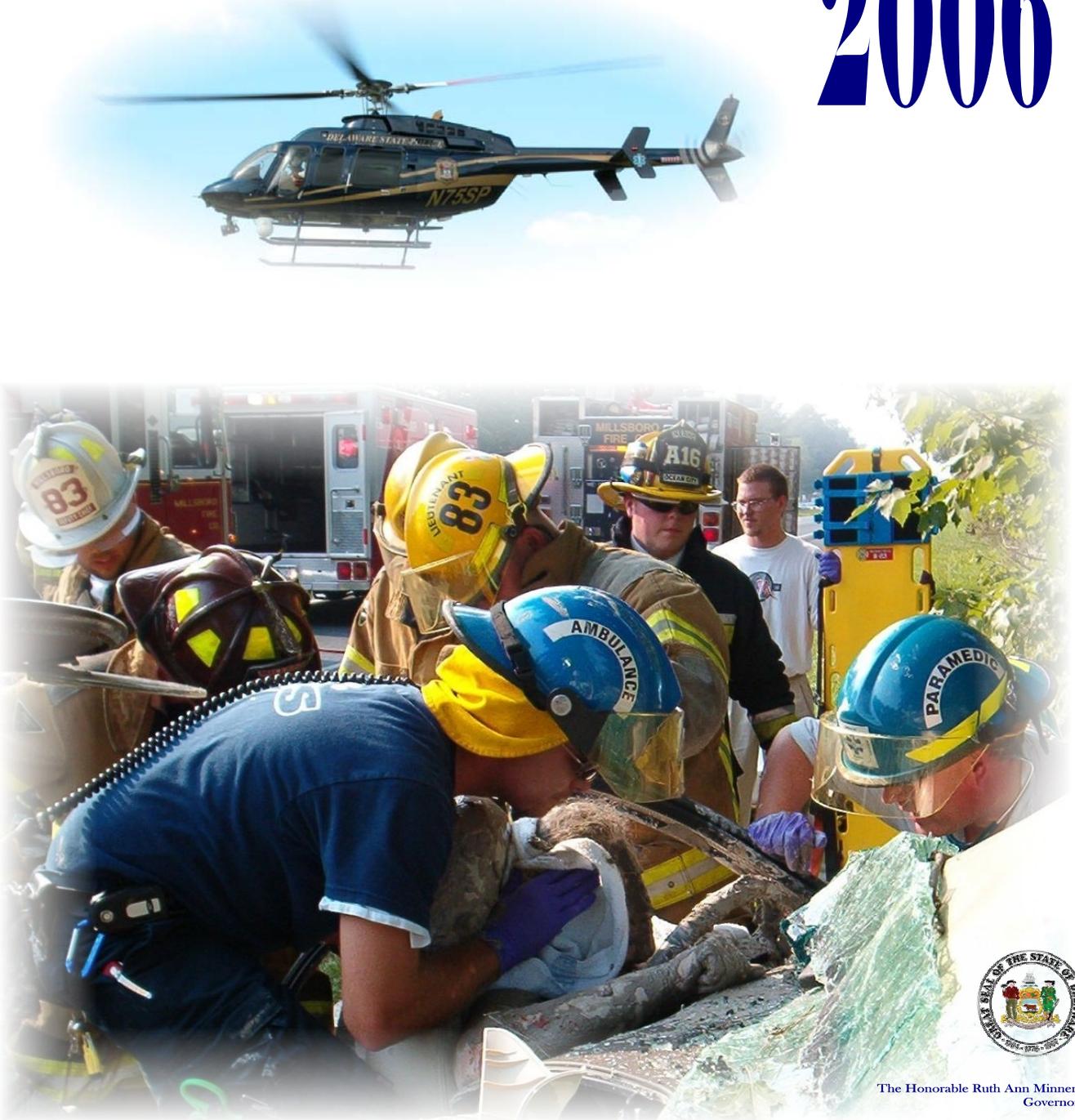


DEMSOC Annual Report

Delaware Emergency Medical Services Oversight Council

2006



The Honorable Ruth Ann Minner,
Governor



DELAWARE EMERGENCY MEDICAL SERVICES OVERSIGHT COUNCIL



April 15, 2007

To the Citizens of Delaware,

On Behalf of Governor Ruth Ann Minner and the Delaware Emergency Medical Services Oversight Council (DEMSOC), I am pleased to present the 2006 DEMSOC Annual Report. DEMSOC was created in 1999 to promote the continuous development and improvement of our Emergency Medical Services (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 several times throughout the year 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 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.

2006 proved to be yet another challenging year for EMS on the national level. Most of the trends experienced nationwide are evident here in Delaware as well. The growth in Delaware's population presents the need to care for more patients and expand capacity. The competition to attract qualified EMS providers to meet our staffing needs is intense, as well. The costs associated with maintaining a competent EMS system are on the rise, and this has an affect on our provider agencies. Also, our focus on greater preparation for disasters and acts of terrorism is becoming more evident as EMS provider agencies move forward in their work with several federal partnerships. As our EMS system rises to meet these and numerous other challenges, DEMSOC will be integrally involved in the process, providing a venue for discussion and growth.

I urge you to use this report to heighten your awareness of the importance of Emergency Medical Services to our state and local communities. The dedicated personnel working and volunteering in our EMS system need your continued support to ensure that our system remains among the best anywhere.

Respectfully yours,

David B. Mitchell, J.D., Secretary
Department of Safety and Homeland Security



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DEMSOC ANNUAL REPORT – 2006

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DEMSOC ANNUAL REPORT - 2006

Executive Summary

The Delaware Emergency Medical Services Oversight Council (DEMSOC) presents this annual report in accordance with Title 16, Subsection 9703 of the Delaware Code. DEMSOC was formed pursuant to the Delaware Emergency Medical System 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 to ensure 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, David B. Mitchell, J.D., serves as the Chairman. Also serving on the Council is the Secretary of Delaware Health and Social Services, Vincent P. Meconi. DEMSOC also includes representatives from the following agencies: the Governor's Office, each County government, the Delaware State Fire Prevention Commission, the Delaware Volunteer Firemen'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 main purpose of this report is to inform those interested in our State's EMS efforts about current practices and initiatives and to provide measurements useful for monitoring the performance of our EMS system. Our inaugural report in 2000 allowed DEMSOC to begin the process of establishing a baseline from which to measure the impact of future changes and growth in Delaware's Emergency Medical Services (EMS) system. Since EMS was first developed in the 1960's, systems throughout the country have struggled with finding the best methods to measure and evaluate system performance. Delaware is no exception. One common method is to use response times, but response time data cannot readily measure the quality of care provided to a patient. Other equally important aspects of EMS system to measure are clinical performance and EMS system costs.

This report addresses EMS system oversight, EMS system performance, EMS system costs and medical direction. Specialized programs/areas are highlighted such as: State Trauma System, EMS-C, Cardiovascular Care and Domestic Preparedness.

The ongoing challenges seen by the Delaware EMS system are consistent with those seen nationwide. These challenges include: addressing the increased call volume related to the aging of our state's population, and increases in the development of our counties. Issues with system finance and sustainability will continue. Many agencies receive funding through state and federal sources. Current federal funding cuts may adversely impact our system. In general, EMS systems nationwide are facing issues with personnel recruitment and retention. Our system must take a proactive approach to this issue if we are to maintain the quality and efficacy of our EMS services.

INTRODUCTION

EMS originally was conceived to respond to accidental death and injury and cardiac conditions outside the hospital. But EMS, and its unique history in both health care and public safety, is much more complex. It was started by several influential areas - traffic safety, trauma care, cardiology, resuscitation science and military medicine - and it continues to cross the boundaries of numerous disciplines, including health care, medical transportation, public health and homeland security.

EMS defies an easy explanation, the American College of Emergency Physicians describes EMS;

- ✱ **EMS is out-of-hospital patient care.**
- ✱ **EMS is ambulance transport.**
- ✱ **EMS is an extension of emergency medicine.**
- ✱ **EMS is an arm of public health.**
- ✱ **EMS is a safety net for the health care of the un- and under-insured.**
- ✱ **EMS is prevention.**
- ✱ **EMS is first response and public safety.**
- ✱ **EMS is expected to provide immediate emergency medical response and patient transport to large numbers of affected patients following a disaster.**
- ✱ **EMS is America's front line of health care.**



EMS ISSUES AT THE NATIONAL LEVEL

In 2006, Delaware enjoyed unprecedented representation in national organizations that influence EMS policy at the federal level. Former State EMS Medical Director and Former DEMSOC member Dr. Robert O'Connor completed his second and final year as President of the National Association of Emergency Medical Services Physicians. Additionally, State EMS Director Steven Blessing was selected by the members of the National Association of State Emergency Medical Services Officials to serve a two year term as President-elect, to be followed by a two year term as Association President. Secretary Mitchell serves as a member of the national SAFECOM Emergency Response Council, where the members' unique experience and expertise to help set the course for the next two years. He is also a member of the Governor's Homeland Security Advisors' Executive Committee, which deals with "All Hazards, All people" response planning nationally. Secretary Mitchell is also a member of The All Hazards Consortium, which is comprised of regional stakeholders from government, industry, education and non-profit organizations. Several other EMS providers throughout the state have earned recognition as speakers at national EMS venues, or serve on committees in our national EMS organizations, and they continue to demonstrate that Delaware is a leader in providing EMS care.

FUNDING

Federal funding for critical EMS programs felt the pinch of a tightening budget in Washington. Several key federal grant programs have lowered their funding levels or have been left unfunded. Most preparedness grants saw reduced funding levels and reallocation of monetary assets. Two key federal programs provided to EMS were eliminated in 2006- the Rural Access to Healthcare grant and the State Trauma Systems Development grant. Both of these provided funding to EMS in Delaware. Other grants that affect Delaware, such as the Emergency Medical Services for Children grant, were threatened with elimination but ultimately regained funding. The tightening of funding in federal grant streams also brought about tougher funding standards, revised funding guidelines and very narrow performance measures across the board for all federal EMS grants.

Although federal funding was reduced and in some cases eliminated, Delaware programs affected by these cuts continue to operate and thrive through other funding sources.

DOMESTIC PREPAREDNESS

Domestic preparedness remains a key topic for EMS at the national level. In 2006, EMS agencies still reported a general lack of training and equipment as the nation boosts its preparedness capabilities, and EMS improved its visibility in federal planning and policy development in an effort to correct this situation. Preparation for response during pandemic flu events was at the forefront in 2006 and EMS agencies throughout the country became involved with the planning and training at the state and local level. In the aftermath of Hurricane Katrina in 2005, discussion about the use of the Emergency Management Assistance Compact (EMAC) to allocate EMS assets was another issue of

concern, since the process did not go well during Katrina and its aftermath, and assets in several states were deployed without state knowledge.

Delaware remains ahead of most states in its preparedness planning and efforts and the use of EMAC for Delaware assets worked well in recent times of need.

WORKFORCE DEVELOPMENT

Work continued in 2006 on recruitment and retention of EMS providers. There is a national shortage of EMS providers and a need to solidify EMS as a recognized medical profession. The national trend is toward the creation of a National Scope of Practice, which would standardize the provider levels recognized in each state and enhance interoperability, mutual aid and licensure reciprocity. Many states have also moved to mandate accreditation of their paramedic initial training programs (Delaware's paramedic training program was re-accredited during 2006). The National Registry of Emergency Medical Technicians went to 100% computerized testing nationwide beginning January 1, 2007.

Although Delaware is also affected by a shortage of EMS providers, our agencies across the state have worked hard to improve recruitment and retention, compensation, work conditions, training and diversity. As our population ages the demand for services will increase, as will the demand for EMS providers. 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%. Sussex County is in position to be extremely hard hit by the aging population. In 2006, 47.5 percent of the paramedic responses are to patients over age 60. As the senior population increases, so will the strain on the system.

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

The National Association of Emergency Medical Services Educators has created an EMS Diversity Task Force, and has appointed Glenn Luedtke, Director of Sussex County EMS, as Chairman. The goals of this task force include:

- Increase the awareness of diversity issues in EMS
- Conduct research to accurately identify EMS diversity issues throughout the United States
- Increase stakeholders' understanding and promote consensus regarding steps that should be taken to enhance diversity among EMS providers
- Develop model institutional and policy-level strategies that may increase diversity within EMS

- Identify existing programs that have successfully addressed diversity in EMS and share them with stakeholders
- Develop broad coalitions to encourage EMS agencies, their accreditation bodies, and federal, state and county sources to support initiatives that will enhance diversity among EMS providers

Some of the strategies identified by this task force are:

- Increase **awareness** of EMS as a profession within minority communities
- Improve **training availability** to members of the minority community
- Reduce **financial barriers** among minority and lower-income students
- Increase **emphasis on diversity** in EMS training programs
- Improve EMS agency “**climate**” for diversity

DEMSOC created a workforce diversity subcommittee in 2006 to address issues with the recruiting and retention of a more diverse EMS workforce. This subcommittee will work closely with the NAEMSE group to address this critical issue within our State. 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.

TRAUMA CARE

The provision of trauma care is an important and often underestimated aspect of EMS. Many states are still in the process of designating trauma hospitals and some states are still in development stages in the creation of their statewide trauma systems. Trauma care across the country suffers from a lack of funding for system development, and this was intensified with the termination of the Trauma Systems Development Grant in 2006. Several issues facing our trauma centers today include escalating costs, exorbitant malpractice costs and litigation, overcrowding, availability of specialty care providers, patient destination issues (where injured patients are taken to the hospital) and aeromedical coverage.

Delaware has a well developed trauma system and a strong aeromedical system as well. Loss of systems development funding does not affect our state as severely as many others. However, Delaware’s system is not immune to the other issues faced nationally, such as overcrowding, litigation and the availability of specialty care providers. DEMSOC is considering ways to provide funding to improve our trauma system in the coming years.

CARDIAC/STROKE CARE

Lifestyle issues and a maturing population are the major drivers for national concern about cardiac arrest and stroke. EMS is on the front lines of all efforts to battle cardiovascular disease. National standards for prehospital cardiac care are under development and there is discussion about the development of statewide cardiac care systems that mirror the statewide trauma systems developed in many states. Improved

technology and continuous research in this area have provided the opportunity to make great progress.

Delaware is a leader in the deployment of Automatic External Defibrillators, and its prehospital protocols for providers are considered among the most progressive in the country. Delaware's extensive data collection ability and its EMS operational climate have enabled the state's providers to be on the forefront of many research efforts in this area, as well. The Office of Emergency Medical Services developed plans for an EMS Cardiac Care program in 2006, with implementation scheduled to begin during 2007 with the creation of a dedicated position to coordinate cardiac care and enhanced research efforts.

DATA COLLECTION

Data collection is at the heart of what is done in EMS. Data helps make crucial operational decisions, serves as the basis for quality assurance measurements and is the source of research to improve future care. The National Highway and Traffic Safety Administration (NHTSA) continues to lead an ongoing effort to develop a national EMS database, known as NEMSIS. It is hoped that information gained through NEMSIS will serve as a catalyst for future research and growth in EMS. In order to participate in NEMSIS, states must collect all of their EMS data in a specific electronic format and have the capacity to transmit that data to the national database.

Many of the current NEMSIS data points are based on Delaware's EDIN system. It is projected that Delaware will be one of the first states ready to participate in NEMSIS, sometime during 2007. There are currently 4 states participating in a pilot version of NEMSIS nationally.

SYSTEM OVERSIGHT



DELAWARE EMS OVERSIGHT

DELAWARE EMERGENCY MEDICAL SERVICES OVERSIGHT COUNCIL

The Delaware Emergency Medical Services Oversight Council (DEMSOC) was formed pursuant to the Delaware Emergency Medical System 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 to ensure the quality of EMS services in Delaware.



DEMSOC MEMBERS

Lawrence Tan
John Willison
Wayne, Smith
Cpt. Jeffrey Evans
Dr. Glen Tinkoff
Hon. David Mitchell (Chairman)



Dr. Ross Megargel
Dr. Kevin Bristowe
Robert Coyle
Doug Butler
Glenn Luedtke (Vice-Chairman)
Dr. Tom Sweeney
Steven Blessing
Ken McMahon
Debbie Vincent
Richard Krett
Sgt. Paul Shavack
Kenneth Dunn
Jim Cabbage

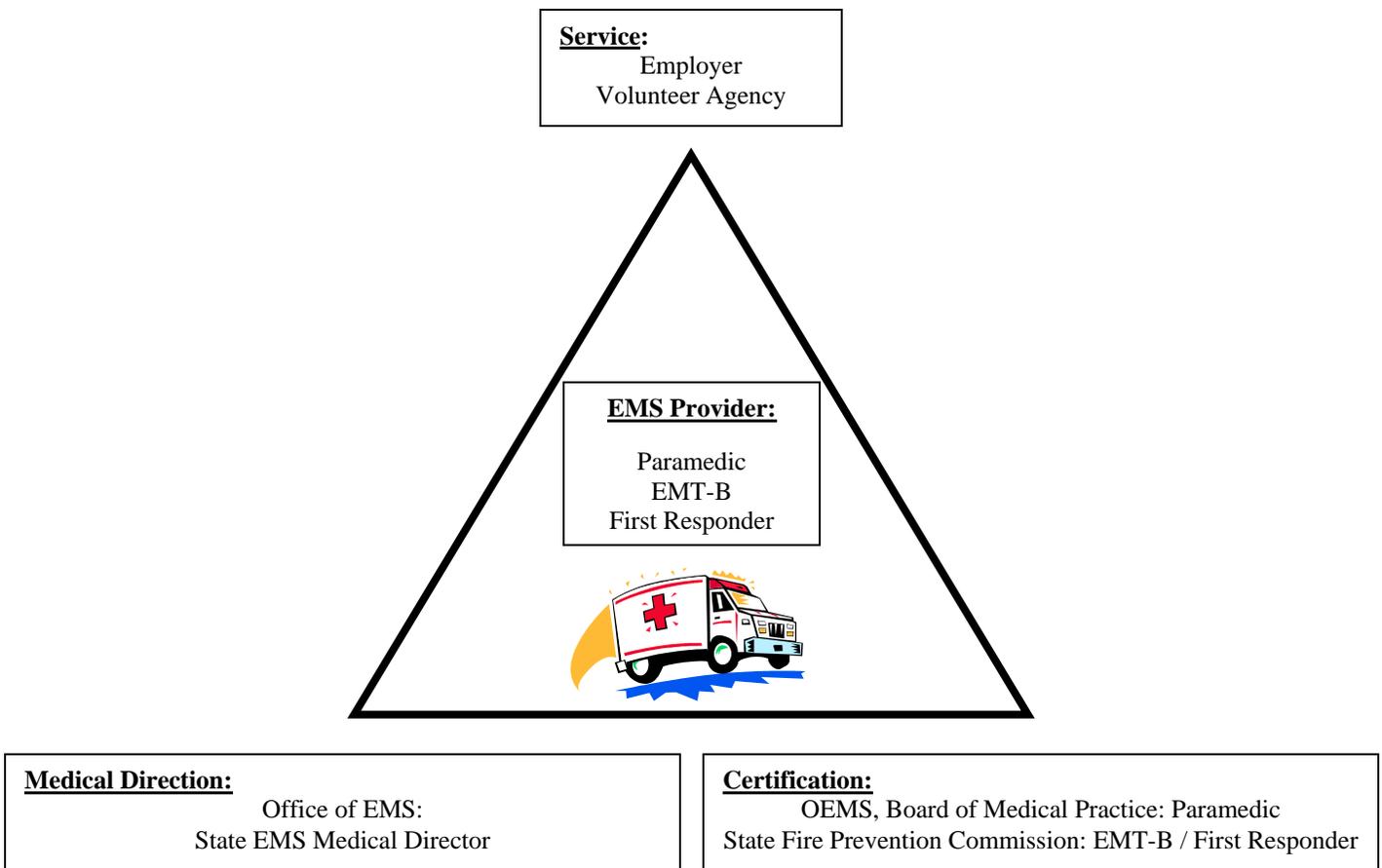
Not pictured:
Dr. Gus Rivera
Colin Faulkner
Alan Robinson
Dr. Robert O'Connor
James Cloney

DEMSOC consists of 19 members appointed by the Governor. The Secretary of The Department of Safety and Homeland Security, David B. Mitchell, J.D., serves as the Chairman. Also serving on the Council is the Secretary of Delaware Health and Social Services, Vincent P. Meconi. DEMSOC also includes representatives from the following agencies: the Governor's Office, each County government, the Delaware State Fire Prevention Commission, the Delaware Volunteer Firemen'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 responsible for coordination of the state's EMS system. The Office of Emergency Medical Services is the regulatory authority for the paramedic system and provides medical oversight to the state's EMS system.

Delaware is a frontline leader in prehospital emergency care through comprehensive coordination, development and evaluation of the statewide emergency medical services system. There are two agencies that share oversight of the EMS system in our state, The Office of Emergency Medical Services oversees Advanced Life Support services and the State Fire Prevention Commission oversees Basic Life Support Services. The EMS Improvement Act articulates the roles of the two agencies.

DELAWARE EMS PROVIDER OVERSIGHT TRIANGLE



OFFICE OF EMERGENCY MEDICAL SERVICES

The Office of Emergency Medical Services is a section within the Division of Public Health, Department of Health and Social Services. It plays a vital role in the integration of emergency medical services into the state's public health system.

Delaware Code, Title 16, Chapter 97, §9704. The Office shall be responsible for ensuring the effective coordination and evaluation of the emergency medical services system in Delaware which includes providing assistance and advice for activities related toward the planning, development, improvement and expansion of emergency medical services.



OEMS STAFF

Laura Cygan
Kathi Fletcher
Al Sherman
Danielle Hodgeman
Kate Spahr
Shelly Ide
Marie Renzi
JoAnne Freddo
Sandy Hypes
Diane Hainsworth
Director Steve Blessing
MarySue Jones
Debbie Vincent

Not Pictured:
Fred Haas
Laurie Lin
Beth MacDonald
Dr. Ross Megargel
Tameka Reed
Michelle Johnson

Mission

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 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.

