April 15, 2012

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 2011 DEMSOC Annual Report.

DEMSOC was created in 1999 in response to House Bill 332, otherwise known as the EMS Improvement Act, to promote the continuous development and improvement of Delaware’s EMS System. The membership of DEMSOC 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 provide support for developing 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 report, I encourage you to use the information provided to become more aware of the important role of our EMS system in Delaware, and I 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

DEMSOC, OEMS, 100 Sunnyside Road, Smyrna, DE 19977
Phone 302-223-1350, Fax 302-223-1330
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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 2011 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 11 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 system (EMS) 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 pre-hospital medical to the citizens and visitors of the 1st 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:

- 1080 Certified First Responders
- 1473 EMT-Basics
- 260 Paramedics
- 165 Dispatchers
EMS services provided to the State of Delaware include:

There are 56 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 nine BLS inter-facility medical transport services, three ALS inter-facility medical transport services and one specialty hospital transport service. The units that respond to 911 calls for service receive their directions from certified dispatch centers located throughout the state.

- 126 BLS ambulances providing 911 services
- 100 BLS ambulances providing non-emergency services
- 19 Full Time & 3 Part Time ALS units providing 911 services
- 5 ALS Supervisor units
- 3 Air Medical helicopters providing 911 services
- 2 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 2011, the EMS system in Delaware responded to the following incidents: (information based on EMS patient care reports)

- 185085 Statewide Total Run Reports
- 142189 Medical Incidents
- 117499 Basic Life Support Incidents
- 30533 Trauma Incidents
- 67586 Paramedic Incidents
- 10120 Pediatric Incidents (0-17yrs)
- 199 Air Medical Transports
- 5822 ALS Cardiovascular Incidents
Delaware System Oversight

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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 19 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 also includes representatives from the following agencies: the Governor’s Office, each county government, the Delaware State Fire Prevention Commission, the Delaware Volunteer Firefighter’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, and the State EMS Medical Director. There is a representative for practicing field paramedics and there are three at-large appointments for interested citizens, one from each county. The Delaware Office of Emergency Medical Services provides staff support for DEMSOC. 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 Division of Public Health within the Department of Health and Social Services.

The Office of Emergency Medical Services (OEMS) is responsible for coordination of training, certification, financing, and oversight of the state’s paramedic system.

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. These regulations address administrative, operational, and provider requirements. This includes emergency as well as non-emergency ambulance services.
Emergency Medical Services and Preparedness Section (EMSPS)

In December of 2010, the Division of Public Health announced that the Office of Emergency Medical Services (OEMS) and the Public Health Preparedness Section (PHPS) merged and now constitutes the new Emergency Medical Services and Preparedness Section (EMSPS). The two separate offices still exist; they are co-located geographically and have shared oversight. Steven Blessing was named as the Section Chief overseeing the newly formed section. Nicole Quinn is the Director of the Public Health Preparedness Office. In early 2011, Diane Hainsworth was named the Director of the Office of EMS. The merger allows the Division of Public Health to consolidate resources supporting the two offices and find synergy in the similar missions and capabilities they possess.

The EMSPS has representation on the following committees:

- DEMSOC
- National Association of State EMS Officials
- Organ and Tissue Donor Awareness Board
- National Trauma-EMS Stakeholders Committee
- Coordinating Council for Children with Disabilities
- Accreditation of Educational Programs for the EMS Professions (CoAEMSP)
- American College of Surgeons’ Trauma System Consultation -site visit review
- Statewide Interpretative and Emergency Communication
- New Castle County EMS Advisory Committee
- Sussex County EMS Advisory Council
- ALS Standards Subcommittee of the Board of Medical Practice
- Delaware Chapter of the American College of Emergency Physicians
- Delaware Chapter of the Committee on Trauma
- Delaware Chapter of the American Trauma Society
- American Heart Association’s Delaware Mission Lifeline
- Delaware Homeland Security
- Delaware Medical Reserve Corps Volunteer Meetings
- Delaware Volunteer Organizations Active in Disasters (DEVOAD)
- Performance Evaluation and Improvement Workshop
- DHSS Disaster Committee
- Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) State Coordinators’ Meetings
- Emergency Services Coordinator Group
- Advisory Committee for Johns Hopkins Center for Public Health Preparedness
- State Hazard Mitigation Council
- ASTHO Directors of Public Health Preparedness (DPHP)
- Traffic Records Coordinating Council “Core Team”
- DPH Section Chiefs Meeting
- CODES
- EMS Dispatch Committee
- DTCC Paramedic Education Advisory Board
- DEMSOC Mass Casualty Transport Committee
- Atlantic EMS Council
- Priority Medical Dispatch
- School Health Commission
- Risk Watch
- NAEMSP Annual Meeting
  - NAEMSP Public Health Committee
  - NAEMSP Standards and Clinical Practice Committee
  - NAESMP Quality Improvement Committee
  - NAEMSP Air Medical Services Ad Hoc Committee
- Christiana Care Emergency Department Research Committee
- Christiana Care Critical Care Committee
- State Citizen Corps Council Meetings
- Delaware Public Health and Medical Ethics Advisory Group
- Healthcare preparedness Steering Committee
- Laboratory Preparedness Advisory Committee (Biological Component)/Collaborative Fusion, Inc
- SHOC Section Meetings
- Senior Advisory Council (SAC)
- Governance Board Member, Delaware Information and Analysis Center (DIAC)
- Mid-Atlantic Regional Public Health Preparedness Council
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 collects EMS report data electronically on a real-time basis and provides administrators with a powerful resource management, and research tool. The EDIN system collects, at minimum, over 130 data points covering demographic, assessment, and treatment phases of an EMS incident.

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. The Special Needs Alert Program (SNAP) and Safe Kids are part of the programs within EMSC.

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.

Crash Outcome Data Evaluation System (CODES): This program analyzes data to gain a more comprehensive understanding of the causes and impacts, both medical and financial, of motor vehicle crashes, and is better equipped to develop injury prevention programs with demonstrated potential for improved outcomes.
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. Preventive 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.

Medical Orders for Life Sustaining Treatment (MOLST): Delaware recognized the need to update the existing Pre-Hospital Advanced Care Directive (PACD) form and regulations to address the recognition of advance care directives across all health care settings, including, but not limited to, hospitals, long-term care facilities, hospices, emergency medical transport, and home care. Delaware now has an approved Medical Orders for Life-Sustaining Treatment (MOLST) form. These MOLST/PACD regulations authorize the Division of Public Health in conjunction with other key groups within the State to develop and implement MOLST/PACD protocol. These regulations, protocol and form standardize the legal advance care directive documentation so that EMS and all health care providers have a readily recognizable form which sets forth the patients preferences regarding provision of life-sustaining treatments. The MOLST/PACD forms allow EMS and other health care providers both to identify and to honor an individual’s wishes to the greatest extent possible and to grant individuals the dignity, humanity, and compassion they deserve.

Organ and Tissue Donor Awareness Board

The Office of EMS provides staff support to the Delaware Organ and Tissue Donor Awareness Board. 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 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 donation and encouraging them to become designated organ donors through the State driver’s license program. As of October, 2011, there were 577 Delaware residents waiting for an organ transplant. As of January 1, 2012 352,413 (46.23%) Delaware drivers have self-designated as organ donors on their driver licenses.
The Office of Preparedness takes the lead and collaborates with partners and the community to develop, implement and maintain a comprehensive program to prepare for, mitigate against, respond to and recover from public health threats and emergencies.

Beginning in 2002, Delaware has received funding through the Health Resources and Services Administration (HRSA), Bioterrorism Hospital Preparedness Program, which is now managed by the Office of the Assistant Secretary for Preparedness and Response (ASPR) within the US Department of Health and Human Services (HHS). Public Health Emergency Preparedness (PHEP) funding is also received from the Centers for Disease Control and Prevention. In addition, Delaware has also received funding through the U.S Department of Homeland Security to enhance preparedness and response capabilities to a terrorist incident. Delaware continues to prepare the Division of Public Health (DPH), hospitals and supporting healthcare systems to deliver coordinated and effective care to victims of terrorism, disasters and other public health emergencies.

DPH has well-established Public Health and Emergency Medical response capabilities and continues to further enhance 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 vaccine for up to 2000 people per hour for dispensing medications and 600 people per hour for vaccination through its Point of Dispensing; can accommodate up to 200 people in an Alternate Care Site, which can assist hospitals with expanding acute care capabilities by 400 patients; 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. Throughout DPH’s preparedness process, it has addressed supplies and equipment; education and preparedness training, exercises, evaluation and corrective actions; and the needs of at-risk populations.

DPH has implemented a five year building block approach to its training and exercise program. DPH will focus its efforts on responding to an anthrax event, continuity of operations, and hospital readiness and response, scaling up responses year by year. The exercise cycle will begin in the Fall of 2012.
The State Fire Prevention Commission is charged with the protection of life and property from fire for the people of Delaware and to oversee the operation of the Delaware State Fire Marshal’s Office and the Delaware State Fire School.

The 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)

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.

In order to comply with the statutory mandate, the State Fire School established a goal “to provide fire, rescue, emergency care, and related training to members of the fire community, industry, agencies, institutions, and the general public requiring specific programs and any program which will serve to benefit the safety of the public”. The primary activities center on operations at the State Fire Training Center west of Dover. Other activities are consolidated into in-service fire department training courses, training programs for state agencies, institutions and industrial facilities, public education programs, and emergency care and first aid courses.

The agency objectives established to achieve that goal are:

- To provide firefighters with needful professional instruction and training.
- To provide basic life support personnel with needful professional instruction and training.
- To provide rescue personnel with needful professional instruction and training.
- To certify basic life support personnel as State of Delaware Emergency Medical Technicians.
- To inspect and license ambulances that operate within the State of Delaware.
- To provide agency, institutional and industrial personnel and the general public with needful professional instruction and training.
- To disseminate information relative to fires, techniques of firefighting, and other related subjects to all agencies and individuals throughout the state.
- To develop new methods and practices of firefighting.
- To provide facilities for testing of firefighting equipment.

On July 1, 1972, the State Fire Prevention Commission was also given the mandate under Delaware Code, Title 16, and Chapter 67, §6708 – 6714, to regulate the ambulance service in Delaware. The Commission assigned to the State Fire School the added duties of inspecting and licensing ambulances and the training and certifying of ambulance personnel.

Ambulance Service Regulations – This regulation is to ensure a consistent and coordinated high quality level of ambulance service throughout the state focusing on timeliness, quality of care...
and coordination of efforts. This regulation addresses BLS Ambulance Service and Non-Emergency Ambulance Service. It clearly defines the administrative and operational requirements for such entities.

The State Fire Prevention Commission has adopted, as a regulation, a Statewide Quality Assurance and Improvement Committee. This committee, under the direction of the State Medical Director, is responsible for assuring and improving the quality of Basic Life Support within the EMS systems that serve the State of Delaware. By conducting medical incident reviews and evaluating patient care statistics, the committee is able to provide constructive feedback on quality improvement to all EMS professionals within the State of Delaware.

The State Fire Prevention Commission also adopted a BLS regulation that detailed EMS Educational Program Administrative Standards and Guidelines. This regulation describes the standards and guidelines for emergency medical services (EMS) educational agencies that present programs for the First Responders/EMT-Bs in the State of Delaware. The regulation was developed to ensure that all students receive the highest quality of training approved by the State Fire Prevention Commission and the Office of Emergency Medical Services.

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.

<table>
<thead>
<tr>
<th>Number of Fire Fatalities</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Burn Injuries Investigated by SFMO</td>
<td>54</td>
</tr>
</tbody>
</table>

2011 Delaware State Fire Marshal’s Office Data
Medical Direction

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)

Structure

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 and subsequent to problem case identification. Certain high risk or intensity cases are routinely identified for automatic medical direction review.

PCR Print Time Report

The Medical Directors are continuing to monitor the issue of the timely delivery of the patient care report (PCR) to the receiving facilities. The importance of the PCR to the receiving facility is immeasurable since the PCR often provides the patient’s initial complaint, initial vital signs,
initial treatments, medical history, medication list, response to treatments and environmental factors that may influence patient care and subsequent disposition. A PCR completed greater than 24 hours after patient arrives in a facility provides no service to that patient nor the healthcare providers caring for that patient and leads to questions of fraudulent billing when a PCR is completed so far beyond the time of service. Standing Order for PCRs, for both ALS and BLS providers, require compliance times of 4 hours or less. The graph below shows the compliance rates to the standing order of 59% with 41% of all PCRs completed beyond the 4 hour timeframe.

### Statewide Print Time Report 2011

<table>
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<tr>
<th></th>
<th>&lt;=4 hrs</th>
<th>&gt; 4 hrs</th>
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</thead>
<tbody>
<tr>
<td>ALS</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>BLS</td>
<td>86%</td>
<td>14%</td>
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### Statewide Reports by Agency Type and Printed Hour 2011

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<tr>
<th>Agency</th>
<th>&lt;=4 hrs</th>
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</thead>
<tbody>
<tr>
<td>ALS</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>BLS</td>
<td>46%</td>
<td>54%</td>
</tr>
</tbody>
</table>
2011-2012 Initiatives

- **Field Providers Work Hours**: We are addressing concerns regarding the excessive continuous work hours that some of the field providers are working without the opportunity for uninterrupted down time. This happens when providers work for several provider agencies, moving from one to the other without rest between. These types of schedules are leading to a number of real and potential problems/liabilities:
  - Increased medical errors
  - Increased aggressiveness
  - Motor vehicle crashes

- **EMS Funding**: EMS funding is a considerable issue within our state. When the ALS system was developed in our state it was set up that the state would reimburse the county paramedic services 60% of all operational costs. Unfortunately, with the fiscal environment today that number as of the start of FY11 has dropped to 30%. As a result, the county agencies have had to make some difficult decisions as to reductions of service. Some of those reductions (or proposed reductions) include:
  - Reduced administrative support staff
  - Reduced Quality Assurance/Quality Improvement (QA/QI) data analysis
  - Reduced participation in State EMS planning, QA, protocol development and training.

- **Systems of Care Development**: Delaware is fortunate to have a well-developed inclusive Trauma System and an inclusive Pediatric System. The next initiative is the development of a Cardiovascular System of Care. Currently, our EMS system operates as if a cardiovascular system of care is already in place. We have developed protocols that identify the need for transport to an appropriate facility. Emergency percutaneous coronary intervention (PCI) or angioplasty capabilities in each county have been identified and are the preferred centers for transportation of patients having a heart attack. The following are a few major obstacles that have been identified:
  - Currently there is no funding for a system coordinator
  - Need for development/legislative change for protected peer review
  - Need to identify systemic performance measures for QA/QI
  - Lacks outside, independent verification

- **Use of Pre-hospital Continuous Positive Airway Pressure (CPAP)**: Delaware was early to indentify the usefulness of pre-hospital CPAP and embrace the use of CPAP systems for patients in respiratory distress. The use of this type of device continues to reduce overall healthcare costs for these patients with shorter hospital stays and improved patient comfort and outcomes. We are continuing the program that allows the use of these devices in the BLS community with success.
• **Sepsis Protocols and Recognition:** With recent published information regarding the early identification of sepsis (patients with life-threatening infections) and survivability, the state implemented a field testing program through the use of point of care testing for lactic acid levels by paramedics. This point of care testing is part of an optional ALS protocol to help identify patients who are likely suffering from sepsis and begin treatment by pre-hospital care providers. This evidence-based protocol is expected to shorten the time it takes patients with sepsis to receive the appropriate treatment. Research has shown that the sooner we identify patients with severe infections or sepsis and initiate antibiotic therapy the more likely they are to survive, and to survive with less morbidity. In the near future we expect to initiate prehospital IV antibiotic therapy on our septic patients with longer transport times.

• **Updated Standing Orders and EMS Safety:** In 2011, the EMS medical directors reviewed the standing orders with the intention of updating them to the new American Heart Association’s resuscitation guidelines. Included in this update are modifications to the trauma and pediatric standing orders. The medical directors have been and continue to advocate for EMS safety and the standing orders are no exception. From an EMS medical director’s perspective, red lights and siren responses, and transports, are an EMS safety issue for patients, EMS providers and the traveling public. The State Fire Prevention Commission’s regulations currently do not address the use of red lights and siren during EMS responses. The State Fire Commission has agreed to begin the process of addressing this issue and has made verbal commitments to address this problem in the near future. The EMS medical directors continue to advocate for patients, EMS providers and the public, by reminding field providers, within the standing orders, that for many of the patients transported to the hospital, red lights and sirens are not indicated.
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Continuum of Care

The EMS Continuum of Care is the cyclical process used to describe the delivery and constant improvement of EMS care. An EMS event usually begins with the onset of illness or injury in a patient and a call to the dispatch center through 911. The call is then triaged and dispatched and the appropriate providers arrive on scene to provide care. The patient is then delivered to the hospital, where they receive specialty care (cardiac, trauma, pediatrics) as appropriate and ultimately may enter rehabilitation if needed. The event is then analyzed and lessons learned are shared with providers and the public in the form of awareness campaigns and educational programs in the hope of reducing the potential for further events. Events are analyzed by looking at the 12 main attributes of an EMS system (Public Access, communications, clinical care, etc.) so that all aspects of the EMS system benefit from the lessons learned during a given event. Each modification or improvement to one aspect of the EMS system has an impact on the rest of the system.
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 electronic EMS Data Information Network (EDIN) is largely used to evaluate the EMS system. EDIN collects EMS report data electronically on a real-time basis and provides administrators with a resource management and research tool. The EDIN system collects, at minimum, over 130 data points covering the demographic assessment and treatment phases of an EMS incident. The EDIN system has been online since January 1, 2000. Since its inception, over one million records have been entered into the system. Currently, all of the Advanced Life Support agencies in Delaware are using the system on a full-time basis. Of the 58 volunteer Basic Life Support agencies, almost all are using the system on either a full time or partial basis. This allows DEMSOC a continued review of operational and clinical data for the ALS and BLS providers.

Update On New Prehospital Patient Care Reporting System:
The new prehospital patient care reporting system will have an open scalable architecture and support standards, which are key to streamlined processing and data exchange. It will further provide a secure method of collecting pre-hospital data, extracting existing data, and exporting or sharing data for strategic planning and process improvement initiatives. By upgrading the technology used and by utilizing a web based program OEMS will provide higher quality data collection. Finally, Delaware is looking forward to integration into the National EMS Information System. The ability to share and benchmark data with other states will be vital for continued growth and improvement of EMS care in the years to come.
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 to those with perceived emergency needs and, when indicated, provides transportation to, from, and between health care facilities. Mobility and immediate availability to the entire population distinguish EMS from other components of the health care system (National Highway Traffic Safety Administration).*

(All data used for this section and throughout the report were, unless noted otherwise, extrapolated from the EMS Data Information Network (EDIN). 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-2011**

*EMS usage by location type:*
These graphs show the location of EMS calls which is helpful in designing dispatch protocols, developing operational systems to assist EMS providers in the rapid location of patients and to develop programs to reach critically ill and injured patients as quickly as possible with life saving treatments of which the Automatic Defibrillator program is an example.
Types of patients

- Medical patients are those individuals who are suffering from a condition such as chest pain, heart attacks, respiratory problems, altered mental status, seizures, strokes and infectious disease.
- OB/GYN refers to pregnancy and female related medical conditions.
- Trauma patients are those who suffer an injury caused by a transfer of energy from some external source to the human body such as motor vehicle crashes, gunshot wounds, stabbings, industrial accidents and falls.
- Trauma/Medical patients often include patients who had a medical condition that caused them to suffer a trauma such as an episode of syncope, related to a heart problem that caused the patient to fall, suffering a serious head injury.
- Standby is when EMS personnel wait in readiness, typically at large scale events such as marathons or concerts.

