<td>9 FT 20 PT</td>
<td>24/7</td>
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<tr>
<td>Wilmington Fire Department 100</td>
<td>571-4410</td>
<td>172</td>
<td>24/72</td>
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<td>*Wilmington Manor Fire Co.</td>
<td>328-3209</td>
<td>7 FT - 11 PT</td>
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*based on 2013 report
## Kent County Paid Personnel by Agency

<table>
<thead>
<tr>
<th>Agency Name</th>
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<th>Shifts covered</th>
</tr>
</thead>
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<td>Bowers Fire Co.</td>
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<td>Camden-Wyoming Fire Co.</td>
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<td>Carlisle Fire Company</td>
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<td>Cheswold Fire Co.</td>
<td>736-1516</td>
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<td>Clayton Fire Co.</td>
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<td>*Felton Community Fire Co.</td>
<td>284-4800</td>
<td>8FT-15PT</td>
<td>24/7</td>
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<tr>
<td>Frederica Vol. Fire Co.</td>
<td>335-3235</td>
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<td>12H</td>
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<td>12H</td>
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<td>Hartly Fire Co.</td>
<td>492-3677</td>
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<td>8H</td>
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<tr>
<td>Leipsic Fire Co.</td>
<td>674-0829</td>
<td>4EMT 15 Drivers VOL</td>
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<tr>
<td>*Magnolia Vol. Fire Dept.</td>
<td>335-3260</td>
<td>15P</td>
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<tr>
<td>*Marydel Fire Co.</td>
<td>492-9917</td>
<td>VOL 7EMT, 6EMR</td>
<td>24/7</td>
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<tr>
<td>Smyrna American Legion</td>
<td>653-6465</td>
<td>6FT-20PT</td>
<td>12H</td>
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<tr>
<td>*South Bowers Fire Company</td>
<td>335-4666</td>
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## Sussex County Paid Personnel by Agency

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<td>Bridgeville Fire Company</td>
<td>337-3000</td>
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<td>12H</td>
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<tr>
<td>Dagsboro Fire Co.</td>
<td>732-6151</td>
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<td>Delmar Fire Co.</td>
<td>846-2530</td>
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<td>Ellendale Fire Co.</td>
<td>422-7711</td>
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<td>Frankford Fire Co.</td>
<td>732-6662</td>
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<tr>
<td>Greenwood Fire Co.</td>
<td>349-4529</td>
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<td>Gumboro Vol. Fire Co.</td>
<td>238-7411</td>
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<td>12H</td>
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<td>Laurel Fire Dept.</td>
<td>875-3081</td>
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<td>Lewes Fire Dept</td>
<td>645-6556</td>
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<td>*Memorial Fire Co.</td>
<td>422-8888</td>
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<td>12H</td>
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<td>Mid Sussex Rescue Squad Inc.</td>
<td>945-2680</td>
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<td>Millsboro Fire Co.</td>
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<td>Millville Vol Fire Company</td>
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<td>Milton Fire Co.</td>
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<td>Rehoboth Beach Vol. Fire Co.</td>
<td>227-8400</td>
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<td>Roxana Vol. Fire Co.</td>
<td>436-2300</td>
<td>4FT 66 PT, 1FT M-F84</td>
<td>24/72 4FT / 8H 1FT</td>
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<td>Seaford Vol Fire Co.</td>
<td>629-3112</td>
<td>9FT 5PT</td>
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<td>*Selbyville Fire Co.</td>
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<td>*based on 2013 report</td>
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Aviation and Dispatch Center Cost

Delaware State Police Aviation:

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<th>Costs</th>
<th>Amount</th>
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<td>Personnel</td>
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<td>Contractual</td>
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<tr>
<td>Supplies &amp; Materials</td>
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Dispatch Centers

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

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<th>Costs</th>
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<td>Equipment</td>
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Kent County 911 Center:

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Sussex County 911 Center:

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Seaford 911 Center:

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Rehoboth 911 Center:

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Specialty Care

Trauma 43

Emergency Medical Services for Children 52

Cardiovascular Care 59

First State/First Shock 61
Delaware Statewide Trauma System

Delaware Trauma System Registry
Delaware Residents Hospitalized Due to Injury
2000 – 2013*

*Includes all injured hospitalized Delaware residents. Excludes isolated femoral neck fractures of age >55 who fell from same level or from bed/chair. Excludes injury scene deaths.

Traumatic injury can occur at any time. It can happen to anyone. Those with critical injuries need to receive definitive care within a short period of time in order to minimize the risk of death and disability. The role of a Trauma System is to organize resources and assure their immediate availability to the injured at all times and in all geographic areas of the system. These resources include 911 Emergency Communications Centers, Basic and Advanced prehospital providers, multidisciplinary trauma teams in hospital emergency departments, and in-hospital resources such as operating rooms and intensive care units. Research has shown that the coordination of these 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).

As seen in the graph above, the number of Delaware residents injured seriously enough to require hospitalization continues to rise in Delaware. Our Trauma System is caring for more patients each year. 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.

June 30, 2014 marked the 18th 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 for their injuries. The success of the statewide Trauma System is the result of much hard work by many people and
agencies, led by the Division of Public Health (DPH) Office of Emergency Medical Services (OEMS). OEMS is the Lead Agency and 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 or Trauma System Participating Hospital. 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 93,000 people have been cared for by Delaware’s Trauma System.**

As shown below, the mortality rate of the most seriously injured patients has dramatically decreased as our Trauma System has matured. Data analysis efforts are ongoing in the Trauma System Quality Committee to identify factors that may contribute to the changes in mortality rate in recent years, both increases and decreases.

Unintentional injuries include those caused by highway crashes involving motor vehicles, bicycles or pedestrians, by falls, and by farm and industrial mishaps. Intentional injury adds assaults, shootings, stabings, and suicides to the above statistics. Trauma System Registry records show that 7,534 citizens and visitors to Delaware were injured seriously enough to require hospitalization in Delaware hospitals in 2013 and of these, 295 sustained fatal injuries. Because trauma so often involves children and young people, it is responsible for the loss of more years of life than any other cause of death, both nationally and in Delaware. It robs us of our most precious resource---our youth.
Delaware’s Trauma System regulations are based on the guidelines of the American College of Surgeons’ Committee on Trauma (ACS COT). ACS 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. Trauma System Participating Hospitals are reviewed every three years by an out-of-state physician consultant and Division of Public Health staff.

Current Trauma Center and Trauma System Participating Hospital 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*
- *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.

**PARTICIPATING TRAUMA SYSTEM HOSPITALS:**
- *St. Francis Hospital*
- *Wilmington Hospital, Christiana Care Health System*
  
  A Participating Hospital is an acute care facility that may receive, usually by private vehicle, moderately or even severely injured trauma patients. Participating Hospitals quickly identify and transfer patients with significant injuries to a Trauma Center after initial resuscitation. When necessary, this facility may provide care to trauma patients with minor injuries. Participating Hospitals contribute data to the Delaware Trauma System Registry and Quality Improvement Program. They do not receive ambulance patients meeting the Prehospital Trauma Triage Scheme criteria.
2014 Accomplishments
Delaware Trauma System Registry data analysis
Data submitted by all eight Delaware acute care hospitals is compiled into the Trauma System Registry. Hospital Trauma Registrars gather data from prehospital trip sheets and hospital medical records to enter into the trauma registry software program. They submit data on a quarterly basis to the OEMS Trauma System Coordinator. System reports are then generated on various topics, including types, locations, and persons involved in trauma occurring throughout the state, as well as Trauma System quality parameters.

Trauma in the elderly
Injuries are a leading cause of hospitalization, long-term care placement, and death in the elderly. They are a significant health problem. As shown in this graph, falls are the number one cause of injury in the elderly by far.
The following graph shows the age distribution of fall injuries seen in Delaware Trauma System hospitals.

Despite the high incidence of fall injuries, the mortality rate for seriously injured seniors has decreased in Delaware. This is indeed an accomplishment!
**Violent injuries**

Violence leading to injury or death is a growing problem in Delaware. The graph below illustrates the breakdown by county scene location on assaults that caused injuries requiring hospitalization, adjusted by population.

![Graph showing assaults per 100,000 population by county in Delaware in 2013.](image)

*Patients transported to a hospital and scene deaths. Categories of injuries based on the CDC's recommended E-Code groups.*
*The Delaware Population Consortium Annual Projections 2013*

The graph below illustrates the types of assaults resulting in death in Delaware, 2013.

![Graph showing causes of fatal assaults in Delaware, 2013.](image)

*Includes all hospital and scene deaths.*
The next graph provides the age breakdown for hospitalized assault patients.

![Delaware Trauma System Registry* Number of Assault Injuries By Age 2013](image)

* Patients transported to a hospital.
Causes of injury through the lifespan
The next graphs show numbers of injuries requiring hospitalization by type of injury and age:
2015 Challenges
Financial support for the Trauma System
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 (as shown in the introduction graph), 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 programs. A Legislative Team has been formed by the hospital representatives on the Trauma System Committee to look more closely at this issue.

Further development of the Trauma System Quality Program
The Trauma System Quality Program is an ongoing process. Trauma System Registry data from all hospitals support both the Quality and Injury Prevention programs. Volume indicators are well developed and reported annually. Sentinel cases are discussed at the quarterly Trauma System Quality Evaluation Committee meetings and System issues as well as educational opportunities are identified.

Some quality filters that are monitored include:
- Patients with Glasgow Coma Score less than 15 and Injury Severity Score over 24 who are not transferred to a facility with neurosurgical capabilities
- Initial Emergency Department (ED) length of stay for transferred patients
- Interfacility transport times and mode of transport
- Under triage (patients meeting triage criteria without a trauma activation)
- Mortality rate by Injury Severity Score
- Patients transferred out immediately following surgery in the initial facility
- Double acute care transfers
- ED deaths of patients after transfer to a higher level of care
- Patients transferred directly from Operating Room to Operating Room
- Surgical airways in the field
- Patients receiving blood products during interfacility transfer
- ED disposition, Injury Severity Score, and hospital length of stay of patients flown from scenes directly to Level 1 Trauma Centers
- Delays in transfer leading to adverse outcome
- Missed prehospital triage leading to adverse outcome

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
The Emergency Medical Services for Children (EMSC) program is a national initiative designed to reduce morbidity and mortality in children due to life-threatening illness and injuries. In 1984, federal legislation (Public Law 98-555) was enacted to fund EMSC programs in the states to improve the emergency care of children. The Health Resources and Services Administration (HRSA) provides EMSC grant money to help develop emergency medical services for critically ill and injured children by improving existing EMS systems. This is the only federal program that focuses specifically on the quality of children’s emergency care.

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 US 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 Readness 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.

The following table provides information about Delaware’s pediatric population.

### EMSC Table 1: Delaware Population at a Glance

<table>
<thead>
<tr>
<th></th>
<th>2014 Total</th>
<th>Age 0-19</th>
<th>% Age 0-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>933,547</td>
<td>228,833</td>
<td>24.5</td>
</tr>
<tr>
<td>New Castle</td>
<td>552,415</td>
<td>139,527</td>
<td>25.3</td>
</tr>
<tr>
<td>Wilmington</td>
<td>72,348</td>
<td>19,615</td>
<td>27.1</td>
</tr>
<tr>
<td>Kent</td>
<td>171,428</td>
<td>42,759</td>
<td>26.7</td>
</tr>
<tr>
<td>Sussex</td>
<td>209,704</td>
<td>45,528</td>
<td>21.7</td>
</tr>
</tbody>
</table>


Unintentional injuries remain the leading cause of death for Delaware’s children. From 2006 to 2010, 282 children and adolescents between the ages of 1 and 19 died in Delaware, representing 0.8% of total deaths that occurred during that time. Males accounted for 64% of all child deaths in 2006-2010. Accidents (44%), homicide (14%), cancer (9%), and suicide (9%) were the four most common causes of child mortality in 2006-2010. Together they accounted for three quarters of all child deaths (Delaware Vital Statistics Annual Report 2010, page 141).

The percentage of Special Health Care Needs children in Delaware, 17.5%, is higher than the national average of 15.1% (2009 / 2010 National Survey of Children with Special Health Care Needs [http://www.childhealthdata.org/learn/NS-CSHCN](http://www.childhealthdata.org/learn/NS-CSHCN)).

### 2014 Accomplishments

In 2014, the State EMSC Advisory Committee and EMSC Program focused on the following activities:

#### Needs Assessments

An assessment of hospital ED’s was done through the National Pediatric Readiness Project (NPRP), [http://pediatricreadiness.org](http://pediatricreadiness.org). The majority of parents seek emergency care for their children at the nearest ED. It is critical that all ED’s have the necessary resources and knowledgeable staff to provide optimal emergency care for children. The NPRP assessed the pediatric capabilities of Emergency Departments, including the areas of administration and coordination, staffing, quality and performance improvement, patient safety, policies and procedures, and equipment/supplies. All eight acute care hospitals and two free-standing Emergency Departments in Delaware (100%) participated in the NPRP survey. Upon completion of the assessment, respondents received a score based on a 100-point scale representing their readiness to care for children in their ED’s. Delaware’s pediatric readiness median score of 86% is well above the national median score of 69%. The EMSC program is very proud of the work done by Delaware hospitals through both the Pediatric Emergency Care Facility (PECF) Recognition Program and the results of the NPRP.
The other assessment performed through the national EMSC program was on EMS transport vehicle pediatric equipment and supplies. This assessment was also completed with a 100% response rate from Delaware! Data was collected from 64 EMS agencies (Sussex County 24, Kent County 16, and New Castle County 24) with a total of 144 BLS transporting ground vehicles (Sussex 49, Kent 40, and New Castle 55). EMS agencies were asked how many of their vehicles carried specific pieces of equipment as recommended by an American Academy of Pediatrics publication (American College of Surgeons Committee on Trauma, American College of Emergency Physicians, National Association of EMS Physicians, & American Academy of Pediatrics. 2009. Equipment for ambulances. *Pediatrics*, 124(1), e166-e171). According to this self-reported assessment, 66 Delaware BLS transporting vehicles carry all the recommended pediatric essential equipment.

Delaware’s 100% response on both surveys exceeded the federal program’s minimum required response rate of 80%. Data analysis of the equipment needs and pediatric readiness assessments is in progress as required by the federal grant. EMSC grant funds have been used to purchase some needed pediatric supplies, based on responses to the EMS Survey.

**HRSA Acknowledgement**

The Federal EMSC program (HRSA) acknowledged completion of Delaware EMSC’s Performance Measures 71 and 72 - online and offline medical control in 2013. Delaware EMSC is now exempt from doing future surveys for online and offline medical direction because the requirements have been met.

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

In 2014 the EMSC program moved into the second 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 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. The Delaware hospitals are recognized as PECF Level I-III, with one Level 1, one Level 2, and six Level 3 recognized facilities in the System. The initial term of recognition was effective through December 31, 2014, contingent on every hospital providing representation to the quarterly EMSC Advisory and Quality meetings. Reapplications were received in September and second site visits to reconfirm the PECF recognitions have been scheduled for February 2015. Reports from the site visits will be sent to the Director of Public Health for approval in order for hospitals to maintain their recognition for another three years.

The EMSC Quality Program has begun 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. The PECF Program has assisted hospitals by providing a forum for hospital pediatric leaders to network and learn best practices. In 2014, Delaware hospitals 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. 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.

**EMSC Targeted Issue Research Grant: “Evaluation of a Pediatric Emergency Care Recognition Program on Care of Injured Children”**
The recently completed EMSC Targeted Issues Research Grant was designed to assist in evaluating Delaware’s PECF Program and to document the value of such a program. The project analyzed and reported on the care of injured children in states with and without a Pediatric Emergency Care Facility Recognition Program. Data was collected from all eight Delaware acute care hospitals and from North Carolina hospitals near the Wake Forest School of Medicine. The project examined vital sign and weight documentation, pain assessment and management, use of sedation, physical abuse screening, and the use of imaging, procedures, treatments, and consultants. The research found improvement in many areas after the implementation of the PECF project in Delaware. The research team provided data analyses to the hospitals for use in developing future performance improvement projects. Additionally, the team presented to the Delaware EMSC Quality meeting on August 26, 2014. Delaware EMSC is proud that the national EMSC program has recognized Delaware’s successful Pediatric System and hopes that other states may learn from it. The Pediatric System Performance Improvement Program will continue to be developed to support hospital and prehospital programs by identifying both excellence and opportunities for improvement in all areas of pediatric emergency care.