Philosophy

The OEMS is committed to ensuring high quality prehospital care to the citizens of Delaware. This agency supports the concepts of continuous quality management for all services it provides. The OEMS believes that the personnel working in the prehospital system take pride in their work and are motivated by a desire to achieve individual and system-wide excellence in the provision of prehospital care. Quality management will be seamlessly integrated into the work of Delaware pre-hospital services to the extent that

the concepts of quality management are indistinguishable from the daily work of the prehospital provider.

Objectives

- To provide and maintain support for planning, development, expansion and improvement of our Advanced Life Support and Basic Life Support systems;
- To provide statewide coordination of training programs;
- To provide coordination of local, regional, and statewide EMS resources;
- To assure continued system development and quality improvement;
- To incorporate the special needs of children in our EMS system development;
- To provide an integrated EMS Information System;
- To provide medical oversight to our local, regional and state EMS system;
- To promote a system wide attitude that honors individual and organizational contributions, innovations and commitment to achieving excellence in patient care;
- To provide all prehospital personnel with educational information needed to continuously monitor the quality of their work;
- To promote and provide information exchange between prehospital agencies

The Office of Emergency Medical Services administers and enforces emergency medical services statutes, regulations, programs and policies.

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 & Injury Prevention: This program is responsible for coordination of hospitals and provider agencies to ensure optimal care for trauma patients and serves as a leader in statewide injury prevention efforts.

Emergency Medical Services Data Information Network (EDIN): This program is responsible for maintaining a system of electronic data submission for EMS patient care reports and is the basis for EMS quality assurance and assessment of training needs.

EMS Medical Direction: This program is responsible for providing medical oversight of the statewide EMS system (Advanced and Basic Life Support), 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.

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.

Poison Control Center Programs: The OEMS administers Delaware's contract with the Poison Control Center (PCC) at The Children's Hospital of Philadelphia to provide a 24-hour-a-day emergency hotline for poisoning incidents and poison information for Delaware residents.

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 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. It is the intent of these regulations 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.

Prehospital Advanced Care Directive Regulation: The purpose of this regulation is to require the use of a specific form of individual identification that can be readily recognized and verified during a prehospital emergency. The regulation also details the legislated immunity for certified providers honoring this order.

Advanced Life Support Interfacility Transfer 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 define their scope of practice and medical oversight. Data reporting to the Division of Public Health is included for the purposes of evaluating the performance of the State EMS system, of which Interfacility Transport is a component, regardless of the level of medical care provided.

OEMS Board and Committee Memberships;

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, Section 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. An average of 400 Delawareans are waiting for organ transplants at any given time. In 2006, sixty-one Delawareans were organ transplant recipients and 30 patients’ families gave the gift of life by donating their loved ones’ organs or tissues at death. Approximately 279,700 (39%) of Delaware drivers have designated themselves as organ donors on their driver’s licenses to date.

The Office of EMS is assigned within the Division of Health and Social Services and is committed to the overall mission of that agency: “To improve the quality of life for Delaware’s citizens by promoting health and well-being, fostering self-sufficiency, and protecting vulnerable populations.”

To support this mission the OEMS has representation on the following committees:

Domestic Preparedness

DEMSOC

National Association of State EMS Officials

Maternal Child Health Steering Committee

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)

Child Death, Near Death and Stillbirth Commission

American College of Surgeons’ Trauma System Consultation -site visit review

Medical Information System Committee

Traffic Records Coordinating Council "Core Team"

DPH Section Chiefs

CODES

EMS Dispatch Committee

Governor’s Stroke Task Force

DTCC Paramedic Education Advisory Board

DEMSOC Mass Casualty Transport Committee

Atlantic EMS Council

Priority Medical Dispatch

School Health Commission

Risk Watch

Drowning Prevention Coalition

It is our vision that Delaware's Emergency Medical Services represents true excellence in out-of-hospital, community health based care. Delaware's EMS is integrated across the full continuum of community health services beginning with emergency dispatch and including emergency response, community health interventions, injury and illness prevention efforts, and facilitation of access to health services. This is efficiently accomplished by cooperative operational integration of all provider agencies and EMS resources across the state with clear accountabilities, and active partnering with other community health providers.

The Office of EMS brings life-saving medical care to the residents and visitors of Delaware by overseeing and ensuring that responders are fully trained and emergency systems are functioning efficiently and effectively. This ensures a safer and healthier place to live for all Delawareans.





STATE FIRE PREVENTION COMMISSION

The State Fire Prevention Commission is charged with the protection of life and property from fire for the people of Delaware and to oversee the operation of the Delaware State Fire Marshal's Office and the Delaware State Fire School.



COMMISSIONERS

Kennard L. Pyle, Francis J. Dougherty, W. Bill Betts Jr., Chairman Kenneth H. McMahon,
Bob Ricker, Vice Chairman Marvin C. Sharp, and Daniel W. Magee

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 Code and are summarized as follows but not limited to:

- The Commission shall consist of seven persons appointed by the Governor.
- They shall also 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.

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.

Regulations Promulgated by the DSFPC:

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 as well as Non-Emergency Ambulance Service. It clearly defines the administrative and operational requirements for such entities.

DSFPC Board and Committee Memberships:

The State Fire Prevention Commission has representation on the following committees:

- BLS Improvement
- Incident Review
- DEMSOC
- Protocol and Standing Orders
- Governor’s Fire Safety Conference
- Medical Information Subcommittee (Commission’s executive secretary serves as the secretary for this committee)
- Statewide Hospital Diversion Policy
- DEMSOC Financial Reporting Requirements
- HJR 37 Task Force
- Regulation 13 Review
- Legislative Committee on Background checks
- BLS Assessment



DELAWARE STATE FIRE SCHOOL

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 around 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 Technician.
- To inspect and license ambulances that operates 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.



OFFICE OF THE FIRE MARSHAL

The mission statement of the Office of the Fire Marshal is "To provide the citizens of this State and all who visit a Fire Safe Environment be it in the home, the workplace or wherever they pursue their varied lifestyles or interests."

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 fire works.

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.

Number of Fire Fatalities	15
Number of Burn Injuries Investigated by SFMO	49

2006 Delaware State Fire Marshal's Office Data

MEDICAL DIRECTION

Delaware's Emergency Medical Services (EMS) provides medical care to victims of illness and trauma through a coordinated medical system of EMS responders. EMS responders include 911 dispatchers, cardiopulmonary resuscitation (CPR) providers with automatic external defibrillators (AEDs), basic life support (BLS) providers with 120 hours of training, paramedics or advanced life support (ALS) providers with 2000 hours of training 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 Board Certified Emergency Physicians who practice in Delaware. Legally, medical care is rendered by BLS and ALS providers under the medical license of the State EMS Medical Director. Delaware has a part-time EMS medical director and an associate EMS medical director for each County who are responsible for medical oversight, medical protocol coordination and quality assurance at the County level. The County and State EMS 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.



MEDICAL DIRECTORS

Ross Megargel, DO, Rob Rosenbaum, MD, Dean Dobbert, MD, Kevin D. Bristowe, MD
Not Pictured: Thomas Sweeney, MD and Paul Cowan, DO

Treatment Protocols:

Delaware's EMS system provides care through a series of treatment protocols that allow certain level providers to initiate life saving care without taking valuable patient care time to contact an emergency physician working in an emergency department. Delaware has several unique protocols that have significantly improved patient care.

Delaware's EMS system is one the first to initiate prehospital EKGs. This program was started in the mid 1990's and allows our paramedics to make a "diagnosis" of a heart

attack (myocardial infarction), allowing for emergency departments to prepare to receive the patient and provide timely heart saving treatments. With the advancement of invasive heart saving techniques such as angioplasty, paramedic and basic life support teams now can transport a heart attack victim directly to a hospital with angioplasty capability, avoiding life threatening delays caused by patient transfers.

Delaware's continuous positive airway pressure (CPAP) protocol implemented in 2000, is a system of delivering oxygen to patients in respiratory distress from certain advanced lung and heart conditions. Previously, patients with advanced respiratory distress, all required placement of a tube from their mouth into their trachea (endotracheal intubation) and attachment to a ventilator in the hospital. Patients with endotracheal intubation under these conditions often had uncomfortable, several day admissions to intensive care units (ICUs). With CPAP, many of these patients can have medical treatments that often lead to resolution of their life-threatening conditions before or shortly after arrival in an emergency department, reducing or even preventing long, expensive, uncomfortable hospital ICU admissions.

Delaware's seriously head injured patients have benefited for four (4) years from a drug facilitated intubation protocol which allows specially trained paramedics to paralyze patients with clenched teeth, respiratory distress and serious head injury or stroke to protect their airway and utilize aero-medical transportation to Level I Trauma Centers with a neurosurgical capability. This technique of managing seriously head injured patients significantly reduces time to life saving care and is reducing morbidity and mortality.

Research:

Delaware remains among the leaders in EMS research. Research allows EMS managers to make decision based on solid evidence derived through scientific method. Science based decision making has been difficult to do with the worldwide lack of EMS research in general. Delaware's involvement nationally in EMS research is demonstrated by the volume of work highlighted at Appendix B of the report.

Delaware's EMS medical directors have based Delaware's treatment protocols training and equipment on research. Research from international and national literature is sought to answer EMS system questions and problems, but when not available has been developed in state. Delaware's EMS physicians, along with many of our emergency and trauma physicians and nurses have been involved in research that has had a national impact.

The Office of Emergency Medical Services (OEMS), the EMS medical directors, and physician partners at Christiana Care looked at Delaware out of hospital cardiac arrest and the rate of bystander CPR with resuscitation in public areas verse the home and found that CPR resuscitation rates are significantly higher in public places. Since most out of hospital cardiac arrests occur in the home, lay person CPR training and EMS dispatcher protocols should emphasize the importance of bystander CPR.

In an extension of the above study and concerns in the medical literature that there are disparities between Caucasians and African-Americans with regards to health care, we looked at the rate of CPR and resuscitation rates between Caucasians and African-Americans. In this study, we found that in Delaware, CPR and resuscitation rates were similar in the two groups when the out of hospital cardiac arrest occurred in a public place. In the home, however the rate of CPR and resuscitation was significantly lower in the African-American population than the Caucasian group. We have not yet identified reasons for this difference.

Medical Directors visits to BLS Ambulance Companies:

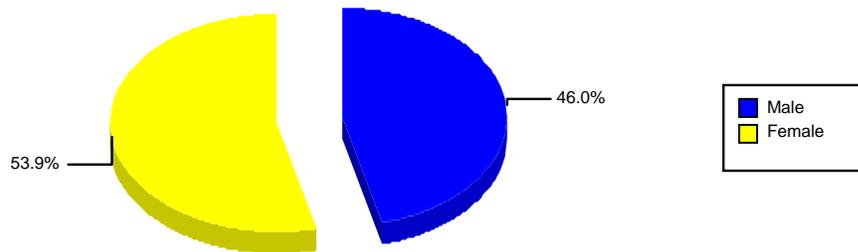
There is an effort underway among the volunteer fire/ambulance service, fire commission, public health and the OEMS to ensure the quality of patient care and to improve relationships and communication between providers and Medical Direction.

The EMS medical directors are committed to the provision of quality prehospital medical care. The provision of this care is reliant upon open lines of communication, quality improvement measures and the medical coordination of emergency dispatch, first responder, EMT-Bs, paramedics and medical control physicians. Although EMS medical directors interact on a regular basis with EMT-Bs and paramedics in the emergency departments, increased efforts are being made to ensure closer ties between providers and medical direction. The medical directors, fire commission, volunteer fire/ambulance services and the OEMS, recognize the value of interacting with providers in their “home” environment. To facilitate clear and open channels of communication, the EMS medical directors and a representative of the OEMS would like to visit all provider agencies for the purpose of education, problem solving, and quality assurance development and to discuss other medical issues as they may arise. EMS medical directors are setting aside time on their schedules to make in person visits to each ambulance provider agency. The OEMS is developing presentations and will provide continuing education credit hours for those in attendance.

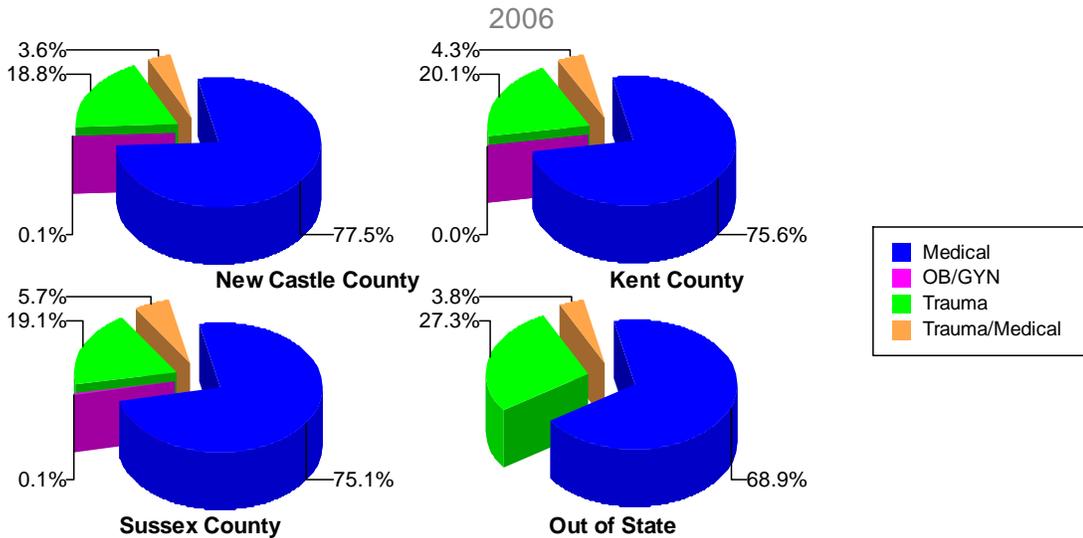
Medical Director's Clinical Performance Report

All data used for this section was extrapolated from the EMS Data Information Network (EDIN). Please note for this report, Advanced Life Support (ALS) and BLS data are separately reported. While reading this report please do not combine the ALS and BLS data. Doing so would lead to inaccurate totals.

Gender of EMS Patients

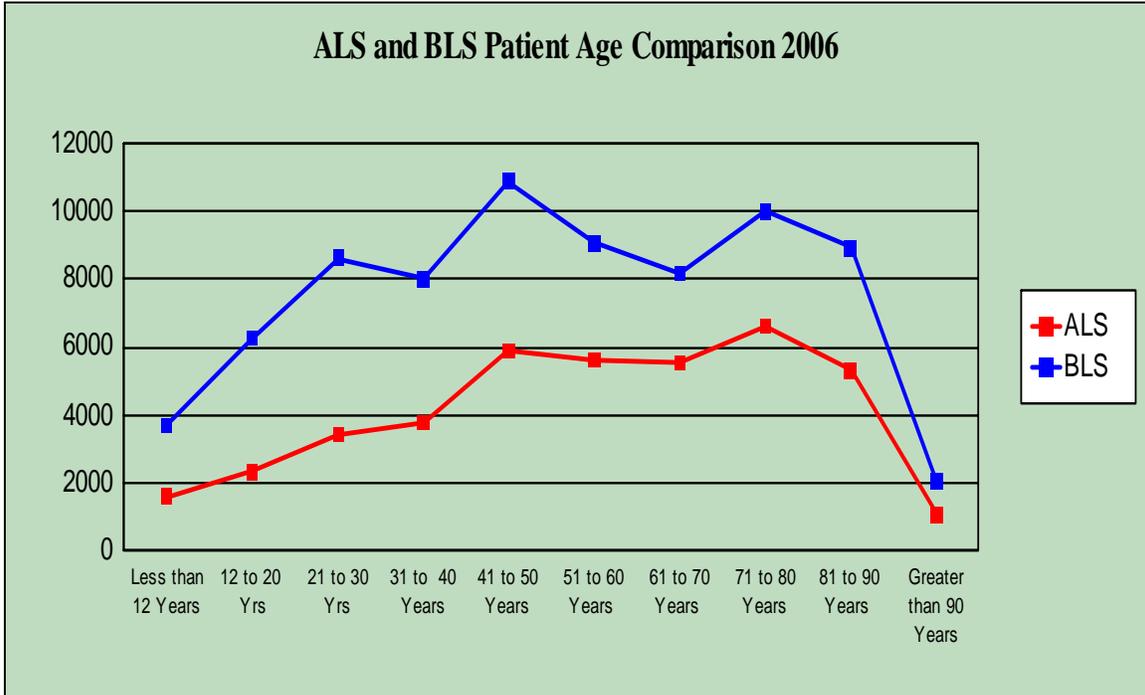


Types of EMS Patients by County



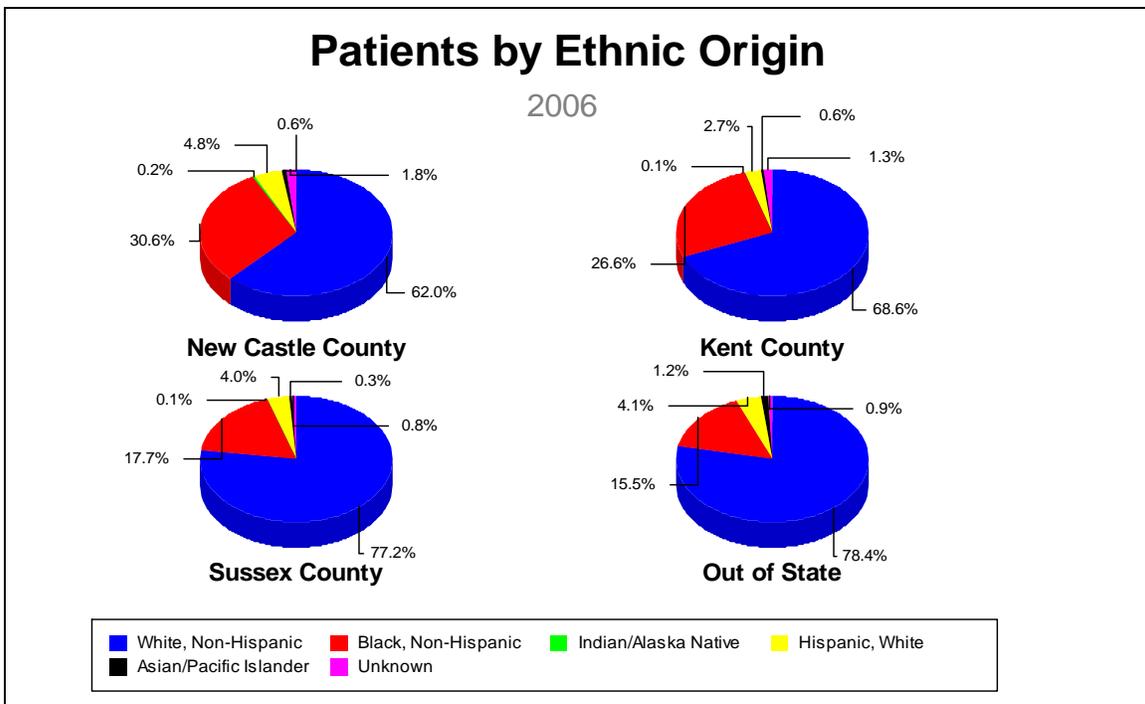
Types of patients:

Examples of medical patients include chest pain, heart attacks, respiratory problems, altered mental status, seizures, strokes and infectious disease. Trauma patients include 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 a faint related to a heart problem that caused the patient to fall, suffering a serious head injury. This graph along with several of the following graphs help the EMS medical directors, administrators and educators to tailor resources to provide the greatest good for the greatest number.



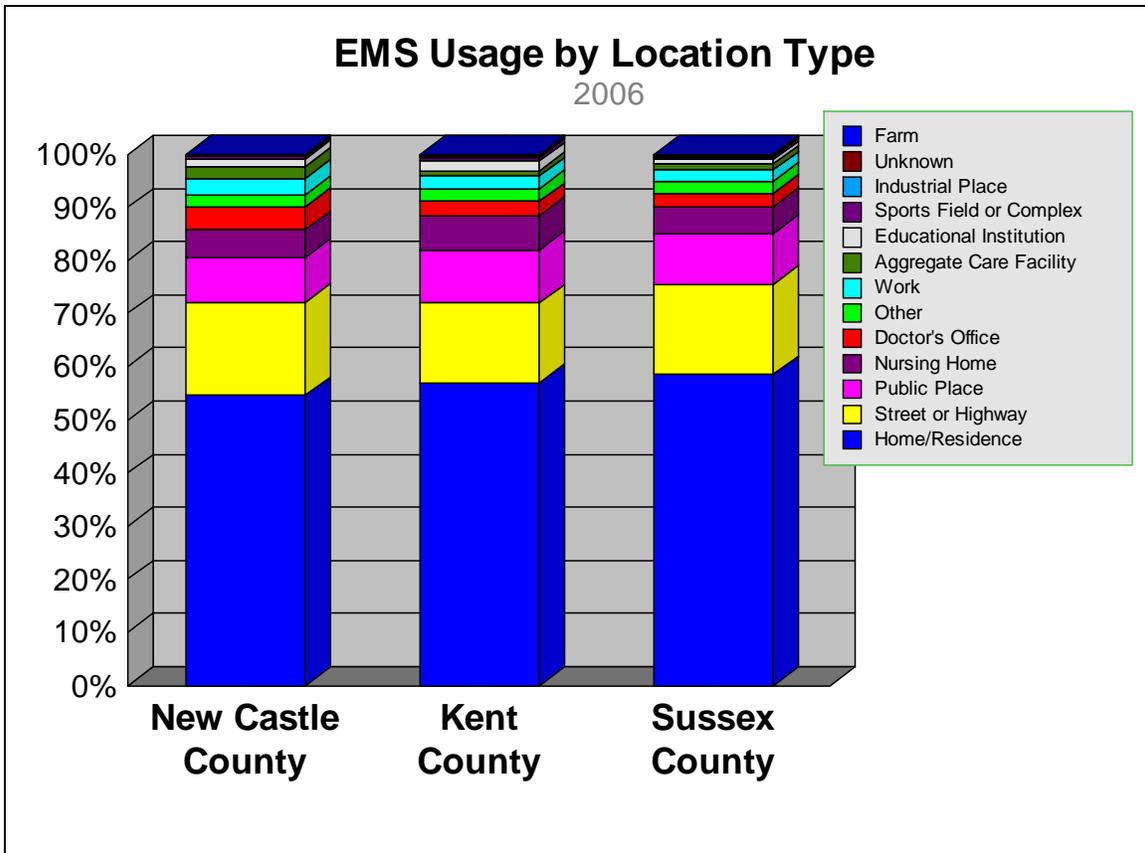
Age:

Note peaks at 41-50 and 71-80 years of age, etiology uncertain.