Gender of EMS Patients-2011
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.
Note: Both ALS and BLS charts are based on the total number of patients transported by the specific EMS service. BLS responds to more patient runs and therefore transports more patients to the hospital. This is noted on the right hand side of each chart contained on this page.
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 a maximum response, and identifies calls as:

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

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

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

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

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

**Omega** – Response type not addressed in the legislated response time goals. An example of an Omega response is a dispatcher, while remaining online with the caller, connects to a poison control center for instructions.
Goal: Each Advanced Life Support (ALS) paramedic agency within the Delaware EMS system provide an ALS paramedic unit, as defined by recognized state standard, on the scene within 8 minutes of the receipt of Delta calls on at least 90% of the time. BLS ambulance unit on scene within 10 minutes of the receipt of Delta calls on at least 90% of the times in urban areas and 70% of the times in rural areas.
**Goal:** Each Advanced Life Support (ALS) paramedic agency within the Delaware EMS system provide an ALS paramedic unit, as defined by recognized state standard, on the scene within 8 minutes of the receipt of Charlie calls on at least 90% of the time. BLS ambulance unit on scene within 12 minutes of the receipt of Charlie calls on at least 90% of the times in urban areas and 70% of the times in rural areas.
Goal: BLS ambulance unit on scene within 12 minutes of the receipt of Bravo calls on at least 90% of the times in urban areas and 70% of the times in rural areas.
Estimate of EMS System Cost

One important factor in evaluating the efficiency of an EMS system is measured in terms of cost. Delaware continues to refine the process to accurately reflect total EMS system costs. The Basic Life Support (BLS) Financial form was developed and distributed to all agencies starting in 2002. Additionally, all 911 centers, involving EMS dispatch, have submitted the costs to run their centers during 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

“The Delaware State Fire Prevention Commission recognizes the importance of collecting and providing financial information with designated agencies. With the adoption of the current Ambulance Service Regulations this requirement remains an important part of the data reporting requirements. However, the Commission recognizes that the Ambulance Service Providers have a number of reporting requirements which are duplicate reports in part. These reporting requirements include the annual Delaware Volunteer Financial Report, the Annual EMS Financial Report and the Annual Fire Company Financial Review/Audit Report. The Commission recently began a review of these requirements and working with the various agencies will look toward the development of a standard financial reporting form that will meet the requirements of the various agencies requiring this information.”

~David J. Roberts, Chairman Delaware State Fire Prevention Commission
The population figures below for 2011 were obtained from the 2011 Delaware Population Projections Summary Table. The County Cost Per Capita was obtained by calculating the total population for 2010 by the expended budget for 2011 for each agency. The cost per square mile was obtained by calculating the total geographical size by the expended budget for 2011 for each agency.

**Advanced Life Support (ALS) Program Cost**

<table>
<thead>
<tr>
<th>Area</th>
<th>Population (2010)</th>
<th>County Cost Per Capita*</th>
<th>Geographic Size</th>
<th>Cost Per Square Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kent County</td>
<td>162,388</td>
<td>27.10</td>
<td>594 square miles</td>
<td>7,411.29</td>
</tr>
<tr>
<td>New Castle County</td>
<td>541,650</td>
<td>24.90</td>
<td>438 square miles</td>
<td>30,801.78</td>
</tr>
<tr>
<td>Sussex County</td>
<td>201,238**</td>
<td>55.64**</td>
<td>950 square miles</td>
<td>11,787.98</td>
</tr>
<tr>
<td>Delaware</td>
<td>905,276</td>
<td>32.13</td>
<td>1,982 square miles</td>
<td>14,678.13</td>
</tr>
</tbody>
</table>

*Cost per Capita is unavailable for the BLS agencies.

**Please also note that the County Cost Per Capita calculation does not include the visiting population to the state, including commuters in New Castle, racing fans in Kent, and beach visitors in Sussex.

**County ALS Agency Cost, FY 11**

<table>
<thead>
<tr>
<th>Area</th>
<th>Total</th>
<th>70% County Contribution</th>
<th>30% State Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Castle County, EMS</td>
<td>$13,491,178</td>
<td>$9,443,825</td>
<td>$4,047,353</td>
</tr>
<tr>
<td>Kent County, EMS</td>
<td>$4,402,305</td>
<td>$3,081,614</td>
<td>$1,320,692</td>
</tr>
<tr>
<td>Sussex County, EMS</td>
<td>$11,238,578</td>
<td>$7,867,005</td>
<td>$3,371,573</td>
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</table>
Aviation and Dispatch Center Cost

Delaware State Police Aviation Program Costs

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
<th>Personnel:</th>
<th>Helicopter Maintenance:</th>
<th>Fuel Costs:</th>
<th>Medical Supplies:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$2,700,000.00</td>
<td>$1,750,000.00</td>
<td>$700,000.00</td>
<td>$250,000.00</td>
<td>$15,000.00</td>
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</tbody>
</table>

Dispatch Center Costs

*The costs listed below include the total cost and selected budget lines only*

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

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
<th>Personnel:</th>
<th>Equipment:</th>
<th>Training:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$4,768,667.00</td>
<td>$4,301,621.00</td>
<td>$451,508.00</td>
<td>$15,538.00</td>
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</tbody>
</table>

Sussex County 911 Center:

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
<th>Personnel:</th>
<th>Equipment:</th>
<th>Training:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,764,431.00</td>
<td>$1,600,606.00</td>
<td>$105,685.00</td>
<td>$20,200.00</td>
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</tbody>
</table>

Kent County 911 Center:

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
<th>Personnel:</th>
<th>Equipment:</th>
<th>Training:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1,802,900.00</td>
<td>$1,662,300.00</td>
<td>$132,400.00</td>
<td>$8,200.00</td>
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</table>

Seaford 911 Center:

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
<th>Personnel:</th>
<th>Operational:</th>
<th>Training:</th>
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<tr>
<td></td>
<td>$557,626.00</td>
<td>$545,126.00</td>
<td>$10,800.00</td>
<td>$1,700.00</td>
</tr>
</tbody>
</table>

Wilmington:

*(EMS Dispatch is handled by New Castle County 911 center)*

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$0.00</td>
</tr>
</tbody>
</table>

Rehoboth 911 Center:

<table>
<thead>
<tr>
<th></th>
<th>Total Costs:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$486,034.00</td>
</tr>
</tbody>
</table>

(Wilmington: $438,258.00 + $46,385.00 + $1,391.00)
Specialty Care

Trauma 45

Emergency Medical Services for Children 52

Cardiovascular Care 58

First State First Shock 61
Delaware Statewide Trauma System

Introduction

Unintentional injury is the # 1 killer and disabler of Delawareans aged 1 to 44 years, and is among the ten leading causes of death for the remaining ages of 45 to over 65 years. Intentional injury, a separate category, is also among the leading causes of death in the 1 to 44 year age group. Unintentional injuries, homicide, and suicide accounted for 64 percent of all deaths to Delaware children and adolescents in 2005-2009 (Delaware Health Statistics Center. Delaware Vital Statistics Annual Report, 2009, Delaware Department of Health and Social Services, Division of Public Health: 2011).

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, stabbings, and suicides to the above statistics. Trauma System Registry records show that 6,269 citizens and visitors to Delaware were injured seriously enough to require hospitalization in Delaware hospitals in 2010 and of these, 185 sustained fatal injuries. In addition, another 105 people were killed immediately in Delaware traumatic incidents in 2010. 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.

As seen below, the number of injuries serious 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.

![Delaware Trauma System Registry Total Hospitalizations due to Injury 2000 – 2010*](image)

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 Advancedprehospital 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).

June 30, 2011 marked the 15th 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 the appropriate 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 69,300 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 matured. The data shown in the slide on the left was discussed in an article published in the August 2010 *Journal of Trauma*, with Dr. Glen Tinkoff, Trauma System Medical Advisor, as lead author. The blue line shows national data for the same group of patients. Delaware has consistently achieved lower mortality rates in the most seriously injured patient group than the nation overall.
The data below shows the same analysis for seriously injured older patients. The mortality rate for this group of patients has also declined significantly over the years.

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 Services**
  A Regional Resource Trauma Center has the capability of providing leadership and comprehensive, definitive care for every aspect of injury from prevention through rehabilitation.

**Pediatric Regional Level 2 Trauma Center:**
- **Nemours / Alfred I duPont Hospital for Children**
  A Pediatric Regional Level 2 Trauma Center has the capability to provide comprehensive pediatric trauma care for the most severely injured children within its geographic area and is expected to assume a leadership role in the care for injured children within its local, regional, and statewide Trauma Systems.
Community Level 3 Trauma Centers:

- Beebe Medical Center
- Kent General Hospital, Bayhealth Medical Center
- Milford Memorial Hospital, Bayhealth Medical Center
- 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 Services

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.

2011 Accomplishments

1. **Trauma System Registry – PLUS**
   For the first time, Emergency Department (ED) injury data has been collected from all Delaware Trauma System hospitals and analysis has begun. This accomplishment was assisted by a grant from the Delaware Office of Highway Safety which provided funding to contract with an injury epidemiologist to analyze ED highway injury data. Hospitals provided data on all ED injury-related visits for calendar year 2010. It is anticipated that more annual data will be collected in the future. The graphs below demonstrate the age breakdown for statewide ED visits in 2010 for two major mechanisms of injury – highway injuries and fall injuries.

   As seen in the next graph, ED visits for highway injuries increase sharply in the 15-19 and 20-24 age groups.
Fall-related ED visits are most frequent in the very young and elderly.

2. Delaware Trauma System Registry

Data submitted by all eight Delaware acute care hospitals is compiled into the Trauma System Registry. Hospital Trauma Registrars gather data from prehospital tripsheets and hospital medical records to enter into the Collector 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 is a significant health problem. Injuries are a leading cause of hospitalization, long-term care placement, and death in the elderly. As shown in the next graph, falls are the number one cause of injury in the elderly by far.
Violent injuries are also a problem in Delaware. The graph below illustrates the breakdown by age on assaults that caused injuries requiring hospitalization in Delaware in 2010.

Below is a breakdown of the kinds of assaults resulting in death in Delaware, 2010.
2012 Challenges

1. 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 include taking trauma call, malpractice insurance costs, uncompensated care, and expectations of increasing numbers 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.

2. Further development of the Trauma System Quality Program

The Trauma System Quality Program is also an ongoing process. Trauma System Registry data from all hospitals supports both the Quality and Injury Prevention programs. Volume indicators are well developed and reported annually. Sentinel cases are discussed at the Trauma System Quality Evaluation (QE) Committee meetings as well as system education issues. 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
- Interfacility transport times
- Undertriage (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 transferred to a higher level of care
- Patients transferred directly from Operating Room to Operating Room
- Surgical airways in the field
- Patients transferred with blood running
- Patients that bypass other Trauma Centers and go directly to the Level 1 Trauma Center from the scene (overtriage)
- 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……..to save lives.
Delaware Emergency Medical Services for Children

Introduction

In 1997, Delaware was awarded its first Emergency Medical Services for Children (EMSC) grant through the federal Maternal and Child Health Bureau. The EMSC program is designed to reduce child and youth mortality and morbidity due to severe illness and injury. Delaware’s EMSC program is administered through the State via a contract with Nemours/Alfred I. duPont Hospital for Children.

Children's heart rates, respiratory rates and blood pressures all change as they grow. Their airways are shaped differently for intubation, IV sizes are smaller and medications must be carefully calculated according to weight. One size does not fit all! Emotional reactions to illness and injury vary by developmental age. Healthcare providers must have the pediatric training and equipment needed to care for children.

In 1984, federal legislation was enacted to fund Emergency Medical Services for Children (EMSC) programs in the United States. Children under the age of 18 years account for approximately 26% of the U.S. population and about 25% of all visits to Emergency Departments (ED’s) nationwide. Studies showed that prehospital providers did not always receive training on how to care for children, and ambulances and emergency departments sometimes lacked the correct sized equipment needed to care for children.

Photo submitted by Angie Quackenbush, DE EMSC Program
2011 Accomplishments

In 2011, the State EMSC Advisory Committee and EMSC Program focused on the following activities:

Statewide Pediatric System
Delaware’s Division of Public Health (DPH) announced the December 30, 2011 completion of the initial phase of development of Delaware’s Statewide Pediatric System through recognition of Delaware’s hospitals as Pediatric Emergency Care Facilities. Every Delaware acute care hospital that treats children voluntarily chose to participate in this new program, which required them to meet state standards, submit a lengthy application, and be visited by a review team. Since 2007, DPH’s Emergency Medical Services for Children (EMSC) Standards Committee, a group of 19 Delaware clinical emergency care experts, has worked to develop the statewide Pediatric Emergency Care Facility Recognition Program to standardize emergency medical care for children in Delaware.

Development of such a program is a performance measure of the Health Resources and Services Administration (HRSA) national EMSC program. Delaware’s Standards Committee relied upon documents and regulations adopted in other states such as California, Illinois and Tennessee as models for the Delaware program. The purpose of having statewide pediatric standards for the emergency departments is to take the first step in organizing a system of emergency care for children in Delaware.

“We are proud that every Delaware hospital has chosen to be part of this emergency care system for children,” said Dr. Karyl Rattay, DPH director. “This is an opportunity to recognize their commitment to excellence in pediatric care. Having an inclusive statewide pediatric system means that every child will receive the benefit of an entire system of specialized pediatric care if they should need it.”

Like the Delaware Trauma System, the role of the Pediatric System of care is to organize resources and assure their immediate availability to the target population at all times and in all geographic areas of the system. Studies have shown that the coordination of these resources which takes place as a system of care is developed, can result in dramatic improvements in patient outcome.

According to the EMSC National Resource Center, Delaware is only the 5th state in the nation to successfully implement the Pediatric Emergency Care Facility Recognition Program. Delaware also became the 3rd in the nation to develop an inclusive pediatric system with all acute care hospitals that see children recognized.

The Honorable Matthew Denn, Lt. Governor, joined Dr. Rattay in recognizing Delaware’s hospitals as Pediatric Emergency Care Facilities at an awards ceremony held in the Tatnall Building on February 21.

The following hospitals were recognized as Delaware Pediatric Emergency Care Facilities:
Level 1  
Nemours/Alfred I. duPont Hospital for Children, Wilmington
The Level 1 facility is capable of providing comprehensive specialized pediatric medical and surgical care to all acutely ill and injured children. This facility serves as a regional referral center for the specialized care of pediatric patients.

Level 2  
Christiana Hospital, Christiana Care Health System, Newark
The Level 2 facility is capable of identifying and stabilizing pediatric patients who are critically ill or injured and providing ongoing inpatient care or appropriate timely transfer to a Level 1 facility.

Level 3  
Bayhealth - Kent General Hospital, Dover
Bayhealth - Milford Memorial Hospital, Milford
Beebe Medical Center, Lewes
Nanticoke Memorial Hospital, Seaford
St. Francis Hospital, Wilmington
Wilkinson Hospital, Christiana Care Health System, Wilmington
A Level 3 facility is capable of identifying and stabilizing those pediatric patients who are critically ill or injured and providing appropriate timely transfer to a higher level of care. Level 3 facilities have capabilities for the management of minor pediatric inpatient illnesses.

The highlight of the event was the heartfelt comments from parents of a 3-year-old child who nearly drowned here in June, 2011. They praised the care their son received from the time of the incident through his discharge from the Level 1 Nemours/Alfred I. duPont Hospital for Children. This child is alive and well today, thanks to the systems of care that Delaware has developed. The video of their talk can be found at [http://www.wdel.com/story.php?id=40965](http://www.wdel.com/story.php?id=40965)

The Honorable Matthew Denn, Lt. Governor, shares his thoughts on the importance of the new Pediatric System for Delaware’s children and their families. He is joined by Dr. Sue Kost, EMSC Advisory Committee chairperson, and Dr. Karyl Rattay, Director of Public Health.
**EMSC Targeted Issue Grant Research** – ‘Evaluation of a Pediatric Emergency Care Recognition Program on Care of Injured Children’

Delaware is serving as the model for an EMSC Targeted Issue research grant investigating the impact an implementation of a Pediatric System has on emergency care for children. We are proud that the national EMSC program has recognized the work our state has done to develop our Pediatric System. Based on the results of this research, other states may see the value of developing a pediatric system and utilize the experience of Delaware to take pediatric care in their states to the next level of excellence.

**National EMSC Performance Measures Survey**

Delaware’s EMSC program has completed an analysis of data from the National EMSC Performance Measure (PM) surveys. The data will be utilized to assess the needs of the EMS and hospital programs related to pediatric care. The EMSC online survey was distributed to all licensed BLS and ALS EMS agencies that respond to 911 calls in Delaware and to all acute care hospitals. The survey and analysis are helping to identify gaps in essential pediatric equipment for ambulances based on the American Academy of Pediatrics (AAP) guidelines. This information will be used to help guide the use of EMSC grant funds.

**Annual Childhood Injury Prevention Conference**

The Delaware EMSC program partnered with Safe Kids Delaware to provide this conference in June 2011 in Dover. Over 150 injury prevention advocates from across the state attended.

**EMSC Program Manager**

Delaware has a new EMSC Program Manager, Raj Maskay, is replacing Marie Renzi, who resigned after serving the program for 13 years. Raj worked for the state of Alaska’s Division of Public Health for over 11 years and managed the Alaska EMSC program for four years.

**EMSC 2011 Data**

Data from the Delaware Trauma System Registry, below, shows that the death rate of the most seriously injured young people has significantly decreased since the statewide Trauma System was implemented in 2000. It is expected that the Pediatric System developed through the EMSC Pediatric Emergency Care Facility Recognition program will help to further reduce the mortality rate of children and teens in Delaware over time.

EMSC Graph 1: Delaware Trauma System Registry Mortality Rate, Children and Teens
Delaware EMSC uses the EDIN system to monitor the number and location of pediatric calls, the most frequent reasons for the calls, and the procedures most frequently performed on children by prehospital providers. The following graphs provide aggregate data regarding pediatric emergency incidents in the State of Delaware in 2011.

EMSC Graph 2: 2011 Number of Pediatric ALS and BLS Incidents Ages 0-19 Years

Data reflects the number of run reports in the EDIN database for BLS agencies and for ALS agencies.

EMSC Graph 3: 2011 Ten Most Frequent Procedures by ALS and BLS, Patients Ages 0-19 Years

Vital signs and provision of oxygen were the most frequent BLS procedures on young people in 2011. Vital signs and on-line medical control consultation were the most frequent ALS procedures for children and teens in 2011.

Other Important Facts:
The majority (74.8%) of 2011 pediatric ALS calls were for medical reasons. Over half (60%) of all pediatric BLS emergency calls were for medical reasons also.

Trauma calls made up of 21 percent of ALS pediatric calls; and 33.1 percent of BLS pediatric calls.
Pain and general malaise continued to be the top two primary complaints for BLS encounters with children ages 0-19, while difficulty breathing continued to be the top primary complaint for ALS calls for children ages 0-19.

About 5.8 percent of all ALS calls and 9.2 percent of BLS calls for those aged 0-19 years were due to motor vehicle crashes in 2011. Both figures are slightly lower than in 2010.

For those aged 15-19 years, about 46.6% of ALS calls and 51.8% of BLS calls were due to motor vehicle crashes. This trend has remained almost the same for the last two years.

2012 EMSC Challenges / Goals

Unintentional injuries remain the leading cause of death for Delaware’s children. In the 5-year period between 2005 and 2009, unintentional injury, homicide, and suicide accounted for 64.4% of the deaths of Delaware children between the ages of 1 and 19 years\(^1\). The goal of the EMSC program is to reduce death and disability of children by improving pediatric emergency care. There is still much to be done. Injury prevention works to decrease the number and severity of injuries, while other EMSC performance measures support growth and development of both prehospital and hospital pediatric programs.