**Preventing Injury in the 21st Century Conference**
The EMSC program partnered with Safe Kids Delaware to provide the annual Injury Prevention Conference on June 25, 2014 in Dover. The following presentations were the highlights of the conference:
1. “Caring for Children in a Disaster”, C. Rossi-McLaughlin, MS, RN, Nemours Emergency Management/Disaster Preparedness Officer;
2. “Generation Rx- Preventing Misuse and Abuse of Prescription Medication”, K. Musto, RPh;
3. “Juvenile Fire-setting and Intervention Program”, R. Legar, State Fire Marshal’s Office;
4. “Protecting Children and Youth from Sudden Cardiac Death”, S. Krug, President/Founder, Mathew Krug Foundation;
5. “AED Awareness”, K. Gillespie, AA, NRP, Delaware AED Project Manager; and

The conference provided continuing education contact hours to approximately 130 participants. Vendors also provided health education and public awareness materials during the conference.

**Data**
The following Delaware Trauma System Registry graphs describe children under age 15 who are admitted to a Delaware hospital for an injury.
Graph 1: **Total Number of Injured Children Requiring Hospitalization in Delaware Hospitals from 2000 to 2013.** 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.

![Graph 1: Total Number of Injured Children Requiring Hospitalization in Delaware Hospitals from 2000 to 2013.](image)

Graph 2: **Age Groups of Injured Children Requiring Hospitalization 2013.** Toddlers were seriously injured most frequently, but every age group has risk of injuries.

![Graph 2: Age Groups of Injured Children Requiring Hospitalization 2013.](image)
Graph 3: *Causes of Injury of Children in Years 2000, 2009 and 2013.* Over time falls continued to be the leading cause of injury requiring hospitalization in pediatric patients in Delaware.

![Graph 3: Causes of Injury of Children in Years 2000, 2009 and 2013. Over time falls continued to be the leading cause of injury requiring hospitalization in pediatric patients in Delaware.](image)

Graph 4: *Types of Falls by Age in 2013.* Falls from furniture, playground equipment, and other climbing/falling incidents were most frequent among those 8 years and younger.

![Graph 4: Types of Falls by Age in 2013. Falls from furniture, playground equipment, and other climbing/falling incidents were most frequent among those 8 years and younger.](image)
2015 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.

Summary
Delaware EMSC has had successes to be proud of in 2014. The Delaware EMS and National Pediatric Readiness Project surveys were completed with 100% response rates. Delaware’s Pediatric Readiness median score of 86 is above the national median score of 69. The Inclusive Statewide Pediatric System played an important role in hospitals achieving those high scores.

Although EMSC has made great progress over the years, much remains to be done to ensure children consistently receive optimal emergency care. Unintentional injuries remain the leading cause of death for Delaware children. Through its programs and projects, the EMSC program will continue to aid in reducing death and disability of children in Delaware.
Cardiovascular Care

The importance of improving heart health is continually stressed by Delaware Public Health. There is new evidence that the overall heart health of cardiac patients is improving with the increased prescribing of cholesterol lowering medications known as statins. Cholesterol levels have shown improvements in recent national studies with the increased use of these medications. It is estimated that nearly 400,000 sudden cardiac deaths occur each year with nearly 90% of those being OHCA. 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 in 2014. Delaware has been and will continue to be a retiree destination due to the 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.

Stemi/Stroke Specialty Centers

The emergence of specialty treatment centers for active heart attack (STEMI) and stroke patients found their roots in the 2004 and 2010 National Highway Traffic Safety Administration’s assessments of Delaware’s Emergency Medical System. It was recommended Delaware develop and implement emergency medical care triaged and destination policies as well as protocols for patients requiring transport to specialty care centers. The specialty care centers recommended were ST Elevation Myocardial Infarction (STEMI) and Cerebral – Vascular Attack (CVA) STROKE centers. These specialty care centers continue to research and implement new and innovative treatments for their respective treatment designations.

By continuing to aggressively pursuing the development of designated STEMI/STROKE centers Delaware has five hospitals that are offering full-time emergent PCI (Percutaneous coronary intervention) treatment for STEMI and five hospitals are that are certified by the Joint Accreditation Commission for Health Care Organizations (JACHO) as Primary Stroke Centers.

*Hospitals currently designated as STEMI centers are:*

<table>
<thead>
<tr>
<th>Beebe Healthcare, Lewes, DE</th>
<th>Nanticoke Memorial Hospital, Seaford, DE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christiana Hospital, Newark, DE</td>
<td>St. Francis Hospital, Wilmington, DE</td>
</tr>
<tr>
<td>Kent General Hospital, Dover, DE</td>
<td></td>
</tr>
</tbody>
</table>
Hospitals currently JACHO certified as primary stroke centers are:

<table>
<thead>
<tr>
<th>Hospital Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beebe Healthcare, Lewes, DE</td>
<td>Nanticoke Memorial Hospital, Seaford, DE</td>
</tr>
<tr>
<td>Christiana Hospital, Newark, DE</td>
<td>St. Francis Hospital, Wilmington, DE</td>
</tr>
<tr>
<td>Kent General Hospital, Dover, DE</td>
<td>Wilmington Hospital, Wilmington, DE</td>
</tr>
</tbody>
</table>

Cardiac Alert/Code
Delaware’s EMS standards for paramedics treating patients with cardiac related complaints continue to be aggressive and cutting edge. Patients who present with signs and symptoms of acute myocardial infarction AMI/heart attack are treated by rapid 12 lead EKG analyses and recognition of the area of AMI. Time is the critical factor for AMI/heart attack patients. The rapid recognition of AMI/heart attack by paramedics is the first step in a sequence of events which includes rapid notification of the appropriate care facility and rapid transport to the specialized care facility. By using this systematic approach for out of hospital AMI/heart attack related emergencies the interval from time of onset of symptoms to cardiac catheterization has been reduced to an average of less than 60 minutes. The early recognition of AMI often results in complete bypass by the patient of the standard emergency room and directly to the cardiac catheterization lab with cardiac intervention times under 20 minutes. By using this systematic approach studies continue to show that patients have a lower mortality rate, less cardiac damage and shorter hospital stays.

Prehospital Protocols
The recent addition of the induced hypothermic protocol for patients resuscitated from cardiac arrest continues to show improvement in patient outcomes. Those patients who do not immediately wake up have been shown to have improved neurological function at discharge when they were hypothermic treated. By using this advanced procedure to cool the brain there is data showing the use of this technique has resulted in better than expected outcomes at discharge.

Stroke
Strokes accounted for 1258 Paramedic incidents in 2014. Stroke has a very narrow therapeutic window of only three hours in most cases and an absolute maximum of four and a half hours in the remaining few instances. These patients require the same systematic approach as for AMI/heart attack emergencies. Rapid identification, notifying the appropriate specialty care center and rapid transport to a primary stroke center within the therapeutic window greatly enhances the patient's chances of survival. Statewide stroke treatment continues to evolve with the latest innovations and techniques being implements at the larger stroke centers. These treatment advances will result in better outcomes for Delaware residents with significant improvements.

Since EMS personnel must properly identify the signs and symptoms of stroke and initiate the proper sequence of events EMTs and paramedics play a vital role in stroke management thus enhancing the patient's chances of survival.
Through state legislation in 1999 the Office of Emergency Medical Services was designated the lead agency for the new “First State/First Shock Program”. The establishment of the “First State, First Shock Program” was envisioned by the Director of EMS 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 American Heart Association (AHA) currently has two new programs focusing on early effective CPR. The program encourages the use of hands only CPR to the public and high performance CPR to the trained first responder. These programs are based on extensive historical cardiac arrest data and multiple studies of CPR’s effectiveness. 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 Police/Fire & EMS first responder agencies currently are experiencing the elimination of support for many of the aging units currently deployed. Due to the aging of these units and the elimination of support for these aging units by the manufacture the need for a replacement program is of vital importance.

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 Delaware Emergency Medical Reporting System (DEMRS) provides event tracking and patient outcome to guide future efforts.

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.

Key Initiatives
Continuation of 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 2014 the Office of Emergency Medical Services was able to distribute 54 SAED units. 5 of the units were issued to police, fire, and rescue agencies. 49 of the units were distributed to agencies requesting SAED’s that qualified for the Public Access Defibrillation program.

With funding through the Health Fund Advisory Committee and rural grants from the Health Resources Services Administration, the Office of Emergency Medical Services has been able to place over 3000 units in service for public access and police, fire and rescue agencies since 1999.

Major challenges to the First State/First Shock Program:
Funding for the First State/First Shock Program has been significantly reduced from $200,000 in FY 2011 to $67,500 in FY 2014. This results in limited SAED placement opportunities and eliminates the replacement of aging SAED units. Funding for the First State/First Shock Program remains a challenge. The access to Public SAED’s in locations of high potential sudden cardiac arrest coupled with fast and efficient CPR has shown improved survival of these sudden cardiac arrest patients.

The demand for the replacement of aging SAED’s is a rapidly increasing and 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-500 units in service that were distributed by the First State/First Shock Program. As of December 2014 these LP-500 units are no longer supported by the manufacturer Physio-Control. These units while potentially remaining in-service will not have repair service available and disposable or expiring supplies availability will be diminished. Delaware State Police currently have 283 of these units in service that will need to be replaced over several future budget cycles at an approximate cost of $1000 per unit. The
majorities of the nearly 1200 remaining LP-500 units are currently in service on Volunteer EMS and Fire equipment and serve as the primary response SAED’s to sudden cardiac arrest in local communities.

Cardiac arrest is a primary health issue. Current data shows 71% of all cardiac arrests occur in the home. Strategically placing SAEDs throughout the state and continue providing CPR/SAED training for laypersons and first responders still remains the primary initiative. Replacing aging SAED’s with new models will be the focus of the future SAED program.

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 44%. This is a 4% increase from 2013. 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 SAED’s will have to become a major initiative to continue these improvements.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cardiac Arrests</th>
<th>Patients Pronounced Dead by Paramedics</th>
<th>Patients Transported to Hospital</th>
<th>Patients that experienced a return of circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>780</td>
<td>170</td>
<td>610</td>
<td>158 (26%)</td>
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<tr>
<td>2005</td>
<td>752</td>
<td>185</td>
<td>585</td>
<td>170 (29%)</td>
</tr>
<tr>
<td>2006</td>
<td>756</td>
<td>166</td>
<td>590</td>
<td>190 (32%)</td>
</tr>
<tr>
<td>2007</td>
<td>756</td>
<td>151</td>
<td>605</td>
<td>215 (36%)</td>
</tr>
<tr>
<td>2008</td>
<td>745</td>
<td>117</td>
<td>628</td>
<td>222 (35%)</td>
</tr>
<tr>
<td>2009</td>
<td>773</td>
<td>119</td>
<td>654</td>
<td>261 (40%)</td>
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<tr>
<td>2010</td>
<td>850</td>
<td>131</td>
<td>717</td>
<td>252 (35%)</td>
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<td>2011</td>
<td>893</td>
<td>136</td>
<td>756</td>
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<tr>
<td>2012</td>
<td>882</td>
<td>173</td>
<td>709</td>
<td>253 (36%)</td>
</tr>
<tr>
<td>2013</td>
<td>978</td>
<td>185</td>
<td>793</td>
<td>317 (40%)</td>
</tr>
<tr>
<td>2014</td>
<td>1019</td>
<td>287</td>
<td>732</td>
<td>324 (44%)</td>
</tr>
</tbody>
</table>
EMS System Resources

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Emergency Department and Hospital Diversion Data

Information provided by the Delaware Healthcare Association indicates there were 398,638 visits to the Delaware acute care hospital emergency departments in 2014. This is an increase of 124,107 (45.21%) hospital emergency department visits statewide from the same period in 2000. In addition, there were 75,602 patient admissions from the emergency department for 2013, an increase of 27,590 (57.46%) from the same period in 2000.

In 2014 there was an average of 32 patients in the Delaware acute care hospitals on any given day, who no longer required hospital care, but the patients remained in the hospital, awaiting discharge to post-acute care settings, or inpatient psychiatric facilities.
## E911 Statistics

<table>
<thead>
<tr>
<th>New Castle County 9-1-1</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
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| Total Calls for New Castle | 60,888  | 54,860   | 61,655| 63,584| 68,609| 57,818| 61,840| 61,179 | 55,850    | 57,789  | 52,758   | 54,542   | 711,372|

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68
### Kent County 9-1-1

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<td>12%</td>
<td>-7%</td>
<td>-2%</td>
<td>-1%</td>
<td>-5%</td>
<td>6%</td>
<td>-5%</td>
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<td>-2%</td>
<td>-12%</td>
<td>7%</td>
<td>-9%</td>
<td>6%</td>
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<td>-9%</td>
<td>10%</td>
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<td>14,001</td>
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<td>10,561</td>
<td>9,401</td>
<td>9,441</td>
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## Total 911 Calls

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<th>Jul</th>
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<th>Oct</th>
<th>Nov</th>
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<td>Statewide</td>
<td>79,304</td>
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<td>15,124</td>
<td>15,785</td>
<td>203,139</td>
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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 “online” medical direction to the providers and are the receiving physicians within the emergency rooms of the state.

Work continued in 2014 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 2005-2015, Delaware’s population will increase by 15%, and the number of residents 60 years and older is expected to increase 27%.

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 for each one of these levels will change over the next four or 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 who have expiration dates of September 30, 2011 or September 30, 2012 have two registration cycles (4 years) to complete a state approved First Responder to Emergency Medical Responder transition course. All First Responders who had a certification expiration date of September 30, 2011 have until September 30, 2015 to complete the transition. All First Responders with a certification expiration date of September 30, 2012 have 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 who have expiration dates on March 31, 2011 or March 31, 2012 have two registration cycles (4 years) to complete a state approved Emergency Medical Technician-Basic to Emergency Medical Technician transition course in order to be eligible for national EMS or state certification as an Emergency Medical Technician. All Emergency Medical Technician-Basics who had a certification expiration date of March 31, 2011 have until March 31, 2015 to complete the transition. All Emergency Medical Technician-Basics with a certification expiration date of March 31, 2012 have until March 31, 2016 to complete the transition.

Transition from NREMT-Paramedic to Nationally Registered Paramedic
Persons 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 will have the new designation of Nationally Registered Paramedic (NRP). All NREMT-Ps who had a certification expiration date of March 31, 2011 must complete the transition by March 31, 2015. All NREMT-Ps with a certification expiration date of March 31, 2012 must complete the transition by March 31, 2016 and all NREMT-Ps with a certification expiration date of March 31, 2013 must complete the transition by March 31, 2017.

**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 in order to assist the three county paramedic services and the Delaware State Police meet their paramedic staffing needs. The curriculum follows the National Paramedic EMS Education Standards and consists of approximately 2,000 hours of classroom, simulation lab, clinical and field internship experiences. Throughout the program, emphasis is placed on helping the students develop 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). We have has continuously maintained this accreditation since 1999 and we are the only accredited paramedic program within the State of Delaware.

**Accomplishments**

In 2013, the College developed a plan and received funding to expand the paramedic program. This was done in response to a need for more paramedics that was expressed to the College by the county paramedic services and the Delaware State Police. The Delaware paramedic system is beginning to experience an unprecedented surge in attrition resulting from retirements. The Delaware Tech program has been structured to meet the staffing needs of the county paramedic services and the State Police Aviation Section. This is about twelve paramedics annually. This number is forecast by the county services and the State Police to increase from twelve to between thirty and thirty-five paramedics annually through 2018. The paramedic services have turned to the College to meet part of this need by producing between eighteen and twenty-four paramedic graduates annually.

Delaware Tech expanded the paramedic program in 2014; starting a cohort of students in January in addition to the one that regularly begins in May. A total of eighteen students were enrolled in the program in 2014. The most significant challenge associated with this expansion will be having a sufficient number of county paramedic service Field Training Officers available throughout the state for the paramedic students to complete their required field internship rotations. All of the county services have expressed intent to continue to support the Paramedic Program with Field Training Officers. The College remains committed to assist the county services by providing Field Training Officer training.
Also in 2014 the Delaware Tech Paramedic Program graduated its 15th class. A total of 156 paramedics have successfully completed the Program since its inception. All of the graduates successfully passed the National Registry of Emergency Medical Technician’s Paramedic Examination maintaining the program’s pass rate of 100%.

*Photos submitted by SCEMS*
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.

Preparing for Emerging Infectious Disease

One of the major headlines of 2014 involved outbreaks of the disease Ebola. While the disease itself was nothing new, the increased threat of this disease entering our country was certainly cause for concern. As providers watched events unfold in Texas, many in this state wondered if we were prepared for handling Ebola patients here in Delaware.

The Office of Public Health Preparedness and Office of Emergency Medical Services worked diligently to provide essential information to EMS responders in the state. In many circumstances, incidents with national implications garner extensive media coverage. Oftentimes, this onslaught of information proves problematic when a mixed message or even misinformation is delivered. PHP and OEMS overcame this by providing a unified message to our state’s responders. Regular situation updates were provided to keep responders informed with the most up-to-date information.