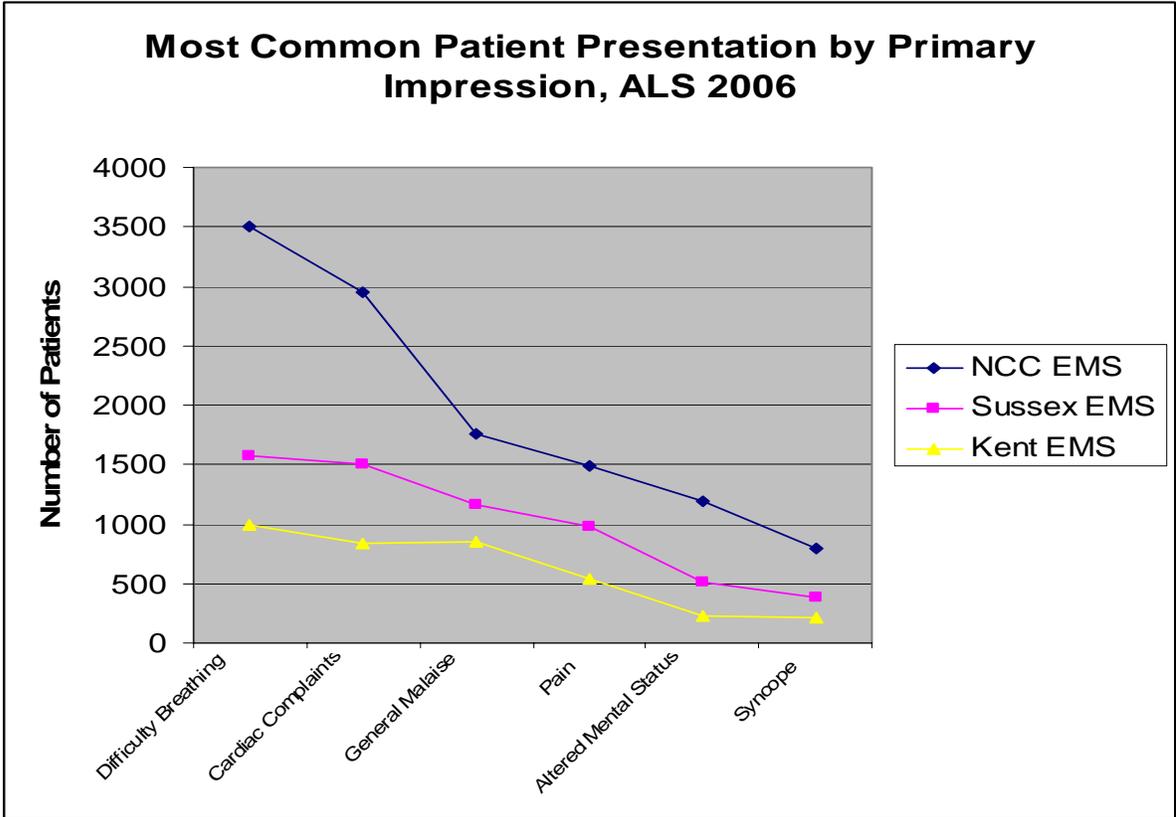
Patient's ethnic origin:

This graph is helpful in planning social, diversity and cultural training for personnel and working to overcome barriers to patient care.

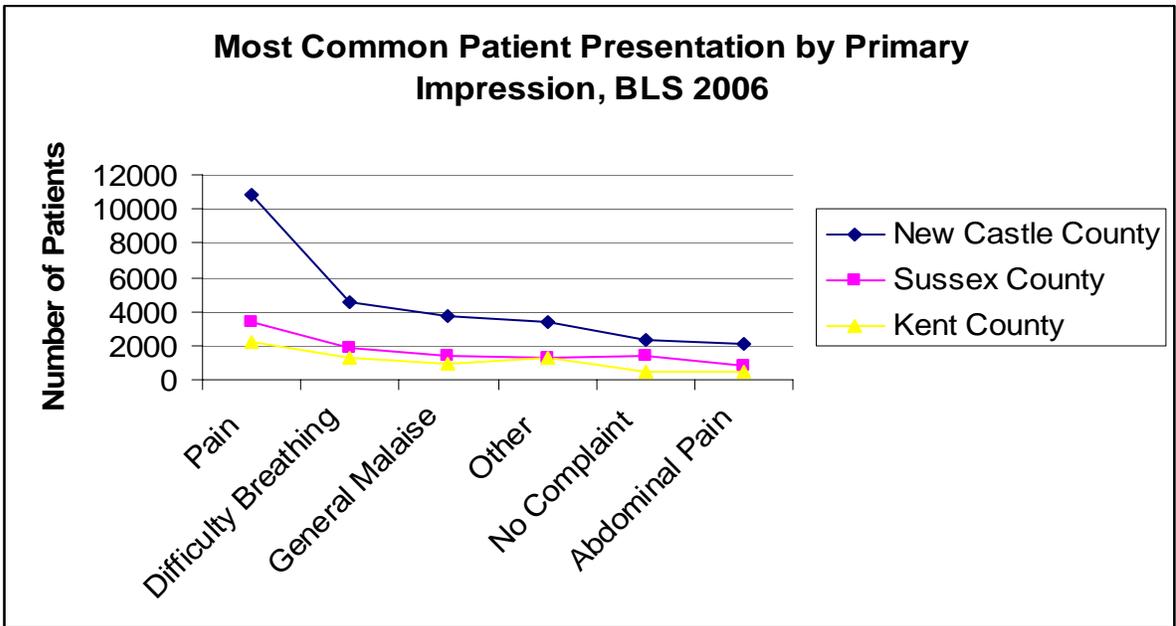


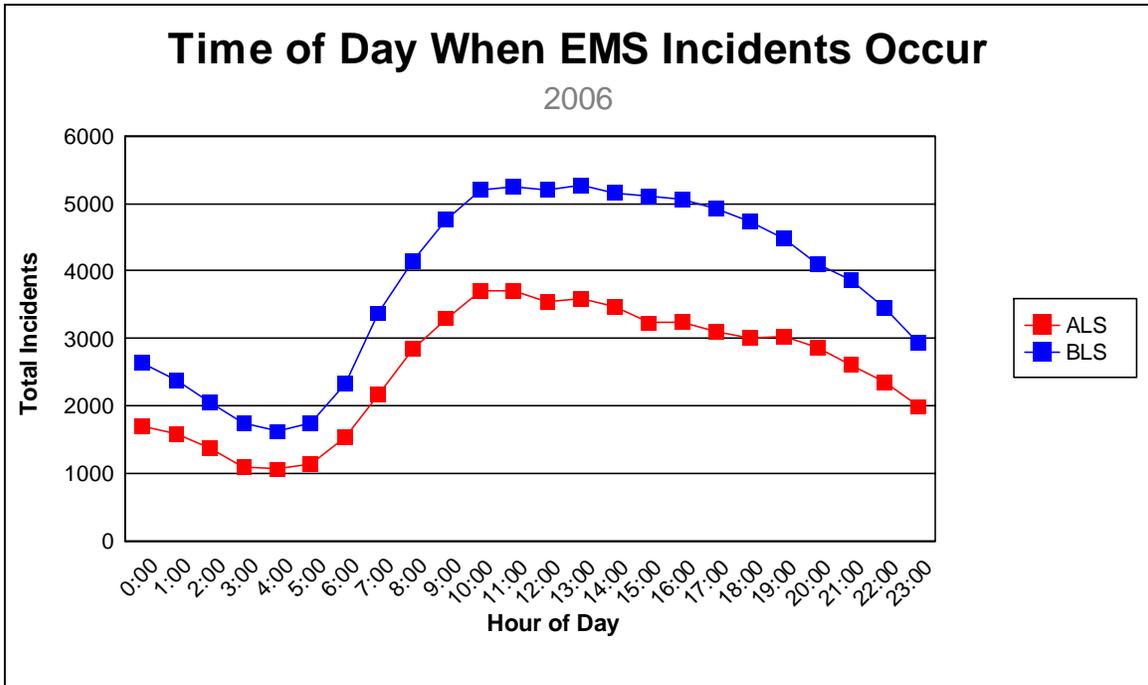
EMS usage by location type:

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.

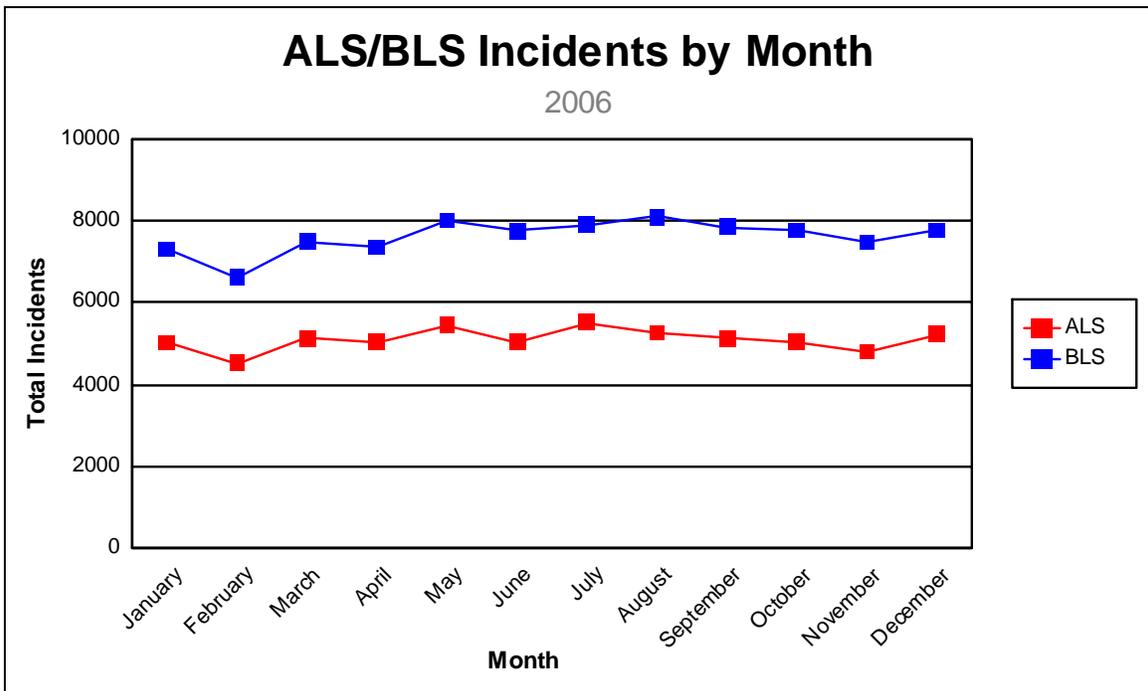


Primary Impression is the EMS provider’s evaluation of the patient based on: signs, symptoms, patient’s chief complaint and other factors. These graphs do not take into account the type of patient (medical, trauma). The primary impression of other is defined in the patient narrative and not able to query.





Note surge in call volume upswing at 7:00 am and comes back down at 11:00 pm



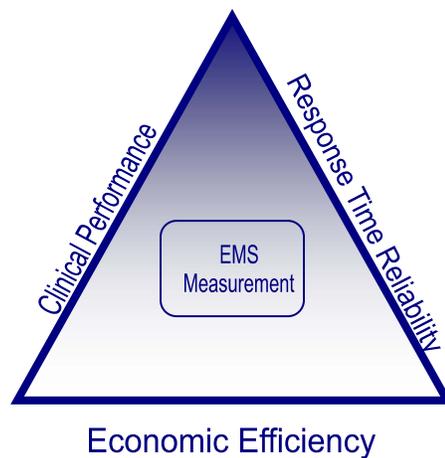
Monthly data statewide is consistent, variations are seen however in Sussex County in the summer months and in the other counties during special events such as Race Week in Dover.

DELAWARE EMS SYSTEM



MODEL FOR EMS SYSTEM PERFORMANCE EVALUATION

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 will result in a significant increase in costs as well as a decrease in clinical performance.



STATEWIDE EMS SYSTEM RESPONSE TIME PERFORMANCE

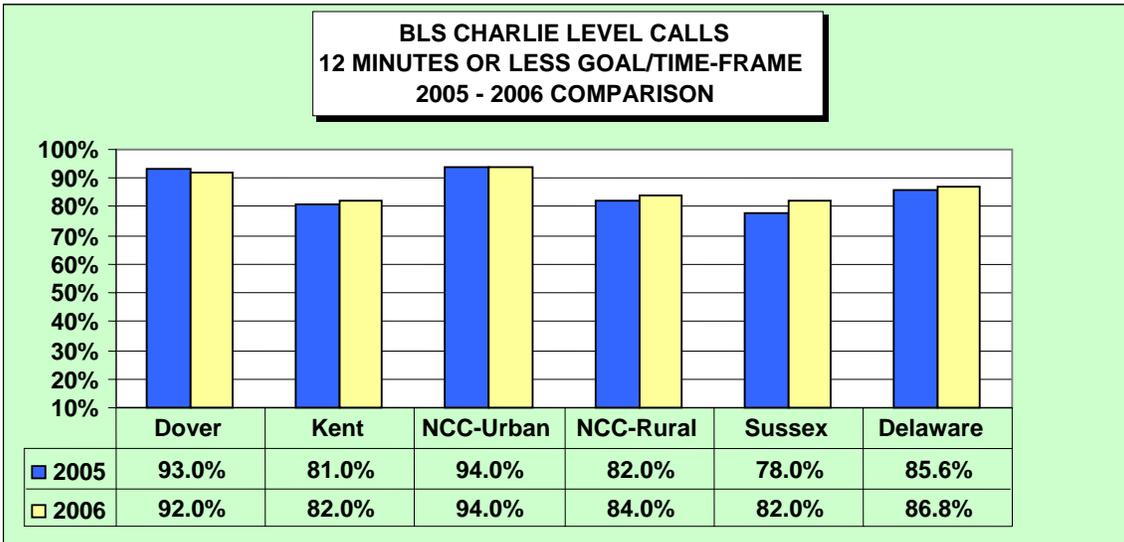
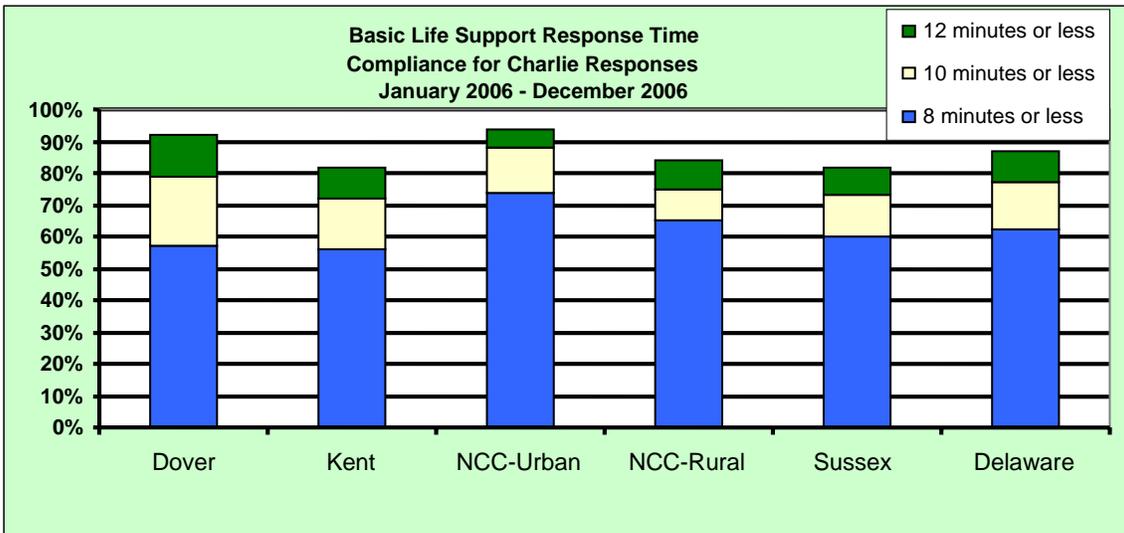
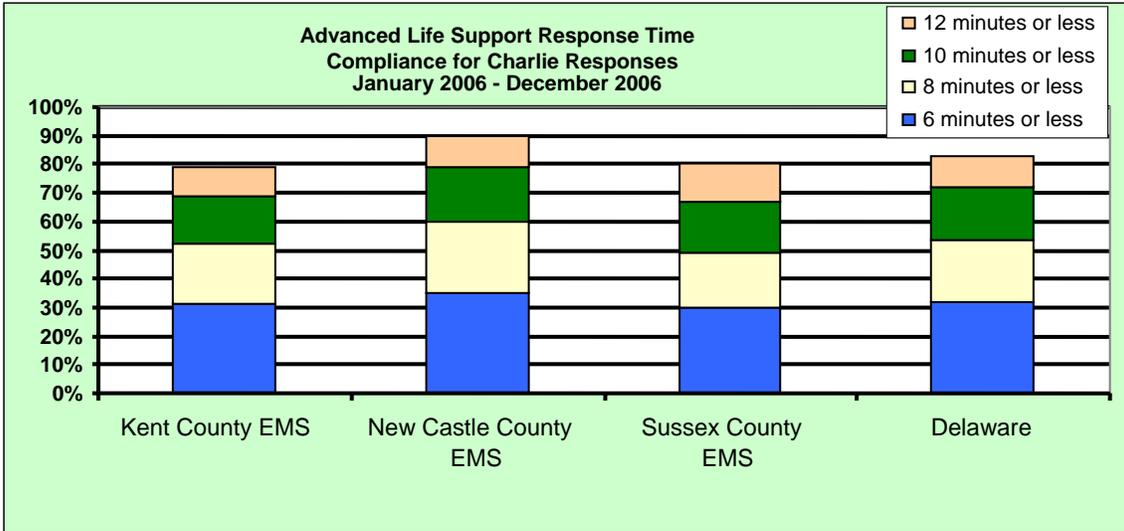
The Delaware EMS system measures response time performance in fractile's. Fractile response refers to how the response time is measure against an established performance goal. For example, if a response goal is 8 minutes, the fractile response is a percentage of the responses within that 8 minute goal. 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