In 2011, Delaware remains dependent upon annual federal grant EMSC funding to support children’s needs in our growing EMS System. There is still no official pediatric representation on DEMSOC. A statewide Pediatric System Quality Program needs to be developed to support hospital and prehospital pediatric program growth through identification of opportunities for improvement in all areas of pediatric emergency care. And there is no EMSC legislation to integrate EMSC priorities into state EMS system statutes and regulations.

Summary

Delaware’s Statewide Pediatric System has been born! The initial phase of our Pediatric Emergency Care Facility Recognition Program has been completed successfully. But like a child, this system needs to grow and mature. The Recognition Program supports a continuous process aimed toward achieving excellence in prehospital and hospital pediatric care statewide. Its goal is to maintain a system that is in a constant state of readiness to care for pediatric patients anywhere in the state. Delaware’s EMSC program is proud of its many accomplishments over the 15 years of its existence, and looks forward to continuing its leadership toward future successes.

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\(^1\) Delaware Health Statistics Center. *Delaware Vital Statistics Annual Report, 2009*, Delaware Department of Health and Social Services, Division of Public Health: 201
Cardiovascular Care

Out-of-hospital cardiac arrest (OHCA) remains the leading cause of death among adults in the United States and other developed Western countries. Between 250,000 and 400,000 estimated deaths occur each year. Cardiovascular disease refers to a multitude of diseases and conditions affecting the heart and blood vessels and is not limited solely to the heart and great vessels.

Heart disease and stroke remain the two most common cardiovascular diseases in Delaware. 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 healthier individual lifestyles. The combined efforts of multiple agencies in Delaware to continue to place emphasis on education and awareness will play a major role in reducing the risk factors.

Delaware Paramedics responded to over 6200 patients with cardiovascular related complaints in 2011. Due to declared benefits of retirement in Delaware, there has been a significant influx of retirees. Delaware also has a native aging population. Due to these two factors a large number of Delaware hospitals have expanded their cardiovascular care programs. Delaware EMS systems ensure a continuum of care for patients transported by EMS through integration with these hospitals.

Cardiac Arrest Registry to Enhance Survival (CARES) Program

Submitted by Robert A. Rosenbaum, MD FACEP, EMS Medical Director, New Castle County and Timothy Shiuh, MD FACEP, Associate EMS Medical Director, New Castle County

New Castle County EMS (NCC EMS) continues to participate in the Cardiac Arrest Registry to Enhance Survival (CARES), a surveillance project run through the CDC and Emory University that follows cardiac arrest patients from dispatch through hospital outcome. NCC EMS is one of the first 25 agencies (now numbering 68 agencies) from across the country participating in CARES by sending data from every cardiac arrest patient with presumed primary cardiac etiology treated by EMS in NCC. Details include time to dispatch; response times; demographics; initial presentation; treatments by bystanders, first responders and EMS personnel; and level of function for survivors. All hospitals in NCC send data to the CARES database creating a seamless picture of the care provided to cardiac arrest patients. Performance by NCC EMS has been well above the national average of reported cardiac arrest survival and remains at or above the average of the peer group of other CARES agencies. Agencies participating in CARES are high performance EMS agencies with established records for provision of quality care making the achievement of above average results among this group all the more impressive. NCC entered its 1,000th patient into the database during 2011 and also added its 100th survivor to the database.

As the number of patients continues to grow, we are able to review broader areas and look for trends. One clearly identifiable trend is the improvement of survival for patients who have bystander CPR performed. The odds ratio of survival is doubled for patients in our CARES database who had bystander CPR. In patients under age 65 who have bystander CPR, the odds of survival increase by 2.4 times. We continue to see opportunities for improvement in cardiac
arrest survival and hope that implementation of several specific initiatives will increase these numbers:

- We have encouraged a far more direct approach from dispatchers to get bystanders to perform CPR. Our goal is recognition that a patient is in cardiac arrest and for a bystander to begin CPR within 1 minute of the start of the call.
- We are reviewing data that show areas where bystander CPR is more likely and where it is less likely. Targeted education initiatives in areas with little bystander CPR could lead to more opportunities for survival from cardiac arrest in these areas. Rates of bystander CPR in our patient set from all of New Castle County remain at approximately 20%. This unacceptably low rate further illustrates the need for a concerted education effort for CPR and AED usage in all communities.
- New Castle County EMS continues to provide feedback to first responders from police agencies that have arrived on scene and begun CPR or applied an AED. Earlier intervention by any trained provider increases survival likelihood. Communication from NCC EMS and Medical Direction with case examples provides positive feedback to the respective departments and involved law enforcement personnel.
- We hope to see greater ROSC in the field through a protocol change in the 2012 Paramedic and BLS Standing orders. The requirement that patients in cardiac arrest have 3 cycles (6 minutes) of CPR on scene is intended to drive our performance and rapidly initiate care on site with an emphasis on quality chest compression and de-emphasizing rapid patient movement. This will require an evolution in EMS practice to better match current recommendations of the American Heart Association supported by detailed research on best practices for care of patients in cardiac arrest.

CARES will continue to be utilized by NCC EMS as a valuable resource to identify successful interventions in care of cardiac arrest patients and to look for areas that can be improved. The addition of Sussex County EMS to the CARES collaborative effort and the planned addition of Kent County EMS will provide the opportunity for statewide data collection on outcomes of cardiac arrest patients in the near future.

**STEMI/Stroke Specialty Centers**

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 triage 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. By aggressively pursuing the development of designated STEMI/STROKE centers, Delaware has four (4) hospitals offering full-time emergent PCI for STEMI and five (5) hospitals are currently certified by the Joint Accreditation Commission for Health Care Organizations (JACHO) as Primary Stroke Centers.

**Hospitals currently designated as STEMI centers are:**

- Christiana Hospital, Newark, DE
- St. Francis Hospital, Wilmington, DE
Kent General Hospital, Dover, DE
Beebe Hospital, Lewes, DE

Hospitals currently JACHO certified as primary stroke centers are:
- Christiana Hospital, Newark, DE
- Wilmington hospital, Wilmington, DE
- St. Francis Hospital, Wilmington, DE
- Nanticoke Memorial Hospital, Seaford, DE
- Beebe Hospital, Lewes, DE

Cardiac Alert/Code

The standard of care for paramedics treating patients with cardiac related complaints or patients who present with signs and symptoms of acute myocardial infarction AMI/heart attack is 12 lead EKG analyses. 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 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 less than 30 min. By using this systematic approach, studies continue to show that patients have a lower mortality rate and shorter hospital stays.

Prehospital Protocols

The recent addition of the induced hypothermic protocol for patients resuscitated from cardiac arrest that do not immediately regain consciousness has been shown to improve neurological function. The data gathered as a direct result of this procedure is showing a better than expected outcome for these patients.

Stroke

Strokes accounted for 1,366 Paramedic incidents in 2011. Stroke has a very narrow therapeutic window and these patients require the same systematic approach as for AMI/heart attack emergencies. Rapid identification, early notification to 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. 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.
The First State, First Shock Public Access Defibrillation (PAD) program was established in 1999 through support and funding from the Health Fund Advisory Committee. The Office of Emergency Medical Services is designated the lead agency for the First State, First Shock program.

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)

The First State, First Shock program has been committed to the following goals:

- Decreasing death and disability in Delaware by decreasing time to defibrillation in cardiac arrest patients
- Promoting heart health and early detection of the signs and symptoms of heart attack
- Increasing public accessibility to Semi-Automatic External Defibrillators (SAED) throughout the state
- Increasing the number of Delawareans trained in Cardio–Pulmonary Resuscitation and SAED use
- Ensuring First Responders and police vehicles are SAED equipped
- Tracking outcome to guide future efforts

The primary goal of the First State, First Shock program is 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 For 2011 Were:

- Completing the FDA mandated recall and replacement of 488 SAED units by two manufacturers.
- Distribution 184 SAED units, 75 of which were issued to first responders with the remainder issued through the Public Access Defibrillator program
- Thanks to funding from the Health Fund Advisory Committee and Health Resources Services Administration, the program has been able to place over 3000 SAED units in service throughout the state to date.

Major challenges to the First State, First Shock! program:

1. There continues to be an increase in over-the-counter sales of SAED’s throughout the state. SAEDs are considered a class III medical device by the FDA which requires a prescription prior to purchase, however one manufacturer is marketing a device FDA
approved for direct over-the-counter sales, no prescription required. This makes it extremely difficult to keep track of the number of SAEDs throughout the state.

2. Older units issued at the inception of the program are out-of-warranty, obsolete, malfunctioning and require replacement. Of the 2661 units still in service only 584 are within the five year warranty period. This is particularly challenging since monies will have to be allocated to purchase units to replace older units as they continue to malfunction.

3. 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/AED training for laypersons and first responders still remains the primary initiative.

For victims of cardiac arrest the return to spontaneous circulation rate in Delaware is 36%. Prior to the placement of SAEDs the prognosis for cardiac arrest victims was poor with an estimated 1% - 5% with return of spontaneous circulation. Delaware has made tremendous strides in strengthening the early defibrillation link in the Chain of Survival. The 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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cardiac Arrests</th>
<th>Patients that experienced a return of circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>780</td>
<td>158 (26%)</td>
</tr>
<tr>
<td>2005</td>
<td>752</td>
<td>170 (29%)</td>
</tr>
<tr>
<td>2006</td>
<td>756</td>
<td>190 (32%)</td>
</tr>
<tr>
<td>2007</td>
<td>756</td>
<td>215 (36%)</td>
</tr>
<tr>
<td>2008</td>
<td>745</td>
<td>222 (35%)</td>
</tr>
<tr>
<td>2009</td>
<td>773</td>
<td>261 (35%)</td>
</tr>
<tr>
<td>2010</td>
<td>850</td>
<td>252 (35%)</td>
</tr>
<tr>
<td>2011</td>
<td>893</td>
<td>273 (36%)</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 394,682 visits to the Delaware acute care hospital emergency departments in 2011. This is an increase of 120,151 hospital emergency department visits (30.44%) statewide from the same period in 2000. In addition, there were 70,417 patient admissions from the emergency department for 2011, an increase of 22,405 (31.82%) from the same period in 2000.

There were fewer Emergency Department visits in 2011 than in 2010; however, this trend is not expected to continue. The decrease is due to a combination of public health publicity for and availability of the combined seasonal flu and H1N1 flu vaccinations, plus a lighter than normal flu season. Delaware also has had an increase in walk-in clinics within the state.

In 2011, there were still an average of 23 patients in Delaware acute care hospitals on any given day that no longer required hospital care, but the patient remained in the hospital awaiting discharge to post-acute care settings. Also, there was an average of three patients in the Kent and Sussex Counties hospital emergency departments on any given day awaiting transport to an
inpatient psychiatric facility. This inability to discharge inpatients results in a shortage of inpatient beds available for the admission of emergency department patients and the inability to move the emergency department psychiatric patients until transport arrives reduces the number of emergency department beds available for new patients. This also has a direct negative impact on the frequency of hospital diversions and the BLS providers that must take patients to other hospitals outside of the BLS provider's immediate service area.

![Daily Average Number of Hospital Inpatients Awaiting Discharge to a Post-Acute Care Setting](image)

Note: the transfer of emergency department psychiatric patients to inpatient psychiatric facilities does not seem to be affecting New Castle County hospitals at this time; however, not all of the New Castle County hospitals are currently tracking transport of emergency department psychiatric patients.

![Daily Average Number of Hospital Emergency Department Patients Awaiting Transfer to a Psychiatric Facility](image)
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 2011 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 increased 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 an EMS program that would increase the availability of training and allow students to transition to the Delaware Tech program upon graduation.

Increasing demand for services fueled by a rising population and aging baby boomers has placed many volunteer fire companies into a position of hiring staff to cover basic life support (BLS) ambulance runs resulting in additional operational costs to maintain existing levels of service.
Education and Training

The state of Delaware currently recognizes three (3) levels of Emergency provider. Each level has a correlating National Registry equivalent, however only paramedic personnel are required to maintain a National Registry certification as well as a state certification or license. The current levels are:

- First Responder (FR)
  - The FR can initiate immediate basic lifesaving interventions.
- Emergency Medical Technician-Basic (EMT-B)
  - The EMT-B can provide basic emergency medical care and transportation.
- Emergency Medical Technician-Paramedic (EMT-P)
  - The EMT-P provides the highest level of pre-hospital emergency care.

In accordance with the national standards as published in the EMS Educational Agenda for the Future and the National Registry of Emergency Medical Technicians, the State of Delaware has adopted the new standards as outlined in the National Scope of Practice model. These changes will be implemented over the next 5 years with state wide completion by March 2017.

- First responder (FR) becomes Emergency Medical Responder (EMR)
  - EMR personnel are certified through the Delaware State Fire Commission
  - All First responders will be transitioned by September of 2016
- EMT-B transitions to EMT
  - EMT personnel are certified through the Delaware State Fire Commission
  - All personnel will be transitioned by March 31, 2016
- EMT-Paramedic to Nationally Registered Paramedic
  - All paramedics in the State of Delaware are required to maintain this National certification in order to obtain and maintain their Delaware Paramedic License
  - All current paramedics will be transitioned by March 31, 2017

EMT-Paramedic

Submitted by Delaware Technical and Community College

EMT-Paramedic (EMT-P) is the advanced life support (ALS) standard of care for the State Of Delaware. Delaware Technical Community College offers paramedic education through a two-year Associate of Applied Sciences degree program that follows the National EMS Education Standards. Developing leadership and sound decision making skills as part of a student’s clinical practice is emphasized throughout the Program which consists of approximately 2,000 hours of classroom, simulation lab, clinical and field internship experiences.

In March 2011 the Program was reviewed by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP) and recommended for reaccreditation by the Commission on Accreditation of Allied Health Education Programs.
(CAAHEP). It was reaccredited in October 2011. The Program has continuously maintained accreditation by CAAHEP since 1999 and is the only accredited paramedic program within the State of Delaware.

In 2011 the Delaware Tech Paramedic Program graduated its 12th class. A total of 124 paramedics have successfully completed the Program since its inception. One hundred percent of the Program’s graduates have successfully passed the National Registry of Emergency Medical Technicians Paramedic examination.

**Delaware Academy of Public Safety and Security (DAPSS)**

The **Delaware Academy of Public Safety and Security (DAPSS)** is a public charter school for male and female high school students or “Cadets” who want a strong academic foundation for college and/or careers in law enforcement, firefighting, emergency medicine, and other fields that keep the public safe and secure. The school is located in New Castle County and opened in September of 2011 with 9th grade students. The school’s core curriculum blends traditional learning with highly motivational career preparedness course work. With help from our public safety partner, after four years, our cadets will have a wide range of options for continuing their education or starting their careers in the rapidly expanding field of public safety and security.
Domestic Preparedness

Burn Training

The emergency care of patients who are critically burned presents challenges to our experienced medical responders in Delaware. With the threat of criminal acts of terrorism using energetic devices as weaponry, our state’s cadre of care providers needs to be prepared to deal with the potential of multiple victims of this type of injury.

The American Burn Association offers the Advanced Burn Life Support (ABLS) class. This 8-hour class is intended for physicians, nurses, paramedics and other advanced care providers who may be called upon to care for victims of thermal injury. The course is led by instructors who are experts in burn care. Didactic material is combined with case studies, group discussion and hands-on training using live victims moulaged to simulate burn patients. The goal is to educate care providers on the most current guidelines on providing care to burn victims during the first 24-hours post injury.

The Office of EMS working with the Division of Public Health was fortunate to provide this training to our state’s health care providers. A class was offered at the Delaware State Fire School in May. Sixteen students – including physicians, nurses and paramedics – completed the program. Thanks to funding from a preparedness grant, we were able to offer this program at no cost to the state’s providers.

We look forward to offering this extremely valuable and popular program in the future.

Toxmedic Protocols

These protocols were developed to delineate the requirements and responsibilities of various agencies when providers or patients are exposed to hazardous substances. Patients who have been exposed to chemicals and weapons of mass destruction often require procedures, medication and treatments that are not in the scope of a normal field paramedic. Participation in the Toxmedic program by Delaware paramedic agencies is elective. Each of the state’s ALS agencies continues to participate.

Each paramedic identified as a “Toxmedic”, has successfully completed the Advanced Hazmat Life Support Course (AHLS). AHLS program is a 2-day, 16-hour course sponsored by the Division of Public Health.

The AHLS program focuses on medical management of people exposed to hazardous materials, including nuclear, biological and chemical terrorism. Participants are trained to provide rapid assessment of hazmat patients, recognize toxic syndromes, provide medical management for hazmat patients, apply the poisoning treatment paradigm and administer specific antidotes.

The state Toxmedic treatment protocols were updated last year to reflect the most current information related to the treatment of smoke inhalation cyanide exposures and hydrogen sulfide from chemical suicide calls. While no new protocols were developed, information related to
many of the antidote medications was added to the EMS Pharmacology manual. In addition, work is underway to provide distance learning material to update all Delaware Toxmedics on current hazmat patient care protocols.

**Nerve Agent Antidote Protocols for BLS and Public Safety**

The protocol was designed to outline the process by which BLS and Public Safety agencies train, acquire, maintain, use and discard MARK I nerve agent antidote kits. When responding to an act of chemical terrorism or a hazardous materials incident, emergency responders may be exposed to harmful, even fatal doses of nerve agents. In these situations, responders may need to administer life saving medications to themselves or fellow responders in a rapid time frame. The decision for an agency to participate in the MARK I program is voluntary; however, those agencies wishing to participate must comply with the Nerve Agent Antidote protocol outlining training and quality assurance requirements.

During the first few months of 2011, the Office of Emergency Medical Services, working with the Homeland Security Terrorism Preparedness Working Group and Public Health Preparedness, completed a project replacing expired nerve agent antidote kits for state EMS and law enforcement services. Expired Mark I kits have been replaced by DuoDote™ autoinjectors. Autoinjectors that remained after the replacement program were distributed to EMS services that wished to begin participating in the antidote program.

**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 entails continuing a number of projects that 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.

**Carbon Monoxide Poisoning**

There have been many articles published in prehospital medical journals about the dangers of Carbon Monoxide poisoning. Carbon Monoxide is an odorless, colorless gas produced by the incomplete combustion of many organic materials. It affects the body by inhibiting the ability of the blood to transport oxygen to the cells. Patients who are exposed to CO often exhibit very vague symptoms making it easy to mistake CO poisoning for other problems such as the flu. In addition to affecting the patient, the presence of CO in a residence may also affect responders who are sent there to aid the patient.
EMS agencies throughout Delaware have made increasing use of the pulse co-oximeter to measure CO levels in their patients. The Delaware State Fire School offers training on CO and co-oximetry in both their basic EMS classes and department in-service continuing education programs. In addition, at the 2011 Delaware Volunteer Firefighters’ Association Conference, a representative from OEMS presented an educational session on smoke inhalation which included information on CO and the use of co-oximetry on the fire ground.

**Chemical Suicide Awareness**

An emerging threat to responders has presented in the form of chemical suicides. Person’s who wish to take their own life, are using a variety of household materials to produce a poisonous chemical reaction. The byproducts of this reaction often include substances such as hydrogen sulfide or cyanide. Often the victim will choose a location such as a car in order to use the confined space to produce the most lethal concentration of fumes.

Emergency responders arriving on scene are at risk of secondary exposure, contamination and illness as a result of any left-over chemicals in the air. In order to make responders aware of the potential for these situations, OEMS completed two projects related to chemical suicides in 2011.

First was the development of a continuing education program on chemical suicides. This program was a result of efforts involving both OEMS and the Delaware Department of Natural Resources and Environmental Control (DNREC) and is intended for firefighters, EMS providers and law enforcement officers. It reviews the threat of chemical suicides, the dangers involved and helpful tips to approach suspect vehicles. The program includes video presentations of model vehicle approaches by various response agencies.