One tool that proved valuable in the dissemination of this information was our state’s electronic patient care reporting system DEMRS. Notices were posted to the system’s home page. This provided responders with information concerning how to screen EMS patients for the possibility of infection. Protective measures emphasized the use of appropriate body substance isolation techniques. From this page, responders could link to the most current information coming out of the Centers for Disease Control and Prevention.

Our DEMRS system was also modified to better track patients with possible infectious diseases. An additional data screen was added to allow users to enter information relating to the screening of patients for potential infection. Assessing the patient’s travel history, exposure potential to infected persons, and the presence of infection symptoms such as fever, provides a method to screen patients who present to EMS. This data entry also enables a method to track the prevalence of patients exhibiting signs of infectious disease.

Fortunately Ebola did not impact our state’s providers to any major extent. However, the preparedness efforts that took place served as a great exercise to demonstrate how information can be shared with responders in an efficient and timely manner. DEMRS proved to be a key instrument in accomplishing this line of communication. The additional data collection information will continue to benefit EMS providers in screening future patients exhibiting signs and symptoms of other infectious disease.
Burn Preparedness
The treatment of burn patients often presents special challenges to medical practitioners of all levels. Years ago, preparedness efforts outfitted local hospitals with medical equipment in order to care for burn patients. The second component of this preparedness initiative is to provide training for medical professionals who will be caring for these patients.

The Advanced Burn Life Support (ABLS) class is an eight-hour class providing information on caring for burn patients through the first 24-hour critical time period. This course is intended for physicians, nurses, physician assistants, nurse practitioners, and paramedics. Popular and beneficial components of this class are the hands-on scenarios that allow practitioners to assess and manage simulated patients.

In 2014, OEMS sponsored an ABLS class attended by 20 medical providers of various specialties. This year’s class was held at the Delaware State Fire School and instructed by burn care specialists from Crozier-Keystone Health System. All came together to learn and practice management of burn patients. At the end of the day, students walk out with a better understanding of burn pathophysiology and patient care. This is always an extremely popular program and we will continue to make efforts to offer it regularly to practitioners of Delaware.

Hazardous Materials Response
OEMS participated in the seventh 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, decontamination, and other response topics. OEMS offered two training sessions aimed at the medical management of patients exposed to hazardous materials.

The first session provided a general overview of Haz Mat medicine. In the introductory portion, a physician shared information concerning hospital preparations to receive patients affected by hazardous chemicals. He reviewed both the decontamination process and the initial medical care that would occur. The conclusion of the program reviewed various types of injury patterns that are common with exposures to each haz mat 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.

In the afternoon, OEMS sponsored the Advanced Haz Mat Life Support for Toxic Terrorism class. This four-hour class discussed assessment and treatment of exposures related to possible agents of terrorism. The focus was on chemical, biological, and radiological agents of harm. Students learned a helpful treatment paradigm that could be used when they care for exposed patients in the future. This program is a portion of the full AHLS class that is regularly offered by OEMS.

EMS Standing Orders
This year OEMS worked with EMS providers from Advanced Life Support and Basic Life Support agencies throughout the state to evaluate and revise the patient care standing orders. This process involved partnerships with the Delaware State Fire School, State Fire Commission, and the state’s hospital systems. In addition to updating and developing standing orders that
guide general medical care, a few additional standing orders were added to address preparedness-related issues.

On the BLS front, new standing orders guide providers in treating patients exposed to hazardous materials, providing fire ground rehabilitation, and triaging patients in mass casualty situations.

When confronted with a response to a hazardous materials incident, BLS providers now have directions to aid with scene assessment and management. Specific treatment guidelines are provided for managing patients exposed to organophosphate pesticides/nerve agents, hydrocarbons, and biological agents.

Firefighting is an activity that places great physical and emotional stresses on responders. To address this threat, BLS standing orders now include procedures to implement rehabilitation processes at fire and rescue scenes. Information is provided on environmental stressors such as heat and cold exposure. Guidelines on medical monitoring give EMS responders tips on assessing the medical conditions of firefighters to insure their health and safety at the scene.

In mass casualty situations, the number of victims exceeds the capabilities of the initial responding EMS units. To provide the most benefit for the largest number of patients, responders must triage, or sort patients into categories based upon medical severity. An easy method to accomplish this is the START triage technique. START stands for Simple Triage and Rapid Transport. The procedure relies on assessing three parameters – respiration rate, skin perfusion, and mental status. The result of this assessment places patients into one of three categories. Green patients are stable and their treatment can be safely deferred until additional EMS resources arrive. Yellow patients have potentially life threatening conditions that require urgent treatment. Finally, patients triaged as Red priority are the most severe and require immediate, life-saving care. The new BLS standing orders review the START triage method. One benefit of this method is that it is a standard practice for EMS providers of all levels throughout the state. In situations involving multiple providers, this will enable a common method of sorting patients in a disaster.

On the ALS side, no additional preparedness-related standing orders were added to the standard care. However, a plan for caring for patients exposed to chlorine inhalation was added to the state’s ToxMedic Standing Orders. The ToxMedic program provides treatment guidelines for patients exposed to hazardous materials. Chlorine is a common chemical found in most communities. The standing order provides directions for treating the respiratory distress that often results from exposure.

OEMS continues to work with ALS and BLS services to evaluate and revise treatment protocols.

**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, 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.
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. To date, there are 98 ambulances certified through the State fire commission to provide these services through ten (10) Interfacility transport companies.

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 utilizes the same statewide treatment protocols.
  - Delaware has 10 Basic Life support Interfacility agencies with a total of 98 ambulances licensed and operating in Delaware:
    - CFT
    - Christiana Care
    - Delaware Park
    - GEM
    - Hart to Heart
    - LifeStar
    - Prime Care
    - St. Francis
    - TransCare
    - 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:
    - Hart to Heart
    - Life Star
    - St. Francis
    - TransCare
    - GEM
    - Christiana Care
- **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:**

- Facilities requesting non-emergency patient transportation
- Skilled Nursing Facilities
- Physician Offices
- Clinics
- Acute Care Hospitals
- Home/Hospice Care Facilities
- Board and Care Facilities
- Urgent Care Centers
- Custodial Care Centers with a prescribing practitioner including jails, rehabilitation centers, etc.

**Interfacility Transports by Month - 2014**

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<th>Number of Responses</th>
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<td>April</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td></td>
</tr>
<tr>
<td>October</td>
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- **CFT Ambulance Service**
- **Hart to Heart Transportation**
- **Nemours/Alfred I duPont**
- **Ready Medical Associates**
- **TransCare Main Line**
- **Lifestar**
- **GEM Ambulance**
- **Mid Atlantic**
- **PrimeCare Medical Transport**
- **Smyrna American Legion Ambulance**
- **Urgent Ambulance Service**
New Castle County

Advanced Life Support
Report submitted by Chief Lawrence Tan 83

Basic Life Support 107

Communication Center 111
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 2014, 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 expanded its field supervision to include 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 website at: www.nccdle.org/ems, or follow us on Facebook.
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.
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 2014, 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.

This chart illustrates the New Castle County paramedic call volume during calendar year 2014 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
New Castle County EMS had a paramedic service response time for all incidents (combined Charlie, Delta, Echo and stand-by events) of 63.5% reliability within 8.59 minutes or less during calendar year 2014. Response time reliability for potentially life-threatening, time sensitive “Echo” level incidents was 66.5% reliability of arrival within 8.59 minutes or less, and a response time reliability of 64.6% of arrival within 8.59 minutes or less for “Delta” level incidents. The graduated levels of response time reliability occur as a result of the communications center re-assigning paramedic units from lower priority incidents to higher priority, time-sensitive incidents.

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 30,697 incidents during calendar year 2014, which included 778 “Echo” level incidents, 12,153 “Delta” level incidents and 15,513 “Charlie” level incidents. Many of the incidents involved a response by more than one New Castle County paramedic unit.

**September 28, 2014:** Paramedic Travis Duffin participates in a television interview after responding to assist in an emergency childbirth that took place at the Interstate 95 Welcome Center parking lot. The baby was successfully delivered in a car and was transported to the Christiana Hospital. Both the mother and child were discharged home.
This map illustrates the number of New Castle County Paramedic incidents that occurred in each fire company district during calendar year 2014. The New Castle County Paramedics work closely with the fire company basic life support ambulances on a daily basis. County paramedics augment the basic life support capabilities of the fire service 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 2014. Each star 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 involving a shooting or stabbing that occurred during calendar year 2014. New Castle County EMS responded to over 229 incidents involving a shooting or stabbing during 2014.

Source: New Castle County Computer Aided Dispatch (CAD) System
This map illustrates the locations of New Castle County Paramedic responses to incidents involving pedestrians during calendar year 2014. The New Castle County Paramedics responded to over 230 incidents involving pedestrians that were struck by vehicles in 2014.

Source: New Castle County Computer Aided Dispatch (CAD) System.
New Castle County Paramedics routinely respond to “working” fires to provide medical support to the fire service and render care to fire victims. The New Castle County Paramedics responded to over 200 structure fires during calendar year 2014.

New Castle County Paramedic Unit Activity

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<tr>
<td>Medic 3 (Newark)</td>
<td>3,053</td>
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<td>Medic 4 (Brandywine 100)</td>
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<td>Medic 5 (Middletown)</td>
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<tr>
<td>Medic 6 (Glasgow)</td>
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<td>Medic 7 (Prices Corner)</td>
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<td>Medic 8 (Wilmington)</td>
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<tr>
<td>Medic 9 (12 hour/day unit)</td>
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<tr>
<td>Medic 10 (Special Duty)</td>
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<tr>
<td>Medic 12 (Special Duty)</td>
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</tr>
<tr>
<td>Medic 13 (Special Duty)</td>
<td>2</td>
</tr>
<tr>
<td>Medic 20 (Special Ops)</td>
<td>48</td>
</tr>
<tr>
<td>ALS Bike Team</td>
<td>5</td>
</tr>
<tr>
<td>Single paramedic ALS responses</td>
<td>2,039</td>
</tr>
<tr>
<td>TOTAL RESPONSES</td>
<td>34,693</td>
</tr>
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New Castle County EMS Supervisor and Staff Activity

<table>
<thead>
<tr>
<th>EMS SUPERVISOR/STAFF</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS HQ Staff (Chief &amp; Asst Chiefs)</td>
<td>40</td>
</tr>
<tr>
<td>EMS Lieutenants</td>
<td>338</td>
</tr>
<tr>
<td>Paramedic Sergeants</td>
<td>3,061</td>
</tr>
<tr>
<td>TOTAL STAFF RESPONSES</td>
<td>3,439</td>
</tr>
</tbody>
</table>

September 21, 2014: Six New Castle County paramedic units with several members of the EMS Division staff responded with seventeen basic life support ambulances and two helicopters to a multi-casualty incident (MCI) involving an overturned tour bus in the area of Route 1 and Red Lion Road. The incident was declared a Level III MCI and involved the triage, treatment and transportation of 50 patients to five area receiving facilities. One patient was pronounced at the scene. All patients were transported from the scene in a little over one hour. Tabletop, functional and full scale exercises combined with use of Homeland Security Grant Program (HSGP) funding to develop EMS surge capacity significantly enhanced the response to the major medical incident.
Public Education/Injury Prevention Programs

New Castle County EMS continued to provide a limited 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. In New Castle County, the initiation of bystander CPR before EMS arrives gives the patient a 2.5 to 3 times greater chance of survival.

**Public Education Activities**

**CPR/AED Classes** 24 courses conducted with certification of 422 persons

**CPR Healthcare Provider** 28 courses conducted with certification of over 458 persons

**First Aid Classes** 5 courses conducted with certification of 69 persons

**Vial of Life Program** Continued collaboration with Christiana Care Emergency Departments and Visiting Nurse Association, and volunteer fire service to facilitate ongoing distribution of Vial of Life kits. Participated in 12 “Heroin Alert” presentations.

**EMS Division Displays** Staffed 14 paramedic service displays or presentations with 18 EMS Division Honor Guard details and 7 NCC Pipes and Drums events. Delivered 10 recruitment presentations to potential EMS applicants.

**EMS Continuing Education** New Castle County Paramedics provided 8 continuing education presentations to 138 basic life support personnel.

**Child Passenger Safety** Participated in 2 demonstrations of proper child passenger safety seat utilization and installation.

**Youth Education** 17 presentations to over 654 students regarding EMS careers and the role of paramedics in the emergency medical services system.

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**October 25, 2014:** New Castle County Paramedics conduct a community CPR class at the Canaan Baptist Church in New Castle. The cost for the paramedics that served as CPR instructors was covered by a grant provided by the New Castle County Council.
ACCOMPLISHMENTS

NCCo EMS Division Hosts 2nd Annual Sudden Cardiac Arrest Survivors Reunion

February 28, 2014: The New Castle County Paramedics hosted the Second Annual Sudden Cardiac Arrest Survivor’s Reunion at the Department of Public Safety Headquarters. 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 County Executive joined the Department of Public Safety in recognizing 179 people from 4 EMS agencies, 12 fire companies, 5 law enforcement agencies, the Emergency Communications Division and 26 citizens for their contributions to the successful outcome of cardiac arrest cases in New Castle County.

NCCoEMS Participates in Department Promotional Ceremony

On April 10, 2014 the Department of Public Safety hosted a Promotional Ceremony for the Division of Police and Emergency Medical Services Division.

Paramedic Corporal Peter T. Small was promoted to the rank of Paramedic Sergeant. Paramedic Sergeant Small has been assigned to Field Operations, Platoon II.
May 19, 2014: New Castle County EMS held its annual Graduation and Appointment Ceremony at the Department of Public Safety Headquarters. The annual event recognizes personnel that successfully completed paramedic training, in addition to those that transferred to New Castle County EMS from other services and completed the field certification process necessary to achieve Delaware paramedic credentials. The New Castle County EMS Graduation & Appointment Ceremony is typically scheduled to coincide with National Emergency Medical Services Week.
The Emergency Medical Services Division has had four (4) members of the staff successfully complete the Command and Leadership Academy offered 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. The EMS Division staff has been participating in the Command and Leadership Academy as a component of efforts to improve professional development opportunities within the division.

On May 29, 2014 New Castle County EMS Lieutenant Mark Logemann and Lieutenant Martha Russ were recognized at the 43th Graduation Ceremony of the Command and Leadership Academy hosted by the New Jersey State Association of Chiefs of Police. The graduation luncheon was held at the National Conference Center in East Windsor, NJ and recognized graduates from all three training sites.

On December 16, 2014 New Castle County EMS Captain Mark Allston and Lieutenant Dawn Guezian were recognized at a similar graduation ceremony.

Two more members of the EMS Division supervisory staff are enrolled in the current cohort.
In September 2013, the New Castle County Paramedics initiated recruitment for a paramedic class that began in February 2014. New Castle County EMS initiated an extensive recruitment campaign that included social media, dissemination of recruitment posters in English and Spanish, news releases, information sessions and dissemination of information with recruitment tables at various locations and schools—including military bases.

The New Castle County Paramedic Academy Class of 2014-2015 started their enrollment in the Good Fellowship EMS Training Institute in West Chester, PA. A member of New Castle County EMS has remained with the paramedic class on a daily basis as the Class Coordinator.

The Paramedic Academy Class has participated in several activities in addition to their academic and clinical training. For example, the class sponsored and coordinated a 5K Walk/Run to benefit the Stephanie Callaway Scholarship Fund. The scholarship honors a Sussex County Paramedic that died in the line of duty in 2008. Several members of Sussex County EMS, to include some of Stephanie’s family were present for the opening ceremony and participated in the event. The Paramedic Academy Class ran the 5K course side by side with the New Castle County Police Academy 40th Recruit Class in a demonstration of the solidarity of the members of the New Castle County Department of Public Safety.

The New Castle County Paramedic Academy Class will graduate in December 2014, will complete their National Registry Paramedic certification, and will begin the field certification process to become Delaware paramedics.
NCC'EMS Participates in "Heart in the Game" EKG Screening Events

The New Castle County Paramedics have participated in the "Heart in the Game" events held at various schools. "Heart in the Game" provides free EKG screening for high school athletes while raising awareness of CPR & AED utilization during sudden cardiac arrest. New Castle County EMS and members of the Paramedic Academy Class have assisted with demonstrating hands-only CPR and use of AED’s.

Paramedics Continue to Respond to Violent Situations

November 9, 2014: New Castle County Paramedics work with the Wilmington Police Department, Wilmington Fire Department and St. Francis Hospital ambulance at the scene of a shooting on Pleasant Street in Wilmington. The EMS Division issues all paramedics soft body armor, which must be replaced every five years.