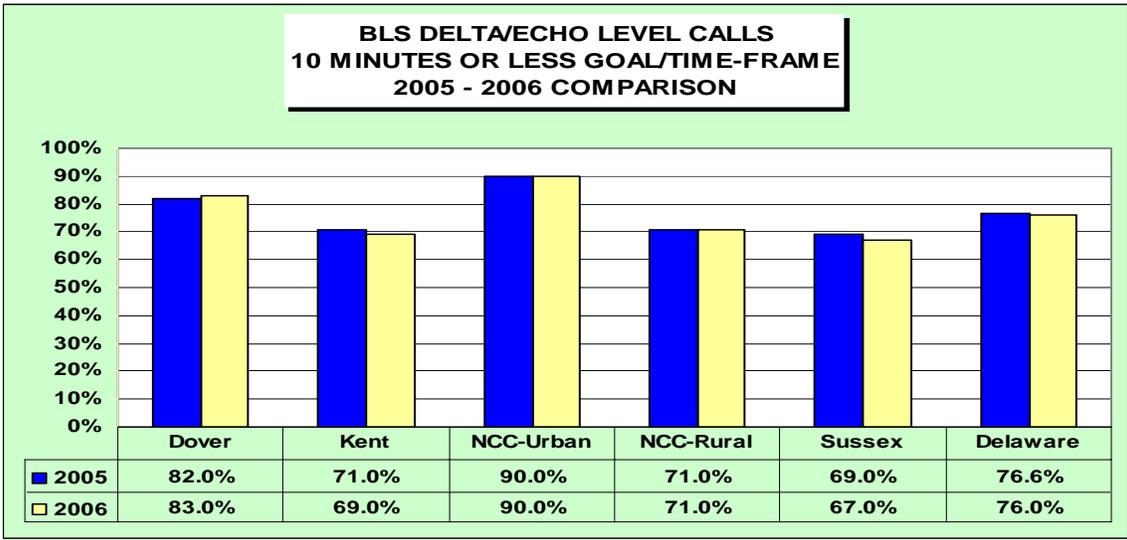
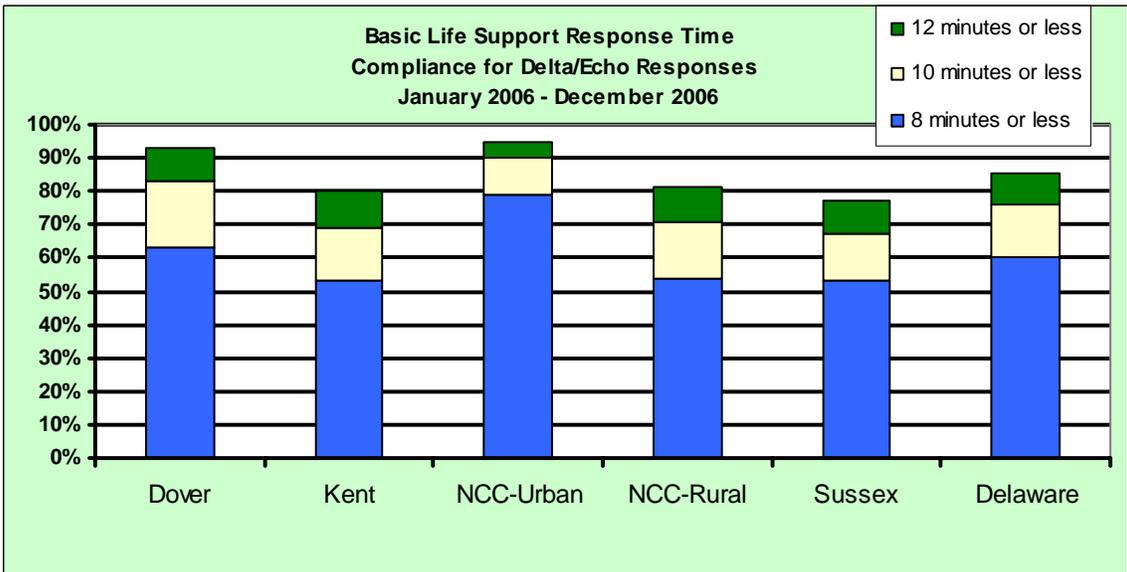
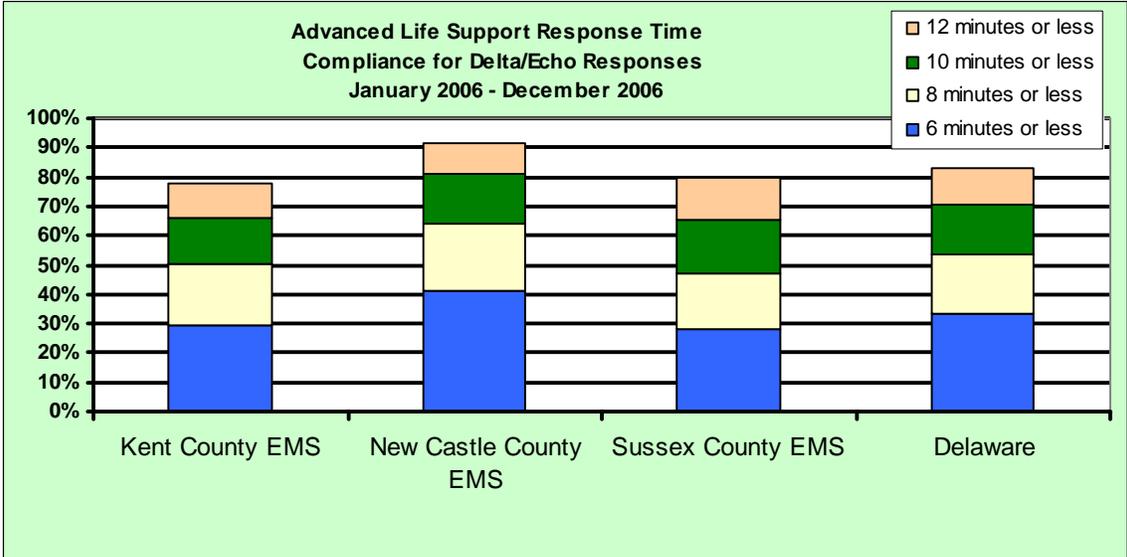
The response time goals for the Delaware EMS system adopted by the EMS improvement Committee are based on Cardiac Arrest survival research. These response goals are nationally recognized and cited by both NFPA (1710) and the American Ambulance Association guidelines. It is recognized that these are IDEAL goals. Using response time performance as the primary measure of EMS system performance has come under scrutiny.

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

- Alpha – Requires a BLS response. Example is a minor burn.
- Bravo- Requires a BLS response. Example is with unknown patient status.
- Charlie- Requires ALS and BLS response. Example is burns with difficulty breathing.
- Delta- Requires ALS and BLS response. Example is an unconscious burn victim.
- Echo- Response type not addressed in the legislated response time goals, but it requires a maximum response to include available first responders. Example would be a cardiac arrest.
- Omega- Response type not addressed in the legislated response time goals. An example of an Omega response is a dispatcher assisting a caller to contact poison control.

Data used for this section of the report is from the EDIN system, it is notable that EDIN does not calculate seconds, therefore all times are recorded as whole numbers.





ESTIMATE OF EMS SYSTEM COSTS

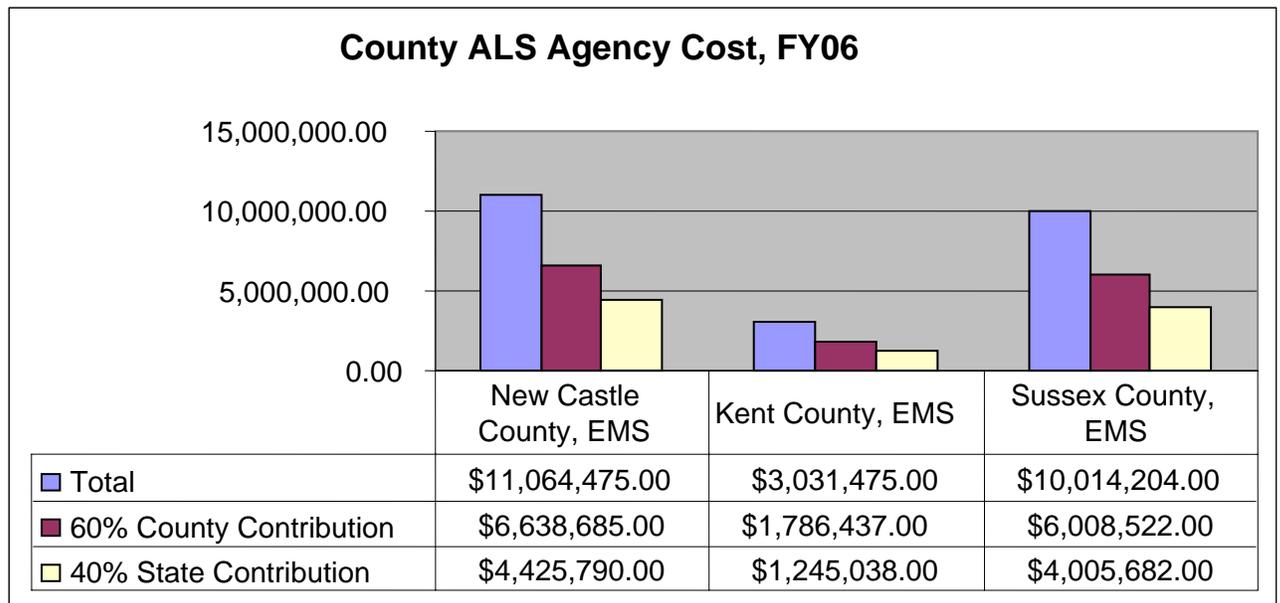
One important factor in measuring an EMS system is its efficiency, measured in terms of cost. Delaware continues to refine the process to accurately reflect total EMS system costs. The new BLS Financial Form was developed and distributed to all agencies in 2002. Additionally, all 911 centers involving EMS dispatch have submitted their costs to run their departments during 2006. The population figures below for 2006 were obtained from the **2006 Delaware Population Projections Summary Table**. The County Cost Per Capita was obtained by calculating the total population for 2006 by the expended budget for 2006 for each agency. The ALS Cost per Run was obtained by calculating the number of runs for 2006 by the expended budget for 2006 for each agency.

ALS PROGRAM COSTS

Area	Population (2006)	County Cost Per Capita*	ALS Cost Per Run	Geographic Size
Kent County	147,675 persons	\$ 21.50	\$ 305.00	594 square miles
New Castle County	527,027 persons	\$ 21.00	\$ 324.00	438 square miles
Sussex County	180,275 persons**	\$ 55.60**	\$ 588.00	950 square miles
Delaware	854,977 persons	\$ 28.20	\$ 388.00	1,982 square miles

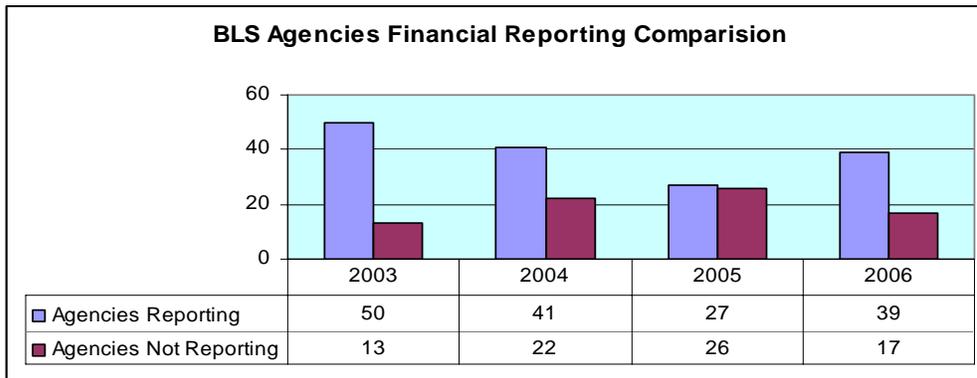
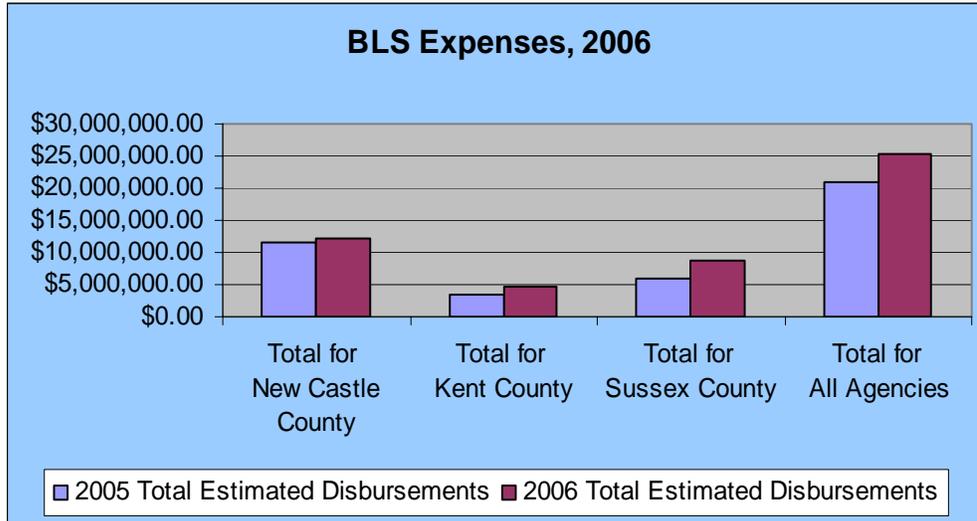
*Cost per Capita is unavailable for the BLS agencies.

**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.



BLS PROGRAM COSTS

BLS agencies are requested to send fiscal sheets to the Delaware Volunteer Fireman’s Association (DVFA), Delaware State Fire Prevention Commission, and the Delaware Office of EMS. The BLS agencies have up to 60 days after the end of their fiscal year to send their report. The last possible day of Fiscal Year 2005 was December 31, 2005. They had until March 1, 2006 to send in the Fiscal Year 2005 reports.



2006 REPORTING	Agencies Reporting	2006 Total Reported Disbursements	2006 Total Extrapolated Disbursements	2006 Total Estimated Disbursements
New Castle County	15	\$8,278,985.17	\$3,800,071.28	\$12,079,056.45
Kent County	6	\$2,576,048.61	\$2,130,612.00	\$4,706,660.61
Sussex County	18	\$6,635,768.03	\$1,958,342.50	\$8,594,110.53
Total for all Agencies	39	\$17,490,801.81	\$7,889,025.78	\$25,379,827.59

Total Estimated Disbursements for BLS agencies was derived by taking the *median* disbursement for agencies that reported in a given year. This was divided by the *median* transports to get the cost per transport. The extrapolated cost per transport was multiplied by the reported number of transports for an agency not reporting financial data to obtain an estimated disbursement. Estimated disbursements were added to actual reported disbursements to get Total Estimated Disbursements for a given year. (In cases where there are no estimated disbursements for a county actual data was available for that period)

DELAWARE STATE POLICE AVIATION PROGRAM COSTS

Total Costs:	\$ 1,470,267.85
Personnel:	\$ 919,360.00
Helicopter Maintenance:	\$ 467,634.85
Fuel Costs:	\$ 78,273.00
Medical Supplies:	\$ 5,000.00
*only that portion allocated to EMS costs	

DISPATCH CENTER COSTS

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

Kent County 911 Center:

Total Costs:	\$1,607,200.00
Personnel:	\$1,203,700.00
Equipment:	\$ 93,100.00
Training:	\$ 10,000.00

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

Total Costs:	\$ 2,808,778.00
Personnel:	\$ 2,534,061.00
Equipment:	\$ 272,068.00
Training:	\$ 2,649.00

Sussex County 911 Center:

Total Costs:	\$1,431,695.00
Personnel:	\$1,359,195.00
Equipment:	\$ 44,500.00
Training:	\$ 28,000.00

Seaford 911 Center:

Total Costs:	\$ 474,271.00
Personnel:	\$ 399,645.00
Equipment:	\$ 59,991.00
Training:	\$ 2,500.00

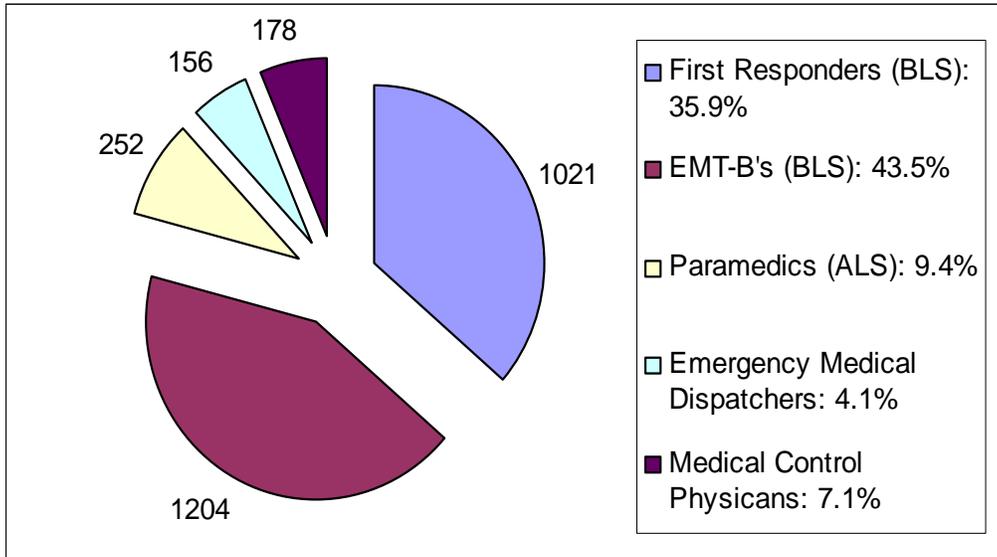
Rehoboth 911 Center:

Total Costs:	\$ 408,273.00
Personnel:	\$ 360,279.00
Equipment:	\$ 27,904.00
Training:	\$ 7,094.00

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

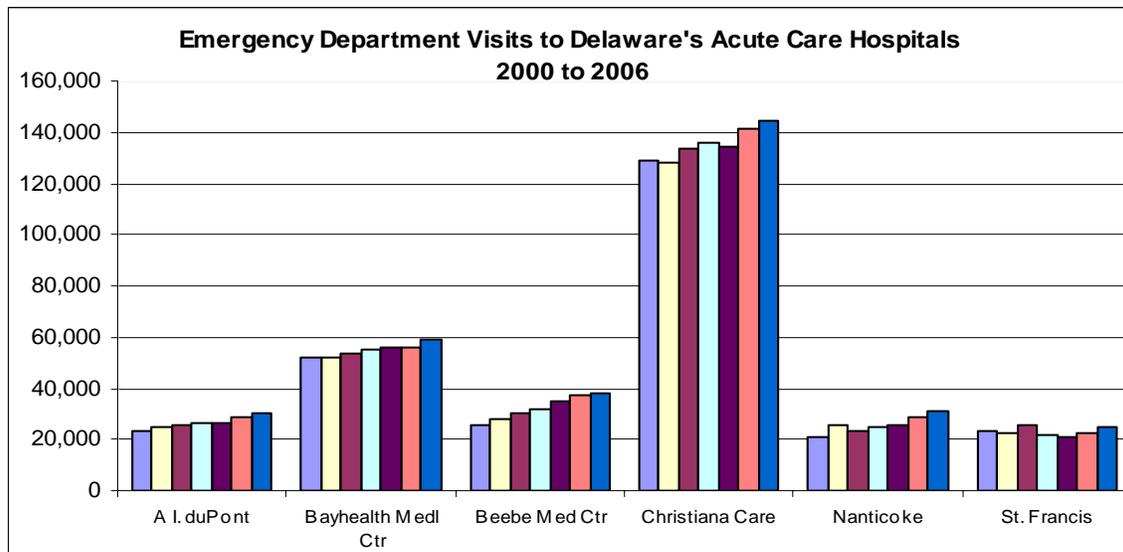
Total Costs:	\$ 0.00
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HUMAN RESOURCES

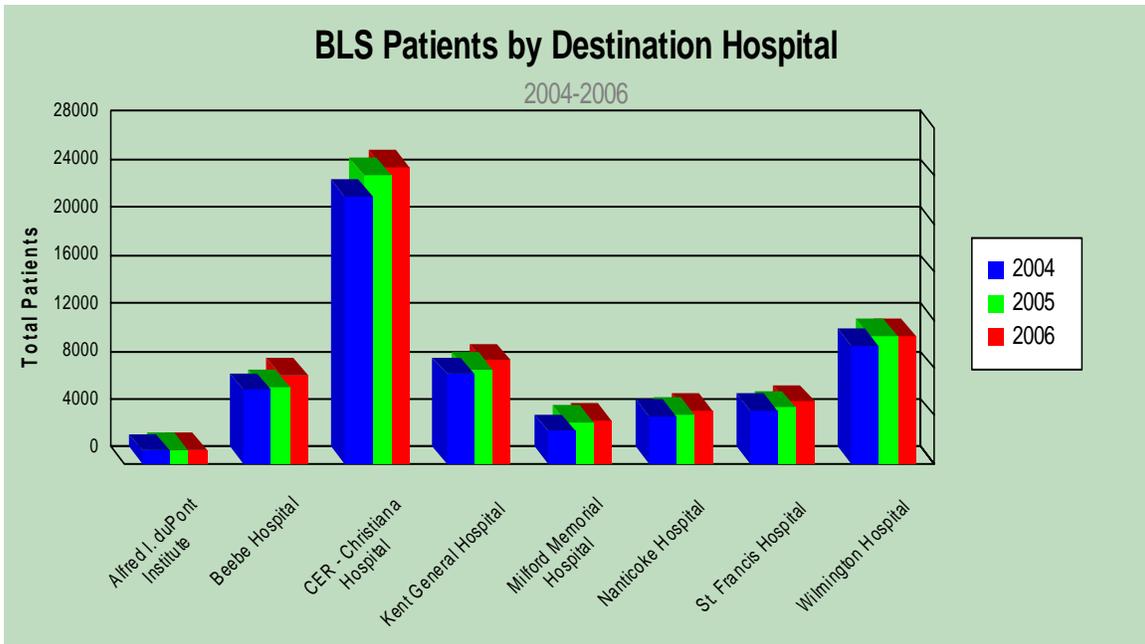
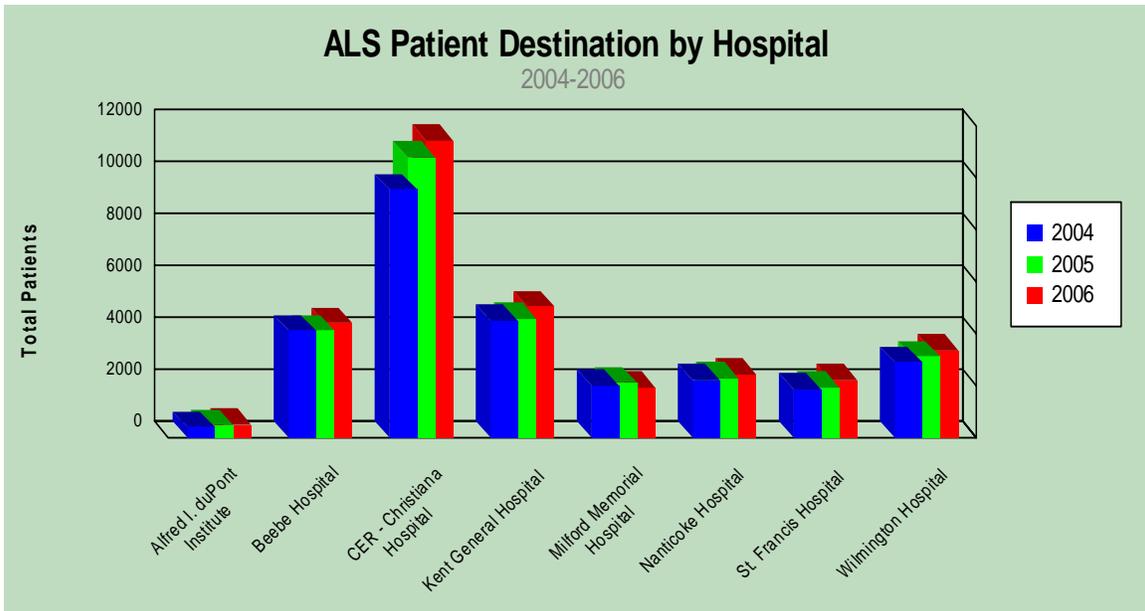


EMERGENCY DEPARTMENT AND HOSPITAL DIVERSION DATA

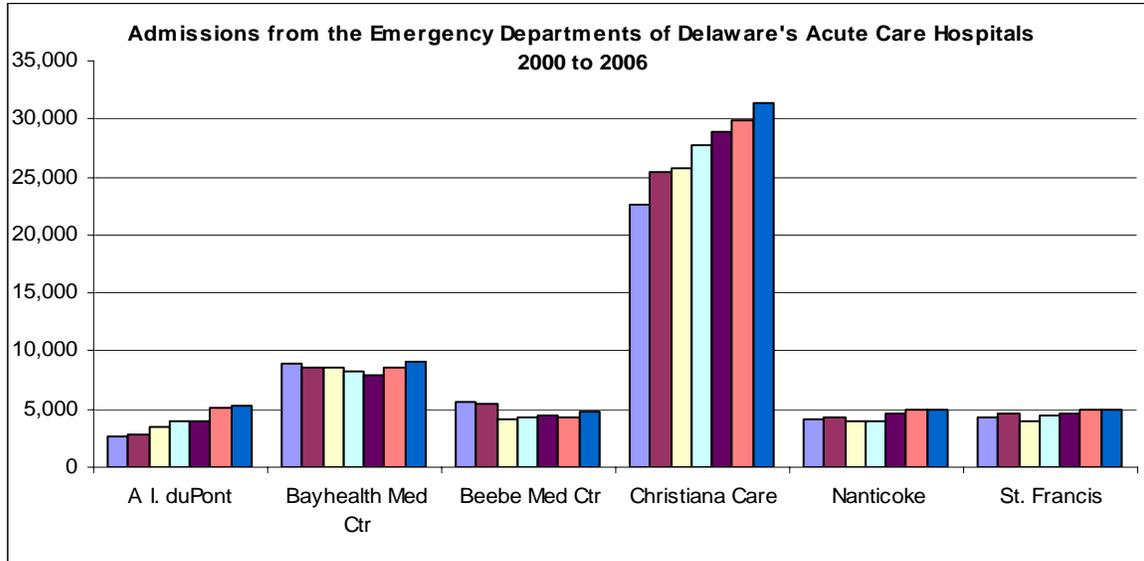
In 2006, hospital Emergency Departments within the state treated over 328,000 patients. Of those patients treated over 70,000 patients arrived by ambulance. EMS providers are tasked with treating patients with a wide variety of complaints, from generalized illness, victims of car crashes to patients who have suffered a cardiac arrest.