Secondly, the state Toxmedic protocol was revised to include a treatment plan for hydrogen sulfide exposure in order to treat patients or responders who become affected while on the incident scene. This treatment plan enabled use of medications already included in the existing Toxmedic program.
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. 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 100 ambulances certified through the State fire commission to provide these services through nine (9) 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 (EMT’s). EMT’s provide basic care and patient monitoring including oxygen therapy, bandaging & splinting, etc.
  - Interfacility transport EMT’s have the same scope of practice as 911 EMT’s and utilize the same statewide treatment protocols.
  - Delaware has nine Basic Life support interfacility agencies with a total of 100 ambulances licensed and operating in Delaware:
    - CFT
    - Christiana Care
    - Delaware Park
    - 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 two paramedic interfacility agencies licensed and operating in Delaware:
    - St. Francis
    - TransCare
- **Specialty Care Transports:**
  - 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 Health Services
    - 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.
New Castle County

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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.” In 2010, New Castle County EMS became the first EMS agency in Delaware to achieve national accreditation from 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 2011, New Castle County EMS deployed nine (9) paramedic units during its high call volume periods, and eight (8) paramedic units during non-peak operating hours. A Paramedic Sergeant (field EMS supervisor) is on duty during each shift with a second Paramedic Sergeant augmenting field operations during peak call volume periods. An EMS Lieutenant serves as the overall shift commander on a 24-hour basis. Both the Paramedic Sergeant and EMS Lieutenant are equipped as advanced life support responders.

Our personnel strive to demonstrate our commitment to our motto “Excellence in Service” each and every day.

Further information regarding the New Castle County Paramedics is available on our web site at: www.nccde.org/ems.
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 to New Castle County.

In 2011, the EMS Division deployed eight (8) paramedic units and a Paramedic Sergeant on a 24-hour basis, seven days a week. A ninth paramedic unit and second Paramedic Sergeant are added during peak call volume periods on a “power shift” configuration (0700-1900 hours) seven days a week.

![New Castle County EMS Incidents by Hour](chart)

This chart illustrates the New Castle County paramedic call volume during calendar year 2011 by hour of day.
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 63.9% reliability within 8:59 minutes or less during calendar year 2011. Response time reliability based on dispatched priority level documented a faster paramedic response time for potentially life-threatening, time sensitive (“Echo” level) incidents with a response time reliability of arrival 72.3% within 8:59 minutes or less.

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 29,246 incidents during calendar year 2011. Approximately 3,493 patients required two or more paramedics to accompany them during their transport to the hospital.
This map illustrates the number of New Castle County Paramedic incidents that occurred in each fire company district during calendar year 2011. 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.

Source: New Castle County Computer Aided Dispatch (CAD) System
New Castle County Emergency Medical Services (identified as CARES Agency 40) has been participating in the Cardiac Arrest Registry to Enhance Survival (CARES Registry) since 2009 and has over 1,000 case entries. The latest survival data released by the CARES Registry indicates that cardiac arrest survival rates in New Castle County, Delaware are above the national average of the reporting jurisdictions. New Castle County EMS continues to explore opportunities to further enhance the potential for survival of patients that experience out-of-hospital cardiac arrest. New Castle County EMS responded to 500 patients that were in cardiac arrest during calendar year 2011. Approximately 69% of the patients in New Castle County were at home when they experienced sudden cardiac arrest.

Source: Cardiac Arrest Registry to Enhance Survival (CARES)

New Castle County Paramedics provide care to the victim of a motor vehicle collision involving a motorcycle. County paramedics were dispatched to 197 crashes involving motorcycles during calendar year 2011.
### New Castle County Paramedic Unit Activity

<table>
<thead>
<tr>
<th>PARAMEDIC UNIT</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medic 1 (Wilmington)</td>
<td>3,170</td>
</tr>
<tr>
<td>Medic 2 (New Castle)</td>
<td>4,016</td>
</tr>
<tr>
<td>Medic 3 (Newark)</td>
<td>3,347</td>
</tr>
<tr>
<td>Medic 4 (Brandywine 100)</td>
<td>3,312</td>
</tr>
<tr>
<td>Medic 5 (Middletown)</td>
<td>1,805</td>
</tr>
<tr>
<td>Medic 6 (Glasgow)</td>
<td>3,081</td>
</tr>
<tr>
<td>Medic 7 (Prices Corner)</td>
<td>3,404</td>
</tr>
<tr>
<td>Medic 8 (Wilmington)</td>
<td>3,953</td>
</tr>
<tr>
<td>Medic 9 (12 hour/day unit)</td>
<td>1,845</td>
</tr>
<tr>
<td>Medic 10 (Special Duty)</td>
<td>70</td>
</tr>
<tr>
<td>Medic 11 (Special Duty)</td>
<td>32</td>
</tr>
<tr>
<td>Medic 12 (Special Duty)</td>
<td>3</td>
</tr>
<tr>
<td>Medic 13 (Special Duty)</td>
<td>0</td>
</tr>
<tr>
<td>Medic 20 (Special Ops)</td>
<td>22</td>
</tr>
<tr>
<td>ALS Bike Team</td>
<td>0</td>
</tr>
<tr>
<td>Single paramedic ALS responses</td>
<td>2,344</td>
</tr>
<tr>
<td>TOTAL RESPONSES</td>
<td>30,407</td>
</tr>
</tbody>
</table>

### New Castle County EMS Supervisor and Staff Activity

<table>
<thead>
<tr>
<th>EMS SUPERVISOR/STAFF</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS HQ Staff (Chief &amp; Asst Chiefs)</td>
<td>110</td>
</tr>
<tr>
<td>EMS Lieutenants</td>
<td>774</td>
</tr>
<tr>
<td>Paramedic Sergeants</td>
<td>2,966</td>
</tr>
<tr>
<td>TOTAL STAFF RESPONSES</td>
<td>3,850</td>
</tr>
</tbody>
</table>

The mission of the New Castle County Paramedics can take place in a variety of locations and venues. Here, a county paramedic unit stands by while fire company water rescue personnel search the Chesapeake & Delaware Canal for a vehicle that reportedly submerged with the driver still inside. The victim was recovered, and was pronounced dead at the scene by the paramedics.
ADMINISTRATIVE ACTIVITY

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. Unfortunately, our agency has had to reduce its outreach activity as a result of fiscal restrictions throughout state and local government. 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 bystander CPR performed during cases of sudden cardiac arrest 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 times greater chance of survival.

Public Education Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR/AED Classes</td>
<td>13 courses conducted with certification of 210 persons</td>
</tr>
<tr>
<td>CPR Healthcare Provider</td>
<td>39 courses conducted with certification of over 690 persons</td>
</tr>
<tr>
<td>First Aid Classes</td>
<td>1 course conducted with certification of 10 persons</td>
</tr>
<tr>
<td>Vial of Life Program</td>
<td>Continued collaboration with Christiana Care Emergency Departments and Visiting Nurse Association, and volunteer fire service to facilitate ongoing distribution of Vial of Life kits. Distributed Vial of Life kits at 7 events by paramedics.</td>
</tr>
<tr>
<td>EMS Division Displays</td>
<td>Staffed 16 paramedic service displays or presentations with 5 EMS Division Honor Guard details and 4 NCC Pipes and Drums events</td>
</tr>
<tr>
<td>9/11 Remembrance</td>
<td>New Castle County EMS participated in 5 events that recognizing the 10-year anniversary of the events of 9/11/01</td>
</tr>
<tr>
<td>Open House</td>
<td>Paramedic units displayed at 3 fire company open house events</td>
</tr>
<tr>
<td>Teen Driving Awareness</td>
<td>3 events with 55 students to highlight the risks and potential impact of teen driving decisions</td>
</tr>
<tr>
<td>Youth Education</td>
<td>4 presentations to 92 students regarding EMS careers and the role of paramedics in the emergency medical services system</td>
</tr>
</tbody>
</table>
The New Castle County Pipes & Drums is a multi-discipline ceremonial unit that includes Emergency Medical Services Division, Division of Police and Emergency Communications Division personnel. The Emergency Medical Services Division also maintains an EMS Honor Guard to represent the County paramedics at official events, public safety funerals and render honors to retired members of the service.

ACCOMPLISHMENTS

Continued Participation in National CARES Registry

The New Castle County Paramedics were one of the first 25 agencies to participate in the national Cardiac Arrest Registry to Enhance Survival (CARES) program operated by the Centers for Disease Control (CDC), American Heart Association (AHA) and Emory University. The CARES registry facilitates uniform collection of EMS response and hospital discharge data for cardiac arrest patients, and provides a platform for standardized data analysis. There are now 57 EMS agencies nationwide participating in the project.

New Castle County Service Awards

Twelve personnel from the Emergency Medical Services Division were cited for their outstanding service and dedication to the citizens of New Castle County.
30 Years:  
Senior Lieutenant Karl E. Hitchens  
Paramedic Sergeant Kenneth N. Dunn  
Paramedic Corporal Charles W. O’Neal  
Paramedic First Class James D. McCranan  

25 Years:  
Paramedic Sergeant Donald M. Kennard  
Paramedic Sergeant Dawn E. Gulezian  
Paramedic Corporal John P. Lloyd  

20 Years:  
Lieutenant Mark P. Allston  
Paramedic Corporal Kenneth M. Sliney  
Paramedic Corporal Donald L. Morris  
Paramedic Corporal Beth A. Bratton-Heck  
Paramedic Corporal Paul G. Bazzoli  

2011 EMS Graduation & Appointment Ceremony

New Castle County EMS hosted their annual Graduation & Appointment Ceremony in May 2011 during National EMS Week. The annual event recognizes the graduating New Castle County paramedic students, in addition to those “selective certification” personnel that transferred from out-of-state. The 2011 event was also the first time the ceremony was streamed live to an international audience.

Appointed to the Service in 2010  
Paramedic Jessica A. Duncan  
Paramedic Thomas C. Hobbs  
Paramedic Rachel A. Sternerman  

New Castle County Paramedic Class of 2008-2009  
Paramedic Elizabeth A. Alderson  
Paramedic Ashley D. Steil  

New Castle County Paramedic Class of 2009-2010  
Paramedic Aleksandra N. Campbell  
Paramedic Travis N. Duffin  
Paramedic Leah Hojnicki  
Paramedic Michael E. Pietruczenia
NCC*EMS Initiates Pre-hospital Sepsis Screening

In July 2011, the New Castle County Paramedics added a new device to assist in the early recognition and treatment of a common, but silent killer known as “sepsis.” The Emergency Medical Services Division issued lactate meters and thermometers to all county paramedic units to permit the testing of a patient’s blood lactate level and obtain a patient’s body temperature in the field. Lactate has been identified as a potential leading indicator of shock and organ failure. Elevated blood lactate levels with an elevated temperature and other vital sign changes can indicate the early stages of sepsis. County paramedics are alerting the receiving hospitals to potential sepsis patients in an effort to expedite the initiation of care that can potentially reduce mortality for these patients.

National EMS Week 2011 Activities

EMS Week 2011 included lunch BBQ events at the Delaware Park Picnic Grove for EMS Division personnel. The appreciation lunch included a visit from the FDNY EMS Pipes & Drums, who stopped by on their way to Arlington, VA to welcome the participants completing the National EMS Memorial Bike Ride.

EMS Division personnel rotated through the BBQ, which featured cooking by some of staff. The lunch has been used to say “thank you” to those who give so much of themselves each and every day.
Middletown Freestanding Emergency Department site to Include Paramedic Station

On November 30, 2011 County Executive Paul Clark participated in the groundbreaking ceremonies for a Christiana Care construction project that will place a freestanding emergency department in Middletown. The site will include a separate New Castle County paramedic station that will replace the existing accommodations for Paramedic Station No. 5, which is currently located at the NCCPD Southern Patrol Unit on Broad Street.

Photo courtesy of Christiana Care Health System

NCC*EMS Participates in Preparedness Exercises

The EMS Division participated in a functional exercise of the state Division of Public Health Hospital Evacuation Plan on May 10, 2011 at the Christiana Hospital. The exercise provided an opportunity for hospital administration to interact with representatives from state and local government during simulated conditions that would require the evacuation of a hospital in Delaware.

EMS Chief Provides Congressional Testimony

On May 12, 2011 Chief Lawrence E. Tan provided testimony to the Emergency Preparedness, Response and Communications Subcommittee of the U.S. House of Representatives Committee on Homeland Security. Chief Tan delivered testimony on behalf of the Emergency Services Sector Coalition on Medical Countermeasures and the International Association of EMS Chiefs. The Emergency Services Sector Coalition on Medical Countermeasures consists of emergency services professional associations, policy groups and pharmaceutical companies that are working to promote the development of a national strategy for protecting emergency services (law enforcement, fire service and EMS) personnel from a chemical, biological radiological, nuclear or explosive (CBRNE) incident.
Twenty-five Emergency Medical Services Division personnel were recognized at the May 26, 2011 Department of Public Safety Awards Ceremony for their accomplishments and exemplary performance. The following EMS Division personnel were cited for notable performance at the event:

Assistant Chief Richard D. Krett
Assistant Chief Daniel G. Seador
S/Lt. Joseph J. Dudley
Lt. Mark P. Allston
P/Sgt. Kenneth N. Dunn
P/Sgt. Dawn E. Gulezian
P/Sgt. Donald M. Kennard
P/Sgt. Mark R. Logemann
P/Cpl. David B. Aber
P/Cpl. Isaac J. Hankins
P/Cpl. Crystal D. DiMauro
P/Cpl. Michael A. McColley
P/Cpl. Richard Moerman, Jr.
P/Cpl. William J. O’Leary
Paramedic 1/C Stacy T. LeCompte
Paramedic 1/C David J. McKinney, Jr.
Paramedic 1/C Sherri R. Portello
Paramedic 1/C Daryl C. Rollins
Paramedic 1/C Jeffrey R. Russell
Paramedic 1/C Michael C. Schusteritsch
Paramedic 1/C Elizabeth A. Thompson
Paramedic 1/C Autumn M. Tuxward
Paramedic 1/C Jorge H. Vasquez
Paramedic Michael E. Ferrero
Paramedic Dawn M. Longfellow
The New Castle County Emergency Medical Services Division coordinated the medical coverage of several special events during calendar year 2011. For instance, on May 15, 2011, New Castle County Paramedics worked with basic life support ambulances from St. Francis Hospital EMS, and bike teams from the Aetna Hose, Hook and Ladder Company of Newark and University of Delaware Emergency Care Unit to provide coverage to the Delaware Marathon. The Delaware Marathon involved over 2,500 participants and resulted in twelve (12) requests for emergency medical assistance that included five (5) patients being transported to area hospitals.
NCCo Paramedics Recognized by Kiwanis Club of Wilmington

Three New Castle County Paramedics were honored with Kiwanis Club Awards for the Quarter at a luncheon held at the Hotel DuPont in Wilmington on September 21, 2011. Paramedic Sergeant Kenneth N. Dunn, Paramedic First Class Daryl C. Rollins and Paramedic First Class Stacey T. LeCompte of the New Castle County Emergency Medical Services Division were recognized by the Kiwanis Club of Wilmington.

The three New Castle County Paramedics were cited for their teamwork, exemplary clinical expertise and skill demonstrated during a July 2010 response to a shooting. The incident involved a male patient who had sustained a shotgun wound to his face, which caused severe facial injuries that obstructed his ability to breathe.

NCCo EMS Produces Public Service Announcement Videos

New Castle County EMS released three public service videos during calendar year 2011 that have been broadcast over the cable TV government access channel and posted to the NCC*EMS web site.

**Paramedic Service Video:** an informational video that describes the role of the New Castle County Paramedics and the capabilities of the county advanced life support service within the EMS system. Link: [http://youtu.be/cGrVLWiJkODs](http://youtu.be/cGrVLWiJkODs)

**Learn CPR!** a brief video that describes the importance of immediate action during cases of sudden cardiac arrest. The video highlights the need for citizens to learn CPR, but also instructs them to follow the directions provided by the 9-1-1 dispatcher in the event of an emergency. Link: [http://youtu.be/lxXPHXau464](http://youtu.be/lxXPHXau464)

**Learn CPR! (Spanish Version):** the Learn CPR video was also produced in Spanish and made available to the Latino community. Link: [http://youtu.be/O7z7KevLGrS](http://youtu.be/O7z7KevLGrS)
In cardiac arrest survival rates, NCCo fares well

A recent News Journal article ("A lifesaving measure you need to learn") by Kelly Bothum did an excellent job explaining the value of bystander-initiated CPR in cases of out-of-hospital cardiac arrest.

What readers might not know is that the survival rate in New Castle County for those who suffer out-of-hospital cardiac arrest exceeds the statistics cited in the article – and the survival rate could get even better with help from our citizens.

Together with local hospitals, the New Castle County Paramedics have participated in a national cardiac arrest registry since 2009. The sole purpose of the Cardiac Arrest Registry to Enhance Survival (CARES) is to enable emergency medical services (EMS) systems to uniformly evaluate their response to out-of-hospital cardiac arrest in their communities. The registry helps determine actions that could improve the outcome for patients who experience an out-of-hospital cardiac arrest.

The study cited in the article found that less than 33 percent of the people who went into sudden cardiac arrest somewhere other than a hospital received bystander CPR. The lack of bystander action contributed to a national cardiac arrest survival rate of less than 8 percent.

In New Castle County, only 20 percent to 25 percent of cardiac arrest patients receive bystander CPR before EMS arrives at the scene, yet the overall rate of survival – with meaningful discharge from a hospital – is 10 percent. (Meaningful discharge means the patient has minimal, if any, long-term permanent disabilities and is self-sufficient.)

This includes patients with and without bystander CPR, and at least doubles the expected rate of survival.

The value of bystander CPR in New Castle County becomes clear when you examine our cardiac arrest survival rates when bystanders act immediately.

In New Castle County, if you suffer sudden cardiac arrest and receive bystander CPR, you have a 22 percent chance of surviving to meaningful discharge from a hospital, compared with the 8 percent survival rate for patients with bystander CPR cited in the article.

If your cardiac arrest is witnessed by an EMS provider in New Castle County, the rate of survival to meaningful discharge from a hospital is nearly 25 per-

Civic organizations and schools can play a role in making sure more people know CPR

cent, almost triple the national rate of 9 percent. The survival rate in EMS-witnessed cases in the county rises to more than 33 percent for cardiac-arrest patients who have an initial shockable heart rhythm such as ventricular fibrillation.

This is excellent considering the 34.6 percent survival rate documented by all the "high performance" EMS systems in the CARES group, which include many urban EMS systems that have much greater access to public defibrillators than we have in the largely suburban and rural areas of New Castle County.

County residents can further improve out-of-hospital cardiac arrest survival rates by learning CPR, acting quickly in an emergency and supporting the efforts of our EMS professionals. Civic organizations can offer CPR training. High schools can include CPR training as a requirement for graduation.

Individuals calling 911 to report a medical emergency can follow the telephone instructions provided by the dispatchers, even if they have never taken a CPR course. Your best effort at compressing the chest of a cardiac arrest victim is better than no action and may double or triple the victim's chance of survival.

Through their dedication, high level of training, commitment to clinical excellence and partnership with other first responders, New Castle County's paramedics are delivering extraordinary results, which is one reason our EMS agency is the only one in Delaware to receive accreditation from the national Commission on Accreditation of Ambulance Services.

The citizens of New Castle County should be proud of their paramedics and the level of care they provide every day. Please support them as they work to increase the number of survivors of sudden cardiac arrest. Working together, we can make the cardiac arrest survival rates in our community among the best in the nation.