Paramedics Participate in Active Shooter Exercise

June 14, 2014: New Castle County Paramedics participated in a full scale exercise (FSE) that simulated an active shooter incident at the City/County Building in Wilmington. EMS Division personnel worked with the Wilmington Police Department, Wilmington Fire Department and St. Francis Hospital EMS in the simulated incident. The exercise was funded through the State Homeland Security Grant Program.
The improved technology available from the latest generation of cardiac monitors, combined with software and hardware that supports data analysis is helping the paramedic service maintain continuous improvement in its clinical care. For example, the data obtained from the Cardiac Arrest Registry to Enhance Survival (CARES) enables the EMS Division to identify cases involving successful hospital discharge of the patient. The EMS Division is also able to verify continued improvement in cardiac arrest survival rates in New Castle County.

December 8, 2014: P/Sgt. David Aber, P/Cpl. Richard Moerman and Paramedic William Greenley were recognized with members of the Volunteer Hose Company of Middletown for their actions on August 27, 2014 that resulted in the survival of a cardiac arrest patient. State Senator Bruce Ennis provided a Senate Tribute, County Councilman William Powers provided a County Council Resolution and Middletown Mayor Kenneth Brauer presented a tribute to each of the responders. The patient also attended the event, which was held at the Volunteer Hose Company fire station.
NCCo EMS Division Provides Medical Coverage to President of the United States

The New Castle County Emergency Medical Services Division provided medical support to the United States Secret Service and New Castle County Police during a visit by the President of the United States on July 14, 2014.
Paramedic Corporal Jorge Vasquez was recognized as the Paramedic of the Quarter for the first quarter of 2014. P/Cpl Vasquez was cited for his outreach into the Hispanic community on behalf of the paramedics. His voluntary participation as a bridge to the community has included service as a translator during emergency incidents, as well as assisting with the development of a Spanish version of a "Learn CPR" public information video. He also played a pivotal role in the April 2013 EMS Division briefing to a Panamanian delegation of public safety officials.

(Left to Right) P/Cpl. Jorge Vasquez, Chief Lawrence Tan and P/Sgt. Michael Nichols at the Kiwanis Club of Wilmington Awards Luncheon hosted at the Hotel DuPont.

Paramedic Corporal Paul Bazzoli and Paramedic Corporal Brian Warrick were recognized as the Paramedics of the Quarter for the fourth quarter of 2014, and were later designated as the "Paramedics of the Year" by the Kiwanis Club of Wilmington. P/Cpl. Bazzoli and P/Cpl. Warrick were cited for their September 27, 2014 response to the unit block of Adelene Avenue in Newark to assist an 8 year old girl that had been attacked by a dog. The paramedics provided care to her critical injuries, including an open fracture of her right arm, while transporting her to the DuPont Hospital for Children. The patient was flown to the Children's Hospital of Philadelphia where she had nine surgical procedures to reattach her arm.

(Left to Right) P/Cpl. Paul Bazzoli and P/Cpl. Brian Warrick received the Kiwanis Club of Wilmington "Paramedics of the Year" award for 2014. Both were recognized for their commitment to render care to a seriously injured child, despite the presence of a dangerous dog.
New Castle County Department of Public Safety Awards Ceremonies

On February 20, 2014, the New Castle County Department of Public Safety held an awards ceremony to recognize Division of Police, Emergency Medical Services Division, Emergency Communications Division and Office of Emergency Management staff and members of the public that assisted the department in its delivery of services.

The following EMS Division personnel were recognized:

Asst. Chief Richard Krell
S/1s. Karl Hitchens
Lt. Martha Ross
Lt. Kelli Zullo
F/Sgt. Michael Nichols
F/Cpl. John Lloyd
F/Cpl. Christopher Reed
F/Cpl. Kenneth Slone
Paramedic Elizabeth Alderson
Paramedic Brian Bradford
Paramedic Travis Duffin
Paramedic Jessica Duncan
Paramedic Bryan Stafford
Paramedic Robert Tomchak

On September 25, 2014, the New Castle County Department of Public Safety hosted an awards ceremony to recognize exemplary performances by police, paramedics, emergency communications and emergency management personnel. The following Emergency Medical Services Division personnel were cited at the ceremony:

F/Sgt. Christopher A. Johnson
F/Sgt. Kenneth M. Dawn
F/Cpl. Lorraine E. Williams
F/Cpl. Matthew W. Watson
F/Cpl. Christopher W. Reed
F/Cpl. Jeffrey R. Russell
F/Cpl. David I. Lawrence
F/Cpl. Kevin C. Cowpertmouth
F/Cpl. Richard Moresan, Jr.
F/Cpl. Ronald P. Isocrono
Paramedic First Class Ashley D. Stoll
Paramedic First Class Kenly S. Warwick
Paramedic Dawn M. Longfellow
Paramedic Leah Hujnicki
Paramedic Scott Kay
Paramedic Travis M. Duffin
Paramedic Travis K. Tome
Paramedic Bryan M. Riontum
Our Mission is Your Life

NEW CASTLE COUNTY PARAMEDICS
New Castle County

Basic Life Support (BLS)

Submitted by various BLS agencies in New Castle County

New Castle County is comprised of 22 volunteer fire companies and one paid fire department, the City of Wilmington. Every fire company in New Castle County operates at least one basic life support unit and many fire companies operate multiple BLS units. There are two additional BLS units, owned by the county, that are used as “loaner” ambulances; these ambulances are placed into service when a fire company’s ambulance is placed out-of-service for any period of time.

Many volunteer fire companies in New Castle County are transitioning from a predominantly volunteer system to a combination system, which accommodates both volunteer and paid personnel. During a time when volunteerism is on a decline, fire companies must find alternative ways to provide a safe, quick, and professional service, while struggling with these personnel issues. BLS units need to be on-scene within an average of eight minutes of most calls. This type of time demand, as well as increased call volume has led many volunteer companies to transition to paid personnel that work various shifts. The combination departments have shown to be a great improvement for many New Castle County Companies.
A life-saving rescue in Elsmere

Firefighters, EMTs, Paramedics, Emergency Departments work together to save a life; On Sunday, May 4, 2014, the New Castle County 9-1-1 Center received several phone calls regarding an active fire at a residence on Harvey Place, in the Vilone Village neighborhood in Elsmere. At least one of those calls indicated that an adult male subject was believed trapped on the second floor of the burning house.

Elsmere Fire Company was dispatched, along with several neighboring fire companies, to a “working house fire” on Harvey Place. Firefighters from Elsmere and Five Points Fire Companies arrived within minutes to find smoke and flames emanating from the structure. In addition, an adult male met them at the curb and said that his brother was trapped in a second-floor bedroom.

Elsmere Fire Chief James Facciolo directed firefighters Anthony Facciolo and Rob Trivett to search the upper level of the structure to locate the subject. Taking a 2” hand line, the two firefighters entered through the front door, ascended the stairs to the second floor and encountered active fire conditions and heavy smoke in a bedroom, significantly lowering visibility levels.

At the same time, Five Points Fire Captain Murtha, Lieutenant Cox, Firefighters Johnson and Oakman were directed by Chief Facciolo to assist the Elsmere crew with their search of the second floor.

At the top of the stairs, Firefighters Facciolo and Trivett advised Captain Murtha that they had located an unconscious male inside the bedroom and needed to rapidly remove the victim by passing him to the Five Points crew, so they could work to contain the fire. Firefighters Facciolo and Trivett passed the victim out the doorway to the Five Points crew, who shuttled the man down the stairs to the front door, where other firefighters and EMS personnel were waiting with a stretcher and oxygen.

New Castle County paramedics and the EMT’s from the Cranston Heights Fire Company’s ambulance grabbed the victim, placed him on the stretcher and immediately began CPR, as they hurriedly moved to the waiting ambulance and from there to Christiana Hospital. In the meantime, fire crews were able to bring the blaze under control.

The victim, Glen Anderson, was treated at Christiana Hospital Emergency Department and subsequently transferred to Crozer Medical Center in Chester, PA, where he remained for several weeks. Thanks to the quick actions and great teamwork shown by the firefighters, emergency medical services and hospital personnel, Mr. Anderson recovered fully from his injuries. In a postlude, Mr. Anderson visited with several of his rescuers in August at the Elsmere Fire Company to personally thank them for their heroic efforts that saved his life. In addition, Mr. Anderson and his brother thanked all the firefighters, EMTs and Paramedics at the Elsmere Banquet on March 21, 2015.
University of Delaware Emergency Care Unit

Introduction
The University of Delaware Emergency Care Unit, known as UDECU, is an ambulance service formed in 1976 by Kevin J. O’Neill, a sophomore University of Delaware student. The idea was to free up the University of Delaware Police Officers and Aetna Hose Hook and Ladder Company from transports on the University of Delaware Campus. In the spring of 2001, UDECU completed a historic agreement with Aetna Hose Hook and Ladder Company, the Newark Fire Department. The agreement allowed UDECU to act as a third due ambulance for the City of Newark. This agreement has allowed UDECU to help Aetna to improve EMS coverage in the city. Since the agreement was signed, UD-1 has responded to car accidents, cardiac arrests, and many other medical emergencies. In 2003 the district to which UDECU could respond to was extended considerably and UDECU was upgraded to a second due ambulance. As a result of this agreement, approximately 20% of UD-1 call volume is off campus. In 2013 UDECU became a part of the University of Delaware Police Department. A police officer, who is also certified as a NREMT, oversees their day to day operations. Today UDECU continues to operate as an authorized BLS transporting EMS agency in the State of Delaware. Our membership is comprised of approx. 40 active members. The organization is 100% volunteer.

2014 Accomplishments
- UDECU hired a billing company to bill for services rendered and supplement their operating budget.
- UDECU along with the University of Delaware Police Department and the University of Delaware Department of Environmental Health and Safety were awarded the title of becoming a Heart Safe Campus.

2013-2014 Goals
- To strive to have the ambulance in service around the clock.

Summary
The University of Delaware Emergency Care Unit is dedicated to providing the University of Delaware and surrounding community with professional, high quality emergency medical care with low response time.
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 2014 was 354,127. Another 97,391 non-emergency calls were also processed by our Emergency Call Operators. The Center dispatched or processed a total of 134,402 fire/medical incidents and 287,062 police incidents in year 2014. New Castle County Emergency Communication Center handled over 41.5% of the 959,756 total 9-1-1 calls in the State of Delaware for 2014. New Castle County 911 takes great pride in announcing we have again gained Re-Accreditation in EMD Protocol with the Priority Dispatch Emergency Medical Dispatch Protocols as required by Delaware Law.

The New Castle County Emergency Communications Center operates 24-hours a day on a year-round basis. 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 thirty-two full and part-time Emergency Call Operators, nineteen New Castle County Police Communications personnel, twenty-three Delaware State Police Communications personnel, twenty-three full-time Fire/Medical Communications personnel, and an administrative staff of seven personnel.

Emergency Medical and Fire Dispatch

New Castle County Fire/EMS section utilizes a national protocol system to triage incoming emergency calls to determine the level of service. All of our 911 professionals are trained to provide 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 911 professional receives numerous hours of training in each protocol (fire, police, and medical) and is required to participate in continual training to maintain their certifications.
This chart represents the total medical responses by Fire Company during 2014.

This chart represents the number of fire related calls for service by company for 2014.
**Language Line**

New Castle County Emergency Communications center utilizes the Language Line to assist in handling non-English speaking callers. In 2014, we averaged approximately 87 Language Line calls per month. There were requests for Spanish, Mandarin, Hindi, Arabic, Turkish, Korean, Polish, French, Punjabi, Russian and Haitian-Creole.

**Mobile Communications Unit**

New Castle County continues to enhance our a state-of-the-art mobile communications van in an effort to keep it current with technology so that it continues to be available to take over all operations as needed within a moment’s notice. We have the ability to remotely activate station tones, giving us full dispatch capabilities in a mobile platform. The communications van responds on all multiple alarm fires, fire fatalities and other major incidents in order to provide the Incident commander on-scene support and communications.

**2014 Year in Review**

2014 again proved a busy year for New Castle County. The Fire & Medical section handled communications for approximately 84 working fires, including 2 multiple alarm fires.

On February 20th, 2014 we received a call of a truck hauling 200 bales of hay reported to be on fire Rte.1 NB/New Discovery Road, TMC assisted in removal of the hay from the trailer so it could be extinguished.

On May 1st, 2014 we received 5 different water rescues due to storms that passed thru the area causing hazardous driving conditions resulting in vehicles becoming disabled in high water.

On May 26th, 2014 we the 911 Center was notified of a balcony collapse with one female with serious injuries.

June 28th, 2014 the 911 Center was notified of a Cessna aircraft had lost contact with the New Castle County Airport Tower. Plane reported down on the New Jersey side of the Delaware River in the area of Fort Mott State Park.

On July 9th, 2014 after several severe storms had moved through we had reports of several trees and wires down along with 2 houses struck by trees.

On September 21st, 2014 the 911 Center received several calls reporting a MCI involving a tour bus that rolled over with over 50 passengers on board this proved to be a very taxing time for our 911 Center as we were working this incident.
On October 31st, 2014 the 911 Center received a call of a collapse of a new house under construction, which resulted to injuries to a construction worker.

These events are just the highlights of our 2014 year in review where we experienced a complete range of emergencies. We received phone calls for nearly every type of event imaginable. From highly technical rescue; such as high angle, confined space, water rescues, aircraft emergencies, shootings and drug over doses. We continue to see a wide array of incidents owing to the diversity of industry, businesses and cultures seen in New Castle County.

Summary
New Castle County Emergency Communications continues to lead the First State with implementing new technologies and methodologies to improve our service to the public and our responding agencies.

We continue to integrate with our communities with our personnel attending civic meetings with Smart911 demonstrations and sign up events. We finished wrapping up our pending transition to our new CAD vendor New World Systems. Our new CAD system will further enable us to provide state of the art service to our customers and first responders.

On May 31st, 2014 we implemented a Power Shift within our Public Safety Operator’s with a schedule of 1000x2200 hours. These hours were chosen based off of our data showing us this was the busiest times of day for our 911 Center. In 2013, our data showed us that our 911 phones were answered in 10 seconds or less 78% of the time. After the implementation of our Power Shift we saw that number change to 84% of our calls are answered in 10 seconds or less. We continue to look for ways to improve this answer time even further with the forward thinking of assigning even more personnel to this schedule as staffing permits.

The Emergency Communications Division continues to see change within our leadership ranks. We have a new Telecommunications Training Officer and continue to have full support from the administration of New Castle County.
Kent County

Advanced Life Support
Report submitted by Chief Colin Faulkner 117

Basic Life Support 142

Communication Center 144
Kent County Department of Public Safety
Submitted by Kent County EMS

Introduction
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. Additionally, our partnerships extend broadly into the emergency response community and together, we are able to provide a high level of medical care our State has become accustomed to.

Kent County Paramedics deploy from three stations throughout Kent County with a Power Unit that is available during peak response hours to assist with peak call volume challenges and surge. Additionally, Kent County DPS supports the following teams, SWAT, High Angle Confined Space Rescue, Hazardous Materials/Decontamination; with a high level of dedicated medical support outside of our standard deployment.

An aggressive expansion is currently underway in Kent County to establish an additional paramedic response unit in the southeast region of Kent County to fill an emerging need to provide paramedics in this highly rural area. Growth and development have impacted the infrastructure put in place two plus decades ago and it has been determined that the additional unit is required to maintain a standard of care available in this region that the remainder of our County currently enjoys.

Our Department 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’ and bike responses. 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 response consistent with national standards for the services we directly provide. With the recent expansion of our Emergency Management Division, Kent County will be better able to assess an implement a broader perspective and preparedness for potentials including natural disaster and terrorism threats as well as venue specific challenge. 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.

The Department of Public Safety continues to work with partner agencies, both public and private concerns, as well as all levels of government to insure that we provide the highest level of care and response available and which is consistent with our Mission Statement.
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.

Initiatives
- Increase community relations and exposure.
- Increase attendance and participation for Special Operations.
- Continue to increase Paramedic familiarity with high tech Special Operations equipment.
- Increase our emergency notification via purchase of additional Monitor V pagers
- Continue to embrace technology to improve both response and Patient care.
- Supplement and update safety equipment for Paramedics.