Information provided by the Delaware Healthcare Association indicates that there were 328,149 visits to the Delaware acute care hospital emergency departments in 2006. This is an increase of 53,618 hospital emergency department visits (19.53%) statewide from the same period in 2000.

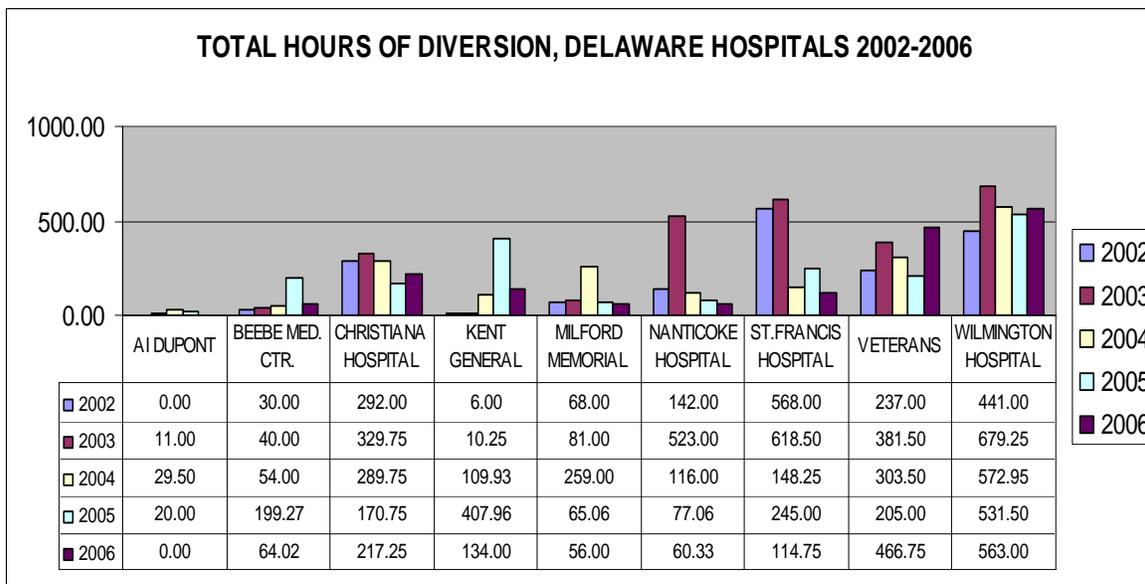


Of those patients treated in Emergency Departments throughout the state, approximately 18% are admitted to the hospital for additional treatment.



There were 60,654 patient admissions from the emergency department for 2006, an increase of 12,642 admissions from the emergency department (26.33%) statewide from the same period in 2000.

Consistent with previous years, there were still as many as 75 - 100 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. This inability to discharge inpatients results in a shortage of inpatient beds available for the admission of emergency 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.



EMS EDUCATION AND TRAINING



EMS EDUCATION AND TRAINING

Emergency Medical Service (EMS) education in Delaware is provided at three nationally recognized levels. They are First Responder, Emergency Medical Technician-Basic (EMT-B), and Emergency Medical Technician-Paramedic (EMT-P). Registration through the National Registry of Emergency Medical Technicians (NREMT) is offered for each of these levels.

The First Responder, Basic and Paramedic programs provide for a gradual increase in the complexity and comprehensive knowledge level for the student. An individual may begin at any level of EMS education. Each higher-level program reinforces the basic skills and then adds additional advanced training.

FIRST RESPONDER

First Responder training is a 40-hour program and is aimed primarily at police, firefighters and industrial first aid squads. The emphasis of this course prepares the responder to address immediate life threats and injuries until more highly trained personnel are available. The First Responder training follows a national standard curriculum established by the U.S. Department of Transportation (DOT). This program is offered through the Delaware State Fire School and a few private educational companies in the state. A 12-hour DOT refresher course must be completed every two years to re-certify.



EMT-BASIC

The Emergency Medical Technician-Basic course is designed to prepare an individual to function independently in a medical emergency. The EMT-B certification is the basic life support (BLS) standard of care for the State Of Delaware. In 1998, the State Fire Prevention Commission adopted EMT-B as the primary certification required for care providers on Delaware ambulances.

The course requires a minimum of 120 hours of classroom and skills instruction and approximately 10 hours of clinical rotations. EMT-B follows a national standard curriculum established by the U.S. Department of Transportation (DOT). This course provides the students with in-depth knowledge and skill-based training to appropriately assess, stabilize, monitor, and transport the pre-hospital patient. In addition, the student will become familiar with medic assist functions and the use of an Automatic External Deliberator (AED). Delaware certification requires successful completion of a written (National Registry) and practical skills examination.

The lead agency for EMT-B education is the Delaware State Fire School. Medical oversight and curriculum review is through the Office of EMS. The cost of training is provided by the State for students affiliated with a volunteer provider agency.

The Office of EMS is currently working with select Technical high schools in Delaware to provide an EMT-Basic curriculum. The goal of this program is to reach high school students and introduce them into the EMS system. With this degree, students will be encouraged to attend the Paramedic program offered at Delaware Technical Community College. The first program is scheduled to start at St. Georges Technical High School in September of 2007

To remain certified as an EMT-B in Delaware, providers must complete a state sanctioned 24-hour DOT refresher program every two years, as well as a healthcare provider level CPR/AED course. To maintain National Registry EMT-B certification the provider must complete a 24-hour DOT refresher course, 48 hours of continuing education credits, and a healthcare provider level CPR/AED course.



EMT-PARAMEDIC

EMT-Paramedic (EMT-P) is the advanced life support (ALS) standard of care for the State Of Delaware. EMT-Paramedics are called to respond to the most life-threatening calls for help and respond separately from the BLS ambulances. EMT-Paramedic education consists of approximately 1500 hours of intensive classroom, clinical and supervised field experience. EMT-Paramedic follows a national standard curriculum established by the U.S. Department of Transportation (DOT). EMT-Paramedics are trained to assess, treat and stabilize ill or injured persons. Treatments include advanced airways, cardiac monitoring and defibrillation, and administration of lifesaving medications.

The paramedic program is offered through Delaware Technical and Community College as a two-year degree program. The program has undergone an extensive peer review process through the Committee on Accreditation of Education Programs for the EMS Professions (CoAEMSP) and has received accreditation through the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The mission of the CoAEMSP under the direction of CAAHEP “is to continuously improve the quality of EMS education through accreditation and recognition of services for the full range of EMS professions.”

EMT-Paramedics must successfully complete a practical and written examination from the National Registry of EMTs in order to receive Delaware certification. To remain certified as a Paramedic within Delaware, a provider must remain NREMT-P certified as well as maintain advanced cardiac life support (ACLS), pediatric advanced life support (PALS), and a specialized trauma certification (PHTLS or ITLS). National Registry requires completion of a 48-hour DOT refresher course and 24 hours of continuing education credits every two years to recertify.

In February 2006, the Paramedic Technology Program at Delaware Tech was recognized by the Committee on Accreditation of Educational Programs for the EMS Professions to be in compliance with the nationally established 2005 Standards and Guidelines for the Accreditation of Educational Programs in Emergency Medical Services Professions as

demonstrated by the recent peer review. Further, the program was found to have zero standards violations or identifiable weaknesses as reported by the peer review team during the exit report of the required site visit. In May 2006, the Commission on Accreditation of Allied Health Education Programs certified that the program at Delaware Tech completed its accreditation review and was judged to be in compliance with the national established standards.

DELAWARE TECH AND COMMUNITY COLLEGE PARAMEDIC PROGRAM

Class Year	Number of Students Beginning Program	Number of Students Completing Program	Number of Paramedics Employed in Delaware
1999-2000	3	2	2
2000-2001	20	15	13
2001-2002	9	4	4
2002-2003	14	11	11
2003-2004	13	13	11
2004-2005	19	12	11
2005-2006	20	18	17
2006-2007	19	18	N/A

EMS INSTRUCTOR COURSE

In Delaware, the instructor level or Methodology course trains individuals to teach the U.S. Department of Transportation (DOT) basic and advanced level courses. The course emphasis is on the development of teaching skills as opposed to emergency care skills. To enter into an instructor level course an individual must already have expertise in the subject matter and a strong EMS knowledge base.

The State of Delaware recognizes two instructor level courses. The National Fire Protection Agency (NFPA) instructor Level I and II which is taught at the Delaware State Fire School and the second a Methodology course based on the NHTSA National Guidelines for Educating EMS Instructors which is taught by many EMS agencies. These two courses prepare the EMS instructor for the specific and unique subject matter that faces the emergency medical system. Delaware Technical and Community College requires an Associates Degree and 6 years experience or a Bachelor Degree and 4 years of Experience to instruct at the EMT-Paramedic level. All Paramedic Instructors must hold a Paramedic or RN, who practices in a related field, license.



FIELD TRAINING OFFICER (FTO) PROGRAM

Each Advanced Life Support agency in Delaware has developed a FTO process to meet their needs. The FTO programs for the ALS agencies are the joint responsibility of the medical director and the agency. The agency and the agency's Medical Director have the flexibility to design their process to meet the needs of their organization, i.e., the requirements to be a flight medic, SORT medic, or an interfacility medic which may be different from a traditional "street medic." The agency's Medical Director is responsible to certify to the State Medical Director, the Board of Medical Practice and the citizens of Delaware the relative competence of the paramedic.

NATIONAL REGISTRY COMPUTER BASED TESTING

The National Registry of EMTs began using computer adaptive testing rather than the current pencil and paper test method on January 1, 2007. In the first month of computer based testing, 3,729 providers across the United States tested using this method. Results from an online survey conducted by National Registry showed, "92% of respondents rated the online application as extremely easy or easy to complete." The benefits for testing by computer are:

- Rapid turnaround of test results
- Choices on when and where to take the exam
- Easier registration and scheduling
- More fair and accurate evaluation of a candidate's competency
- Increased testing flexibility
- Increased security of exams

The National Registry's computer based exam is offered in all three counties at approved Pearson VUE testing sites. The cost for the exam will increase for each level:

- First Responder \$65.00
- EMT-Basic \$70.00
- EMT-Paramedic \$110.00

Ultimately it is expected that the percentage of first time pass rates on National Registry tests will improve, as the computer can adapt the test to examine the skills of each individual in a way that cannot be done with paper and pencil testing.

CONTINUING EDUCATION AND DISTANCE LEARNING

The Office of EMS approves all prehospital training conducted in the State Of Delaware. The most popular of this training is distance learning. Prehospital providers are taking advantage of the benefits of receiving continuing education training online. The internet has given prehospital providers the foremost source for current in-depth education and research regarding EMS. National Registry of EMT also allows EMT-Basic to count 24 hours of distance learning toward recertification and 12 hours for Paramedics.

In conjunction with the Division of Public Health, The Office of EMS has approved prehospital providers to access *Train Delaware* which is “the most comprehensive database of nationwide learning opportunities for professionals who protect the public’s health.” www.train.org is a free service provided by the Public Health Foundation (PHF). Learners can use TRAIN to:

- Search or browse the nationwide database for on-site or distance learning courses
- Sign up for e-mails about new courses
- Create a personal learning record of competency-based training
- Provide and view feedback about courses listed on the site
- Register online for many courses

INTERNATIONAL TRAUMA LIFE SUPPORT (ITLS)

The Office of EMS is now the Delaware Chapter for the International Trauma Life Support (ITLS) course. “ITLS is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care.” The Delaware State Fire School and Delaware Technical and Community College are organized training centers under our state’s chapter that will help deliver this training to all basic and advanced life support personnel.

NATIONAL SCOPE OF PRACTICE

In 2005 the National Highway Traffic and Safety Administration (NHTSA) developed *The National EMS Scope of Practice Model*. “The National EMS Scope of Practice Model is a continuation of NHTSA and the Health Resources and Services Administrations implementation of the *EMS Agenda for the Future*.” *The National EMS Scope of Practice Model* identifies and defines four levels of EMS licensure, with each level representing a specific knowledge and skills set that build upon each other.

The 4 levels of EMS licensure *proposed* by the *National Scope of Practice* are:

1. Emergency Medical Responder (EMR)
 - The focus of the EMR would be to initiate immediate lifesaving care to critical patients. This is similar in nature to the existing First Responder level currently in Delaware.

2. Emergency Medical Technician (EMT)
 - The focus of the EMT would be to provide basic emergency medical care and transportation for patients. This is similar in nature to the existing EMT-B program in Delaware
3. Advanced Emergency Medical Technician (AEMT)
 - The focus of the AEMT would be to provide basic and limited advanced emergency medical care. Delaware does not have a similar certification.
4. Paramedic
 - The paramedic would be an allied health professional whose focus would be to provide advanced care for critical and emergent patients. A paramedic provides advanced skills and knowledge. Currently the Paramedic system in Delaware provides all the elements of this level.

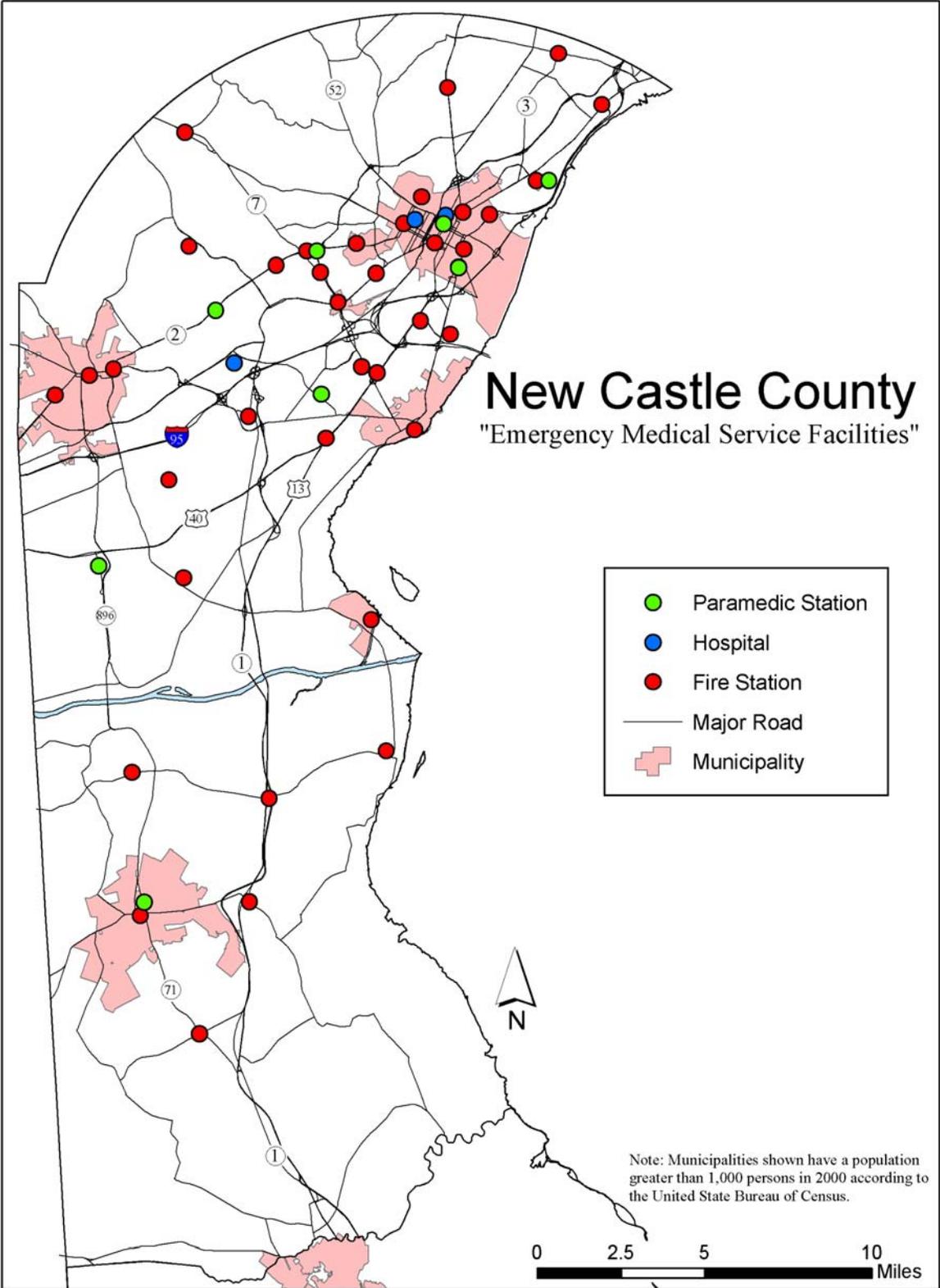
According to NHTSA (2005); “the challenge facing the EMS community is to develop a system that establishes national standards for personnel licensure and their minimum competencies while remaining flexible enough to meet the unique needs of State and local jurisdictions.”

The Office of EMS in conjunction with DEMSOC will review *The National EMS Scope of Practice Model* to determine the feasibility of incorporating its concept/design into EMS practices in Delaware. Strong rationale for adopting *The National EMS Scope of Practice Model* is that it will increase public awareness and understanding of EMS personnel, and support the professional image of EMS providers. It will also better integrate EMS into the overall healthcare model practiced throughout the nation.

EMERGENCY MEDICAL DISPATCH

All public safety answering points (PSAP) that dispatch ambulance personnel are required to use the Priority Medical Dispatch System (PMDS). All dispatchers employed at those PSAPs must be certified Emergency Medical Dispatchers (EMDs). EMS training is provided on an as-needed basis by in-state EMD trainers. The initial course is 24 hours in length and requires 24 hours of continuing education every 2 years, to maintain national certification.





NEW CASTLE COUNTY EMERGENCY MEDICAL SERVICES

HISTORY OF NEW CASTLE COUNTY EMERGENCY MEDICAL SERVICE

“The First Paramedic Service in the First State”

The New Castle County Paramedic Service can trace its roots to the New Castle County Ambulance Service that was initiated under the County Levy Court system with a single ambulance covering all of New Castle County, including the City of Wilmington in 1933. Another unit dedicated to Wilmington later augmented the single ambulance. During this period, County Levy Court ambulances had a caseload comprised of approximately fifty-percent medical emergencies and fifty-percent non-emergency transports to and from hospitals, clinics and doctor’s offices.

In May 1961, basic ambulance services were expanded to include another unit dedicated to the areas south of the Chesapeake and Delaware Canal. With the increases in demand for emergency and non-emergency service, the County Ambulance Service expanded once again to permit the designation of vehicles and personnel exclusively for emergency responses.

During 1974, the County Ambulance Division and the Wilmington Medical Center, Delaware Heart Association, and Doctors for Emergency Service initiated a joint effort to establish advanced life support (ALS) “paramedic” services as a pilot program. The ALS paramedic program represented an entirely different concept in prehospital patient care. The first paramedic unit was based in the City of Wilmington, and was dedicated in January 1976. It remained a pilot program for the next four years while several studies were undertaken to determine the methods to be used for any further expansion of the ALS services. The most noteworthy of these studies were the reports by the Arthur D. Little Company and the Emergency Medical Services Task Force Report.



January 5, 1976: The first New Castle County paramedic unit is formally dedicated in Rodney Square, Wilmington. This marked the initiation of advanced life support services in Delaware.

As the need and value of paramedic services was realized, the County initiated an expansion into the areas outside the City of Wilmington. In 1978 a second paramedic unit was stationed in the area south of the Chesapeake and Delaware Canal. Over the next two years, much effort went into the planning and coordinating of both existing and future services. The Ambulance Advisory Board was established to meet these planning needs, and developed a “five station plan.” Additionally, non-emergency transportation services were discontinued in order to concentrate on the proposed ALS paramedic services program expansion.

From 1980 to 1982 the Ambulance Division completed its most rapid period of expansion. A third paramedic unit was added in 1980 and assigned to EMS Station No. 2 on Summerville Road in New Castle. In March 1981, a fourth paramedic unit was assigned to the County Engineering Building on Kirkwood Highway, which became known as EMS Station No. 3. The completion of the five-station deployment plan was observed in November 1981 when the fifth paramedic unit was placed in the Claymont Fire Company sub-station located at Marsh and Naamans Road. This location became known as EMS Station No. 4.