Paul G. Clark is the New Castle County executive. Lawrence E. Tan is chief of New Castle County Emergency Medical Services. For more information about the New Castle County paramedics and what you can do to help in cases of sudden cardiac arrest, go to www.nccde.org/ems.
NCCo Paramedics Participate in Job Fair

On Monday, April 11, 2011 the New Castle County Paramedics participated in a Job Fair hosted by United States Senator Chris Coons. Over 50 employers were present at the Chase Center at the Riverfront in Wilmington for the event. Lt. Mark Allston, EMS Division Recruitment Coordinator, and Paramedic Cpl. Isaac Hankins staffed the EMS Division display with representatives from the New Castle County Office of Human Resources.

NCCo EMS Renders Honors to Fallen NCCPD Officer

On September 16, 2011 the New Castle County Police Department suffered a tragic loss. Lt. Joseph Szczerba was fatally stabbed while struggling with a suspect shortly after midnight. Lt. Szczerba, at age 44, had served with the department for 18 years.

The New Castle County Paramedics were tasked with planning and coordinating the medical coverage of the funeral, which was estimated to be attended by 6,000 people. With the assistance of Kent and Sussex County EMS and several BLS agencies, New Castle County EMS provided support to the New Castle County Police Department that included an EMS Honor Guard, the NCC Pipes and Drums, medical coverage of the funeral venue, and maintenance of county-wide 9-1-1 ALS coverage on the day of the funeral.

New Castle County EMS mourns the loss of NCCPD Lt. Joseph L. Szczerba.
Our Mission is Your Life
ALS and BLS Patient Age Comparison-2011

New Castle County

Percentage When New Castle County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2011

New Castle County ALS and BLS

= <4 hrs
>4 hrs
<table>
<thead>
<tr>
<th>New Castle County</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLS Scratch Report</td>
</tr>
<tr>
<td>From 01/01/11 to 12/31/11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Station</th>
<th>In District</th>
<th>Out Of District</th>
<th>Totals</th>
<th>Scratches</th>
<th>Company Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aetna Hose, Hook &amp; Ladder</td>
<td>7534</td>
<td>841</td>
<td>8375</td>
<td>108</td>
<td>1.29%</td>
</tr>
<tr>
<td>Belvedere Fire Company</td>
<td>98</td>
<td>222</td>
<td>320</td>
<td>30</td>
<td>9.38%</td>
</tr>
<tr>
<td>Brandywine Hundred</td>
<td>1631</td>
<td>527</td>
<td>2158</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Christiana Fire Company</td>
<td>8420</td>
<td>535</td>
<td>8955</td>
<td>4</td>
<td>0.04%</td>
</tr>
<tr>
<td>Claymont Fire Company</td>
<td>2987</td>
<td>535</td>
<td>3522</td>
<td>15</td>
<td>0.43%</td>
</tr>
<tr>
<td>Cranston Heights Fire Company</td>
<td>1310</td>
<td>881</td>
<td>2191</td>
<td>1</td>
<td>0.05%</td>
</tr>
<tr>
<td>Delaware City Fire Company</td>
<td>1001</td>
<td>438</td>
<td>1439</td>
<td>2</td>
<td>0.14%</td>
</tr>
<tr>
<td>Elsmere Fire Company</td>
<td>1366</td>
<td>431</td>
<td>1797</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Five Points Fire Company</td>
<td>930</td>
<td>435</td>
<td>1365</td>
<td>1</td>
<td>0.07%</td>
</tr>
<tr>
<td>Goodwill Fire Company</td>
<td>1122</td>
<td>372</td>
<td>1494</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Hockessin Fire Company</td>
<td>993</td>
<td>488</td>
<td>1481</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Holloway Terrace Fire Company</td>
<td>923</td>
<td>426</td>
<td>1349</td>
<td>29</td>
<td>2.15%</td>
</tr>
<tr>
<td>Mill Creek Fire Company</td>
<td>3699</td>
<td>444</td>
<td>4143</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Minquadale Fire Company</td>
<td>1242</td>
<td>478</td>
<td>1720</td>
<td>4</td>
<td>0.23%</td>
</tr>
<tr>
<td>Minquas Fire Company</td>
<td>775</td>
<td>799</td>
<td>1574</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Odessa Fire Company</td>
<td>606</td>
<td>185</td>
<td>791</td>
<td>29</td>
<td>3.67%</td>
</tr>
<tr>
<td>Port Penn Fire Company</td>
<td>72</td>
<td>165</td>
<td>237</td>
<td>1</td>
<td>0.42%</td>
</tr>
<tr>
<td>Talleyville Fire Company</td>
<td>3164</td>
<td>327</td>
<td>3491</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Townsend Fire Company</td>
<td>485</td>
<td>176</td>
<td>661</td>
<td>49</td>
<td>7.41%</td>
</tr>
<tr>
<td>University of Delaware</td>
<td>222</td>
<td>75</td>
<td>297</td>
<td>34</td>
<td>11.45%</td>
</tr>
<tr>
<td>Volunteer Hose Company Inc.</td>
<td>2596</td>
<td>223</td>
<td>2819</td>
<td>63</td>
<td>2.23%</td>
</tr>
<tr>
<td>Wilmington Manor Fire Company</td>
<td>1626</td>
<td>426</td>
<td>2052</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>42802</strong></td>
<td><strong>9429</strong></td>
<td><strong>52231</strong></td>
<td><strong>370</strong></td>
<td><strong>0.71%</strong></td>
</tr>
</tbody>
</table>

| New Castle County BLS Paid Personnel Chart By Company |

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>Total Pd personnel</th>
<th>Shifts covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aetna Hose Hook &amp; Ladder</td>
<td>8 FT - 40 PT</td>
<td>24 hour coverage</td>
</tr>
<tr>
<td>Belvedere Fire Co. 30</td>
<td>1 FT 15 PT</td>
<td>12H</td>
</tr>
<tr>
<td>Brandywine Hundred Fire Co. 11</td>
<td>8 FT - 4PT</td>
<td>24/7</td>
</tr>
<tr>
<td>Christiana Fire Co. 12</td>
<td>8 FT - 47 PT</td>
<td>24/7</td>
</tr>
<tr>
<td>Claymont Fire Company 13</td>
<td>9 FT - 125 VOL</td>
<td>24/72</td>
</tr>
<tr>
<td>Cranston Heights Fire Co. 14</td>
<td>6 FT - 15 PT</td>
<td>24/7</td>
</tr>
<tr>
<td>Delaware City Fire Company 15</td>
<td>4 FT</td>
<td>24 On ~ 72 Off</td>
</tr>
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New Castle County

Basic Life Support (BLS)
Submitted by various BLS agencies in New Castle County

New Castle County is comprised of 21 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 lead 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.

Photos courtesy of Aetna Fire Company
Notable Events

Odessa Fire Company

Odessa Fire Company receives award for Excellence in Fire Service-Based EMS
Washington, D.C
Thursday, April 7, 2011

President Frank Gant and Ems Supervisor Dave Aber, along with Gov. Markell, Congressman John Carney, and DVFA President Bill Tobin receive the Award for the Odessa Fire Company at the CFSI dinner in Washington D.C. The award was for Excellence in the Fire Service-Based Ems. This was the first year this award has been given for a volunteer fire company at the CFSI dinner.

Brandywine Hundred Fire Company

Brandywine Hundred Honors Top EMS Responders

Brandywine Hundred is the proud operator of two ambulances, responding to over 2,237 requests for service with 1,683 of these requests resulting in transports. The staffing of the ambulances is accomplished through a combination of paid staff for the primary unit and the second ambulance is staffed entirely by volunteer members. We would like to take this opportunity to congratulate the top responders for their dedication:

- Chris Weatherby – 55 calls
- Richard Daswick – 18 calls
- Doug Horstmann – 14 calls
- Tom Fanelli – 12 calls
- Ryan Kennard – 8 calls
Communication Center

New Castle County
Submitted by David Roberts

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 2011 was 365,048. Another 88,151 non-emergency calls were also processed by our Emergency Call Operators. The Center dispatched or processed a total of 125,387 fire/medical incidents and 317,475 police incidents in year 2011. New Castle County Emergency Communication Center handled over 51.63% of the 776,891 9-1-1 calls in the State of Delaware for 2011.

The New Castle County Emergency Communications Center was recognized as an Accredited Center of Excellence in Emergency Medical Dispatch by the National Academy of Emergency Medical Dispatch in October 2002 as the 87th agency in the world accredited; and then, re-accredited in October 2005, November 5, 2008 and 15, 2011. Additionally, we utilize the National Academy of Emergency Fire Dispatch protocols and currently working toward our national accreditation.

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 full and part-time Emergency Call Operators, twenty-three New Castle County Police Communications personnel, twenty Delaware State Police Communications personnel, twenty-five full-time Fire/Medical Communications personnel, and an administrative staff of six personnel.

This agency also operates a state-of-the-art mobile communications van that is capable of taking over all operations, with the exception of phones, within the 9-1-1 Center at a moments notice. The New Castle County Emergency Communications Center operates within the New Castle County Public Safety Building.

![Picture submitted by NCC 911 Center]

New Castle County Delaware 911 Calls

![Data submitted by E911 Board]
Kent County

Advanced Life Support 103
Report Submitted by Chief Colin Faulkner

Basic Life Support 118

Communication Center 120
Kent County Emergency Medical Services
Submitted by Kent County EMS

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.

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 13 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.

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 able 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.
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.
Law enforcement agencies throughout the country have realized the important role of medical support during SWAT or tactical missions. Utilization of experienced paramedics trained in tactical operations enhances the team and ensures appropriate and timely emergency medical care during highly stressful and potentially dangerous situations.

**History**
Kent County Department of Public Safety, Division of Emergency Medical Services (KCDEMS) initiated the SWAT/Tactical Medic program in 2007. The first law enforcement agency to request our services was Smyrna Police Department. Smyrna PD coordinates a consortium tactical team, the STAR (Special Tactics and Response) team comprised of member of various departments. Recently, Milford Police Department has requested KCDPS SWAT-Medics support their SOG (Special Operations Group) tactical team.

**Training**
Intensive training is required to be proficient and maintenance of skills. SWAT-Medics, in addition to remaining proficient in emergency medical treatment protocols and procedures, must also maintain training in tactical operations and weapons. Initial training occurs at the International School of Tactical Medicine® where specialized emergency medical training is provided to handle advanced airway management, thoracic and abdominal injuries, orthopedic stabilization, police K-9 emergency veterinarian care, and much more. This school also certifies our paramedics as basic and advanced SWAT operators with a proficiency in tactical entry, room clearing, weapons training, hostage and barricaded subjects training. The team continually trains on a monthly basis with both the STAR and SOG teams to ensure excellent working relations and skills maintenance.
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. 2011 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 12 community events- these events included CPR classes, school demos, health fairs, and a great number of standbys (where we are on standby due to crowd estimates, etc.) Kent County Paramedics taught 5 CPR classes last year reaching over 30 people.

2011 marked the 9th 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 2011 we inspected and installed 8 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, the Kent County Public Library and Dover Public Library.

In order to accomplish effective communication with our younger audience, Paramedic Pete was hired and detailed to cover these events. Pete spoke with the children regarding who Paramedics are and what to expect if they call 911. Also discussed were bike safety, anti-bullying campaign, summer / water safety among other topics. Paramedic Pete and his assistants, Paramedic John and Paramedic Mike were well received! 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.
2011 Improvement Initiatives and Summary Report


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 and this skill is supported by monthly “Triage Days” during which all patients are identified with appropriate triage tags. 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 Triage Days and con-eds will maintain current training levels. *These have been added to the 2012 Training Schedule*
2. Further training needs to be accomplished such that all Medics are competent in establishing a Medical Sector at an MCI (Triage, Treatment, and 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. *The goal is to expand the vehicle fleet to provide for 2 spare units.*
4. Extended Operation and Re-call of personnel capability needs to be demonstrated through practical exercise. *Medics are issued personal pagers for Call-back and OT notification.*

**Mass Gatherings**

**Response:** The Department prepares for several Mass Gathering activities each year. Notably, the NASCAR races at Dover Downs, the Delaware State Fair, the Bike-to-the-Bay, and the Amish Country Bike Tour present the venues for the largest populations. There are occasionally other events (VIP appearances, DAFB Air Show, Chicken Festival, etc.) which also require Mass Gathering preparations. 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 has been expanded with one trailer now housing the Bikes and one Medic-Gator and a second trailer which houses a second Medic-
Gator. 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 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 Gator (the primary means of covering large venues). All Medics are introduced to towing a support trailer.

**Activity:** The Gator and/or Bikes were used to cover Spring and Fall NASCAR races, Safe Summer Day, and the Governor’s Fall Festival. The Spec Ops trailer was pre-deployed for the State Fair. The County Decon Unit and TANGO-1 were deployed to cover several VIP events including Return Day.

**Needs & Initiatives:**
1. Additional medics have completed IPMBA training.
2. A standardized reporting form has been established to address operational needs when requested to cover a large event.

**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. DSP has acquired a new helicopter which will increase the availability of aviation support over marine environments.

**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:**
At this time further development of maritime response is tabled as current response efforts have been sufficient.

**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.

**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. Joint exercises have been conducted with DNREC, the 31st CST, and DAFB. These joint
sessions have met with great approval from all concerned and more are planned for the future. Currently there are six Medics trained or awaiting training to the Hazmat Technician level which qualifies them to assist the entry team.

**Activity:** There were no Decon activations for this period. The unit(s) participated in displays 2 times. The units were pre-deployed in support of the NASCAR races.

**Needs & Initiatives:**
1. Regular training nights will continue. Joint training evolutions with other response agencies should be enhanced. The 3rd Tuesday each month 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.

**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 10 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 were no team activations. The team participates in annual trench and collapse weekend exercises.

**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.

**EOD/SORT Response**

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

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

**Training:** Four 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:** Monthly training with both teams continues. There was more than 50 hours of training activity. There were 10 missions for a total of 60 hours.

**Needs & Initiatives:**
1. SWAT Medics are alerted by alpha pager and/or the STAR / Milford phone tree process.
2. Additional equipment is being obtained to coincide with the expansion of this program.
3. Re-certification training has begun with one SWAT Medic due for this training each year.

**Fire 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.

**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.

**All-Terrain Medical Response**

**Response:** 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 trailer which requires transport to the scene.
**Equipment:** The ATMR trailer has been a tremendous improvement in storage and ease of transport of the units. All response vehicles (Crown Vics excluded) are equipped to tow the trailer. A solar battery charging system was installed for the Gator. The additional Medic Gator and trailer are in service.

**Training:** The Bike Team continues as before with several Medics trained to ride the units. Gator training has been completed and all medics are familiar with Gator unit operation.

**Activity:** The Bikes and Gator covered both the Spring and Fall NASCAR races. The Gator was used at Safe Summer Day, the Governor’s Fall Festival, and the Amish Country Bike Tour.

**Needs & Initiatives:**
1. Additional training on Gator operation should be conducted to increase the number of qualified drivers. Gator driving should be extended to all Department employees and an MOU should be established to allow VFD personnel to operate the unit under extreme circumstances. *Training is scheduled periodically.* VFD personnel can be utilized as needed, much in the way they assist in transferring Medic Units from the scene when all Medics are committed to patient care.
2. Further training on trailer operations should be conducted and extended to all Department employees to increase the number of qualified drivers. *Training is scheduled periodically.*

**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.

**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 primary Medic Units are being committed to these incidents for longer periods. 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. The establishment of TANGO-1, a multi-purpose response unit has enhanced the response capacity of the Department. This unit is not currently staffed around the clock.

**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 Kent County threat/vulnerability assessment needs to be conducted.

**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.
## 2011 Kent County BLS Scratch Report

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<td>Leipsic Sta. 53</td>
<td>228</td>
<td>22</td>
<td>9.6%</td>
</tr>
<tr>
<td>Magnolia Sta. 55</td>
<td>939</td>
<td>8</td>
<td>0.9%</td>
</tr>
<tr>
<td>Marydel Sta. 56</td>
<td>462</td>
<td>60</td>
<td>13.0%</td>
</tr>
<tr>
<td>Dover AFB Sta. 58</td>
<td>137</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Prime Care Sta. 63</td>
<td>6259</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Smyrna Amer. Legion Sta. 64</td>
<td>2938</td>
<td>163</td>
<td>5.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22164</strong></td>
<td><strong>553</strong></td>
<td><strong>2.50%</strong></td>
</tr>
</tbody>
</table>

## Kent County BLS Paid Personnel Chart by Company

<table>
<thead>
<tr>
<th>Agency Name</th>
<th>Total Pd personnel</th>
<th>Shifts covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowers Fire Co. 40</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Camden-Wyoming Fire Co. 41</td>
<td>6F-19P</td>
<td>24/7</td>
</tr>
<tr>
<td>Carlisle Fire Company 42</td>
<td>1F-14P</td>
<td>24/7</td>
</tr>
<tr>
<td>Cheswold Fire Co. 43</td>
<td>0F-10P</td>
<td>24/7</td>
</tr>
<tr>
<td>Clayton Fire Co. 6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Felton Community Fire Co. 48</td>
<td>8F 15P</td>
<td>24/7</td>
</tr>
<tr>
<td>Frederica Vol. Fire Co. 49</td>
<td>1F</td>
<td>12H</td>
</tr>
<tr>
<td>Harrington Fire Co. 50</td>
<td>2F</td>
<td>12H</td>
</tr>
<tr>
<td>Hartly Fire Co. 51</td>
<td>1</td>
<td>8H</td>
</tr>
<tr>
<td>Leipsic Fire Co. 53</td>
<td>4EMT 15 Drivers VOL</td>
<td></td>
</tr>
<tr>
<td>Magnolia Vol. Fire Dept. 55</td>
<td>15P</td>
<td>24/7</td>
</tr>
<tr>
<td>Marydel Fire Co. 56</td>
<td>VOL 7EMT, 6EMR</td>
<td>24/7</td>
</tr>
<tr>
<td>Smyrna American Legion 64</td>
<td>6F-6P</td>
<td>12H</td>
</tr>
<tr>
<td>South Bowers Fire Company</td>
<td>1F</td>
<td></td>
</tr>
</tbody>
</table>
Kent County
Basic Life Support (BLS)
Submitted by various BLS agencies within 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, Houston, Little Creek, South Bowers, and Robbins Hose. Mutual Aid agreements exist with boarding fire companies to supply ambulance service to these districts or contracts with private ambulance companies.

Notable Events

Cheswold Fire Company

On April 30, 2011 Cheswold was dispatched for an accident with multiple patients at the intersection of Dupont Highway and Messina Hill Road (south end). Rescue 43 arrived under the command of Chief Jeff Brown and found two cars with several injured people involved. He requested two additional ambulances and directed his crews to begin packaging the patients for transport. Four people were transported to local hospitals and the fire units cleared the scene.
Magnolia Volunteer Fire Company

The Magnolia Volunteer Fire Company provides EMS service to 6,000 residents within a 16 square mile bedroom community in central Kent County. The service is staffed with a full crew of two paid EMTs weekdays from 6AM to 6PM, and half of a paid crew with one staff EMT during weeknights and weekends. The other half of the crew during nights and weekends is covered by a volunteer driver or EMT. The 17 staff EMTs and 14 volunteer drivers and EMTs that comprise the service are scheduled for 6-hour shifts based upon their submitted availability using an automated scheduling system. The blended model employed by Magnolia allowed for a fast, efficient, and cost-effective response to 940 EMS calls in 2011, and applies its members' pride in serving their community as a cornerstone of the service.


Magnolia’s Volunteer EMS Top Responders for 2011 were recognized and presented with their awards during the company’s annual Awards Banquet on March 9, 2012. Pictured from left to right are Ambulance Captain Rob Leech, President Earle Dempsey, Mark Cockburn, and Adam Duli.
Communication Center
Kent County
Submitted by Kent County 911

The Kent County Emergency Communications Center receives 9-1-1 calls through a variety of phone exchanges through Kent County, Northern Sussex County and Southern New Castle County. The total number of 9-1-1 calls processed in year 2011 was 97,247. Another 64,995 non-emergency calls were also processed by our dispatchers. The Center dispatched or processed 22,164 medical incidents and 6273 fire incidents in year 2011.