Accomplishments
- Transitioned from WAAV Modems to Cradlepoint modems. Increased speed and reliability for mobile computing. These also provide us a GPS solution to track vehicles.
- We were able to purchase 2 MRX monitors instead of one this year.
- Implemented a paperless refusal system by providing a Dell tablet solution for each unit.
- Ensured compliance to a number of Federal guidelines regarding equipment PM, and testing of both medical and non-medical equipment.
- Implemented an online uniform procurement system through MES that allows the Medics to order their safety equipment and clothing online.
- Secured purchase and conversion of two new vehicles.
- Held a food drive and delivered one and a half tons of food to the Food bank of Delaware.
- Successfully provided medical coverage to the Firefly music festival where we saw over 550 patients in 4 days.
- Provided car seat checks and 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 get out of the door in two minutes or less.
Overview
The EMS Division in the Department of Public Safety is busier than ever. In 2014 we had 12,340 dispatches as compared to 11,506 for the year 2013 an increase of over 7%. 2015 will, if history repeats, be busier yet.

Call Volume 2009-2014

![Call Volume by Day of Week](image)

![Call Volume by Hour of Day](image)

*No single day stands out as busiest, but calls peak during normal waking hours.*
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.

**Goals**

- Supplement our Mass gathering equipment in order to provide enough equipment for the three additional Mass gathering planned in the County for 2015.

- Update our Mass gathering MOU.

- Continue to provide exceptional patient care to the visitors and citizens of Kent County.

- Improve our response to the Southeast region of the County by implementing a pilot program in the Southeast corridor.
Operational Overview

All Terrain Medical Response Team

EMS agencies throughout the country have realized the important role of bicycles in the realm of pre-hospital emergency care. Bicycles are both a cost effective and fun way of delivering any level of pre-hospital emergency care in any number of venues.

The advantages that paramedics on bikes have are many. Crowd congestion issues are lessened by the increased mobility of bicycles, they are relatively inexpensive, cost little to maintain, are able to carry Advanced Life saving equipment, and they offer health benefits to the providers who are riding. This does not even begin to touch upon the intangible benefits of public relations, and community educational opportunities afforded by being “on ground level” with the population you serve. Every child in the area wants to know who you are, what you do, and what things you have on your “tricked out” bike. In Kent County, we have used this as an on duty opportunity to do helmet education, and community education on what it is we actually do as paramedics. Paramedics may be out there to initiate life saving procedures, but many times it is the patient contact with the child who needs only a Band-Aid where we make the greatest impact.
History
Kent County Department of Public Safety, Division of Emergency Medical Services (KCDEMS) has been utilizing paramedics on bicycles for 16 years. Our utilization has risen from 10 events our first year to one or more events almost every weekend from March through October. KCDEMS utilizes our team for everything from Bike Rodeos, where we may teach bike safety and handling to 10 kids, to race coverage for Dover Downs International Speedway where the crowd can top 170,000. The flexibility of our high-end aluminum mountain bikes has allowed us to tailor our programs to the needs of the requesting agency.

The Bikes and Medic-Gator have thus far been pre-deployed to special events. 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.

![Image](image.png)

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.

Activity: 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, Fourth of July, and the Amish Country Bike Tour.

Training: Training our members is important for a variety of reasons. First and foremost it helps our paramedics feel confident in their skills, and it promotes safe and capable handling of the bike. KCDEMS sends all of our All Terrain Medical Response Team (ATMRT) candidates to International Police Mountain Bike Association (IPMBA) school. This is a comprehensive program that spans 4 eight-hour days. This school teaches our medics a multitude of skills, including how to maneuver the bikes, how to safely negotiate obstacles, and also covered are basic maintenance skills. This training ensures that all of our team members have a foundation of safe riding skills. In conclusion, paramedics on bicycles are an asset to any agency. We are not only able to decrease response times by our increased mobility in a crowd, but are able to do positive public relations and education because of our increased accessibility.
Hazardous Materials (HAZMAT) Medic Team

Kent County EMS began to develop its role as support agency to Hazmat Responders early in 1997 with the initiation of the KCEMS Hazmat Medic Team. The Administration identified the goal of offering technical and functional support to the Incident Commander of a HazMat Scene. The Team's mission statement defines this task as "...working with Fire-Rescue Units and other agencies to effectively minimize health risks to the individual, responders, and community in the even of a hazardous materials release". The team was assembled with two Paramedics selected from each shift, one alternate member, and one Administrator to oversee the project.

The first group of five team members was sent to Delaware State Fire School for the EPA Hazmat Operations training in April 1997. This core group compiled a great deal of information while working towards development of operational plans and department SOP's. As the remaining team members have completed the 40 hour Operations training, the team has conducted and /or participated in several training exercises involving the volunteer fire and ambulance services and local industry. The accumulation of equipment has been ongoing and continues to expand. The arrival of the MCI-Hazmat response trailer to Kent County has added to the possibilities of the team's potential. Team development continues at a steady pace.
Hazardous Materials Response (Hazmat)

Response: 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 or awaiting training to the Hazmat Technician level which qualifies them to assist the entry team.

Activity: Decon responses have included 3 deployments in support of DSP and DNREC involving “Meth-Labs”. There was one response in support of DNREC/EOD for dredged munitions. There was one response for a reported hazmat release. 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).

Needs & Initiatives:
1. Regular training nights will continue. Joint training evolutions with other response agencies should be enhanced.

   The 3rd Tuesday of odd months has been established as a regular training day for Medics, as well as the evening session at Little Creek.

2. 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.
EOD/SORT Response (SWAT medics)

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: Three medics completed Basic and Advanced Tactical EMS training and are embedded with the STAR Team in Smyrna 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.

Activity: Operations for the team for 2014:

The SORT medics supported Smyrna Police STAR Team, Milford Police SOG Team, and DSP Sort Team on 12 missions.
- 3 missions were in support of the Smyrna STAR Team
- 3 missions were in support of the Milford SOG Team
- 1 mission was in support of a joint mission with Smyrna’s and Milford’s Teams
- 1 mission was in support of Dover PD and the US Marshalls

We supported the teams noted above in
- 5 Search Warrant executions
- 2 Arrest Warrant executions
- 1 Barricaded subject (The above mission in support of Dover and US Marshalls)

Training for the team was also extensive through 2014:
- We have participated in 128 hours of training with the Smyrna STAR team
- We have participated in 82 hours of training with the Milford SOG team
Injury Prevention and Community Outreach

Kent County Department of Public Safety Division of EMS is proactive in our injury prevention efforts. Throughout the course of the year, we have done a variety of prevention and educational programs for the public we serve. 2014 was a busy year. As the population of Kent County grows, the requests for stand-bys, and community service increase proportionally. In addition to the All-Terrain Medical response team events listed in the previous section, Kent County paramedics participated in numerous community events—these events included CPR classes, 6 taught–78 people certified) school demos, health fairs, and a great number of standbys (where we are on standby due to crowd estimates, etc.) PM II Wyatt taught a class for the Dover PD Youth academy in the summer of 2014.

2014 marked the 12th year that we have been a recognized NHTSA fitting station. Parents and caregivers may come by headquarters by appointment and have their car seats inspected, and checked by our trained technicians. In 2014 we inspected and installed 16 car seats.

Our department now has one NHTSA certified child seat safety technician who has completed the NHTSA 32 hour course. In addition to the above, Kent County Department of Public Safety Division of EMS participated in a number of community outreach and injury prevention programs with the Caesar Rodney School District, Capital School district, Old Navy Kids day, the Kent County Public Library and Dover Public Library.
EMS has an important role in Injury prevention, and we believe that we have a responsibility to do all we can to prevent unintentional injury. We will continue to participate in as many programs as we can, in order to decrease the morbidity and mortality that results from preventable injury.

In addition to our injury prevention efforts KCDPS covers dozens of events each year. We have long standing events that we cover like Old Dover Days, The Bike to the Bay MS 150, Pedal for Prostate Cancer, Wreaths Across America, The Wyoming Peach Festival, The Amish Country Tour, The Run or Dye race series, The Monster Mash Marathon, MMA events, and Boxing events at Dover Downs. We have also been tasked with large gatherings at Dover International Speedway. The EMS Division takes care of the ALS coverage for two NASCAR races each year as well as the Firefly music Festival.
Kent County enjoys covering the Firefly music festival. This festival has grown from 30,000 the first year to over 80,000 in 2014. KCDPS deployed numerous medics each day of the 3 ½ day music festival to cover the venue. It was estimated that up to 80,000 attendees enjoyed the festival. We utilized Paramedics from almost every ALS agency to cover this event. We very much appreciate and want to recognize our friends at DSP Aviation, New Castle County and Sussex County who “lend” us Paramedics every year to help cover this particular event. 2015 promises to be even busier. Two new music festivals have been announced in Kent County—The Big Barrel festival which runs at the Woodlands of Dover on the heels of Firefly, and the Delaware Junction Festival which will take place on the grounds of the Delaware State fair.
This festival has a call volume greater than a number of calls for service that some BLS agencies have in a year. ALS and BLS were dispatched 551 times in 3 ½ days. 3061 individuals were seen in the Medical aid tents and fan care center.

**Festival Information by Numbers**
- 4 Total days of festival
- 47 Hours of music (not including Hub hours)
- 108 Musical acts
- 7 Different stages
- 80,000 Estimated attendance per day
- 50,000 People camping on speedway grounds
- 50 American states represented
- 17 Countries (outside the U.S.) represented
- 15% Ticket-holders from Delaware
- 1400 On-site volunteers
- 1500+ Portable on-site restrooms (10 VIP restrooms)
- $12 mil Estimated economic impact in 2013

**EMS INCIDENT ANALYSIS**

**Actual Call Volume**

| Day | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Total |
|-----|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|------|
| Wed |   |   |   |   |   |   |   |   |   |   | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |
| Thur| 1 | 1 | 2 |   |   |   |   |   |   |   | 2  | 1  | 1  | 1  | 3  | 2  | 1  | 6  | 4  | 4  | 9  | 1  | 1  | 56  |
| Fri | 3 | 1 | 1 |   |   |   | 1  | 1  | 2  | 3  | 5  | 5  | 5  | 7  | 9  | 1  | 1  | 4  | 1  | 1  | 8  | 1  | 1  | 1  | 1  | 1  | 1  | 4  | 149 |
| Sat | 1 | 6 | 9 | 6 | 3 | 3 | 3 | 1 | 1 | 1 | 3 | 1 | 2 | 4 | 1 | 1 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 201 |
| Sun | 1 | 6 | 9 | 6 | 2 | 2 |   | 4 | 3 | 2 | 4 | 2 | 2 | 1 | 6 | 1 | 1 | 1 | 6 | 0 |   |   |   |   |   |   |   |   | 135 |
| Mon | 3 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 |
| Total| 3 | 2 | 1 | 6 | 4 | 4 | 1 | 7 | 7 | 7 | 6 | 1 | 2 | 2 | 3 | 4 | 3 | 5 | 5 | 5 | 4 | 4 | 3 | 3 | 551 |

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**Overview**


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)

**Response:** 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.

Activity: There were no MCI incidents which required the deployment of these additional assets. Units were pre-deployed as required in support of Mass Gathering events.

Needs and Initiatives:
1. Continued refresher training through Trailer Days and con-eds will maintain current training levels.
   
   These have been added to the 2015 Training Schedule.
   EM S participated in a full scale Active Shooter / Hazmat exercise in conjunction with DAFB. EMS participated in a functional exercise with DIS.

2. Further training needs to be accomplished such that all Medics are competent in establishing a Medical Sector at an MCI (Triage, Treatment, Transport).
   
   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.

3. Dedicated towing vehicles should be established such that no on-duty Medic Unit is diverted from direct response to the scene in order to transport a support unit.
   
   This goal has been met with the fleet expansion to provide 2 spare units and the addition through EMA of TANGO-2, an F350 Utility vehicle.

4. Extended Operation and Re-call of personnel capability needs to be demonstrated through practical exercise.
   
   Medics are notified through Chief Messaging for Call-back and OT notification.

5. A Patient Tracking System needs to be established.

   KCDPS is interested in supporting OEMS efforts to establish such a system.
Mass Gatherings

Response: 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. Currently there are 3 more mass gatherings set for 2015- two additional Country Festival type concerts, and Punkin Chunkin.

There are occasionally other events (VIP appearances, DAFB Air Show, Chicken Festival, etc.) which also require Mass Gathering preparations. Operations center on pre-positioning assets and adding staff to cover the particular event. 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.

Equipment: 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 Medical Resource Unit (MRU) 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.
Training: 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.

Activity: The Gators, MRU-3, MCI trailer 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.

Needs & Initiatives:
1. Additional coverage is expected for 2 Country Music festivals in 2015.

Maritime Response

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 has been no maritime response activity.

Needs & Initiatives:
Little Creek FD has acquired a much more robust Rescue Boat. Familiarization with this unit should be included as part of the Medic’s con-ed.
Technical Rescue

Response: 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 are being acquired towards 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 was a call out to support the Medical Examiner with extricating a deceased person from a dwelling. 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.
**Needs & Initiatives:** 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.

**Ground Support Response:** 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.

![Image of firefighters](image.jpg)

**Equipment:** Primary Medic units have Cyanokits as part of the ToxBox inventory and now have a 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.

**Needs & Initiatives:**
1. The establishment of the “Power Unit” has served to help cover this issue during the daytime hours.
2. Once full staffing is accomplished, the additional KM10 unit will also help cover these missions.
WMD / Terrorism Preparedness

Response: General ideology suggests that response units will most likely not know ahead of time that an incident is an act of terrorism or involves WMD. Therefore, all responders must be capable of adapting operational modalities in response to information as it is acquired. Specialized equipment will be utilized as the situation warrants.

Equipment: Personal “Escape Ensemble Kits” are available on each unit which include chemical protective suits and air purifying respirators. Ballistic helmets, goggles, and NIJ Level II body armor are now part of the standard uniform. Tox-Boxes are in-service which provide NAAKs (nerve agent antidote kits) for medics and patients and additional pharmaceuticals for those medics who can function under the ToxMedic Protocols. Four of the five support trailers in the department carry additional WMD response equipment and supplies. The First-On-Scene response guidelines include a “Bomb Response” checklist and related reference materials. Each Medic Unit is equipped with a radiological response kit and a GammaRAE detector for early warning of a radiological event. Carbon Monoxide detectors have been added to the Medic standard equipment. Two RAD 57 carboxyhemoglobin detectors have been put in service and have proven to be valuable tools in triage of multiple carbon monoxide exposure patients.

Training: “Trailer Days” are included in the annual con-ed schedule in which all Medics practice with the response support units and complete hands-on practical evolutions with the equipment. A hands-on training for radiological response has been added. AHLS courses are made available to all Medics as they are scheduled.

Activity: There was no identified activity in response to WMD / Terrorism. There were several CO responses in which the arrival of the Medics (and the CO detectors) was the first indication of potential poisoning. Due concerns over Ebola all medics were trained with regard to PPE donning and doffing. Extensive refresher training continues.

Needs & Initiatives:
1. Refresher training in the use of PPE and “escape kits” needs to be conducted. Each Medic should demonstrate proper use of this equipment.
   Incorporated into “Trailer Day” con-ed sessions.
2. Awareness and Operational level concepts and procedures for WMD response should be revisited through in-service review and printed distributions.
   This is accomplished through periodical publications.
Conclusion

Situational Assessment: Incidents involving some form of Special Operations response continue to occur at a manageable frequency; however response procedures have been modified to ensure the response of TANGO-1, thus relieving primary medic units from extended commitment to long operations. Several annual event venues present significant challenges to the department’s operations. The department has continued response roles both locally and regionally. The possibility of a disaster, natural or man-made, is as present as ever.

Vulnerability: Training and exercise has increased awareness and response capability as compared to previous years, thus reducing the vulnerability of the individual responder. Geographically Kent County remains central to several major metropolitan areas of national significance. Complacency as a result of low utility presents the greatest controllable risk factor. A comprehensive Delaware/Kent County threat/vulnerability assessment is updated periodically through State initiatives.

Capability: The establishment of a “Special Operations” designation as part of an employee incentive program has swelled the number of medics intent on participating in some level of Special Operations. Providing training opportunities to support this interest is challenging. Resources continue to expand and develop to provide flexible response modalities and increased capability. A Statewide and Regional capability goal needs to be established.
ALS and BLS Patient Age Comparison - 2014
Kent County

ALS/BLS Incidents by Month - 2014
Kent County

Percentage When Kent County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2014
Kent County 911 Center
BLS Scratch Report 2014
Kent County

Basic Life Support (BLS)

Submitted by various BLS agencies in Kent County

Kent County is comprised of 18 volunteer fire companies and one volunteer ambulance company, the Smyrna American Legion. The Smyrna American Legion’s ambulance responds on BLS runs within the Citizen’s Hose fire district. Other fire districts, which do not operate BLS services in Kent County, are: Farmington, Little Creek, South Bowers, and Robbins Hose. Mutual Aid agreements exist with bordering fire companies to supply ambulance service to these districts or contracts with private ambulance companies.