During November of 1989, a County Council ordinance officially changed the name of the Department of Public Safety Ambulance Division to the “*Emergency Medical Services Division*.” The change in designation acknowledged the professional level of service provided by the division.

In 1990 the Delaware legislature enacted the Delaware Paramedic Services Act with the purpose of establishing a statewide paramedic program under the direction of the state Office of Emergency Medical Services. Under the provisions of the act, the New Castle County Emergency Medical Services Division was authorized two additional paramedic units, which were deployed in the Glasgow (Medic 6) and Prices Corner (Medic 7) areas.



EMS Station No. 6 is the first free-standing emergency medical services facility constructed by New Castle County. It was completed in 1992.

In November 2002, a “power shift” paramedic unit (Medic 8) was added during peak call volume periods. Additional power shift units are planned for deployment during calendar year 2007.

On February 24, 2004, New Castle County implemented an EMS Career Development Plan through unanimous vote of the County Council. The plan established different paramedic ranks in recognition of experience, education, professional credentials, and participation in additional activities and projects. The plan also added field supervisors with the rank of Paramedic Sergeant to each shift.

ACCOMPLISHMENTS AND NOTABLE EVENTS DURING 2006

Operations

Total NCC*EMS Incidents for 2006: 27,382*
Total “Charlie” level incidents: 12,890
Total “Delta” level incidents: 12,062
Total “Echo” level incidents: 665

**Incidents involving multiple-unit responses only counted as single incident*

New Castle County Paramedic Service Unit Activity

PARAMEDIC UNIT	2006
Medic 1 (<i>Wilmington</i>)	5170
Medic 2 (<i>New Castle</i>)	4177
Medic 3 (<i>Newark</i>)	3946
Medic 4 (<i>Brandywine 100</i>)	3545
Medic 5 (<i>Middletown</i>)	1715
Medic 6 (<i>Glasgow</i>)	3110
Medic 7 (<i>Prices Corner</i>)	4481
Medic 8 (<i>12 hour day unit</i>)	2470
Medic 9	453
Medic 10	27
Medic 11	7
Medic 12	1
Medic 20 (<i>Special Ops</i>)	44
ALS Bike Team	22
Single paramedic ALS responses	2332
TOTAL RESPONSES	31,440

University of Delaware EMS Study: New Castle County commissioned the first phase of an EMS study to analyze the distribution of paramedic service demand, and examine response times from incidents that occurred during 2003-2005. The purpose of the study was to (1) evaluate the workload and response times of paramedic units; (2) evaluate the

resources that may be needed to achieve the targeted system-wide paramedic unit response times cited in the EMS Improvement Act of 1999; (3) provide suggestions of preliminary station locations for future consideration and; (4) provide suggestions of where the County could focus efforts for improvement.

The University of Delaware analysis reached the following conclusions:

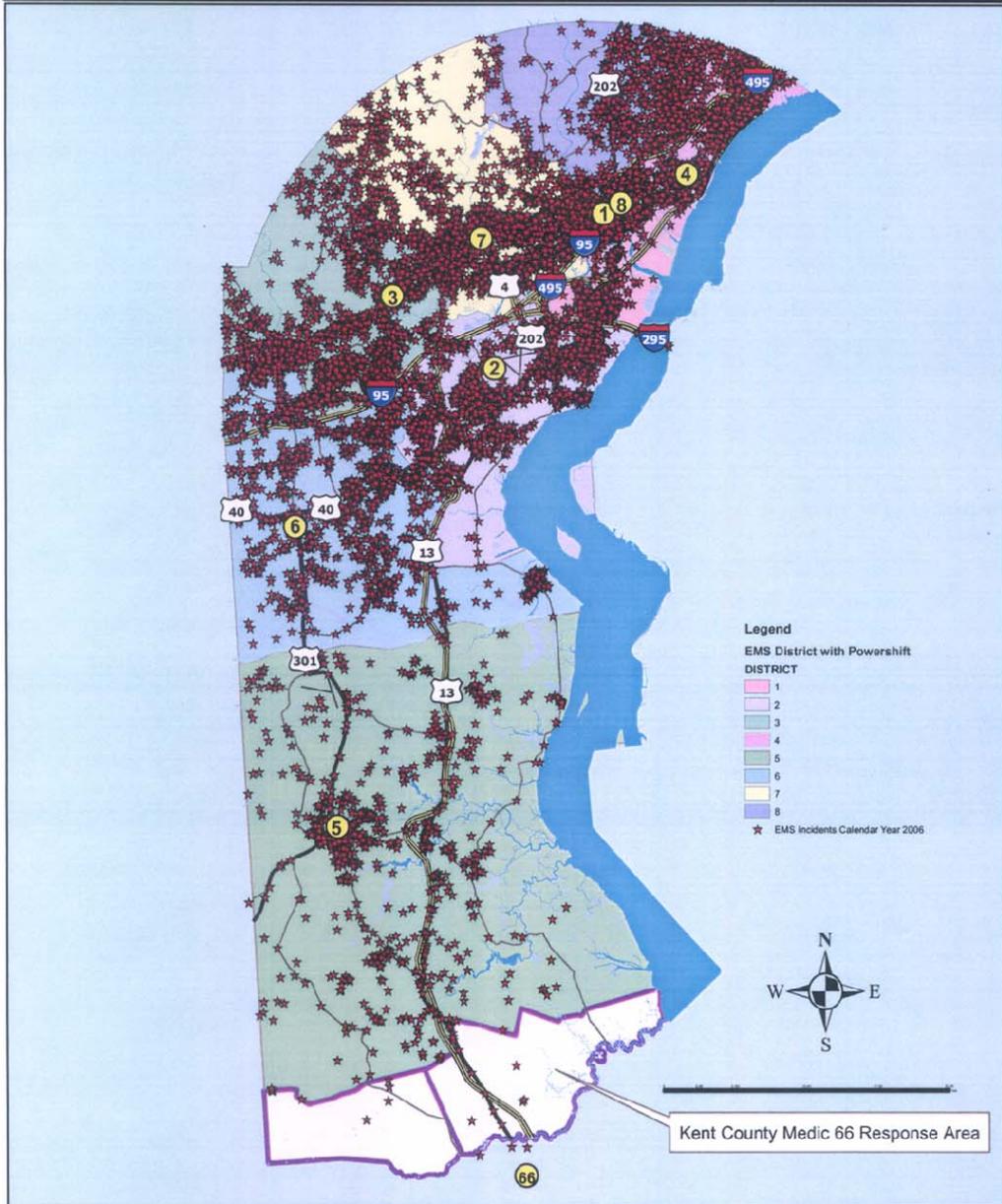
- Paramedic service demand is unevenly distributed over the paramedic coverage areas. For instance, Wilmington accounts for 22% of all ALS incidents, while the southern New Castle County area (below the C & D Canal) only accounted for 5% of the total incidents, despite being three times the size of other paramedic districts.
- Approximately 150 address-specific locations were identified as accounting for 20% of all paramedic incidents in New Castle County. These locations were typically skilled nursing homes, assisted living facilities, freestanding medical centers and apartment buildings. Only three of the locations identified as major generators of paramedic incidents were located in the southern New Castle County area.
- The number of paramedic incidents is increasing at an average rate of 5.3% per year (1998 – 2005) versus a population increase that is increasing at an average rate of only 1% per year (1995 – 2005). This suggests that population demographics may be a larger factor in projecting future demand for service.
- Approximately 18% of incidents in New Castle County require a multiple unit response.
- There is no significant variation in paramedic service call volume by month or day of the week. The most significant variance is by time of day.

The University of Delaware study recommendations included:

- Technology enhancements to include utilization of automatic vehicle location (AVL) capabilities to enable the dispatch center to send the closest paramedic unit to an emergency. The study indicated that significant response time improvements could be achieved with implementation of technology that takes into account the real-time location of vehicles and historic paramedic incident data.
- Explore implementation of automatic vehicle routing and recommendation (AVRR) capability.
- Expansion of the number of paramedic units deployed on a “power shift” basis. The study identified Bear, Christiana, Newark and Pike Creek as locations where response times could be most improved.



New Castle County Emergency Medical Services ALS Incidents Calendar Year 2006



Data from NCC GIS System

Paramedic Station Opens: New Castle County EMS dedicated a new paramedic station in the Wilmington Trust Plaza on July 18, 2006. The leased facility returns a paramedic unit to the central portion of Wilmington, and provides improved accommodations for the Emergency Medical Services Division personnel. The new EMS facility has a separate street level entrance, and includes a garage bay, office area with a kitchenette, and rest rooms with lockers.

Fleet Enhancements: The New Castle County paramedics have placed eight new vehicles in service. The replacement vehicles represent a move from the Chevrolet Suburbans that have been used by the service since the mid-1980's. The new, utility body trucks provide additional space and include systems for better temperature control of the storage areas.

The new Ford trucks feature a full size crew cab for ride-alongs and paramedic candidates participating in field internship, rollup doors to limit the space needed to access compartments on narrow streets, four wheel drive, and sufficient space for the paramedic equipment and individual personal protection equipment carried by each paramedic.

New Castle County EMS carries a duplicate set of paramedic equipment on each vehicle, which permits each medic to have a full compliment of ALS gear at their disposal. NCC*EMS also equips their personnel with an individual set of WMD PPE including a PAPR and chemically resistant suit, in addition to a safety coat and helmet.



SIGNIFICANT EVENTS

High Rise Building Fires: Two multi-alarm high rise apartment fires with injuries in Wilmington provided unusual challenges to emergency medical services providers in New Castle County. The Devon Apartments fire on April 13, 2006 and Crestview Apartments fire on May 30, 2006, involved multiple emergency medical services units at both the basic and advanced life support level. EMS providers not only treated building residents for smoke inhalation and other problems, but also provided medical support to the firefighters operating on both incidents during hot and humid weather conditions.

New Castle County EMS received tributes from the Delaware General Assembly, Wilmington City Council and Wilmington Office of the Mayor for their response to these incidents.



New Castle County EMS Division staff coordinate medical group operations at the incident command post at the Devon Apartments building fire on April 13, 2006. Three patients were transported to the hospital, and one person was pronounced dead at the scene during this incident.



*New Castle County Paramedics operate a casualty collection point during medical group operations at the Crestview Apartments fire on May 30, 2006. Twenty (20) patients were transported to area hospitals, including five (5) firefighters. NCC*EMS coordinated transportation via fifteen (15) ambulances, including units from Delaware County, PA during the multi-alarm blaze.*

Heroin Overdose Cases: New Castle County EMS responded to a significant influx of heroin overdoses during the summer of 2006. A significant increase in apparent heroin-related overdoses was observed the end of April and beginning of May 2006. On some days, New Castle County Paramedics were responding to over 20 incidents involving patients that were unresponsive and not breathing as a result of a potential overdose. Additional information from the law enforcement community suggested that the heroin was being mixed with fentanyl, which enhanced the effects of the heroin. New Castle County added a power shift paramedic unit from May 5th to July 9th in response to the “spike” in these cases. Later, the entire New Castle County EMS Division was awarded a Distinguished Unit Citation by the Wilmington Police Department for their response to the heroin crisis within Wilmington.

SPECIAL OPERATIONS

ALS Bike Team: New Castle County Emergency Medical Services hosted a EMS Bicycle Operations Course during the week of August 21 through 25, 2006. The course was held at the Hockessin PAL facility on Lancaster Pike, and was sanctioned by the International Police Mountain Bike Association (IPMBA).

Paramedic Corporal Matthew Watson and Paramedic First Class Michael Schusteritsch instructed the course. The program covered EMS specific concerns such as cycling with a heavy load, EMS gear management and scene safety. Topics presented during the course included Fitness and Nutrition, Promoting Bike Safety, Effective Cycling, Technical Cycling, Hazard Avoidance, Basic Maintenance, Uniforms and Equipment, Load Placement, Legal Issues and EMS Safety Considerations. The program was approved for 32 hours of EMS continuing education credits through the Delaware Office of Emergency Medical Services.

New Castle County EMS hosted personnel from Kent County (DE) EMS and the Second Alarmers from Montgomery County, PA.

The New Castle County Paramedics maintain an advanced life support bike team as a part of its EMS Special Operations Section. The ALS Bike Team is typically deployed at special event venues with limited access to vehicles, or large crowds that create difficulty with traditional EMS response. The New Castle County ALS Bike Team was activated 22 times during calendar year 2006.

SWAT Medic Team: The NCC*EMS Tactical Emergency Medical Support team added a member to the personnel providing support to law enforcement Special Weapons and Tactics (SWAT) teams. Paramedic Justin E. Jackson successfully completed the selection criteria and was certified as a EMT-Tactical provider through the training program offered by the Department of Homeland Security, Department of Defense and United States Park Police. The New Castle County SWAT medics made 44 responses during calendar year 2006.

PUBLIC EDUCATION AND COMMUNITY SERVICES

New Castle County EMS maintained an active community outreach program during calendar year 2006. A summary of New Castle County EMS public education activity involving our paramedics included:

- Inspected and reviewed the installation of 992 child passenger seats at the Child Passenger Seat Fitting Station operated by New Castle County EMS. Presentation of 7 child seat safety seat training programs.
- Participation in 4 Community Emergency Response Team (CERT) training program coordinated through the County Office of Emergency Management.
- Maintenance of CPR and First Aid training as a designated Community Training Center for the American Heart Association. NCC*EMS presented 7 first aid courses, 8 Friends and Family CPR courses, and 44 Heartsaver AED courses. Delivery of 1 Basic Cardiac Life Support Instructor Course. Delivered 16 First Responder Courses.

- Presentation of 8 “Paramedic Assist” programs to fire service or industrial first aid personnel. The “Paramedic Assist” program provides an orientation to the paramedic service, and identifies methods that first responders can assist the paramedics during emergency incidents. NCC*EMS has been authorized by the state Office of EMS to provide continuing education credit for the program. Also participated in 6 paramedic unit demonstrations.
- Presentation of 12 *Students Learn About Mortality* (SLAM) presentations. The SLAM program provides a graphic illustration of the tragic effects of preventable motor vehicle crashes.
- Presentation of 28 Vial of Life information sessions. The Vial of Life provides a “low tech” method of storing vital patient information for EMS personnel by senior or disabled citizens that live alone. The Wilmington Housing Authority has made enrollment in the Vial of Life program mandatory for its residents in all facilities.
- Presentation of 20 *Heroin Alert* programs. Heroin Alert is a community education program that is jointly presented with a New Castle County Paramedic and New Castle County Police officer.
- Participation in 4 Graduated Driver’s License Program programs and 2 Teen Driving Information presentations.

EMPLOYEE RECOGNITION

EMS Graduation & Appointment Ceremony: New Castle County EMS conducted their annual EMS Graduation and Appointment Ceremony during National EMS Week. The annual ceremony recognizes its personnel that graduated from the Delaware Technical and Community College, in addition to those appointed to the agency from out-of-state.



NCCo EMS Recognizes Personnel During November Awards Ceremony

On November 2, 2006, New Castle County Executive Christopher A. Coons, Director of Public Safety Ernest R. Frazier, Sr., and EMS Chief Lawrence E. Tan participated in a Department of Public Safety Awards Ceremony at their headquarters facility. The ceremony provided an opportunity to recognize EMS Division personnel, civilians, and members of other public safety disciplines for outstanding performance and contributions to the Emergency Medical Services Division. The event resulted in the acknowledgment by the EMS Division of twenty-three members of its own division, nine members of the Police Division, and three civilians.

Receiving Emergency Medical Services Division commendations were:

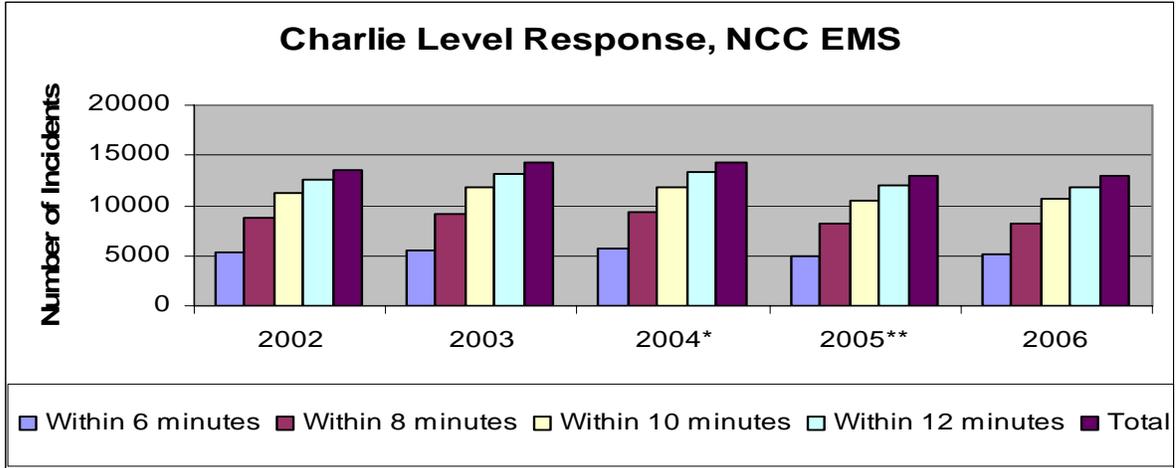
*Assistant Chief Richard D. Krett
S/Lt. Joseph J. Dudley
Lt. James D. May
Lt. Daniel G. Seador
Paramedic Sgt. Kenneth N. Dunn
Paramedic Sgt. Kelli A. Starr-Leach
Paramedic Cpl. Mark P. Allston
Paramedic Cpl. Augustus H. Clagett, III
Paramedic Cpl. William J. O'Leary
Paramedic Cpl. Martha L. Russ
Paramedic Cpl. Matthew W. Watson
Paramedic 1/C Dana D. Bowerson
Paramedic 1/C Carolee M. LeNoir
Paramedic 1/C Michael C. Schusteritsch
Paramedic 1/C Lorraine K. Williams
Paramedic Robert E. DeMeo
Paramedic Steven F. Laskey
Paramedic Brittany K. Lyons
Paramedic Melissa L. McConnell
Paramedic Jacquelyn M. Murphy
Paramedic Aaron S. Ratner
Paramedic Keely S. Warrick*

RESPONSE TIME DATA (from NCC CAD system)

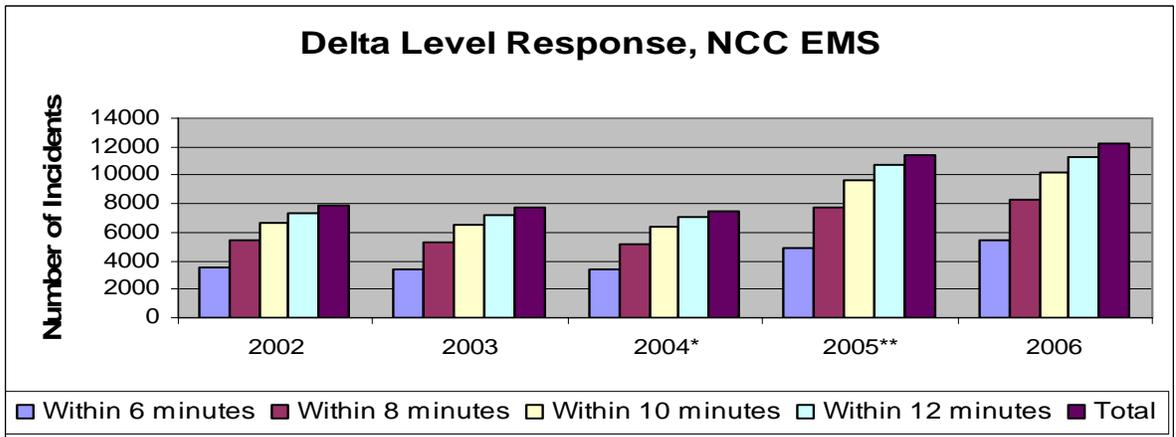
* RMS system failure with loss of data

** Implementation of ProQA version 11.2

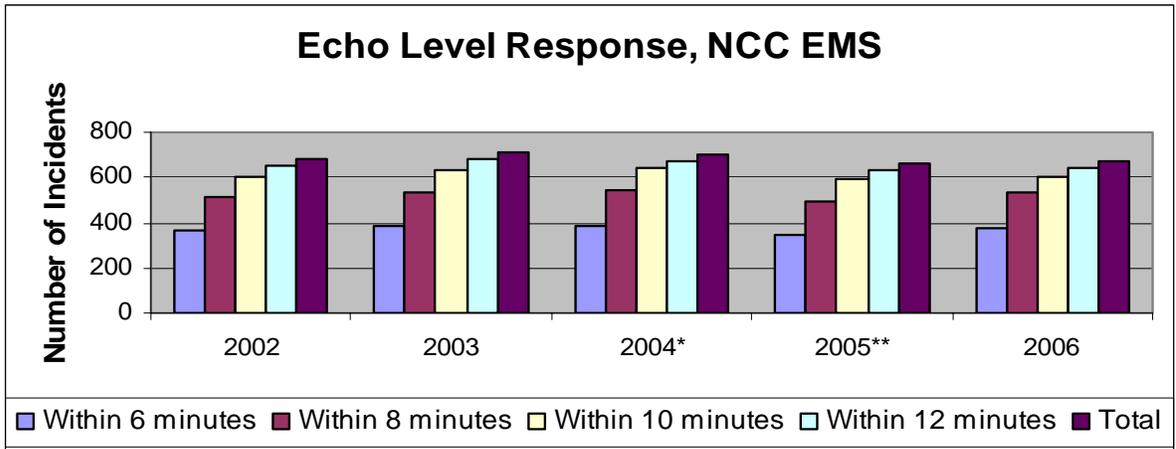
Legislated goal; paramedics on scene 90% of the time within 8 minutes, for each response level.