The Kent County Emergency Communications Center is recognized as an Accredited Center of Excellence in Emergency Medical and Fire Dispatch by the National Academy of Emergency Dispatch. Our next Medical Re-Accreditation renewal date is January 2013. In 2011 through our Quality Assurance Section we achieved 98.64% on Case Entry; 99.17% for Chief Complaint; 99.46% for Key Questions Processing; 92.30% for Pre-Arrival Instructions; 99.72% for Post Dispatch Instructions; 98.75% for Final Coding and an overall average score of 99.03%.

The Kent County Emergency Communications Center operates 24 hours a day on a year round basis. We provide Fire/EMS Communications to 18 Volunteer Fire Companies, 2 EMS Companies and the Kent County Paramedics. The Center is staffed with 21 Fire/EMS dispatchers and an administrative staff of 3 personnel.

Monies provided by the State’s 911 Executive Board funded a new Viper 911 phone system for Kent County. The phone system is a Next Generation 911 system (NG 911) and when network protocols are worked out nationally it will be capable of receiving text messaging, streaming video, photos and telemetry. The upgrade cost $1.3 million using fees collected from telephone and cell phone users.

One of the biggest challenges Kent County has twice a year is the NASCAR Race. This event brings over 130,000 people to our County. The race creates a city within a city. Starting on Thursday of the race week Kent County provided trained dispatchers to answer and dispatch EMS/Fire calls to the emergency responders that are working the event.

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 Kent County Department of Public Safety Building, 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 123
Report Submitted by Director Robert Stuart

Basic Life Support 133

Communication Center 137
Overview

In 2011, Sussex County EMS (SCEMS) celebrated twenty 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
2011 Accomplishments

Field Operations

Call Volume: After a five percent increase in call volume in 2010, Sussex County EMS experienced a 1% decrease in responses in 2011. Over the past five years, SCEMS has experienced an 11% 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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 100 (Eastern Supervisor)</td>
<td>786</td>
</tr>
<tr>
<td>EMS 200 (Western Supervisor)</td>
<td>535</td>
</tr>
<tr>
<td>Medic 101 (Lincoln)</td>
<td>1,923</td>
</tr>
<tr>
<td>Medic 102 (Laurel)</td>
<td>2,046</td>
</tr>
<tr>
<td>Medic 103 (Dagsboro)</td>
<td>1,868</td>
</tr>
<tr>
<td>Medic 104 (Lewes)</td>
<td>2,839</td>
</tr>
<tr>
<td>Medic 105 (Millville)</td>
<td>1,666</td>
</tr>
<tr>
<td>Medic 106 (Long Neck)</td>
<td>2,013</td>
</tr>
<tr>
<td>Medic 107 (Bridgeville)</td>
<td>2,264</td>
</tr>
<tr>
<td>Medic 108 (Georgetown)</td>
<td>1,608</td>
</tr>
<tr>
<td>Medic 109 (summer &quot;Power Unit&quot;)</td>
<td>98</td>
</tr>
<tr>
<td>Other</td>
<td>129</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17,775</strong></td>
</tr>
</tbody>
</table>

Table 1: Incident Responses by Unit (Source: EDIN)

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.
Hurricane Irene: Along with much of the eastern seaboard, Sussex County braced for the impact as Hurricane Irene was forecast to pass directly over the County as a Category 3 hurricane in late August. Emergency preparedness plans were initiated and the Sussex County Emergency Operations Center was staffed by members of the emergency preparedness community, including SCEMS employees, for three days. Although, Sussex County did not receive the significant damage forecast for Irene, the storm served as an excellent opportunity to test several of the lessons learned from the snowstorms of early 2009. SCEMS was able to flexibly deploy units as necessary and placed their Cessation of Response Plans into play, although the winds never reached a level that prevented response to a 911 call. SCEMS and Sussex County Public Information Officers made extensive use of social media sites such as Facebook and Twitter in an attempt to keep the public informed of the approaching storm.

Special Events Coverage: SCEMS provided EMS coverage for numerous special events including Return Day, Punkin Chunkin, Apple Scrapple Festival and the July Fourth Celebrations utilizing both traditional crews and paramedic bike teams. The July 4Th weekend is the busiest weekend of the year for emergency responders in Sussex County. SCEMS deployed several additional units to cover the numerous holiday celebrations in Rehoboth Beach, Bethany Beach and Laurel.

Extreme Makeover: Home Addition: In August, the crew of the television show, Extreme Makeover: Home Edition arrived in Cool Springs outside of Harbeson, DE to build a house for a local resident. At the build site, hundreds of volunteers worked in the heat to construct several buildings in one week. SCEMS personnel were on-site throughout the build until its completion to provide Emergency Medical Services for the people present. Several patients were transported to the local hospital for treatment during the taping of the show.
Personnel

Staffing: SCEMS had six paramedic vacancies as of December 31, 2011. Local, regional and national efforts focused on recruiting Nationally Registered Paramedics from out-of-state. During 2011, SCEMS hired three student paramedic employees from Delaware Technical and Community College’s Paramedic Program. SCEMS did not sponsor any new students in the 2011-2012 paramedic program.
**Competition Team:** Once again, the SCEMS competition team competed in the “JEMS Games” held in March 2011 during the EMS Today Conference in Baltimore, Maryland. The team included Paramedics Jeff Cox, Stuart Hensley, Jill Wix and Jessielynn Woolbright. This year’s competition included seventeen teams the United States and Australia. During the competition, the EMS teams were judged on their performance and speed during mock patient care situations and scenarios. After advancing to the final round of the competition with two other teams, they were judged on how effectively they triaged and treated multiple victims from a mass suicide. For their performance, the SCEMS team was awarded a Gold Medal for their first place finish. In previous years, SCEMS teams have earned both silver and gold medals in the JEMS Games and placed third in an international EMS competition in Israel sponsored by Magen David Adom Israel.

![Figure 7: SCEMS Competition Team takes Gold Medal in 2011 JEMS Games (source: SCEMS)](image)

**NAEMT Award:** In August, the National Association or EMTs presented Sussex County EMS with the Dick Ferneau Paid EMS Service of the Year. EMS Director Robert Stuart and several department members attended the ceremony at EMS Expo in Las Vegas to receive this award.

![Figure 8: SCEMS is presented the Dick Ferneau Paid EMS Service of the Year (source: SCEMS)](image)
Education and Quality Management

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. In addition to these didactic sessions, paramedics complete required daily training delivered via the county intranet.

Simulator Program: After working through several technical issues, SCEMS began their Patient Simulator program. In this program, all field paramedics will be evaluated using scenarios in the simulator lab. They have always assessed their paramedics’ abilities to perform critical skills (e.g. intubation, surgical airways) but this new program will assist them in assessing their ability to make critical patient care decisions. Over the last two months, SCEMS has been able to have a third of its department rotate through the Simulation Lab. The goal is to have all paramedics be evaluated in the Simulation Lab semiannually.

Cardiac Arrest Resuscitation to Enhance Survival (CARES): In November, SCEMS began to participate in the CARES registry, joining New Castle County EMS that has been involved since 2009. This is a database maintained by Emory University in cooperation with the Centers for Disease Control and Prevention in an effort to improve survival from Cardiac Arrest.

Drills and Exercises

Del Tech Disaster Drill: SCEMS participated in drills and exercises with DelDOT, DRBA, local hospitals and the Delaware Tech Paramedic Student Program. SCEMS provided MCI resources such as tarps and cones and staff shadowed the EMS participants and provided guidance and direction during the exercises.

Active Shooter Drill: On June 4, SCEMS participated in Operation School Plan Emergency Action Response (Operation SPEAR) with the Ocean View Police department and other fire and police agencies. Held at the Lord Baltimore Elementary School, this exercise simulated the emergency response to an active shooter in a school setting.

DRBA Drill: On September 21, SCEMS participated in an exercise simulating a fire on the Cape May – Lewes Ferry. The drill was designed to test the hospital’s preparedness to handle a sudden patient surge from a disaster. SCEMS Paramedics, Sussex County Emergency Operations Command Post, the Delaware State Police Aviation Section and local fire companies all participated in the event.

Equipment and Logistics

Paramedic Station 106: In late 2011, SCEMS began the search for suitable property to erect a new paramedic station in the Long Neck area. For many years the current station has been collocated with the Mid-Sussex Rescue Squad, Station 91. Mid-Sussex has elected not to renew its lease with the County prompting this search for a new location.

Infrastructure: Through the use of a grant from DEMA, SCEMS installed a bidirectional amplifier at Headquarters to improve radio and cellular communications throughout the building. Also, SCEMS installed emergency power generation at Station 103/Special Operations, Station 102 in Laurel and Station 105 in Clarksville.
2012 Initiatives

Personnel
Recruiting and Retention: SCEMS entered 2011 with six paramedic vacancies and no sponsored student-employees in the Delaware Technical and Community College Paramedic Program. Over the past five years, SCEMS has had a median attrition rate of 6 paramedics per year. With the cessation of their sponsorship of paramedic students, they’re increasing recruiting activities in an effort to hire more out-of-state paramedics needed to offset the existing vacancies and anticipated annual attrition.

Education of BLS: Since the early 1990s, SCEMS has offered the Medic Assist course to BLS companies. This course is designed to train EMTs to assist paramedics in the performance their ALS skills. As examples, the course includes preparing IV bags for use by the paramedic and correctly placing ECG leads on the patient. SCEMS has recognized that the BLS providers could benefit from more exposure training so it is beginning to offer several other courses to the local volunteer fire and EMS departments. These courses are directed primarily towards Mass Casualty Management and Fire Ground Rehab.

Equipment and Logistics
Cardiac Monitor Replacement: SCEMS will begin a program of replacement for its aging Physio-Control LifePak 12 Monitor/Defibrillators currently utilized in our department. Many of these monitors are over ten years old. This model of monitor is no longer manufactured and the manufacturer will end its support for this monitor over the next several of years. An ad hoc committee consisting of field paramedics and administration was formed to look for a replacement for the LifePak 12. Members of this committee traveled to the headquarters of the three major cardiac monitor manufacturers in an effort to evaluate their products and the quality of their manufacturing processes. This replacement process will take place over several budget years.

Paramedic Station 106: SCEMS will be purchasing property and beginning construction of a new Station 106 in Long Neck.

Infrastructure: SCEMS will be completing its emergency power generation project by installing generators at Station 101 in Lincoln and Station 104 in Lewes. SCEMS will also be completing the conditioning of all garage spaces in an effort to maintain medication storage at the proper temperature range and reduce maintenance costs on vehicle rear climate control units.

Sussex County EMS
P.O. Box 589
Georgetown, DE 19947
302.854.5050

Caring People, Quality Service
http://www.sussexcountyems.com

http://www.facebook.com/pages/Georgetown-DE/Sussex-County-EMS/151180322526
ALS/BLS Incidents by Month-2011

Sussex County

Percentage When Sussex County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2011

Sussex County ALS and BLS PCR Print Time Report
<table>
<thead>
<tr>
<th>Station</th>
<th>Total</th>
<th>Scratches</th>
<th>Scratch Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bethany Beach</td>
<td>608</td>
<td>4</td>
<td>0.7%</td>
</tr>
<tr>
<td>Blades</td>
<td>624</td>
<td>44</td>
<td>7.1%</td>
</tr>
<tr>
<td>Bridgeville</td>
<td>805</td>
<td>30</td>
<td>3.7%</td>
</tr>
<tr>
<td>Dagsboro</td>
<td>465</td>
<td>13</td>
<td>2.8%</td>
</tr>
<tr>
<td>Delmar</td>
<td>1335</td>
<td>6</td>
<td>0.5%</td>
</tr>
<tr>
<td>Elendale</td>
<td>730</td>
<td>24</td>
<td>3.3%</td>
</tr>
<tr>
<td>Frankford</td>
<td>203</td>
<td>11</td>
<td>5.4%</td>
</tr>
<tr>
<td>Georgetown</td>
<td>2144</td>
<td>124</td>
<td>5.8%</td>
</tr>
<tr>
<td>Greenwood</td>
<td>580</td>
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<td>1.9%</td>
</tr>
<tr>
<td>Gumboro</td>
<td>232</td>
<td>13</td>
<td>5.6%</td>
</tr>
<tr>
<td>Indian River</td>
<td>9</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>laurel</td>
<td>1605</td>
<td>58</td>
<td>3.6%</td>
</tr>
<tr>
<td>Lewes</td>
<td>2391</td>
<td>13</td>
<td>0.5%</td>
</tr>
<tr>
<td>Memorial</td>
<td>77</td>
<td>3</td>
<td>3.9%</td>
</tr>
<tr>
<td>Mid -Sussex</td>
<td>2003</td>
<td>129</td>
<td>6.4%</td>
</tr>
<tr>
<td>Millsboro</td>
<td>1697</td>
<td>153</td>
<td>9.0%</td>
</tr>
<tr>
<td>Millville</td>
<td>1283</td>
<td>54</td>
<td>4.2%</td>
</tr>
<tr>
<td>Milton</td>
<td>816</td>
<td>18</td>
<td>2.2%</td>
</tr>
<tr>
<td>Roxana</td>
<td>683</td>
<td>21</td>
<td>3.1%</td>
</tr>
<tr>
<td>Selbyville</td>
<td>347</td>
<td>10</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18637</strong></td>
<td><strong>739</strong></td>
<td><strong>2.50%</strong></td>
</tr>
</tbody>
</table>

### BLS Paid Personnel Chart By Company

<table>
<thead>
<tr>
<th>Sussex County</th>
<th>Total Paid personnel</th>
<th>Shifts covered</th>
<th>Days/Time Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blades Fire Co.</td>
<td>3FT - 8PT</td>
<td>12H</td>
<td>6am-6pm 7 days</td>
</tr>
<tr>
<td>Bethany Beach Fire Co.</td>
<td>8FT - 20PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Bridgeville Fire Company</td>
<td>2FT - 15PT</td>
<td>12H</td>
<td>6am-6pm 7 days</td>
</tr>
<tr>
<td>Dagsboro Fire Co.</td>
<td>3FT - 15PT</td>
<td>12H</td>
<td>24/7</td>
</tr>
<tr>
<td>Delmar Fire Co.</td>
<td>8FT - 8PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Ellendale Fire Co.</td>
<td>4FT - 20PT</td>
<td>12H</td>
<td>24/7</td>
</tr>
<tr>
<td>Frankford Fire Co.</td>
<td>3FT</td>
<td>12H</td>
<td>24/7</td>
</tr>
<tr>
<td>Georgetown American Legion</td>
<td>3FT - 6PT</td>
<td>12H</td>
<td>6am-6pm 7 days</td>
</tr>
<tr>
<td>Greenwood Fire Co.</td>
<td>1FT - 30PT</td>
<td>12H</td>
<td>6am-6pm 7 days</td>
</tr>
<tr>
<td>Gumboro Vol. Fire Co.</td>
<td>3FT - 9PT</td>
<td>12H</td>
<td>6am-6pm 7 days</td>
</tr>
<tr>
<td>Laurel Fire Dept.</td>
<td>7FT - 10PT</td>
<td>12H</td>
<td>24/7</td>
</tr>
<tr>
<td>Lewes Fire Dept</td>
<td>9FT - 10PT</td>
<td>24H</td>
<td>24/72</td>
</tr>
<tr>
<td>Memorial Fire Co.</td>
<td>1 FT - 4PT</td>
<td>12H</td>
<td>7am–7pm 5 days</td>
</tr>
<tr>
<td>Mid Sussex Rescue Squad</td>
<td>10FT - 15PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Millsboro Fire Co.</td>
<td>6 FT - 10PT</td>
<td>12H</td>
<td>5am-5pm 7 days</td>
</tr>
<tr>
<td>Millville Vol Fire Company</td>
<td>9FT - 18PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Milton Fire Co.</td>
<td>1FT - 7PT</td>
<td>12H</td>
<td>24/7</td>
</tr>
<tr>
<td>Rehoboth Beach Vol. Fire Co.</td>
<td>8 FT - 30PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Roxana Vol. Fire Co.</td>
<td>2FT (66) : 1FT M-F (84)</td>
<td>12H &amp; 8H</td>
<td></td>
</tr>
<tr>
<td>Seaford Vol Fire Co.</td>
<td>8FT - 5PT</td>
<td>24H</td>
<td>24/7</td>
</tr>
<tr>
<td>Selbyville Fire Co.</td>
<td>3FT - 8PT</td>
<td>8.5H &amp; 12H</td>
<td>5 days</td>
</tr>
</tbody>
</table>
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.

Notable Events

Bethany Beach Volunteer Fire Company

Training

Twenty five of our EMTs recertified as Nationally Registered and Delaware EMTs in March 2011. This is a two year certification requires a twenty four hour refresher class and a minimum of forty eight hours of continuing education. Additionally, two members gained certification as Delaware Emergency Medical Responders.

Eight of the career and volunteer staff attended the Journal of Emergency Medical Services (JEMS) Conference in Baltimore, Maryland from March 1-5, 2011. This conference is one of the leading venues of EMS education in the country. Having the latest information available to our members will allow us to remain a leader in the EMS community.

Four of the career and volunteer staff also attended the FDIC Conference in Indianapolis, Indiana from March 21-26, 2011. The FDIC conference presents the most current information on firefighting and rescue techniques.

The BBVFC participated in an MCI (Mass Casualty Incident) drill on June 4th, 2011 at Lord Baltimore Elementary School. The drill was a simulated school shooting with approximately 12-15 victims. This drill proved to be a valuable learning experience and tested the MCI plan for the county. Blades VFC provided EMS coverage for the BBVFC district during the drill.

We are planning a trip and tour of the Dover AFB in April 2012, focusing on the Emergency Services provided at their facility. Dr. Cowen from Beebe Medical Center in Lewes is scheduled to come and discuss spinal cord injuries along the Delaware coast. Also, Service Member Dr. Dan Cowell is scheduled to present the topic of Psychiatric Emergencies. A review of respiratory emergencies is going to be conducted by Associate Dean and Director of Respiratory Therapy at Salisbury University, Robert Joyner Jr.

Budget Items

We have purchased four ballistic vests for our personnel when responding to potential violent situations. Two vests will be carried on each ambulance. These vests will greatly enhance the safety of our personnel.
We are monitoring the progress on the AFG (Assistance to Firefighters Grant) grant for a mechanical CPR assist device. The cost of the device is approximately $16,000.

We received a $500 donation from both the Bethany Beach Woman’s Civic Club and the AARP Southern Delaware Chapter.

**DEMSOC Report**

The Delaware Emergency Medical Services Oversight Council released its 2010 report in May of 2011. Bethany Beach is mentioned on pages 124 and 125 of the report in a very positive light. On page 124, Bethany Beach is identified as the lowest scratch rate in the county at 0.49%. On page 125, the year end summary and article referencing “Kids Night Out” are highlighted. Once again, Bethany Beach EMS continues to be a leader in providing quality EMS Service.

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**Sussex County Emergency Medical Services Awards Banquet**

On May 13th, 2011, the Sussex County Emergency Medical Services (SCEMS) held its annual EMS Awards Banquet. Bethany Beach VFC Emergency Medical Services was well represented with several members receiving awards. FF/EMT Brice Hickman was awarded the “EMT of the Year” for Sussex County, FF/EMT Justin Cassell was awarded the “EMT of the Year” for the Medic 104 district, and EMS Chief Douglas Scott was awarded “EMS Captain of the Year” for Sussex County.
Dagsboro Fire Department

In addition to providing Fire/Rescue services, the Dagsboro Volunteer Fire Department also provides Emergency Medical Care to their district. The company operates two BLS ambulances and an EMS Command unit responsible for patient care at emergency scenes. All members of the EMS branch are either National Registered Emergency Medical Technician Basic (NREMT-B) or National Registered Emergency Medical Technician Paramedic (NREMT-P). In addition, all EMS providers are Automated External Defibrillator (AED) certified and are required to take all the qualifying courses to become a Firefighter and Rescue Technician. This training adds up to over 1,300 hrs. all of which they take voluntarily. The department pays for all training courses, however members are not paid for any of their time which is totally voluntary. They have been trained to spring into action and treat anything from a subject with a minor laceration to life-saving CPR. We always know and feel we have done all we can to help a patient in need no matter how serious the call.