Car vs Bean Planter

Early on July 18, 2014, the Hartly Volunteer Fire Company, Station 51, along with Kent County Medics and Delaware State Police Helicopter, Trooper 4, were alerted for a Motor Vehicle Collision with a subject reported trapped. Command arrived to find a sedan had run head-on into a bean planter being pulled by a John Deere tractor. One of the wheels from the planter had gone through the windshield and was resting on the person’s lap. The man was alert and oriented. Fire and EMS personnel worked 40 minutes to extricate the man while tending to his medical needs. Crews removed the roof of the vehicle and used air bags to lift the tractor and planter enough to remove the man. He was flown to Christiana Hospital by Trooper 4. The operator of the tractor was uninjured.

- Delaware Fire Service News story and photo by Josh Norris
"Are you or someone you know interested in joining the Delaware Fire Service?" That's the question the Delaware Volunteer Firefighter's Association's Recruitment and Retention Committee is hoping to ask every Delaware citizen over the next four years.

The recipient of a four-year SAFER grant through FEMA, the DVFA and its Committee are working hard to educate the Delaware public on the many first responder functions in the State, add more staff to the ranks, and maintain those who are already playing the important response role.

Through the www.Firefighter.Delaware.gov website, the Facebook page of the same name and a broad promotional campaign including radio, TV, billboard, and Internet advertising, a critical message is being sent - Delaware's first responders Make a Difference!

Finding those future BLS providers is an important piece of the puzzle that is high on the Committee's agenda. Approximately one out of every three inquiries received since the campaign began specifically asks for information about EMS. Questions like, "What are the requirements to volunteer within EMS?" "How do I get certified as an EMT?" and "How can I start riding/driving the ambulance?" are common questions from interested candidates.

With your help, the DVFA is hoping to generate the interest from new and young future members to join and stay with the Delaware Fire and EMS Services - those that are needed to sustain the systems for many years into the future.
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 2014 was 88,687. Another 56,497 non-emergency calls were also processed by our dispatchers. The Center dispatched or processed 24,949 medical incidents and 5,910 fire incidents in year 2014.

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-one 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 2014 through our Quality Assurance Section we achieved 98.62% on Case Entry; 98.92% for Chief Complaint; 98.61% for Key Questions Processing; 88% for Pre-Arrival Instructions; 99.31% for Post-Dispatch Instructions; 98.24% for Final Coding and an overall average score of 98.61%.
In 2014 our agency, in a partnership with State 911 Board, upgraded our Computer Aided Dispatch and Mobile Dispatch platform to a State-wide system providing interoperability across many of the Communications Centers in the State. The 911 Board also approved the migration from Verizon to Intrado to bring the latest in technology to the 911 system used across the State. This technology will allow Dispatchers the ability to accept text messages and audio/video recordings from 911 callers in the near future. Broadband for Public Safety Agencies is also on the horizon. Delaware, in coordination with FirstNet, is expected to provide an interoperable, state-wide, public safety LTE network linking public safety agencies across the state connecting to a National Public Safety Broadband Network (NPSBN). The NPSBN is Internet for first
responders. Agencies benefiting from the NPSBN will include law enforcement, emergency management, fire service, public works, public health, emergency medical services, and others.

Three of the biggest challenges Kent County encounters four 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 Fair. This upcoming year three additional events will take place in Kent County. The Delaware Junction Festival will be a 3-day Country Music Festival in Harrington hosting many performers such as Toby Keith, Florida Georgia Line and Jason Aldean. In Dover, The Big Barrel Country Music Festival will also be a 3-day event in June hosting performers such as Blake Shelton, Miranda Lambert and Carrie Underwood. In November, Pumpkin Chunkin will take place at the Dover International Speedway.

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, cellular modem dial up, cellular telephones, 800 MHz radio communications, recording capabilities and a radio inter-operability system.
Sussex County

Advanced Life Support
Report submitted by Director Robert Stuart 149

Basic Life Support 163

Communication Centers 164
OVERVIEW

In 2014, Sussex County EMS (SCEMS) celebrated twenty three 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 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
2014 ACCOMPLISHMENTS

FIELD OPERATIONS

Call Volume: Sussex County EMS experienced a 6% increase in responses in 2014. Over the past ten years, SCEMS has experienced a 50% increase in the number of responses to calls for service. Our department has eight paramedics units in service 24 hours a day strategically positioned throughout the county in an attempt to minimize response time to calls for service.

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. Again this year, the roaming power unit, Medic 109, was put in service to help cover higher demand on summer weekends.

Western Sussex Deployment Pilot: Beginning in August, SCEMS started a pilot project to assess an alternate deployment model in western Sussex County. SCEMS split Medic 102 and 107 into four ALS First Responder units covering the same geographical area from Delmar to Greenwood. All ALS calls had two paramedics dispatched unless resources are not available. The project received the support of the Office of EMS (OEMS), the State Medical Director as well as the unanimous support of the ALS Standards Committee and the Board of Medical Licensure and Discipline (BMLD).

### 2014 Incident Responses

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<tr>
<th>Unit</th>
<th>Responses</th>
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<tbody>
<tr>
<td>EMS 100 (Eastern Supervisor)</td>
<td>716</td>
</tr>
<tr>
<td>EMS 200 (Western Supervisor)</td>
<td>628</td>
</tr>
<tr>
<td>Medic 101 (Lincoln)</td>
<td>2,220</td>
</tr>
<tr>
<td>Medic 102 (Laurel)</td>
<td>2,597</td>
</tr>
<tr>
<td>Medic 103 (Dagsboro)</td>
<td>2,257</td>
</tr>
<tr>
<td>Medic 104 (Lewes)</td>
<td>2,984</td>
</tr>
<tr>
<td>Medic 105 (Millville)</td>
<td>1,887</td>
</tr>
<tr>
<td>Medic 106 (Long Neck)</td>
<td>2,168</td>
</tr>
<tr>
<td>Medic 107 (Bridgeville)</td>
<td>2,816</td>
</tr>
<tr>
<td>Medic 108 (Georgetown)</td>
<td>1,790</td>
</tr>
<tr>
<td>Medic 109 (Summer “Power Unit”)</td>
<td>195</td>
</tr>
<tr>
<td>Medic 110 (Seaford “Power Unit”)</td>
<td>28</td>
</tr>
<tr>
<td>Special Operations</td>
<td>97</td>
</tr>
<tr>
<td>Other (Administration)</td>
<td>101</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20,484</strong></td>
</tr>
</tbody>
</table>

Incident Responses by Unit (source: Sussex County CAD)

### Responses by Month (Source: Sussex County CAD)

![Graph showing 2014 responses over the months with an increase in summer and a dip in fall]
Sussex County EMS

2014 Incidents

Note: Incidents that were not geoverified or were outside of Delaware are not included in this map (384)

Source: Sussex County CAD
Dates: (1/1/2014-12/31/2014)

Incidents by fire district with station locations (source: Sussex County CAD)
**Staffing:** For the first time in recent history, Sussex County EMS was fully staffed at the beginning of 2014. During 2014, SCEMS had 5 employees separate from the department and hired four paramedics. Three of these new employees came from the Delaware Technical and Community College Paramedic Program and one prior employee returned from out-of-state.
Competition Team: Once again, the SCEMS competition team competed in the “JEMS Games” held in March during the EMS Today Conference in Washington, D.C. The team included Paramedics Kevin Erb, Dave Hammerer, Jason Hansen and Drew Vickers. During the competition, the EMS teams were judged on their performance and speed during mock patient care situations and scenarios. This year’s team placed fourth out of 19 team from across the country and from around the world as there were teams from Great Britain and from Australia in this year’s competition. They join other SCEMS teams that have won Gold, Silver and Bronze Medals in previous competitions. Since 2005, SCEMS teams have earned 2 gold, 3 silver medals and 1 bronze medal in the JEMS Games and have finished no lower than fifth place every year. The 2008 SCEMS Competition team placed third in an international EMS competition in Israel sponsored by Magen David Adom Israel.
National EMS Memorial Bike Ride: SCEMS paramedics and EMTs from the BLS community participated this year in the 2014 National EMS Memorial Bike Ride. The seven day ride took place in May with the riders traveling from Boston, MA to Arlington, VA, a distance of approximately 600 miles. The Sussex County Team consisted of seven members including SCEMS paramedics and family members.

The ride is to honor and remember those EMTs, paramedics, flight nurses and pilots that have died in the line of duty while providing care to ill or injured people. This year’s ride honored people killed in the line of duty during 2013 and others who have died in the past from the EMS community. The Sussex County participants, also known as the “Delaware Winged Riders”, were riding in memory of Sussex County Paramedic Stephanie Callaway, who was killed in the line of duty in 2008 while providing care to a patient in the back of an ambulance and Michelle Smith, an EMT from Delaware City, who was killed in New Castle County in 2009. While these co-workers and friends are gone, they will never be forgotten.

Phoenix Ceremony: The first annual Sussex County Phoenix Club Awards ceremony was held Tuesday, May 27, at the Seaford Volunteer Fire Department, The ceremony recognized 23 survivors and 92 EMS and fire service providers along with dispatch, family, bystanders and police personnel who were involved in the resuscitation efforts of the 23 survivors. The ceremony was well attended and was a huge inaugural success.
SPECIAL OPERATIONS

**Storm Deployment:** Along with much of the State of Delaware, when a storm or potential disastrous event occurs Sussex County EMS initiates emergency preparedness plans. The Sussex County Emergency Operations Center is staffed by members of the emergency preparedness community, including SCEMS employees, to coordinate any needed response. In addition, SCEMS Operations/Logistics staffs are deployed to the Paramedic Headquarters where they serve as a liaison between the EOC and the field units. SCEMS and Sussex County Public Information Officers make extensive use of social media sites such as Facebook and Twitter in an attempt to keep the public informed.

Although, Sussex County did not receive significant damaging storms in 2014, several events gave us an excellent opportunity to test several of the lessons learned from previous storms. After these storms, we developed our Storm Deployment Operational Guideline that is used by our personnel to guide us from pre-event planning through the post-event recovery.

**Special Events Coverage:** SCEMS provided EMS coverage for numerous special events including Take 10 - Hands Only CPR Training, Athletic Events, Triathlons, Polar Bear Plunges, Apple Scrapple Festival, Fire Company Functions and the July 4th celebrations utilizing traditional crews, all-terrain vehicles and paramedic bike teams. Since the July 4th weekend is the busiest weekend of the year, SCEMS deployed several additional units to cover the increased volume of calls and numerous holiday celebrations in Rehoboth Beach, Bethany Beach and Laurel.

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Events</td>
<td>159</td>
</tr>
<tr>
<td>Bike Medic Events</td>
<td>11</td>
</tr>
<tr>
<td>Public Education Events</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>196</strong></td>
</tr>
</tbody>
</table>

*Number of Special Events covered by both on-duty SCEMS units and Special Events Teams (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 2014, the SCEMS HazMat Team conducted five 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 three members completed the Fire School’s week-long course. Members of the team also provided content to the department’s continuing education in regards to toxicology and HazMat awareness. The Sussex County EMS HazMat Team participated in the annual disaster drills for Nanticoke Memorial Hospital, Beebe Healthcare, and four fire companies. Team members provided an overview of the team’s capabilities and gave a short tour of equipment. During the disaster drill, team members observed and provided constructive feedback on decontamination procedures with discussion in regards to interoperability.

In 2014, Sussex County EMS HazMat responded to several incidents involving clandestine methamphetamine labs where our personnel provided medical and decontamination support. We also assisted Department of National Resources and
Environmental Control (DNREC) personnel with direct hazard mitigation.  

**Drills:** SCEMS participated in drills and exercises with Delaware State Police, DEMA, Delaware National Guard, DelDOT, Delaware River and Bay Authority, Beach Patrols, and local ambulance and fire companies. SCEMS provided resources including evaluators, equipment and provided guidance and direction during the exercises.  

**Honor Guard:** The Sussex County Emergency Medical Services Honor Guard was formed in 2001. Since its formation, the Honor Guard has grown from 2 to 8 members. The Honor Guard participates in community events and parades, including presentation of the colors at the Delmarva Shorebirds baseball games during EMS week. In addition, the Honor Guard has assisted fire and EMS departments in the area with funerals for fallen brothers and sisters. The SCEMS Honor Guard has participated in the National EMS Memorial Service since 2002. The Honor Guard is dedicated to providing high quality ceremonial support to Sussex County EMS, other emergency services that request our support, and the Sussex County Government and community.
Continuing Education: All SCEMS paramedics attend continuing educations sessions held by our Education Department covering both medical and operational topics eight months out of the year.

Daily Training: In addition to these didactic sessions, paramedics complete required daily training delivered via the county intranet. Topics are created by field paramedics and are submitted for approval to be distributed to all clinical staff.

Simulator Program: In this program, all field paramedics are evaluated using scenarios in the simulator lab to assess their ability to make critical patient care decisions. The goal is to have all paramedics evaluated in the Simulation Lab every year.

CARES Registry: Sussex County EMS began participation the CARES Registry in November of 2011 and continued that participation through 2014. CARES, the Cardiac Arrest Registry to Enhance Survival, was initiated in October 2004 as a cooperative agreement between the Center for Disease Control and Prevention (CDC) and the Department of Emergency Medicine at Emory University School of Medicine to identify incidents of prehospital cardiac arrest. The CARES Program is designed to consolidate all essential data elements of a prehospital cardiac arrest event in an efficient manner. With this standardized collection system, participants can track ongoing system performance in several tailored reports. We are currently analyzing data from CARES in an attempt to improve our response to out-of-hospital cardiac arrest. Current data show survival rates well above the national average.
**Paramedic Station 105:** Late in the year, SCEMS began construction on a new station for Medic 105 in the Bethany Beach / Millville area. The new station will be located on property owned by the County adjacent to the South Coastal Wastewater Facility (SCRWF). Construction should be completed in May 2015 allowing us to vacate a rented property that has housed Medic 105 since the early 1990’s.

**Airway Management Equipment:** After spending the past two years evaluating several different models of video laryngoscopes that utilizes a camera to assist in the placement of an endotracheal tube, SCEMS purchased and implemented the King Vision system. Video Laryngoscopy is now the method for initial intubation attempts for patients needing to be intubated. It is our hope that video laryngoscopy will increase our initial success rate and will be less traumatic to the patient. Traditional intubation equipment for direct laryngoscopy, as well as skills proficiency, will be maintained as a backup if the need arises. As part of our airway management review, we also changed our backup advanced airway device to the King LT replacing the Combitube which we feel will be a better, less traumatic device.
2015 INITIATIVES

PERSONNEL

Recruiting and Retention: SCEMS entered 2015 with one paramedic vacancy. Over the past five years, SCEMS has had a mean attrition rate of 7 paramedics per year. Over the next four years, 20 of our paramedics will be eligible for retirement. It is important that we continue recruiting certified paramedics to keep pace with these departures. These retirements will taper off to only a few a year after November of 2017.

Implementation of a Talent Management System: Sussex County is implementing Cornerstone-On-Demand, both a Learning Management System and a Performance Management System. Cornerstone will allow SCEMS employees to access materials and educational offerings available remotely at any time and from any device that can access the internet. We are purchasing catalogs of educational offerings to augment the content created by our educational staff. Our employees’ performance will also be managed through this system which allows supervisors and employees to track progress toward goals and complete performance evaluations electronically.

EQUIPMENT AND LOGISTICS

Station 105 Replacement: The construction of a new station for Medic 105 on county owned property adjacent to the South Coastal Regional Wastewater Facility in Ocean View has been ongoing since late in 2014. We anticipate that construction will be completed in May 2015.

Station 104/100 Replacement: The County is in the process of purchasing suitable property and is planning to begin construction of a new paramedic station in the Lewes/Rehoboth Beach area. This station currently houses both Medic 104 and our eastern district supervisor, EMS 100. For many years the current station has been located in leased space within the Storage Solutions building in the Midway area, a less than optimal location due to the difficulty accessing Route 1.

Station 103 Replacement: We have begun the search for a suitable property to erect a new paramedic station in the Millsboro/Dagsboro area to allow us to vacate rented space. Currently, the Station 103 serves as a home for Medic 103 and all of our special operations equipment including HazMat response and Mass Casualty and Special Event coverage.

Simulation Lab Enhancement: We have funds budgeted to improve our simulation lab. We will be modifying our existing lab space to allow for more realistic simulations to enhance the education experience for our staff. In addition to adding an ambulance simulator to our main lab, we will be improving the computer and audiovisual capabilities in all of our lab areas.
Sussex County

Basic Life Support (BLS)

Submitted by various BLS agencies within Sussex County

Sussex County is comprised of 21 volunteer fire companies and two volunteer ambulance companies. The Georgetown American Legion responds on BLS calls within the Georgetown Fire District and the Mid-Sussex Rescue Squad responds on BLS runs within the Indian River Fire District.