(Within 8 minutes; 2002-65%, 2003-65%, 2004-66%, 2005-64%, 2006-64%)



(Within 8 minutes; 2002-69%, 2003-68%, 2004-70%, 2005-66%, 2006-68%)



(Within 8 minutes; 2002-76%, 2003-78%, 2004-78%, 2005-75%, 2006-80%)

NEW CASTLE COUNTY BASIC LIFE SUPPORT

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 transiting from a predominately 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 8 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, such as Delaware City Fire Company. This fire company is functioning efficiently with two career staff entwined with their dedicated volunteer system. They have managed to respond on all dispatched EMS calls except one within the last 13 years, and in the last six years Delaware City has responded on all dispatched EMS calls. This is an outstanding achievement for this company and a great benefit for the community in which Delaware City protects.



NEW CASTLE COUNTY AMBULANCE ASSOCIATION

The New Castle County Ambulance Association is designed to bring all EMS agencies together and to provide a forum for discussion on local and national issues that pertain to the pre-hospital field. Officers of the association are actively involved in EMS activities at the county and state level and are dedicated to providing EMS personnel with the most up-to-date information. To help increase attendance at these meetings, the association offers a 1-hour continuing education credit at every meeting.

ACCOMPLISHMENTS AND NOTABLE EVENTS

Belvedere Fire Company adds BLS Service

In December, the City of Wilmington Fire Department donated an ambulance to the Belvedere Fire Company which completes the County's coverage of at least one unit in each station. This BLS unit is anticipated to be in-service around March or April and will provide Belvedere Fire Company the ability to treat injuries on-scene and to transport them directly to the hospital. The citizens that reside in Belvedere's emergency services district will benefit from the added BLS support with shorter response times for their medical needs, in effect creating more services to the surrounding communities.



SIGNIFICANT EVENTS

Multiple fire and ambulance companies participated in two separate initiatives in New Castle County during 2006. The New Castle County Emergency Services Expo and a mass casualty drill hosted by Townsend Fire Company. Both initiatives took place in October; the following are summaries of these events:

New Castle County Emergency Services Expo

New Castle County Emergency Services Expo in October allows the Fire Service to educate the public on all aspects of fire and emergency medical services. At the expo multiple agencies were on-hand to showcase apparatus, both new and old. There were Kiosks to help with recruiting volunteers as well as additional areas specifically designated to highlight safety related information. During the day, multiple

demonstrations were performed for the public to educate them on the function of fire and EMS; this allowed the community to see first hand how fire and EMS will respond and what task they are able to perform.

Mass Casualty Drill

Townsend Fire Company hosted a mass casualty drill on October 21, 2006. The drill simulated a crash between a loaded school bus and two passenger cars. The drill took just over two hours and had multiple agency participation. The drill was critiqued and several recommendations were made which will be reviewed for possible improvements. Overall the exercise went very well. “Participants and observers agreed that the incident demonstrated that emergency services personnel in the Middletown, Odessa, and Townsend area are prepared to handle a large-scale incident.”



IMPROVEMENT INITIATIVES

New Castle County has addressed multiple areas within the service that need to be improved: First, BLS agencies have had an ongoing issue with the decontamination of soiled backboards at the local hospitals. Backboards, that need to be cleaned, should be separated and bagged so they do not become hazardous to the provider. If the backboards are not separated and bagged, the hospital is responsible to clean the backboard before placing them back in-service. BLS agencies have experienced “dirty” backboards improperly placed back in-service before they are cleaned or properly bagged. BLS agencies and the hospitals are working on correcting this issue. Christiana Care Health Systems has designed a plan to expand the current backboard room at Christiana Hospital and assign the duty to bag the “dirty” backboards to an emergency room technician.

The second issue addressed by New Castle County BLS agencies is with the statewide reporting system, EDIN. Many ambulance companies have purchased additional equipment at the cost of approximately \$1000.00 to be able to directly fax patient care reports to the hospital; this is an important feature for BLS personnel because it saves

time. The state is currently working on upgrading EDIN's capabilities to allow direct emailing of patient care reports to all Delaware hospitals; this feature should be available in 2007.



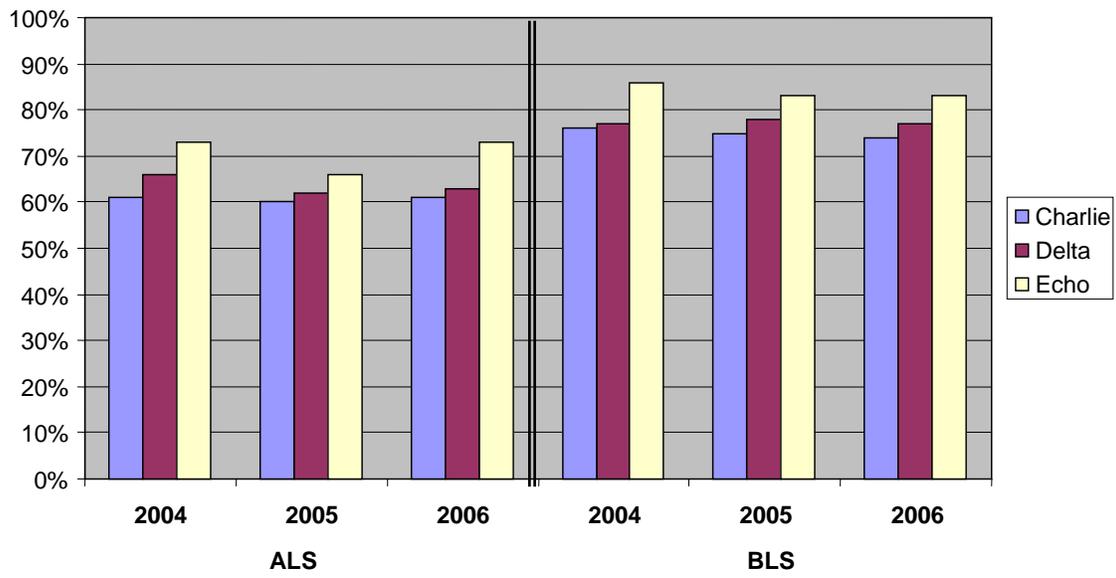
SUMMARY

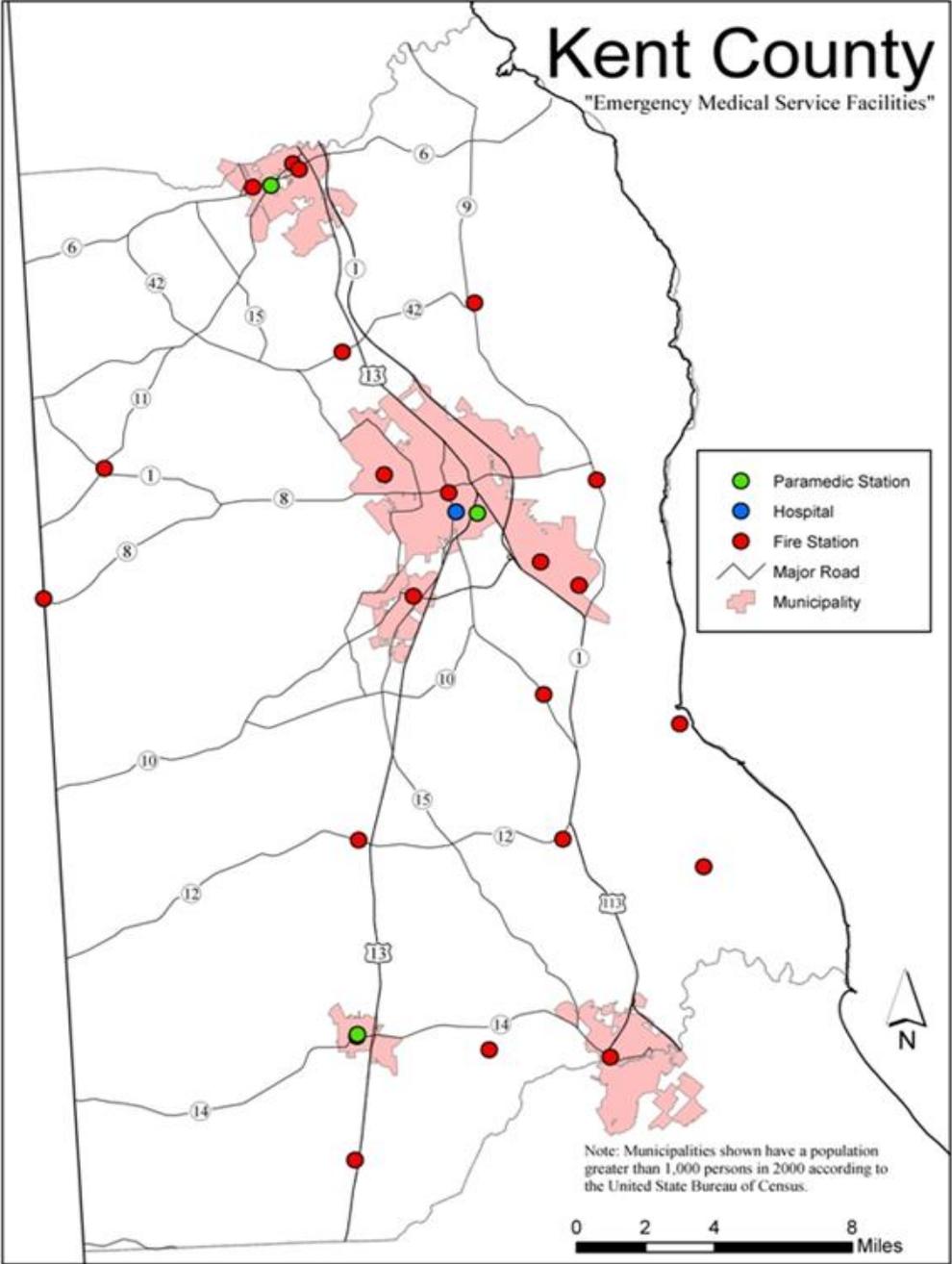
New Castle County is facing increased challenges and mandates that affect all aspects of the Basic Life Support service. With these challenges come new problems that need to be addressed and New Castle County is handling these issues with a willingness to improve the overall system. This willingness to create a better system is demonstrated every time an ambulance company in New Castle County is dispatched to an EMS call and that company provides a safe, quick, and professional service to the public.

PAID PERSONNEL STATS PER COMPANY

AGENCY NAME	TOTAL NUMBER OF PAID PERSONNEL	SHIFTS COVERED	RESPOND ON FIRE CALLS	RESPOND ON EMS CALLS
Aetna Hose Hook & Ladder	8 F/T - 40 P/T	24/7	F/T - YES	P/T ONLY EMS
Belvedere Fire Co.	0	N/A	N/A	N/A
Brandywine Hundred Fire Co.	8	24/7	NO	YES
Christiana Fire Co.	10 F/T - 30 P/T	24/7	YES	YES
Claymont Fire Company	8	24/7	YES	YES
Cranston Heights Fire Co.	8 F/T - 8 P/T	24/7	YES	YES
Delaware City Fire Company	2 F/T - 12 P/T	24/7	YES	YES
Elsmere Fire Co.	1 F/T - 15 P/T	24/7	YES	YES
Five Points Fire Company	2 F/T Supplemental P/T	F/T 6 AM-6PM P/T 6 PM -6 AM	YES	YES
Goodwill Fire Company	6	24/7	YES	YES
Hockessin Fire Co.	6	24/7	YES	YES
Holloway Terrace Fire Co.	40 P/T	24/7	YES	YES
MillCreek Fire Company	9 F/T - 5 P/T	24/7	YES	YES
Minquadale Fire Company	8	24/7	YES	YES
Minquas Fire Co.	8 F/T - 6 P/T	6 PM - 6 AM	YES	YES
Odessa Fire Co.	20 P/T	6 AM - 6PM 7 DAYS	YES	YES
Port Penn Vol. Fire Co.	1 F/T - 20 P/T	7-3 P/T - 9-5 F/T	YES	YES
Talleyville Fire Co.	6 F/T -18 P/T	24/7	YES	YES
Townsend Fire Co.	2	M-F 5AM - 3PM	YES	YES
University Of Delaware	0	N/A	N/A	N/A
Volunteer Hose Company	6	5AM - 3PM & 8AM- 6PM	YES	YES
Wilmington Manor Fire Co.	9 F/T - 5 P/T	24/7	YES	YES
Wilmington Fire Dept	172	24/7	YES	YES

Percentage When New Castle County ALS/BLS Arrived On-Scene in 8 Minutes or Less on Delta/Echo/Charlie Level Incidents-2006



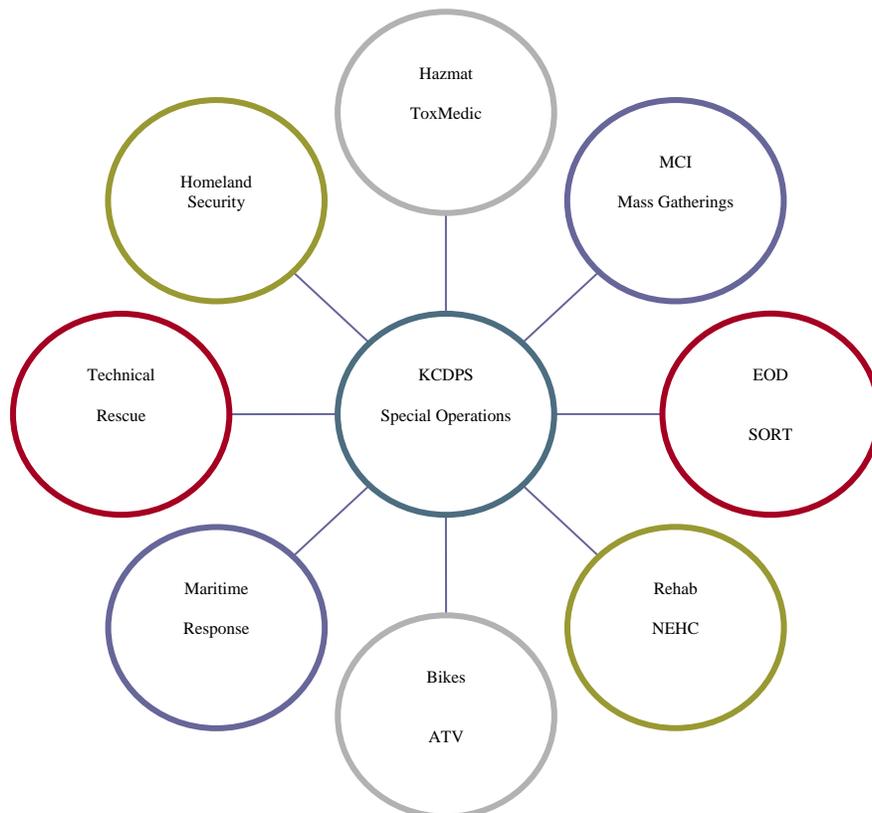


KENT COUNTY EMERGENCY MEDICAL SERVICES

Kent County's Department of Public Safety's Division of Emergency Medical Services has its foundation in a core group of veteran City of Dover Paramedics. What began as a hospital based advanced life support team of eight City Medics steadily grew into a county-wide system with deployment from three paramedic stations located in Kent County's substantial population areas. All three paramedic units became operational on a 24/7 basis in 1993. Citizens and visitors to Kent County now have access to a state-of-the-art advanced life support delivery system with dedicated operations and quality assurance support.

Kent County paramedics have functioned admirably for 16 years of operations without any significant increase in staff yet. There has however, been a significant increase in demand for services, from all three deployment locations. Paramedics are continuously challenged with rigorous training, new procedures and technology, and additional challenges brought on by world events. Since the tragedy of 9/11, Kent County paramedics have been involved in weapons of mass destruction training, hazardous materials training, biological terrorism, broader mass casualty response, as well as an obligation to remain proficient on new equipment obtained to support these additional areas of responsibilities. The Department maintains its own core of field training officers, a bike medic response team, a hazmat response team, NASCAR team, provides support to the Kent County Confined Space Rescue Team and is in the beginning phases of recruitment for police SWAT/SORT operations.

2006 IMPROVEMENT INITIATIVES



Special Operations “All Hazards” Approach

The concept of Special Operations has become more solidified within the Department. Instead of having separate attention focused on hazmat, MCI, and other unusual response operations the Special Operations concept follows the more universal “all hazards” model mimicking the structure of the Homeland Security Grant Program and the National Response Plan. Within the Department this concept develops a picture of multi-tasking equipment and personnel while allowing for particular specialization by a few self-motivated staff.

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

This section of the report will review the current status of each of these response categories as a result of equipment procurement, training of personnel, activity, and further will outline future needs and initiatives to move the Special Operations concept forward.



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 to activate the MCI response and to that end the plan allows for any component of the system to “make the call”. Within this 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 as to the automatic response levels.

Equipment: Each Medic Unit carries Triage Kits and limited additional supplies to be used for patient care. Medic 65 is equipped with an MCI Command Kit to facilitate orderly control of the medical sectors of the incident. 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), Nerve Agent Antidotes Kits (NAAKs), and Cyanide Antidote Kits. 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. Continuing education sessions this year included the roll-out of the updates 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. A “Trailer Day” con-ed was conducted in which all Medics were familiarized with the response support units and completed hands-on practical evolutions with the equipment.

Activity: The Special Operations Trailer was activated during the C-5 Crash incident. There were no other incidents in 2006 which required additional equipment 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 2007 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, 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 as part of the Management Team.*
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. *Two additional Suburbans will be placed in-service this year to accomplish this goal.*
4. Re-call of personnel capability needs to be enhanced through current technology.



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 trailer now houses the Bikes and the Medic-Gator. This trailer facilitates the transport and provides an operational base for these units. 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. 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 a lesser number trained to operate the Gator (the primary means of covering large venues).

Activity: The Gator and/or Bikes were used to cover Spring and Fall NASCAR races, Safe Summer Day, and the Governor's Fall Festival.

Needs & Initiatives: Available staffing minimums should be established such that all bikes and the Gator could conceivably be manned if necessary. *Minimum staffing has been met. Additional training with the Gator continues.*

Maritime Response

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

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

Training: There is no specialized training currently offered to support maritime response.

Activity: There has been no maritime response activity during 2006.

Needs & Initiatives: Investigation of specialized response concerns should be undertaken. The Coast Guard has previously expressed open willingness to conduct joint training regarding rescue lift operations. Communications exercises including EMS, Fire Service, Coast Guard, and commercial maritime vessels should be investigated. *A Department Staff member has been assigned to develop this initiative.*

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 is once again a first line dispatch for known non-petroleum hazmat incidents. 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 and the Decon Support trailer remain housed at Little Creek VFD.

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 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 to the Hazmat Technician level which qualifies them to assist the entry team.

Activity: There were three incidents in 2006 which required the full response of our resources. The unit(s) participated in displays 3 times. The units were pre-deployed in support of the NASCAR races. The units were utilized at the State Fair Exercise.

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. Volunteer Fire Service personnel recruitment and training needs to take greater precedence, however this has been deferred pending establishment of uniform training curriculum through the Delaware State Fire School. *As an outreach service to the Fire Service, this department has made a commitment towards facilitating the development of training curriculums.*
 3. To meet the Department's previous goal of sufficient response of personnel and to achieve the new goal of assisting the DNREC entry team, a minimum of four Hazmat Technician level responders must be maintained on-call. This initiative would require additional Technician level training and on-going costs of on-call pay. This initiative would most likely be phased in over time and as budgeting allows. The previous initiative to establish a Hazmat Duty Officer should be refocused towards a Special Operations Duty Officer, thus enhancing the justification for the position. *This remains a growing need for the Department.*

Technical Rescue

Response: The newly formed, yet rapidly advancing Technical Rescue Team in Kent County is spearheaded by the Dover FD with support from several Kent County FDs. From its inception the Team has requested active participation by Kent County Medics. Currently there are 3 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 Dover Station 2 and is contained in a support trailer. Dover runs an engine and a squad with the 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.

Training: Several Operations level courses and a few Technician level courses have been completed resulting in a good core group of qualified responders. Three Medics are Trench and Confined Space Technicians and one Medic is qualified at the Operations level.

Activity: There were no activations of the team in 2006. On-going training sessions are conducted throughout the year.

Needs & Initiatives: As the team increases in number and equipment inventory, continuing training will have to occur. Exercises testing the recovery techniques are planned and should include ALS intervention practice. The team is working towards USAR qualification.

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. Medics are dispatched to incidents involving explosions.

Equipment: Currently there is little equipment in service directly related to EOD/SORT. Body armor and ballistic helmets are in stock and this inventory is being expanded to provide both “throw-on” vests and fitted “concealed” vests.

Training: All current Kent County Paramedics received the 8-hour ODP Prevention and Response to Suicide Bombings course in October of 2005. In addition to the course Delaware State Police EOD team leader brought their specialized gear in order to familiarize Kent County Paramedics with how to safely remove the suit in the event an EOD tech is sick or injured. Operational concerns were discussed and the session resulted in greater mutual understanding of the job at hand. Medics routinely receive refresher training regarding the assessment and treatment of blast and burn injuries.

Activity: Responses were reduced in number throughout 2006. While the number of EOD support missions declined, the number of SORT/SWAT support missions increased.

Needs & Initiatives:

1. Initial response is currently accomplished by one of the three primary Medic Units. The establishment of the Spec Ops Duty Officer will allow primary units to return to available status quickly. *This remains a priority issue for the Department.*
2. Additionally, an agreement with EOD needs to be established in which this Department is notified of an EOD response in Kent County prior to the EOD units being on scene. This would allow the Duty Officer time to meet EOD and eliminate committing a primary unit. *This is contingent upon the establishment of the Duty Officer.*
3. Tactical EMS training is required for improving support for SORT/SWAT operations. *Training courses are being evaluated. Five medics have been identified for initial training.*

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 no specific equipment for fire ground support operations. All of the support trailers have sheltering, heat, and lighting capability. An additional unit has been placed in-service which 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: No specific training is indicated. Medics should be capable of deploying shelters.