Laurel Fire Department

On Saturday afternoon March the 19th the LFD, along with SCEMS and Trooper 2, were dispatched for a MVC with entrapment, on County Seat Highway east of Laurel. Rescue Captain Jim Brittingham responded and arrived on scene and established command of the incident. Command advised incoming units of double entrapment. BLS/ALS crews arrive and began patient assessment. E-4 arrives and crew goes to work stabilizing and putting tools into service. Rescue 81 arrives and their personnel place into service additional tools. Rescue workers freed the injured passenger and Laurel EMS transport the patient to PRMC. A short time later the driver was freed and Blades EMS transported the patient to PRMC. The extrication took approximately 22 minutes from the time the first engine arrived on scene. Command placed the incident under control and units were cleared with fire police remaining on scene waiting on towing company.
Lewes Fire Department

During the working fire at Drake Knoll Lewes was dispatched for a Vehicle Accident at 5 Points. While in route to Lewes for a cover up assignment Rescue/Engine 89-2 was on scene quickly. 1 vehicle rolled over after striking a fire hydrant. The driver had minor injuries.

Photo courtesy of Lewes Fire Department

Above photos courtesy of Blades Volunteer Fire Company
Communication Center(s)

Sussex County Emergency Communication Center:

The Sussex County Emergency Operations Center / Fire and Ambulance Callboard employs 20 full time Fire / EMS Dispatchers, 1 Quality Assurance Supervisor, and 1 Assistant Chief Dispatcher.

The staff here has been busy this year with several special projects. We were hosts to the *Extreme Makeover – Home Edition*. While this project was in full swing, a Hurricane, Tornado and flooding added some excitement to everyone involved.

We held the Sussex County Annual 911 Day. Fifth grade students from all over the county attend this event. Displays of all Emergency Service groups are on hand to talk with the students.

Over the year our center also welcomed a delegation from Egypt. The group came to observe the 911 functionalities and facilities. The Egyptians are in the start-up process of implementing a country-wide 911 system. Director Joe Thomas, County staff as well as the 911 equipment vendor Verizon, gave a tour of the facilities and showed firsthand how Sussex County is at the leading edge of 911 “next generation” implementation. This visit is the latest in a series of tours we have provided of our state of the art facilities since starting our operations at the new facility location in 2008. This year we also hosted groups from Richmond Virginia, Long Island New York and Norfolk Virginia.

**Fire Service Mobile Project:** Working with the CAD vendor to deploy Mobile Data Terminals to the volunteer fire service in Sussex County that will interface with the CAD system to provide the latest technology as well as providing the field units more information in the apparatus which includes driving directions, automatic vehicle location, and touch screen status update. Sussex now has over 80 units with MDT’s.

**Computer Aided Dispatch System:** The Center is also working with the Mapping and Addressing Department to keep the maps current by doing bi-monthly map updates to the system. We are also expecting to upgrade to accept the new updates to the Medical Dispatch software.

**Phone System** - The Center had a major phone service upgrade this year. Fold-down procedures were put in place in the event the Center had to transfer calls to a neighboring Center.

**EMS Mobile Project:** The Center continues to support the Sussex County EMS with Mobile Data Terminals, which operate in the same function as the fire service mobiles.

**Beta Test Site:** Sussex County Emergency Operations Center / Fire and Ambulance Call Board, continues to be a Beta Test Site for TriTech Software Systems. Sussex is also remains a Beta Test Site for the National Academies of Emergency Dispatch. The site tests protocol changes and updates along with the testing for new protocols.
**Diversion Reports:** The Center compiles a diversion report for the three (3) hospitals in Sussex County as well as the two (2) hospitals in Maryland that border Sussex County. As of January 01, 2011, the updated statewide Diversion Policy was implemented in Sussex County.

**Re-accreditation:** The Center is accredited until 2012. We continue to work towards meeting the standards set by the National Academy of Emergency Medical Dispatch.

**Dispatcher Incentives:** “The current Fiscal Budget continues the incentive program provided to the dispatchers. The amount of the incentive is $375.00, with a maximum of $750.00 per year. This program provides a reward for dispatchers who meet the National Academy of Emergency Medical Dispatch (NAEMD) performance level on each of the various required judged items. This program rewards employees who maintain a high level of competence in responding to emergency calls, which in turn enables the Sussex County Emergency Operations Center to maintain its certified status. The current Fiscal Budget again includes funding for shift differential pay for Emergency Communications Specialists who work the night shift. This supplemental fee of 75¢ per hour is comparable to what the State of Delaware offers their dispatchers, as well as that of other counties.”

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

**Continuing Education:** Sussex continues to provide a variety of continuing education classes to assist the dispatchers with their jobs. The courses are taught by our staff as well as various agency representatives, physicians, medics, and others that interact with our agency. To assist the dispatchers with continuing education and pertinent information, we have launched an internal website which lists current assignments, protocol information, health and fitness information, as well as many other subjects relative to the dispatcher or their position.

**Rehoboth Beach**

*Submitted by Dawn Lynch*

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 2011 was 5,315. Another 30,650 non-emergency calls were also processed by our Telecommunicators. The Center dispatched and/or processed a total of 2,622 EMS Incidents, 651 Fire Incidents, 4,263 Police Incidents, and 2,930 traffic stop in year 2011.

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 2010 through 2013. In 2011 the Center’s overall EMD compliance rate was 96.82%.

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 2011 included implementation of a new recording system to record radio traffic direct from the 800 MHz CEB instead of from secondary radio units and working the State 9-1-1 Board to improve GIS Data for the area. We continued to focus on training in 2011 having sent two dispatchers to the APCO International Conference and seven dispatchers to the APCO MidEastern Training Conference.

City of Seaford Police Department:
Submitted by Anita Bell

The Seaford 9-1-1 Center receives approximately 10,000 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 2011 the center dispatched or processed a total of 3,216 fire/ambulance incidents and 9,162 police incidents.

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 and just recently re-accredited on Dec 22, 2011 thru Dec 22, 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 Dept 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, 2 part-time dispatchers 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.
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, private 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.

**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**

The *Delaware 911 Air Medical Dispatch Process*, which was developed based on proximity of the aircraft to the incident location, is utilized to determine the next due aircraft to be dispatched.
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 Delaware interfacility transports:

- **Christiana Care LifeNet**, Newark and Georgetown Delaware
- **JeffSTAT LifeNet**, Philadelphia Pennsylvania
- **PHI for Maryland ExpressCare**, Baltimore Maryland
- **STAT MedEvac**, Baltimore Maryland, providing air transport for the Alfred I. duPont Hospital for Children transport team

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

- **Christiana Care LifeNet**, Newark and Georgetown Delaware
- **JeffSTAT LifeNet**, Philadelphia Pennsylvania
- **MedSTAR**, Maryland and Washington DC
- **MidAtlantic MedEvac**, Pottstown/Doylestown Pennsylvania
- **PennSTAR**, Philadelphia Pennsylvania
- **PHI for Maryland ExpressCare**, Baltimore Maryland
- **STAT MedEvac**, Baltimore Maryland, providing air transport for the Alfred I. duPont Hospital for Children transport team

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**

**2011 Accomplishments**
Delaware’s air medical system has matured to include eight 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 eight 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.
- **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 Georgetown, Sussex County.
• 2008 - DSP increased its capacity through purchase of a Bell 412 aircraft, which can carry more patients and is useful in case of the need for evacuations. It is also used with the Helicopter Emergency Action Team (HEAT).

Below left, annual trauma scene air transports to tertiary care hospitals Christiana, duPont, or Peninsula Regional by percentage of flights. Below right, comparison of scene flights and interfacility transfers.

2012 Challenges
The Trauma System Quality Committee is continuing to work on analyses of data 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 or Level 2 Trauma Centers from the scene, while triaging less seriously injured patients to the Community Level 3 Trauma Centers. The goal is optimal utilization of the resources of all level facilities so as to avoid overcrowding of our tertiary care centers and underutilization of the resources available close to the patients’ homes in the Community Trauma Centers.

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. Regular helicopter safety inservices for both scene providers and hospital staff are 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’.
MISSION STATEMENT

To Enhance the Quality of life for all Delaware Citizens and visitors by providing professional, competent and compassionate law enforcement

CORE VALUES

HONOR  INTEGRITY  COURAGE  LOYALTY

ATTITUDE  DISCIPLINE  SERVICE
DELAWARE STATE POLICE
TROOPER’S PLEDGE

Humbly recognize the responsibilities entrusted to me as a member of the Delaware State Police,
An organization dedicated to the preservation of property and human life, I pledge myself to perform my duties honestly and faithfully to the best of my ability and without fear, favor, or prejudice. I shall aid those in danger or distress, and shall strive always to make my State and Country a safer place in which to live.... I shall wage unceasing war against crime in all it’s forms, and shall consider no sacrifice too great in the performance of my duty I shall obey the laws of the United States of America....and of the State of Delaware.... and shall support and defend their constitutions against all enemies whomsoever, foreign and domestic. I shall always be loyal to and uphold the honor of my organization, my State and my Country.
The Delaware State Police Aviation Section provides effective support services to our law enforcement, medical, and search and rescue communities. As the section’s mission expands to encompass the many new demands placed on the Division involving the Homeland Security front, members have been able to incorporate new technologies, add new equipment, undertake and excel in new responsibilities such as the search and rescue mission and maintain the 24/7 expanded hours of operation.

The Aviation Section supports State, Federal and local law enforcement by providing aerial assistance during vehicle and foot pursuits, traffic reconnaissance during large public events and 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 violation.
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.
Spot Light

The Delaware State Police Unit was honored by being featured in the July 2011 issue of Rotor & Wing Magazine.
NEWS RELEASE
DELAWARE STATE POLICE
Superintendent Colonel Robert M. Coupe
Presented by Public Information Officer Cpl/3 Bruce W. Harris
P.O. Box 430| Dover, DE 19903 | Cell: 302.535.3706 bruce.harris@state.de.us

DSP News Release: Victim Hoisted from Ship Following 20 Foot Fall

Location:

- Slaughter Beach, Delaware
- Approximately 5 miles off the Coast

DATE and TIME:

- Tuesday May 3, 2011

Victim(s):

- Leovie Cauite-54 Philippines

Oil Tanker:

- The Cosmic (Greek tanker)
- Contracted by Delaware Valley Marine

Assisting Agencies:

- Delaware State Police Trooper 4 Helicopter
- State Fire Service
- Wilmington Police Department
- Slaughter Beach Fire Department
- Lewes Fire Department
- Sussex County Paramedics
- Delaware Bay Launch Service
- United States Coast Guard
Resume:

*Slaughter Beach*-Today around 11:55 a.m. the Sussex County 911 Center received an emergency call from an oil tanker approximately 5 miles off the coast of Slaughter Beach Delaware.

The 911 Center was advised by the ship’s Captain that a crew member, Leovie Caguite-54 of the Philippines had fallen some 20 feet down a cargo hole and struck his head.

The Chief of the Slaughter Beach Fire Department immediately activated the Delaware Air Rescue Team “DART”. DART members consist of Volunteer fire personnel specifically trained to perform rescues from the rear of Delaware State Police Helicopters.

Rescue agencies consisting of: Delaware State Police Aviation, the State Fire Service, Wilmington Police Department, Slaughter Beach Fire Department, Sussex County Paramedics, Lewes Fire Department and the United States Coast Guard all played a hand in today’s rescue efforts.

It took approximately 25 minutes for the Delaware Bay Launch Service to transport a Sussex County Paramedic via boat to the Cosmic, a Greek oil tanker, to assist Caguite with his injuries. Once on board the Cosmic the Sussex County Paramedic “back boarded” the patient for transport. Delaware State Police Trooper-4 helicopter then lowered medical personnel from the Lewes Fire Department to the ship via a hoist.

Once the hoist arrived on the deck of the Cosmic, Caguite and the Lewes Fire Department personnel were hoisted back to Trooper 4. Trooper 4 then transported the patient to the Slaughter Beach boat ramp where he was stabilized by Slaughter Beach ambulance personnel for further transport.
After being stabilized Caguite was then flown to Christiana Hospital where he is being treated for head trauma and is listed in critical condition.

**Special Events**

Throughout the 2011 NASCAR season the Delaware State Police Aviation Section was contracted to provide Aero Medical Services.
Tactical EMS Missions 2011

Special Operation Response Team (SORT)
Explosive Ordinance Disposal (EOD)

Since the commencement of the Tactical/Medic MOU between DSP and WPD, which began in April of 2008, this year was the busiest to date. There were a total of 210 activations, one activation every 1.74 days. The previous record was in 2009 with 203 total activations. The tactical medic’s busiest single month was September of this year with a total of 35 activations in 30 days. In addition to being the busiest year overall, 2011 was the most violent year for the special operations teams as a whole when comparing the types of activations and outcomes.

2011 SIGNIFICANT RESPONSES/Critical INCIDENTS

1/14/11 - 977 Lochmeath Way, Dover
15 hour EOD call-out with multiple devices and bomb making explosives found in a residence.

3/22/11 - 230 N. Harrison Street, City of Wilmington
Barricaded subject in basement of residence
Subject taken into custody after stand-off

5/3/11 - 5 Miles off Delaware Coastline
Aviation SAR mission with critical patient transported to Christiana Hospital where Trooper 4 Heavy was utilized and DART team activated

6/15/11 - 6253 Dublin Hill Road, Bridgeville
Domestic barricade incident
2 dead, Murder/Suicide prior to majority of team arrival

6/26/11 - 7 Water Street, Greenwood
Shots fired at police/barricade with hostages
1 dead, several wounded, hostages rescued by SORT
Subject arrested after several hour stand-off
7/25/11 - Naamans Road & Marsh Road, Wilmington
Barricaded subject in residence
1 dead, Suicide

8/7/11 - 10140 Dogwood Road, Laurel
Barricaded suicidal subject
Subject taken into custody after short operation

9/2/11 - 9687 Randall Street, Laurel
Barricaded subject
1 dead, Suicide

9/6/11 - Shamrock Motel, 2171 S. Dupont Hwy, Dover
Barricaded robbery suspect
Arrested after several hour stand-off
Explosive breaching utilized

9/11/11 - Dutch Inn, 111 S. Dupont Hwy, New Castle
Barricaded subject. Several hour stand-off, subject arrested after gas deployed successfully

11/30/11 - 1403 Lochmeath Way, Dover
Several hour EOD call-out where various chemicals and explosive materials were recovered from a shed behind a residence

2011 SORT/EOD Stats:

TOTAL ACTIVATIONS (SORT & EOD including cancellations and training) = 210.0
MEAN ACTIVATION = 1 call every 1.74 days
WPD SWAT (including cancellations) = 97
WPD CALLS MUTUAL AIDED TO DSP = 29
DSP CALLS MUTUAL AIDED TO WPD = 39
ALS MEDIC STAND-BY’S = 5
2011 DSP Tactical Medic Response Statistics

Medic Response Record

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Mission Types

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MEMORANDUM

To: Michael J. Szcerba
   Chief of Police

From: M/Sgt. Adam B. Ringle 7061
       Tactical/EOD Paramedic 1490
       B-Platoon Uniformed Services Division

Date: 1 JAN 12

Re: WPD/DSP Paramedic MOU Report 2011

Sir,

This writer is providing this departmental information memorandum to highlight the success of Paramedic Memorandum of Understanding (MOU) between the Wilmington Police Department (WPD) and the Delaware State Police (DSP) as well as to outline the Tactical/EOD Paramedic services provided by this writer throughout the year 2011.

TOTAL ACTIVATIONS (including cancels) = 210.0
MEAN ACTIVATION = 1 call every 1.74 days
WPD SWAT (including cancels) = 97
DSP SORT RINGLE = 30
DSP EOD RINGLE = 7
WPD EOD RINGLE = 3
AVIATION SEARCH & RESCUE RINGLE = 2
WPD CALLS MUTUAL AIDED TO DSP = 29
DSP CALLS MUTUAL AIDED TO RINGLE = 39
CALLS WHERE NO MEDIC AT ALL AVAIL = 10
ALS MEDIC STAND-BY’S = 5
Snapshot Comparison

Since this program began in April of 2008, our busiest year was 2011 with 210 total activations, one call every 1.74 days. The previous record was 2009 with 203 total activations. Our busiest single month was September of this year as well with a total of 35 activations in 30 days. In addition to being the busiest year overall, this year was by far the most violent year for the special operations teams as a whole when comparing the types of activations and outcomes, for example, the sheer volume of barricaded subjects. The last major critical incident prior to this year occurred on 10/23/09 at 1524 West 4th Street, City of Wilmington and shared many similarities of the Greenwood incident that occurred on 6/26/11. A barricaded armed subject, shots fired, multiple hostages shot, hostages rescued and one killed.

Training

In addition to the above listed calls for service, this writer attended all Paramedic didactic and clinic training required by the State of Delaware, successfully completed Type I Advanced SWAT School as required by the Wilmington Police Department, attended several multi-agency training drills and successfully completed Helicopter Technician System Operator/Rescue Specialist annual recertification program required by the Delaware State Police Aviation Unit. In addition, this writer attended several continuing education modules on various topics and maintained all required instructor credentials in BCLS, ACLS, PALS, ABLS and AMLS.

Special Projects

This writer has been working with Nelson-Kellerman, the manufacturer of Kestrel Pocket Weather Meters, for the past several years to develop and enhance their product capabilities for law enforcement. This writer receives new models to test annually and provides feedback specific to enhance and develop features for EOD and SWAT call outs where weather data is critical for personnel rehabilitation and hydration guidelines. This writer is currently working with a new type of product called a “Heat Stress Tracker” to develop guidelines in their software to track the effects of heat stress on police officers operating in tactical gear and EOD blast protection suits. This unit provides a mathematical value for the officer’s ability to offload heat effectively to track the potential for injury in given conditions. This could potentially prevent heat overload to officers before it could even occur and this writer possesses the only unit made as it has not been cleared for full production. This orange colored unit is pictured below along with the 4500 Bluetooth weather meter we currently use for EOD call-outs.
Conclusion

The above listed data outlines the significant need for specialized tactical/EOD Paramedic services for both the Wilmington Police Department and the Delaware State Police alike. Furthermore, this program has been proven successful and continues to protect our responding personnel and citizens alike during major and critical incidents. In 2010, this program was activated once every 1.9 days or 192 times and in 2011 there was approximately an 11% overall increase in frequency to once every 1.74 days or 210 times. It should further be noted that critical incidents increased during 2011 almost 150% and several had outcomes resulting in homicide or suicide by the suspect(s).
### 2011 DSP Helicopter Missions

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Trooper-4 Refused 55 calls due to weather
Trooper-2 Refused 62 calls due to weather

### 2011 DSP Helicopter Flight Hours

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2011 AED Deployments

Delaware State Police Aviation Section oversees the division’s AED program. In 2011 Troopers deployed their Automated External Defibrillator (AED) on 12 occasions, which met the criteria for download (pads-on-patient). The following is a summary of the utilizations:

9 utilizations where the AED analyzed followed by a “No Shock Advised” prompt. The patient was subsequently pronounced deceased.

1 utilization where the AED analyzed followed by a “NO shock advised” prompt. Patient care was subsequently taken over by the paramedics. Upon arrival at the hospital the patient had a pulse.