Rehoboth Beach Fire Company

For the last several years the Rehoboth Beach Volunteer Fire Company has been concerned about all the new trails being built in their district and gaining access to them for EMS. Using past history as an example, four years ago two bicycles collided on the one of the early trails causing injuries to both cyclist. They were lucky they could gain access using one of their 4WD pickup trucks. As more and longer trails came along, the leadership of the Rehoboth Beach Volunteer Fire Company decided to pursue some type of vehicle that could not only fit on the trials but was light enough to transverse the trail bridges as well.

Another concern the fire company leadership had was the increasing number of special events held in the city of Rehoboth Beach and how that affected EMS response times. On the 4th of July, for example, the city is in gridlock, making it sometimes impossible for ambulances or paramedic units to get to the emergency. Normally the fire company has two BLS units staffed during then entire tourist season. On events like the 4th of July they will put up at least three staffed BLS units during the peak times. The problem is not the amount of BLS units but getting the units though the crowds and traffic.

With these two issues in mind the leadership starting looking for a vehicle they could use on the trails and one that was narrow enough to get through and around stopped traffic. They also needed a vehicle that they could use on the boardwalk or also on the beach. One that could establish a better than average speed with all-wheel drive. And most importantly, one that could handle EMS equipment and the EMS crew. They settled on a Polaris Ranger 6 wheel drive UTV.

The next issue was how to afford the $20,000.00 cost. The fire company leadership approached the City of Rehoboth with their issue and the City agreed to pay for the unit. The unit was delivered just in time for the Sea Witch Festival. During the Sea Witch Parade the unit responded to two emergencies and proved invaluable in getting thought crowds and traffic to quickly establish patient care. The vehicle is designated as “Ranger 86.” Ranger 86 is housed at the main Rehoboth Beach Station on Rehoboth Ave. The fire company is now in the process of obtaining a trailer to transport the unit out to the surrounding trails before the bicycle and walking season really kicks in.
Sussex County Emergency Operations Center

Our Mission
Our mission is to respond to natural disasters such as snow storms, floods, hurricanes, nor'easters, or other weather related hazards. Respond to technical disasters such as chemical spills, hazardous materials incidents, or other major hazards. Provide 911 service for the residents and visitors of Sussex County.

Emergency Communications (9-1-1) Division

The Sussex County Emergency Operations Center provides emergency communications to 21 Fire Departments, 2 Ambulance Squads, Sussex County Paramedics, and to the Delaware State Police Aviation and Life-Net Aeromedical services operating within the County.

Staffing for the Sussex County Emergency Operations / 9-1-1 Center
Our Administrative Staff includes:
Director / Chief Dispatcher – Joseph Thomas
Assistant Chief Dispatcher – Richard Short
Quality Assurance Supervisor – Debbie Jones
L.E.P.C. – Charles “Chip” Stevenson
9-1-1 Technical Advisor – Jim Bowden
CAD / PC Technician – Jessica Bradley
Clerk – Kelly Kruger

Our Dispatch Staff includes twenty (20) full time dispatchers and two (2) part-time positions. There are four (4) shifts each with five (5) dispatchers. Minimum staffing is four (4) dispatchers except for high volume periods and summer months when minimum is five (5). Of the five persons, each shift has one (1) supervisor and one (1) Emergency Telecommunications Specialist 3 who acts as an assistant supervisor.

The Sussex County 911 Center receives and processes calls for emergency fire and medical assistance. The Center received a total of 114,208 calls for the year 2014. Of those calls 90,773 or 79% were wireless. The Center dispatched 4,558 Fire Incidents, 15,416 ALS Incidents and 10,795 BLS Incidents for a total of 30,769 Dispatched Incidents.
The Center has worked to continue to meet the goals set by legislation to dispatch priority calls within 45 seconds. The enclosed chart shows the Center was within that standard 90.2% for Dispatch Performance of all calls.
Trigger Alert! Summary


Sussex County Emergency Operations Center is an Accredited Center of Excellence in Emergency Medical Dispatch since October 2001 by the International Academies of Emergency Dispatch.
Special Events
The Sussex County Emergency Operations Center assists with many special events held throughout the County. The following is some of the events we attended and provided communications for:
- Polar Bear Plunge
- Fourth of July celebrations in Rehoboth Beach & Bethany Beach
- Rehoboth Beach Marathon
- The Dewey Beach Triathlon
- First Responders Triathlon in Bethany Beach
- Georgetown Spring Festival
- Greenwood National Night Out
- Milford National Night Out
- Bridgeville National Night Out
- Open House at the Indian River Vol. Fire Dept.
- Sussex County Return Day
- Apple Scrapple Festival
- Neighborhood CERTA event, Millville, DE
- Crossroads Communications Rally / Exercise
- Sussex County 911 Awareness Day

Mobile Command Unit
In addition to Special Events, the Mobile Command Unit responds to Emergency situations such as:
- Multi-Alarm Fires
- Major Transportation Incidents
- Hazardous Materials Incidents
- Mass Evacuations
- Multi-Agency responses to any incident in which the Incident Commander would require Communication Coordination
- Searches
- Disasters – Man Made / Weather Related
- In Line of Duty Death Involving Multiple Agencies
February 7, 2014 – Command Post response on a Trench Rescue
Multiple rescue agencies from across Sussex County successfully freed a 38-year-old construction worker from a collapsed trench Friday morning after delicately working nearly two hours in muddy, cold soil to stabilize the scene and pull the man to safety.
More than 50 first responders from across Sussex County responded to the incident. Units from the Sussex County Technical Rescue Team, Blades, Bridgeville and Seaford volunteer fire companies, Seaford Police, Delaware State Police, Sussex County Emergency Medical Services, Sussex County Emergency Operations and Sussex County Environmental Services division responded.

Accomplishments For 2014

SMART 9-1-1 Project: The Sussex County Emergency Operations Center implemented SMART 9-1-1. The County worked with the Delaware State Police, Rehoboth Beach Police Department and the Seaford Police Department to have the entire County go live with SMART 9-1-1 on September 11, 2014. The Center has been doing outreach programs throughout the County to promote the program. We have met with organizations and helped residents with the sign up process. From September 11, 2014 to the end of December 2014 Sussex County Emergency Operations Center had a total of 1,175 Smart 9-1-1 profiles entered into the system.

FirstWatch: While we have used FirstWatch over the years, it has become helpful in gathering data needed to monitor our progress. It gives us an objective, third party neutral platform for our data that we can gather in real time. We use First Watch to monitor situational awareness, set benchmarks and monitor our performance. We monitor the dispatchers call processing times as well as dispatch times. During the EBOLA outbreak, we added triggers to monitor and alert administration of any calls coming in meeting the EBOLA criteria. It allows us to monitor calls and check with the Medical Directors to see if they are seeing the same type of trends in the emergency departments.

Computer Aided Dispatch System: In September 2014, Sussex County Emergency Operations Center upgraded the CAD system to the latest software technology to meet the growing needs of Sussex County. We have upgraded to the latest version (6.0) of Emergency Fire Dispatch Protocols. We are currently Beta-Testing the latest version (13.0) of Emergency Medical Protocols. The Center continues to work with the Mapping and Addressing Department to keep the maps current by doing bi-monthly map updates to the system.

CAD to CAD Interface: Sussex County continues to maintain and use the CAD to CAD interface which links the Sussex County Emergency Operations Center CAD to the Delaware State Police (SUSCOM) CAD. The interface allows the two agencies to share incident information.
Fire / Ems Service Mobile Project: Our department continues to support the fire service and BLS community with their mobile data terminals in apparatus that interface with the CAD system to provide the latest technology as well as providing the field units with more information which includes driving directions, automatic vehicle location, and touch screen status update. Currently we have over 100 mobile units on the system.

Beta Test Site: Sussex County Emergency Operations Center continues to be a Beta Test Site for TriTech Software Systems. Sussex is also a Beta Test Site for the International Academies of Emergency Dispatch. The site tests protocol changes and updates along with the testing of new protocols.

Re-Accreditation: The Center is accredited until April 2015. We continue to work towards meeting the standards set by the International Academy of Emergency Dispatch.

Regional Training Facility: The Sussex County Emergency Operations Center continues to maintain our status as a Regional Training Facility for the International Academies of Emergency Dispatch, offering the Emergency Tele-communicator Course (ETC), Emergency Medical Dispatch Course (EMD), and other training for the entire region.

Continuing Education: The Sussex County Emergency Operations Center 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 other outside organizations. To assist the dispatchers with continuing education and other pertinent information, we continue to maintain the internal web-site which lists current assignments, protocol information, health and fitness information, as well as many other subjects relative to the dispatcher or their position. In 2014, the County also held classes for employees in the newly renovated Training Center at the West Complex. Among those classes, the Dispatch Supervisors took a Leadership Development Program. This one year program included 12 workshops designed to facilitate development and enhance supervisory, management and leadership skills.

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.

Scratch Reports: The Center compiles a scratch report for the 21 fire departments in the County. It provides an overall report of those companies to the Delaware State Fire Commission and to DEMSOC.

Communications Support Division

The Communication Support Division is responsible for all of the radio and tower installation, programming and maintenance. This includes all of the Fire Department and EMS portable radios, mobile radios, those radios in the Sussex County Emergency Operations Center and the Mobile Command Unit.
They are also responsible for maintaining the two-tone paging system, remote tower sites, fire siren programming and installation, dispatch consoles, database management for the 800 system, and communications at the South Coastal Regional Wastewater Facility. The Communications Support Division interacts and assists outside organizations that assist with County events such as Citizens Corps and R.A.C.E.S. They are responsible for keeping the Mobile Command Unit at the ready to respond to emergencies at any time.

The Division serves the County with a staff of three:
Communications Support Supervisor – Harry “Chip” Larsen
Communications Support Specialist – Paul Smack
Communications Support Specialist – Danny McBroom

BUDGET:
Total Cost for Fiscal 2015 for the Communications Support Division is $452,587.

Fiscal 2015 Personnel Costs for the 3 employees is $309,862.
Total Equipment Costs for Fiscal 2015 is $122,498.
Training Costs for Fiscal 2015 is $5,000.

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 2014 was 5,448. Another 35,510 nonemergency call were also processed by our Telecommunicators. The Center dispatched and/or processed a total of 2,581 EMS Incidents, 627 Fire Incidents, 3,160 Police Incidents, and 3,399 traffic stops in year 2014.

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 2013 through 2016. In 2013 the Center’s overall EMD compliance rate was 97.77%.

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 operates within the Rehoboth Beach Police Station. The Center utilizes a Positron Viper 9-1-1 Phone System, Nortel Administrative Phone System, Motorola Centracom Elite Radio System, Verint Recording System, and New World AEGIS CAD System to process calls for service.

Major projects for 2014 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 improve GIS Data for the area. We continued to focus on
training in 2014, we sent the Supervisor to EMD-Q Update Training, four dispatchers to the APCO Conference in Kent Island, MD. We will continue to focus on the above for the year 2015.

Seaford 911 Communication Center

Submitted by Anita Bell

The Seaford 9-1-1 Center receives approximately 12,000 emergency calls through various administration and 9-1-1 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 2014 the center dispatched or processed a total of 3948 fire/ambulance incidents and 9,590 police incidents. Seaford had a total of 131 scratched calls with a scratch rate of 4%.

The Seaford 9-1-1 Center was initially recognized as an Accredited Center of Excellence in Emergency Medical Dispatch on August 7, 2003 by the National Academy of Emergency Medical Dispatch and listed as the 83rd in the world to become accredited. We were re-accredited in 2006, 2008, 2011, and just submitted for re-accreditation in December, 2014.

Seaford 9-1-1 Center operates 24 hours a day, 7 days a week. We provide Police, Fire, and EMS communications to the City of Seaford Police Department and Seaford Volunteer Fire Department and Seaford EMS. Our Communications Center also handles police administrative calls and after hour calls for City Hall. The Communications center is staffed with 8 full-time dispatchers, 1 part-time dispatcher and 1 Administrator/EMD-Q.

The Seaford 9-1-1 Center operates within the Seaford Police Department and recently updated the Communications Center to include 4 dispatch consoles, 1 of which is a fold down station for the SUSCOM and EOC.
Aviation

Delaware Air Medical Services  175
Delaware State Police         178
LifeNet                      182
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. Recertification is required every three years. 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 a 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*

**2014 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 and aircraft in Sussex County
2015 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, 2014 marks the 44th year of the Aviation Section and the 29th year of our Trooper-Medic Program.

The Section consists of 28 pilots and medics providing 24-hour coverage from two locations (Georgetown and Middletown). During 2014 the Section flew 2,226 missions, transported 247 trauma patients and flew 1,618 hours. The aircraft currently utilized include 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.

The Delaware State Police took delivery in November of two new Bell 429 Helicopters to replace the Bell 412 and one of their oldest Bell 407 Helicopters which was purchased in 1999. The Bell 429 offers many upgrades and advantages that will enhance the efforts of the Delaware State Police. Since the Bell 429 is a tri-mission helicopter, it is equipped to handle law enforcement, search and rescue, and emergency medical missions. The Bell 429 offers state of the art equipment such as enhanced mapping, downlink, and FLIR capabilities. The Churchill mapping system enables the flight crew to overlay the street by street map over an infrared picture, increasing the efficiency of locating criminals and missing persons. The new helicopters are equipped with hoists to assist with rescue and recovery missions. Having two aircraft with this capability greatly reduces response times for greater effectiveness in rescue efforts.
Sometimes in the effort to fulfill the Aviation section mission of providing rapid transport of critically injured patients to hospitals or providing air support to law enforcement, aircrews are often met with challenging environmental situations. These challenges include poor visibility due to fog, flight over frozen waters, or flight into obstacles or terrain. The 429 offers enhanced safety with its twin engines, better avionics to safely fly when weather conditions change for the worse and helicopter terrain awareness system, which assists with obstacle clearance and terrain awareness. The Bell 429 offers exceptional flight performance with a fully integrated glass cockpit, advanced drive system, best-in-class WAAS navigation for use in precision approaches to airports and a 4 axis auto-pilot to increase IFR capabilities. This system is invaluable if an aircrew gets caught in rapidly deteriorating weather and assists the aircrew orientation to land safely at an airport.

The Bell 429 is the only light twin-engine helicopter on the market with true two-litter (stretchers) capability, giving us the ability to transport two patients and also featuring enough cabin space for two medical attendants and two crew-members. It offers the option of rear patient loading and a flat floor that accommodates a wheeled stretcher for easier loading and unloading of patients. The Bell 429 can also fly at 174 miles per hour which is 20% faster than the aircraft we presently operate. With the added speed and patient capacity, the Delaware State Police can transport patients quickly and efficiently to trauma centers throughout the region. Additional safety features include a collective mounted throttle, damage tolerant hub and rotor system, and energy attenuating seats. It is the first helicopter certified through the MSG-3 process, resulting in reduced maintenance costs for operators. For DSP, less time in for maintenance translates to more time servicing the citizen of Delaware in these aircraft. The Bell 429 also features a spacious cabin to provide more room to work on critically injured patients and extra-large 60 inch side doors for efficient patient and personnel loading.

**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 the new 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 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 2014, the Trooper Medics attended training to satisfy their continuing education credits needed to maintain their paramedic certifications. In addition to the current medics, three troopers graduated from paramedic training and two troopers began paramedic training at Delaware Technical and Community College. The new Trooper Medics will replace ones lost due to transfer and retirements.

**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 past years the training focus has been on training and operations in the Bell 412. 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. The DART team was activated several times however no actual rescues where performed with them in 2014. With the delivery of the new Bell 429 aircraft, the team looks forward to learning the new aircraft and the enhanced capabilities it offers.

**DSP Tactical EMS Missions 2014**
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 2014, the DSP Tactical Medics had a total of 138 activations.
**2014 AED Deployments**
Delaware State Police Aviation Section oversees the division’s AED program. In 2014 Troopers deployed their Automated External Defibrillator (AED) on 14 occasions, which met the criteria for download (pads-on-patient). Of the 14 deployments, 11 utilizations where the AED analyzed followed by a “No Shock Advised” prompt, 3 utilizations where the trooper administered multiple shocks followed by the patient having a Return of Spontaneous Circulation (ROSC) with 2 of these patients arrived at the hospital alive.

**Infectious Disease Exposures**
For the 2014 calendar year the Delaware State Police had a total of 19 confirmed infectious disease exposures. In addition, there were a total of five cases that did not meet the exposure criteria; however, these incidences were documented and placed on file.

**2014 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.
Carol A. Faedtke, RN, BSN, MJ
Christiana Care/LifeNet recently completed 14 years of aeromedical transport service in Delaware. We continue to fly a highly skilled EMS Pilot/nurse/paramedic crew that can provide quality intensive care to any critically ill or injured patient.