1 utilization where the trooper administered 2 shocks followed by CPR. The patient was subsequently pronounced.

1 utilization where the trooper administered 3 shock following by the patient having a spontaneous return of circulation (ROC). The patient arrived at the hospital alive.

Infectious Disease Exposures

For the 2011 calendar year the Delaware State Police had a total of 10 confirmed infectious disease exposures. In addition, there were a total of 10 cases that did not meet the exposure criteria; however, these incidences were documented and placed in a file.

Of significant importance: There were two separate incidents this year involving exposure to scabies. In addition to receiving medical evaluation and treatment for those troopers who were exposed, both incidents required extensive decontamination of the state police facilities to include vehicles.

The Delaware State Police Aviation Section is pleased to announce that Cpl/2 Nicole Parton, and Cpl/1 Shawn Wright successfully completed their flight training and are working as productive crew members within the section. Cpl/3 Edward Sebastianelli, Cpl/2 Sean McDerby, Cpl/1 Stephen Fausey and Cpl Jennifer Potocki are progressing through the intense 18 month paramedic training program at Delaware Technical Community College and are expected to graduate and join the DSP Aviation rank and file in the Fall of 2012. DSP Aviation welcomes Cpl/1 Steven Rindone, who was recently transferred into the section as a Trooper/Pilot and is currently undergoing his flight training.

Summary

The Delaware State Police Aviation Section continues to research new aircraft acquisition options ranging from refurbishment to fleet replacement. In addition, the section continues to analyze manpower options to support the ever increasing mission and to ensure that we continue to provide superior service to those that we serve by honoring the Division’s Core Values of Honor, Integrity, Courage, Loyalty, Attitude, Discipline and Service.
Christiana Care/LifeNet 2011 DEMSOC Report
**Chief Flight Nurse**

Christiana Care/LifeNet has been proudly providing critical care aviation transport and emergency services support to Delaware and our surrounding states since the spring of 2001. As a two aircraft program, with bases in New Castle and Sussex Counties, we have become an integral part of delivering quality care to those citizens who have become critically ill or injured and require transfer for definitive treatment.

A highly skilled, and critically educated medical crew, consisting of a flight nurse and paramedic, are able to maintain or increase the life sustaining treatment initially started for the patient. By having extensive protocols, readily available medications, critical care monitoring capabilities, and on line medical direction, patient care is not interrupted during transport.

Christiana Care/LifeNet has been CAMTS accredited since April 2006. This certification indicates that the aviation and patient care systems have gone through a rigorous site survey and found to meet or exceed the nationally established standards for medical transport programs. We are preparing for our third site survey in the coming weeks.

**2011 Accomplishments**

A total of 484 aviation missions were completed in 2011. Transports were requested from 38 referring hospitals across 4 states and accepted by a total of 22 major hospitals providing specialty care. 26 scene missions were completed with the highest percentage being in Sussex County. We were requested to and participated in state and county evacuation drills, and multi-casualty incident training.

LifeNet 6-1 and 6-4 are popular requests for community programs throughout the tri-state area. 39 outreach educational appearances were provided for local businesses, schools, EMS agency functions, and scouting organizations. The medical crew and EMS pilots, also provide education for members of the state’s EMS and Fire Service programs.

**Summary**

Christiana Care/LifeNet’s program director, pilots, mechanics, medical leadership, nurses and paramedics, strive to provide the most efficient, timely, and highest quality patient care possible. As part of our dedication to the communities we serve, crew members are involved in emergency services and patient care committees throughout our catchment area at the state and local levels.
Prevention

Safe Kids 169

Special Needs Alert Program 171

Crash Outcome Data Evaluation System 172

Infectious Control 174
Who We Are

Safe Kids Delaware, led by the Delaware Division of Public Health, is a member of Safe Kids Worldwide, the nation’s first non-profit organization dedicated solely to the prevention of accidental childhood injury. Safe Kids Worldwide is made up of more than 600 state and local Safe Kids coalitions in all 50 states, the District of Columbia and Puerto Rico. Safe Kids Delaware consists of more than 20 community, civic and state organizations. The Coalition’s initiatives include classroom-based programs and educational events for families. The Coalition focuses on promoting child passenger safety, water, pedestrian, fire and bike safety.

What We Do

In the United States, Safe Kids partnerships have contributed to a 45 percent reduction in the child fatality rate from accidental injury – saving an estimated 38,000 children’s lives since 1987. Locally, this is done through community partnerships, advocacy, public awareness, and through distribution of safety equipment and education on proper usage. Safe Kids Delaware promotes changes in attitudes, behaviors, laws, and the environment to prevent accidental injury to children.

From January 1, 2011 through October 15, 2011 Safe Kids Delaware participated in:

- 125 Health Fairs, safety camps, classes and events in area schools, businesses and communities reaching approximately 22,881 children and their families;
- Six (6) Bike Rodeos, distributing 430 bike helmets;
- Several Safe Kids Days throughout the state reaching 5,000 children and their families,
- Taught 6,989 children to *Walk this Way* Safely to School.
- Checked 2,000 child safety seats and corrected 800 child safety seats with partner assistance.

Think First for Kids reached 3,000 elementary and middle school children. Pre- and post-tests showed a significant increase in knowledge, change in attitude, and increase in safety behaviors. Our Annual Safe Kids - EMSC Conference attracted more than 130 professional and para professionals who were thoroughly impressed with all that the conference had to offer.
How We Do It
Safe Kids Delaware is committed to making a strong impact on its children and their families.

- Increased Family education
- Providing additional safety equipment including car seats and helmets to families in need.
- Advocating for better laws to help keep children safe, healthy and out of the emergency department.

The success of our achieving these goals is heavily dependent on new and current funding sources. We are continuing to seek resources and pursuing development of new partnerships that will contribute to the ongoing efforts of Safe Kids Delaware and its mission.

Summary
The goal of Safe Kids Delaware is to raise awareness of preventable injury issues in our state, educate individuals in vital injury prevention strategies, and motivate them to participate in our vision of an injury-free life for all children.

New Castle County Safe Kids Day

Safe Kids Bike Rodeo

Seaford Central Elementary School, Safe Kids Walk
This Way Pedestrian Safety Program
Introduction

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

2011 Accomplishments

In April of 2011, the SNAP Program became part of the nation’s first statewide electronic system for citizens who have special needs, the Delaware Emergency Preparedness Voluntary Registry. Parents or guardians may now enroll in the electronic registry and begin their SNAP enrollment process online at [www.de911assist.delaware.gov](http://www.de911assist.delaware.gov). Currently, there are over 245 children enrolled in SNAP; 138 in Kent County, 63 in New Castle County, 44 in Sussex County, and 15 dual enrollees. There are another 68 enrollments in progress through the electronic Delaware Emergency Preparedness Voluntary Registry. Over half of the SNAP electronic enrollments coincided with the dates of Hurricane Irene.

2012 Challenges/Goals

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 through trainings and information-sharing with the public school system, professional medical organizations, disability groups, and parent organizations will facilitate increased enrollment.

Summary

SNAP continues to work with emergency response agencies and families with children with special health care needs to increase the medical information available at the time of a 911 emergency call.
Crash Outcome Data Evaluation System (CODES)

CODES Project is a collaborative effort between the OEMS, the Delaware State Police, the Delaware Health Statistics Center and the Delaware Office of Highway Safety. From these agencies, OEMS collects many types of data (e.g., demographic, injury severity, hospital charge, etc.) that are linked, analyzed and publicized. Resulting data allow state agencies, policymakers and the public to understand the causes and impacts of motor vehicle crashes.

2011 Accomplishments

- Linked 2008 CODES data, generated fact sheets, and prepared motor vehicle crash hospitalization data for National Highway Traffic Safety Administration (NHTSA) and Delaware Office of Highway Safety (OHS)
- Participated in Single Unit Truck Crashes Study using 2006-2008 linked data for National Transportation Safety Board (NTSB) and NHTSA
- Linked 2007-2009 crash to trauma registry data to support the OHS sub grant- ‘Epidemiologic Analyses: Risk-Taking Driving Behaviors, Crash Characteristics, and Severity of Injury’
- Provided 2003-2007 data for Wilmington University to conduct the follow up study of Delaware Graduated Drivers License (GDL) program
- House Bill No. 95 proposed to repeal the law that requires every person operating or riding on a motorcycle to have a safety helmet in their possession. These law encouraged helmet usages by ensuring helmets are available to all riders who may choose to use them. On June 14, a Delaware Crash Outcome Data Evaluation System (CODES) analyst attended the committee meeting with the Deputy Cabinet Secretary of Safety and Homeland Security and the Governor’s office via conference call. CODES provided Delaware’s Office of Highway Safety with the estimated medical costs of helmeted vs. unhelmeted motorcyclists to support the current law
- Attended the OHS Impaired Driving Assessment
- Presented the report of Delaware CODES Application at NHTSA Region 3 Training Webinar
- Presented the report of “Injury Analysis of Alcohol Impaired Driving Crashes” at the 2011 CODES Network Annual Program and Technical Assistance Meeting
- Displayed the poster of trauma injury and CODES information at the 2011 Statewide Highway Safety Conference

Goals

- Complete linking 2009 crash report, EMS, and hospital discharge files
- Continue responding to NHTSA and Delaware OHS data requests in the format requested and in a timely manner
- Continue participating Single Unit Truck Crashes Study using 2009 linked data for NTSB and NHTSA
- Continue linking crash, EMS, and trauma data to support OHS sub grant- Analyses of Trauma System Emergency Department Data and CODES-Trauma Data Linkage
Helmets Save Lives and Costs

In Delaware, motorcycle operators and passengers up to age 19 are required to wear helmets. It could save more lives and costs if all motorcycle operators and passengers wear helmets. National Highway Traffic Safety Administration (NHTSA) estimates the use of motorcycle helmets saved 1,829 lives in 2008. If all motorcyclists had worn helmets, an additional 823 lives could have been saved.

Crash and Injury Outcomes from Statewide Crash and Hospital Discharge Data

For all of the body region injuries, the average medical costs for motorcyclists were higher than the costs for the people injured in other traffic related crashes.


Delaware Crash Outcome Data Evaluation System (CODES) represents a collaborative effort among the Office of Emergency Medical Services, Delaware State Police, Delaware Health Statistics Center, and the Office of Highway Safety. The facts and figures presented here were derived from 2003 to 2007 CODES linked database. For more information, please call (302) 223-1350.
Infection Disease Control

The infectious control program for Delaware includes pre-hospital care providers (EMTs, paramedics, and first responders), firefighters, and law enforcement personnel. Delaware is one of the few states that conduct mandatory source testing.

The need for an effective infection control program has always been an essential and integral part of the pre-hospital practice because there is both the risk of healthcare providers acquiring infections themselves and could result in passing infections on to patients. Preventive and proactive measures offer the best protection for individuals and organizations that may be at risk for an elevated exposure to these infectious diseases. Since 1993, Delaware has reviewed 179 potential exposures forms reported by the pre-hospital setting and in 2011 reviewed 31. The table below represents the type of exposures reported in 2010.

<table>
<thead>
<tr>
<th>Type of Exposure for 2011</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhalation: coughing, sneezing, confined proximity</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Ingestion: splash/spray, hand-to-mouth contact, mouth-to-mouth contact, ect.</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>Percutaneous: medical sharp, hollow-bore needle, bite, ect.</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Mucocutaneous: Nasal, Oral, Ocular.</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Cutaneous: non-intact skin, intact skin with large fluid volume</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

Infection control refers to policies and procedures used to minimize the risk of spreading infections and reduce the occurrence of infectious diseases. These diseases are usually caused by bacteria or viruses which can be spread by:
- human to human contact
- animal to human contact
- human contact with an infected surface
- airborne transmission through tiny droplets of infectious agents suspended in the air
- such common vehicles as food or water

Protection from the threat of infectious disease is an urgent matter due to constant changes in lifestyles and environment, which result in new diseases to which people are susceptible. The required equipment lists for ambulances in Delaware also offers assistance to pre-hospital providers to receive immunizations against hepatitis, flu, tetanus and tuberculin skin testing.

Education and training is required yearly by all agencies to update pre-hospital personnel on infectious disease policies and universal precautions. Increased emphasis is being placed on the educational process to reinforce these issues with pre-hospital medical providers as well as industrial and police agencies. During this training, agencies are given an overview of common diseases that have a potential for transmission.
DELAWARE EMS SAFETY INITIATIVES

The EMS field has been identified as a high-risk industry and safety impacts more than just EMS personnel. Safety in EMS affects our patients, EMS responders, and the public. EMS providers are more than two and a half times more likely than the average worker to be killed on the job, and their transportation-related injury rate is five times higher than average.

Following the tragic events of 2008 in which Sussex County Paramedic Stephanie Callaway and Delaware City EMT Michelle Smith were killed in the line of duty, several initiatives were taken, aimed at increasing the awareness of the risks associated with the EMS profession and how to reduce those risks. In the past year, the following steps have been taken:

- Delaware’s EMS community participated in the development of the National Association of EMT’s (NAEMT) “EMS Safety Course” which was introduced at the EMS Today Conference in Baltimore in March of 2011
- “EMS Safety Course” was presented at the Delaware State Fire School (DSFS), during which a number of Delaware providers were certified as instructors
- DSFS has since established a schedule that will offer the course at their facilities throughout the state
- The “EMS Safety Course” will be presented at the Delaware Volunteer Firefighters’ Association conference in September of 2012
- a number of individual agencies have conducted courses for their members, and other courses are scheduled throughout the state
- changes in statewide treatment protocols aimed at reducing the number of patients transported with the use of warning lights and sirens

Delaware is also represented on a committee established by the National Fire Protection Association (NFPA) to establish a new standard for the design and construction of ambulances. This new standard, known as NFPA 1917, replaced the existing KKK-1822 standard established by the National Highway Traffic Safety Administration (NHTSA) as a bid specification document. Already under revision, NFPA 1917 seeks to incorporate automotive engineering design, ergonomics, and new technologies to create a safer ambulance.

A member of the Delaware Emergency Medical Services Oversight Council (DEMSOC) Committee also serves on the steering committee for the National EMS Culture of Safety Strategy Project. The project is a three-year cooperative agreement between the National Highway Traffic Safety Administration (NHTSA), with support from the Health Resources and Services Administration’s (HRSA) EMS for Children (EMSC) Program, and the American College of Emergency Physicians (ACEP) and brings together representatives from national EMS and fire organizations to develop a national EMS “Culture of Safety” Strategy. This Strategy is intended to change the status quo and chart a new course that will support the emergence of a culture of safety in EMS.

These efforts, and others yet to come, are all intended to produce one common outcome….when the call is over, everyone goes home.
Appendix

Delaware ACEP Letter 179

Joint Emergency Medical Services Chiefs of Delaware Letter 180
May 25, 2011

The Honorable Jack Markell
Governor
150 William Penn Street
Dover, DE 19901-3637

Dear Governor Markell:

As the president of the Delaware Chapter of the American College of Emergency Physicians, I would like to add the voice of Delaware’s emergency physicians in supporting the May 23, 2011, request of our paramedic chiefs to restore the state portion of paramedic funding to original levels.

Our state-wide paramedic system provides the medical sophistication needed to weave a solid safety net in partnership with the local volunteer fire companies. The paramedics bring life-saving skills to the homes of patients who are critically ill or injured. They are key to the success of the hospital heart attack, stroke, and trauma programs. They touch the lives of thousands of Delaware citizens each year by bringing calm and sophisticated help to crisis situations.

We know from our colleagues and our own practice experience in other states that there are many EMS systems that deliver little medical value. Our Delaware paramedics are different and deliver value every day that decreases the need for expensive medical hospitalizations through early, effective care in the home and on the street.

We ask for your help in better anchoring the funding partnership for this important service between the counties and the state.

Sincerely,

Jonathan McGhee, DO
President, Delaware Chapter
American College of Emergency Physicians
May 23, 2011

The Honorable Jack Markell
Governor
150 William Penn Street
Dover, DE 19901-3637

Dear Governor Markell,

The Chiefs and Directors of the county paramedic services respectfully request your consideration for use of a small portion of the estimated $320 million surplus for investment in the statewide paramedic services. A modest investment in the advanced life support component of the state’s emergency medical services (EMS) system will create sustainable jobs with long term career potential, strengthen a critical infrastructure, and create downstream healthcare system savings from the care that is delivered by highly trained paramedics through reductions in the length of stay for patients admitted to a hospital. A small investment of $6 million would enable a restoration of the state reimbursement to all three counties to 50%.

Delaware continues to receive national recognition for both the quality and scope of care provided by its paramedic services. The shared responsibility for paramedic service by the state and counties since 1990 has proven extremely effective in reducing death and disability throughout Delaware. However, the difficult economic times have resulted in a reduction in state support for advanced life support services from 60% in 1990 to the current level of 30%. The reduced support has required the counties to leave positions vacant, unfund authorized positions and even perform layoffs in the face of ongoing increases in demand for service.

An investment in the statewide paramedic service will result in the ability of the counties to maintain their staffing and continue to provide sustainable jobs with long term career potential. With an aging population, healthcare workforce shortages and threats of terrorism and natural disasters, there has never been a better time to invest in EMS. Applying a small portion of the surplus to the state’s paramedic service would strengthen the health care system, provide careers, and build our state’s preparedness.
The emergency medical services system must be considered one of our state’s most critical infrastructures. From managing the daily demands for emergency medical assistance to coordinating responses to large scale incidents, EMS plays a vital role in supporting the health, well-being and security of our citizens.

A small investment of the surplus funds for paramedic services will create downstream health care system savings in Delaware. Supporting the statewide paramedic service will directly benefit the public health and safety by improving system response times, improving the quality of medical care, and enhancing the efficiency of the health care system. For example, paramedics in Delaware are already able to rapidly identify patients having a heart attack and needing advanced treatment in a cardiac cath lab. Paramedics routinely notify receiving hospitals to mobilize specialized teams and resources needed to definitively care for these patients—which saves heart muscle and improves the patient’s quality of life. In another example, the use of breathing treatments by paramedics has reduced the need for intensive care admissions on patients with significant difficulty breathing. The resolution of the patient’s difficulty breathing by paramedics without having to place a tube in their lungs, saves the healthcare system the cost of a patient that would otherwise be on a ventilator for several days.

Delaware faces economic, health care and domestic security concerns. The Joint EMS Chiefs of Delaware respectfully request consideration for use of a small portion of the surplus to assist us in supporting sustainable jobs with long term career potential, improving the health of those who become suddenly ill or injured, and strengthening one of the state’s most critical infrastructures.

The shared responsibility for delivery of paramedic service through regulatory and clinical oversight by the state, and operational service delivery and management by each county has enabled Delaware to develop a system that saves lives. Your support is requested to help us restore and sustain that important mission.

Please feel free to contact us if you should require any additional information. We appreciate your consideration of this request.
Governor Jack Markell

May 23, 2011

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Sincerely,

[Signature]

Lawrence E. Tan, Chief
Emergency Medical Services Division
New Castle County Department of Public Safety
3601 North DuPont Highway
New Castle, Delaware 19720
LETan@ncce.org

[Signature]

Chief Colin Faulkner
Director of Public Safety
Kent County Department of Public Safety
811 Public Safety Boulevard
Dover, Delaware 19901
Colin.Faulkner@co.kent.de.us

[Signature]

Robert A. Stuart, Director
Sussex County Emergency Medical Services
P.O. Box 589
Georgetown, Delaware 19947
RStuart@sussexcountyde.gov

cc:  Senator Bruce C. Ennis
Representative Dennis P. Williams, JFC Chair
Senator Harris B. McDowell, JFC Co-Chair
Secretary Lewis D. Schiliro, Safety and Homeland Security
Secretary Rita Landgraf, Health and Social Services
Diane McGinnis-Haineworth, Director, OEMS
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.