2014 Accomplishments
Our two aircraft located in New Castle and Sussex Counties, completed 543 interfacility transport and EMS missions requested by 41 different hospitals, local and state waste wide EMS agencies, located in 5 surrounding states: Delaware, Maryland, Pennsylvania, New Jersey, and Virginia.

Along with the Delaware State Police Aviation Unit, LifeNet participated in local and statewide disaster drills, multi-casualty incident management, and large scale evacuation drills. Understanding that the people who live in the communities we serve trust us with their families and loved ones, LifeNet gave back to those communities and sponsored blood drives, collected food and clothing, and participated in community educational events throughout the tristate area.
*other represents hospitals that have referred to us less than 5 times

*Other represents the percentage of hospitals that have received patients less than 10 times
2015 will see LifeNet updating its current aircraft fleet. LifeNet 6-1 at the Christiana Hospital in Newark will be acquiring an EC 135 in the near future, and LifeNet 6-4 based out of the Georgetown Airport in Sussex County will move into an EC 145 by early fall. Both twin engine aircraft will be equipped with the latest technological advancements in aeromedical safety.

Christiana Care/LifeNet completed its 4th CAMTS (Commission on Accreditation of Medical Transport Systems) certification survey in February. We anticipate full reaccreditation in April following the CAMTS Board meeting.
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**Who We Are**

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.

**2014 Accomplishments**

Safe Kids Delaware continues to work with a variety of organizations across the state to promote changes in attitude and behavior, and legislation aimed at reducing unintentional childhood injuries. Through ongoing partnerships, Safe Kids Delaware attended 46 health fairs statewide reaching over 22,000 people. Three Safe Kids Days were held, with one being in New Castle County and two in Sussex County, with a total outreach to approximately 1,200 people. A total of 32 bike safety programs were offered and over 500 free bike helmets were distributed. Statewide, over 350 child safety seats were checked for proper installation and education was provided for 600 caregivers on how to properly install a child safety seat and secure their child in the seat. Safe Kids Delaware held a training class and certified 24 child passenger safety technicians in September 2014. Halloween safety displays were provided to 17 libraries in Kent and Sussex Counties with tip sheets and reflective badges for 1,100 children. In addition, five interactive Halloween safety programs were presented to a combined audience of approximately 3,000. Over 8,500 children were educated in fire prevention through a combination of community outreach events and school-based presentations. Finally, the annual Safe Kids Delaware/Emergency Medical Services for Children Conference had over 125 registrants in attendance to learn about trending injury prevention topics.

**2015 Challenges**

In late 2014, the Kent County Committee of Safe Kids Delaware was reorganized after being inactive for some time. With active committees now serving all three counties, 2015 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**

With added attention being brought to injury prevention through national media publications, the demands placed upon safety-based organizations will continue to grow. Unintentional injuries are consistently a leading cause of death and hospitalization for children, and it will take everyone’s effort to reduce these numbers.

“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, Safe Kids Worldwide CEO*
Special Needs Alert Program (SNAP-911)

Who We Are
The Special Needs Alert Program (SNAP-911) assists responders in providing emergency care for children with special health care needs. SNAP-911 alerts providers through secure methods to look for medical information even when a parent is not present during an emergency. Completed SNAP-911 enrollment, emergency medical information and consent forms are entered into a secure SNAP-911 electronic database. The child’s medical information is given to the 911 dispatch center, the county-based paramedic service and the local fire company can be made accessible to responding units.

What We Do
As of 2014 there are 226 children enrolled. Families continue to enroll through the electronic Delaware Emergency Preparedness Voluntary Registry and through their physician’s office. SNAP-911 enrollment is a component in the Delaware Comprehensive School Safety Plan. Additionally, parents may be aware of SNAP-911 when accessing the Delaware Student Health Forms. DE Student Health Form – Children FINAL2012 DE Student Health Form – Adolescent FINAL2012

How We Do It
Increasing outreach and enrollment opportunities is a challenge and key component to continued program growth. Working with existing partners and building new avenues of outreach facilitates increased enrollment.

Summary
SNAP-911 continues to work with emergency response agencies and families with children with access, functional and medical needs to provide an increase of medical information available at the time of a 911 emergency call.
Delaware Coalition for Injury Prevention

Introduction
Injury prevention includes both prevention awareness and public education. 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 Delaware in 2013, **148 persons died instantly from their injuries**. 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 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 unintentional injuries such as motor vehicle crashes and falls 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/ViolencePrevention/Index.html](http://www.cdc.gov/ViolencePrevention/Index.html). Throughout the lifespan and wherever they live, Americans are at risk for disability or death due to injury. No age or location is truly “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.

2014 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.

Some of the successful Coalition for Injury Prevention outreach events for 2014 are listed on the individual Coalition team pages. The Coalition’s goal is that through efforts such as these, 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.
2015 CHALLENGES
The first challenge to injury prevention efforts is to be successful by getting the message to the public in such a way that injuries and injury-related deaths decrease. In order to accomplish this, support and funding are needed. Lack of funding continues to be an issue for the Coalition. Violence and injuries are so common that people often accept them as part of life. But they can be prevented, and prevention has been proven to save not only lives but healthcare dollars. Injury prevention is low in the political hierarchy and there is little monetary support available, despite research showing that seat belts saved an estimated 305,000 lives nationally between 1975 and 2012 (National Highway Traffic Safety Administration, Traffic Safety Facts: Occupant Protection, 2012 Data, Pub. No. DOT HS 8111 892). A $46. child booster seat on average saves society $1,900. in healthcare and related costs. A midnight driving curfew combined with provisional licensing for teens yields an estimated cost savings of $680. per driver at a cost of only $88. (Children’s Safety Network/Economics and Data Analysis Resource Center at Pacific Institute for Research and Evaluation). So much more could be done with adequate funding. So many more people could be reached, so many more lives saved.

Summary
Injury prevention is vital work. The Coalition for Injury Prevention operates on the good will of member agencies and their representatives. The Coalition aims to facilitate networking among agencies interested in working on the same projects or with the same populations. Networking decreases costly duplication of effort and stretches scarce resources due to limited funding. The Coalition will continue to find ways to address the 4 E’s of Injury Prevention: Enactment/Enforcement, Engineering, Economic Incentives/Penalties, and Education. Dedicated injury prevention leaders statewide continue to support this program and its vision of a safe, injury-free Delaware. Delaware Trauma System data demonstrate that lives are being saved. Injury prevention plays a role in those statistics.
The Delaware Coalition for Injury Prevention
‘Prevention of Individual and Family Violence-Related Injuries
Across the Lifespan’ Team

Team Leaders – Adrienne Owen, Cheri Will

Member Agencies - Beebe Healthcare, Christiana Care Health System, Delaware State Police, Domestic Violence Coordinating Council, Emergency Medical Services, Nanticoke Memorial Hospital, and People’s Place II, Inc.

2014 Accomplishments

- Developed the team’s web pages on the Office of EMS/DPH website. The web pages for ‘Prevention of Individual and Family Violence-Related Injuries’ offer education about different forms of abuse, including bullying, domestic and sexual abuse, as well as prevention of gun violence. Resources and events are highlighted via these web pages.

- Supported the First State Force Band Project through Rural Health grant funding. Elementary school students enjoyed musical productions which emphasized the importance of nonviolence and avoidance of drugs.

2015 Goals

- Contribute relevant material to resource books in the context of injury prevention.

- Enhance the current team’s web page by developing a one page fact sheet on prevention of violence.

The team continues to work to lower the number of injuries and deaths caused by violence by researching the issues that are causing conflicts and teaching safety measures that people can use to de-escalate and prevent violent acts from occurring.
The Delaware Coalition for Injury Prevention
Prevention of Poisoning Injuries Team

Team Leaders - Jeanette Trella, Jamie Rosini

Member Agencies - Delaware Division of Public Health with the Poison Control Center, Philadelphia

2014 Accomplishments
- Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Poisoning Injuries’ offer education about the incidence of poisoning, intervention strategies when sustaining poisoning injuries, and prevention resources.

- Participated in the Delaware National Guard and Navy Operations Health and Wellness Expo, November 2014. Distributed educational materials to 150-200 federal civil service and active military personnel and their families. Informational materials covered topics such as prescription drug abuse, home poison prevention safety, and medication safety.

2015 Goals
- Contribute relevant material to resource books on injury prevention.

- Continue to educate the public on medication safety and prevention of poisoning injuries via the internet, social media, and when available, provide educational support and materials for health fairs and school presentations.

- Develop a partnership with Delaware’s Medical Examiner’s office to better understand Delawarean poison-related injuries, as reported to the Philadelphia Poison Control Center.

The team continues to work on lowering the number of poisonings by teaching the public about drug safety in all environments, including the home and the workplace, and by teaching the public to recognize the signs of a poisoning incident.
The Delaware Coalition for Injury Prevention
Prevention of Falls Team

Team Leaders - Diana Curtis; Wendy Wintersgill

Member Agencies - Bayhealth Medical Center; Ms. Deb Brown (Life Changes Coach); Ms. Lyra Cayme (RN, Silver Lake Center); Christiana Care Health System; Delaware Division of Services for Aging and Adults with Physical Disabilities; Disabled American Veterans; Ingleside Retirement Apartments; Nemours/Alfred I. DuPont Hospital for Children; Tina Robinson; Peggy Mack, PhD.

2014 Accomplishments

- Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Falls’ are focused on establishing and teaching best practices in fall prevention for Delawareans across the life span; quick tips are offered for parents with children, as well as for seniors. Delawareans can choose general information, or more specific information streamlined for medical professionals or for policy makers.

- Statistical analysis reveals that senior adults are more at risk for falls leading to hospitalization and to changes in their quality of life. The Matter of Balance program is a fall prevention program offered through partnering organizations.

- Fall prevention outreach also occurred through several events, such as one in May at the Dover Modern Maturity Center. Of the 400 seniors in attendance, over 100 interactions on fall prevention were recorded at this event.

- The Team recognized Prevention of Falls efforts in September with the Governor’s Proclamation naming September 22-28 Fall Prevention Awareness Week.

2015 Goals

- Contribute relevant material for resource books on injury prevention.

- Continue to educate the public on strategies for prevention of falls through community events, public service announcements, and outreach to legislators.

Falls are the most frequent cause of injury-related hospitalization in Delaware. This team works to help children and adults avoid falls and subsequent injuries.
The Delaware Coalition for Injury Prevention  
Prevention of Fire-Related Injuries Team  

Team Leader - Rebekah L. Legar  

Member Agencies - Delaware State Fire School, Delaware Office of Emergency Medical Services, and Office of the Delaware State Fire Marshal  

2014 Accomplishments  
• Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Fire-Related Injuries’ offer information about safe handling of fires, prevention of chemical and scald burns, the problem of juvenile fire setting, and fireworks.  

2015 Goals  
• Contribute relevant material to resource books on injury prevention.  
• Continue to educate the public on strategies for prevention of fire-related injuries through presentations at public events, as well as outreach with juveniles who have engaged in dangerous fire-setting behaviors.  

The team continues to work on lowering injuries and deaths from fires by teaching people how important smoke detectors are and by demonstrating how to make homes fire-safe.
The Delaware Coalition for Injury Prevention
Prevention of Drowning and Submersion Injuries Team

Team Leader - Jen Whaley

Member Agencies - Beebe Healthcare, Sussex County Emergency Medical Services, YMCA

2014 Accomplishments
• Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Drowning and Submersion Injuries’ educate consumers about the realities of drowning and submersions, along with associated risk factors. Swimming lessons are a key factor in improving water safety, and there are additional strategies for the home and other settings.

2015 Goals
• Contribute relevant material to resource books on injury prevention.

• Continue to educate the public on strategies for prevention of drowning and submersion-related injuries.

Drowning is the leading cause of injury-related deaths in the home for children ages 1 to 4. This team continues to work on lowering the number of drowning deaths and injuries by teaching people how to be safe in the water and suggesting changes in laws and regulations related to water safety.
The Delaware Coalition for Injury Prevention
Prevention of Motor Vehicle Related Injuries Team

Team Leaders - Michelle Arford-Granholm; Kimberly Chesser

Member Agencies – Nemours/A I duPont Hospital for Children ; Beebe Healthcare; Christiana Care Health System; Delaware Division of Public Health; Delaware Office of Highway Safety; Delaware Emergency Nurses Association; Delaware State Fire School; Nanticoke Memorial Hospital

2014 Accomplishments

- Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Motor Vehicle-Related Injuries’ offer statistical information on the incidences of Delaware motor vehicle crashes causing injuries, as well as prevention safety tips.

- Targeted public education campaigns included mocktail parties emphasizing serving non-alcoholic beverages during the holidays and for special events, and the use of life-sized mannequins with safety messages encouraging safe pedestrian practices. A Mock Prom Crash simulation at a Sussex County high school was also coordinated through this team to impact students through a visual demonstration that the outcome of driving under the influence can be fatal.

2015 Goals

- Contribute relevant material to resource books on injury prevention.

- Continue to educate the public on strategies for prevention of motor vehicle-related injuries and fatalities. In 2014, there were increases in pedestrian, speed-related, and impaired driving crashes along with a decrease in helmet use. Our goal is to focus on these areas and continue to monitor motor vehicle-related injuries and fatalities for trends which can be targeted for additional injury prevention efforts.

The team continues to work to lower the number of deaths and injuries due to motor vehicle crashes by advocating compliance with seat belt laws and ensuring that children are in proper child restraints according to their weight and size.
The Delaware Coalition for Injury Prevention
‘Prevention of Traumatic Brain Injuries and Spinal Cord Injuries
Across the Lifespan’ Team

Team Leaders - Kyle Hodges, Tom Kaminski

Member Agencies - Brain Injury Association of Delaware; Christiana Care Health System;
Delaware Attorney General’s Office; Delaware Office of Children with Special Health Care
Needs; Safe Kids Delaware; Delaware State Council for Persons with Disabilities Brain Injury
Subcommittee; University of Delaware College of Health Sciences.

2014 Accomplishments
- Developed the team’s web pages on the Office of EMS/DPH website. The web pages
  relating to the ‘Prevention of Traumatic Brain Injuries (TBI) and Spinal Cord Injuries (SCI)’
  define TBI, the interfacing of TBI’s with SCI’s, risk factors for sustaining TBI and SCI injuries,
  as well as prevention and recognition of injury strategies.

- Collaborated with the Delaware Interscholastic Athletic Association on teaching concussion
  prevention. Promoted concussion awareness via the REACT poster intervention programs in
  Delaware high schools, which teach steps to be taken when a concussion injury is suspected.

- Participated in monthly training program on TBI prevention with the Children’s Safety Network,
  TBI Technical Assistance Center and Community of Practice September 2013 – June 2014.

2015 Goals
- Contribute to relevant material resource books on injury prevention.

- Promote the enactment of legislation to expand regulation of youth sports and activities
  that are under the purview of the Delaware Interscholastic Athletic Association.

- Promote the enactment of legislation to have underage ATV (all-terrain vehicle)
  operators use specific safety measures via collaboration with the ATV Safety Coalition.

The team continues to work on lowering the number of brain and spinal cord injuries and deaths
by teaching people how to protect themselves from head injury occurrences and how to make
homes, cars, and all environments safer.
The Delaware Coalition for Injury Prevention
Prevention of Dog Bites Team

Team Leader - Cynthia Martin

Member Agencies - Delaware Animal Control (First State Animal Center-SPCA); Mispillion Kennel Club; and Scott Vogel (Independent Humane Educator)

2014 Accomplishments

• Developed the team’s web pages on the Office of EMS/DPH website. The web pages relating to the ‘Prevention of Dog Bites’ educate consumers about dog bite prevention. Statistics are included on the incidence of dog bites, but the emphasis is on dog bite prevention strategies for consumers. Parents are urged to monitor children at all times when around dogs and to teach safe behaviors around dogs, as all dogs can bite when frightened, threatened, or ill.

• Special public service events dedicated to teaching prevention of dog bites occur in specific months. One example is the Delaware State Fair in July 2014, where hundreds gathered to learn prevention strategies as volunteers from various dog clubs and organizations shared their knowledge with Delawareans.

2015 Goals

• Contribute relevant material to resource books on injury prevention.

• Educate the public on strategies for prevention of dog bites at community events.

• Promote guidelines developed by the American Veterinary Medical Association on appropriate behaviors around dogs. Emphasize the importance of active supervision, proper socialization, and positive training.

The team continues to work on the problems of dog bites by monitoring the number of dog bite occurrences, teaching people about responsible dog ownership, and teaching dog bite prevention.
Thank You

The Delaware Emergency Medical Services Oversight Council (DEMSOC) would like to express a sincere thank you to all the agencies that submitted photos, data and text for this year’s DEMSOC report.