Activity: There were over 40 calls for Medics to stand-by fire grounds. The total time committed to stand-by exceeds 28 hours for the year. There was a nearly even distribution across 8-hour time divisions with a slight majority of calls falling between 0800 and 1600 hours (20). The average duration of the calls was 33 minutes with the longest being several hours (duration split between 2 units).

Needs & Initiatives: The establishment of a Duty Officer should alleviate the demand for primary Medic units to cover stand-by operations. While the primary units may still make initial responses (especially incidents with reported patients), the Duty Officer should be able to relieve primary units at extend incidents. The Duty Officer will be able to provide enhanced services including shelter, heat, air conditioning, and cooling fans. *This remains a priority issue for the Department.*

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. Bike gear remains the same and Gator gear is assembled from spare equipment as needed.

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 Bikes appeared in at least 2 parades. The Gator was used at Safe Summer Day, the Governor's Fall Festival, and the State Fair Exercise.

Needs & Initiatives:

1. An assessment needs to be conducted to determine minimal Bike Team staffing. *Minimum staffing has been established.*
2. 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.*

3. 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. Over-the-uniform body armor and ballistic helmets will be in service by the end of the first quarter of 2006. 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.

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 conducted twice each year and are available to all Medics.

Activity: There was no identified activity in response to WMD / Terrorism.

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.

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.

Capability: The establishment of a Duty Officer program will reduce the demand on the primary Medic Units at many Special Operation incidents. The Medics are better trained to utilize available equipment. Resources continue to expand and develop to provide flexible response modalities and increased capability.

SIGNIFICANT EVENTS

REICHOLD CHEMICAL SPILL

On Friday August 25, 2006 at approximately 1930 hours, there was a chemical spill of 'Styrene' from a railcar that was stored on the Reichold site. The styrene was stored in a railcar that is built to hold 20,000 gallons. This event progressed to a SERT Level III response with mutual aid from multiple jurisdictions. In addition to administrative staff response from the Department of Public Safety; Kent County paramedics responded, the Kent County Hazmat Team, the 911 Center's Command/Communications vehicle, and Emergency Management. All agencies performed admirably with this potentially dangerous scenario. The styrene leak was readily evident in the environment which led to an evacuation within a five-mile radius of the epicenter. Thousands of calls entered

our 911 system challenging dispatchers while Kent County's Department of Public Safety's Divisions and all other responding agencies remained on scene or at the Command Center for close to two days. The event was successfully mitigated without serious injury to responders or the public.



C5 CRASH

On April 3, 2006, a C5 crashed in a field near the Dover Air Force Base at approximately 6:35 A.M. Kent County's MCI/Disaster Plan was initiated within minutes of the crash bringing to the scene all three Divisions of the Kent County Department of Public Safety as well as fire/rescue/police agencies. Additionally, helicopter support was provided by the Delaware State Police, Maryland State Police, and Lifenet.



Early concerns for EMS Command and medics at the crash site were number of victims, potential hazmats and ordinance, as well as terrorism and post incident activity. The scene was mitigated in a professional manner by all responding units. Critically injured or potentially critically injured patients were transported to the Christiana Medical Center by helicopter. Lower priority patients were transported to Kent General Hospital in Dover. This event, which could have been much worse, provided a true test of emergency response for Kent County and its supportive resources. Additionally, with the mutual aid of New Castle and Sussex County as well as the State of Maryland, Kent County was able to maintain a consistent level of emergency services to the citizens and

visitors of our County. With nationwide attention, there were only positive comments for all emergency responders. This event proved that the integrated efforts of emergency responders can and will work not only for this event, but for much larger events as well.



EDUCATIONAL INITIATIVES

Kent County DPS EMS division continues to grow. 2006 was the first year we recruited and sponsored second year Paramedic Technology students from Delaware Technical and Community college. We will continue to pursue this and see it as a good opportunity to recruit qualified Paramedics to the system.

FUTURE IMPROVEMENTS/INITIATIVES

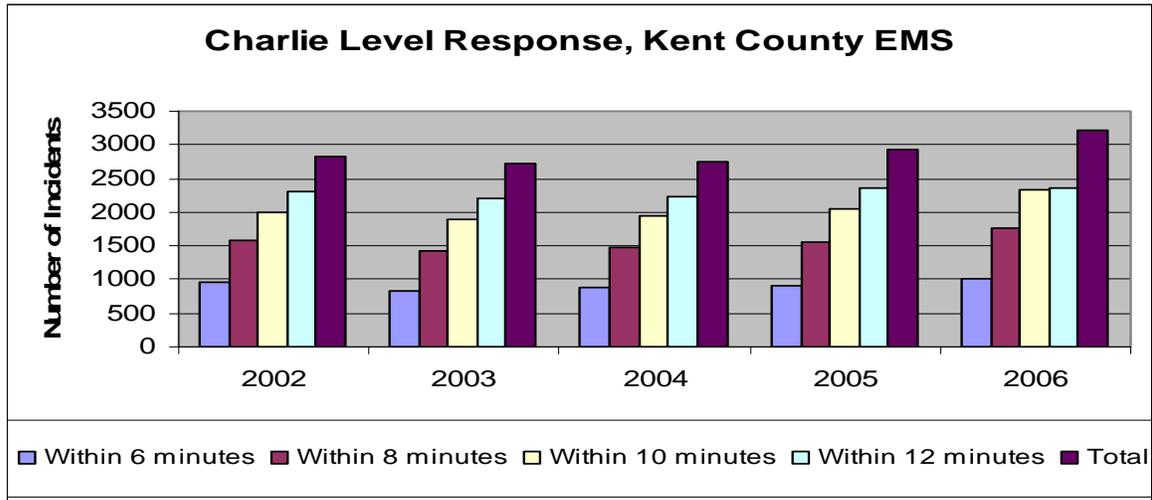
Kent County EMS is proud of its efforts and the manner in which the medics and dispatchers have managed a significant increase in call volume that is at a juncture of depleting resources. Kent County has been creative in managing the growth of demand for service. Double-stocked medic units, split medical crews, and an active supervisor, along with administrative response to emergencies has maximized all resources. The Dover and central Kent County region has experienced a significant increase in emergencies. Increasing growth and development in has brought Kent County to a juncture where immediate expansion is necessary for the continued reduction of morbidity and mortality rates. Kent County will combat this increasing demand through the creation of 'Power Unit(s)' designed to deploy additional paramedics during peak response time hours. Such a deployment will allow Kent County to adjust response regions for better response times, greater availability of medics. This unit will function

during daytime hours when historically EMS call volume is at its peak, all during a time frame when Kent County's population is at its highest because of the employed workforce that migrates to our County.

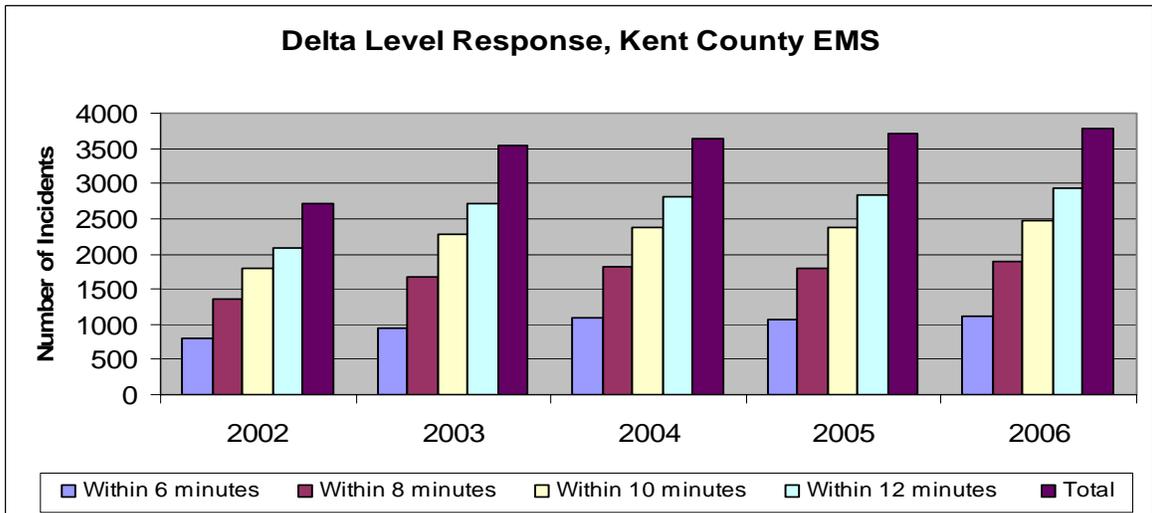
The paramedics and dispatchers of the county remain vigilant in providing the best emergency response possible for all our citizens and visitors. With the implementation of recommended improvement initiatives for additional staff and equipment, the standard that Kent County has become accustomed to will be well secured. As such, Kent County Emergency Services is looking forward to continuing the tradition of delivering high quality emergency response.

RESPONSE TIME DATA

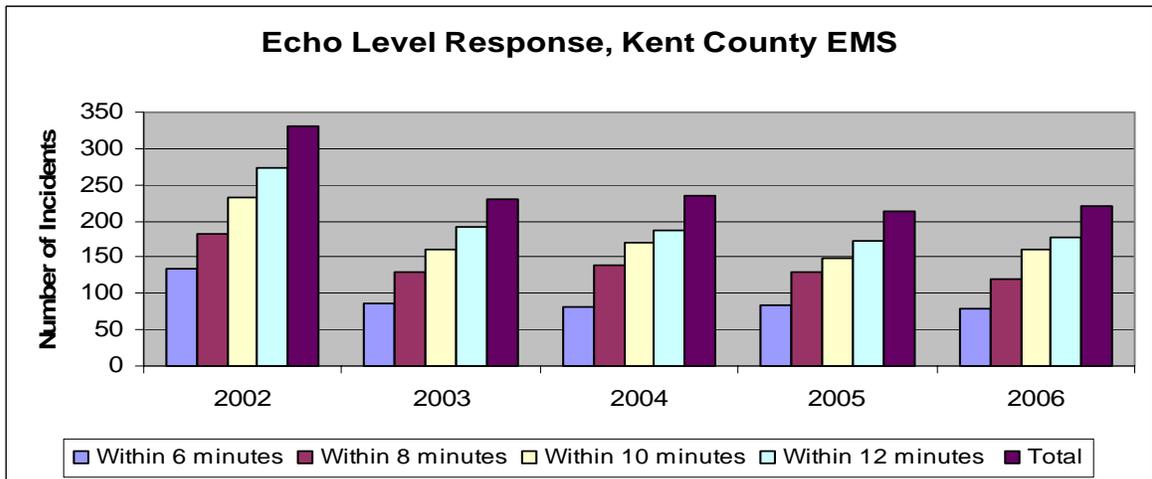
Legislated goal; paramedics on scene 90% of the time within 8 minutes, for each response level.



(Within 8 minutes; 2002-55%, 2003-53%, 2004-53%, 2005-53%, 2006-55%)



(Within 8 minutes; 2002-50%, 2003-48%, 2004-48%, 2005-45%, 2006-48%)



(Within 8 minutes; 2002-55%, 2003-56%, 2004-59%, 2005-61%, 2006-56%)

KENT COUNTY BASIC LIFE SUPPORT

Kent County is comprised of 18 Volunteer Fire Companies and one volunteer ambulance company, the Smyrna American Legion. The Smyrna American Legion's ambulance response 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 paid ambulance companies, such as the contract with Prime Care Ambulance and the City of Dover.



BLS supports additional ALS unit in Kent County

A committee was appointed in mid 2006 to review the entire Emergency Medical System in Kent County. This committee is compiling a report to be presented to the Levy Court with its findings. The major concerns within the BLS community are in a couple of the more rural areas, which usually run without ALS support, due to the response time. A recommendation has been made by the Kent County Ambulance Association to increase the number of ALS units within the county.

Kent County Ambulance Association

The Kent County Ambulance Association is designed to bring all EMS agencies together and to provide a forum for discussion on local and national issues that pertain to the pre-hospital field. Officers of the association are actively involved in EMS activities at the county and state level and are dedicated to providing EMS personnel with the most up-to-date information. To help increase attendance, the association offers a 1-hour continuing education credit at most of these meetings. Recently, the Kent County Ambulance association appointed a Public Information Officer, which has proven to be an asset in disbursing information to the public.

Accomplishments and Notable Events during 2006

DVFA Annual Conference

The 12th annual Delaware Volunteer Firemen's Association conference was held at the Sheraton Dover hotel and conference center the week of September 9-16, 2006. During the first three days of the conference, Emergency Medical Services classes were held in all aspects of emergency care. Classes surpassed anticipated attendance levels as more

than 300 persons engaged in the EMS continuing education phases of the conference. A special tribute was held to honor the fifth anniversary of the September 11th attack. The conference ended on the 16th with the annual parade. The Governor's Cup went to Citizens' Hose Company of Smyrna and best appearing Fire Company without music went to the Clayton Fire Company. Best appearing Ladies Auxiliary marching unit was awarded to the Minquadale Fire Company.

Mass Casualty Incident Involving a Military C-5 plane

Kent County Fire and EMS was challenged on April 3, 2006 when an Air Force C-5 Galaxy transport jet crashed at Dover Air Force Base. Seventeen people aboard survived the crash and were transported to Kent General and Christiana Hospitals. The huge aircraft broke into three pieces -- the tail, fuselage and cockpit section. Many fire companies train for Mass Casualty Incidents in hopes that they will never have to respond, but on this day, it was not a drill. The event was managed in a safe, timely and efficient manner.



Delaware State Fair

Every year in July the Harrington fairgrounds is home to the annual Delaware State Fair. During this ten-day event, Harrington Fire Company and other local Fire/EMS departments spend their days caring for the large number of tourist who may get sick or injured while visiting the attractions. Dispersed throughout the fairgrounds are EMTs and Paramedics that will respond and treat visitors on a daily basis. The Harrington Fire Company also does stand-bys during some of the larger, more populated, main events, such as the monster truck show and the demolition derby.

The Delaware State Fire School and State Fire Marshal's Office were also present throughout the entire Fair promoting Fire Safety. Attendance records showed a slight increase in attendance over 2005. Opening night and Children's Day are large events for the two agencies to promote their message of Safety. The Indian River Fire Company partnered again this year by coming to the Fair with their remote Dalmatian "Patches". Under the direction of Fire Prevention Chairman Allen Miller, Patches entertained the children on Children's Day. The Fire School's inflatable ambassador of Fire Safety, Firefighter Ed U. Cator, appeared in the Fair Parade Tuesday and Thursday evenings for Children's Day and Governor's Day

Lowe's Home Safety Visits Delaware for Safe Summer Day

On July 19th, Safekids held their Safe Summer Day at Brecknock Park in Camden. This year's event was a huge success with an estimated 3200 people visiting the Park. Injury Prevention groups from across the State were present to promote Safety. Kent County Fire Departments were heavily involved with demonstrations and displays. Fire departments from across the County held vehicle rescue, hazardous material and firefighting demonstrations. The highlight of the day was the appearance of Lowe's Home Safety's "Great Home Safety Adventure," which is a tractor-trailer built to feature home safety interactive lessons. This was the first appearance of the display in Delaware. As children entered they proceeded from room to room for a twenty minute lesson on home hazards. Instructors from Lowe's Home Safety who were present stated this was the most heavily attended event they had attended.

Kent County Emergency Operations Hosts Open House

The Kent County Office of Emergency Operations hosted a hugely successful Open House and Life Safety Event on October 5th. An estimated 700 children toured the facility as well as saw displays and demonstrations from area Fire and Life Safety Groups. Those in attendance included Delaware Electric, Red Cross, Delaware State Fire School, Delaware Fire Marshal's Office and many others. Live demonstrations were conducted by Harrington Fire Department, involving vehicle rescue and the Delaware State Police K-9.



Dover International Speedway

Twice a year the Dover International Speedway is home to stock car racing. This event draws in over 150,000 spectators to Kent County. With this large number of NASCAR fans brings an increase in EMS and Fire responses. Along with the increased responses, EMS and Fire Personnel from around the state take additional training to provide emergency services during the race. Temporary treatment and triage areas, set-up to treat NASCAR fans and ambulances, are on a stand-by basis if anyone needs to be transported directly to the hospital. On an average, 250-300 people are treated during these four day events.

Delaware Visitor Center Honors Local Firefighters

“Fighting the Dragon: Firefighting in the State of Delaware” is the featured attraction at the Delaware Visitor’s Center located at 406 Federal Street in downtown Dover. The exhibit opened on September 11, 2006 and will run until July 31, 2007. Planned and created by the Delaware Division of Historical and Cultural Affairs in consultation with a citizens’ advisory committee, the Delaware Volunteer Firemen’s Association and the Delaware State Fire School, the exhibit showcases the work of those ordinary Delaware Citizens that perform extraordinary service as volunteer firefighters and EMS providers. During a tour of the gallery, visitors have an opportunity to learn about the unique culture of volunteer firefighters and EMS personnel and the service they provide in making Delawareans’ lives and communities safer. The exhibit highlights the human element of firefighting and EMS, the nature of their work, their working conditions and equipment, and the history of the volunteer system in Delaware.



School Fire Drill in Frederica

Frederica Fire Company conducted a fire drill at Lake Forest East Elementary school on October 12, 2006. The school was occupied by children and its staff. Multiple agencies responded including Kent County EMS and the Delaware State Police. Children at the school were not informed of the drill and thought the fire was real. All children in the school followed the evacuation plan appropriately and on firefighter arrival found that all of the students and faculty had safely evacuated the building.

Governor’s Fire Safety Conference

The 2006 Governor’s Fire Safety Conference took place at the Sheraton in Kent County on October 6, 2006. This annual event is hosted by the Delaware Fire Prevention Commission, in association with the Delaware Children’s Fire Safety Foundation. Governor Ruth Ann Minner recognized individuals for their commitment to fire prevention throughout the state. Christiana Fire Company was awarded, for the fourth consecutive year, the Edward McCormick award for fire safety education.

Improvement Initiatives

Kent County has addressed multiple areas within the service that need to be improved: First, BLS agencies have had an ongoing issue with the infectious control reporting system. On two separate incidents, this year, there were some issues raised about the reporting of potential exposures and the time delay on informing BLS personnel. The Office of EMS (OEMS) was contacted and both incidents have been corrected. A 1-hour CEU presentation was delivered at all three county ambulance associations to educate BLS personnel on the Delaware infectious control standards.

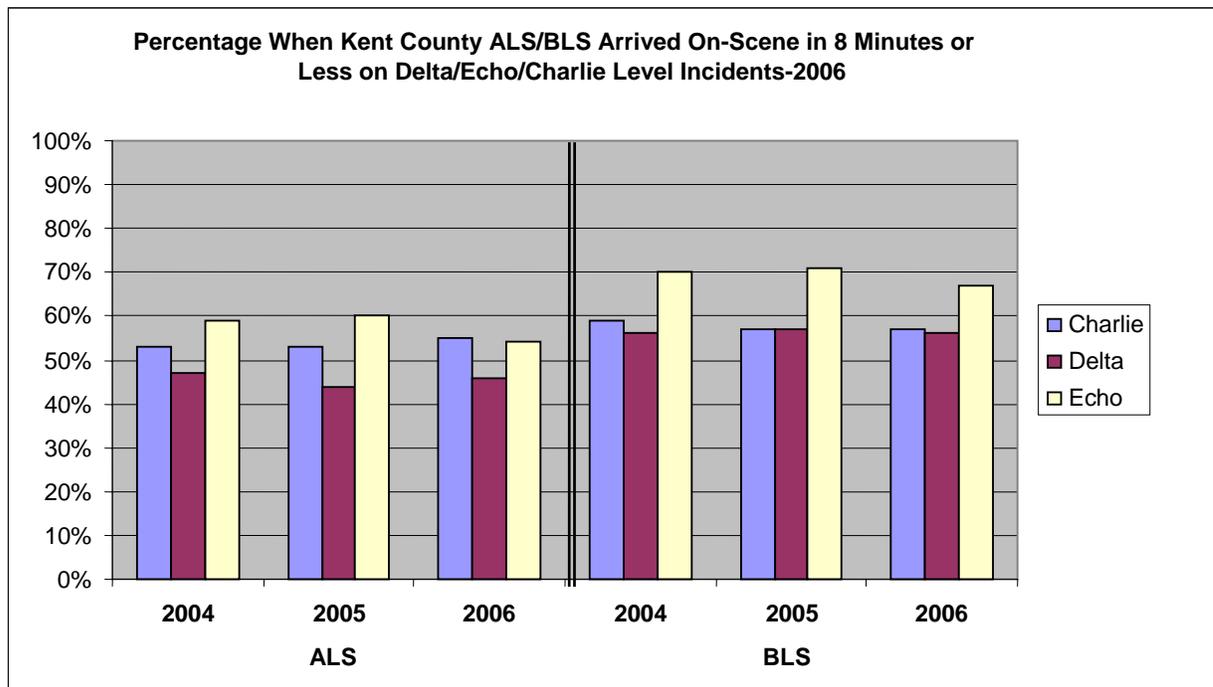
The second issue addressed by Kent County BLS agencies is with the statewide reporting system, EDIN. Many ambulance companies have expressed dissatisfaction with the capabilities of EDIN; primarily with the direct fax of patient care reports to the hospitals. The other complaint by BLS agencies with EDIN is the availability of computer terminals at the local hospitals. BLS agencies are not able to complete patient care reports in a timely fashion at the hospitals due to the inadequate number of computers. This is a concern among the BLS agencies because it causes a delay with the hospitals receiving the patient care report.

Summary

There have been many accomplishments in Kent County, as well as some setbacks. Several companies have ordered new ambulances, hired paid personnel, and financially been able to cover all BLS expenses. There are still a large number of companies struggling to meet the financial burdens of running a BLS service. Most BLS agencies find it difficult to fund training for personnel, purchase supplies and in general keep up with the changes in society. Retention and new acquisition of personnel is also a huge problem both with volunteer and paid personnel. Kent County BLS is moving forward to meet the needs of the community with all the advancements that were made in 2006 and will continue to improve in 2007 and beyond.

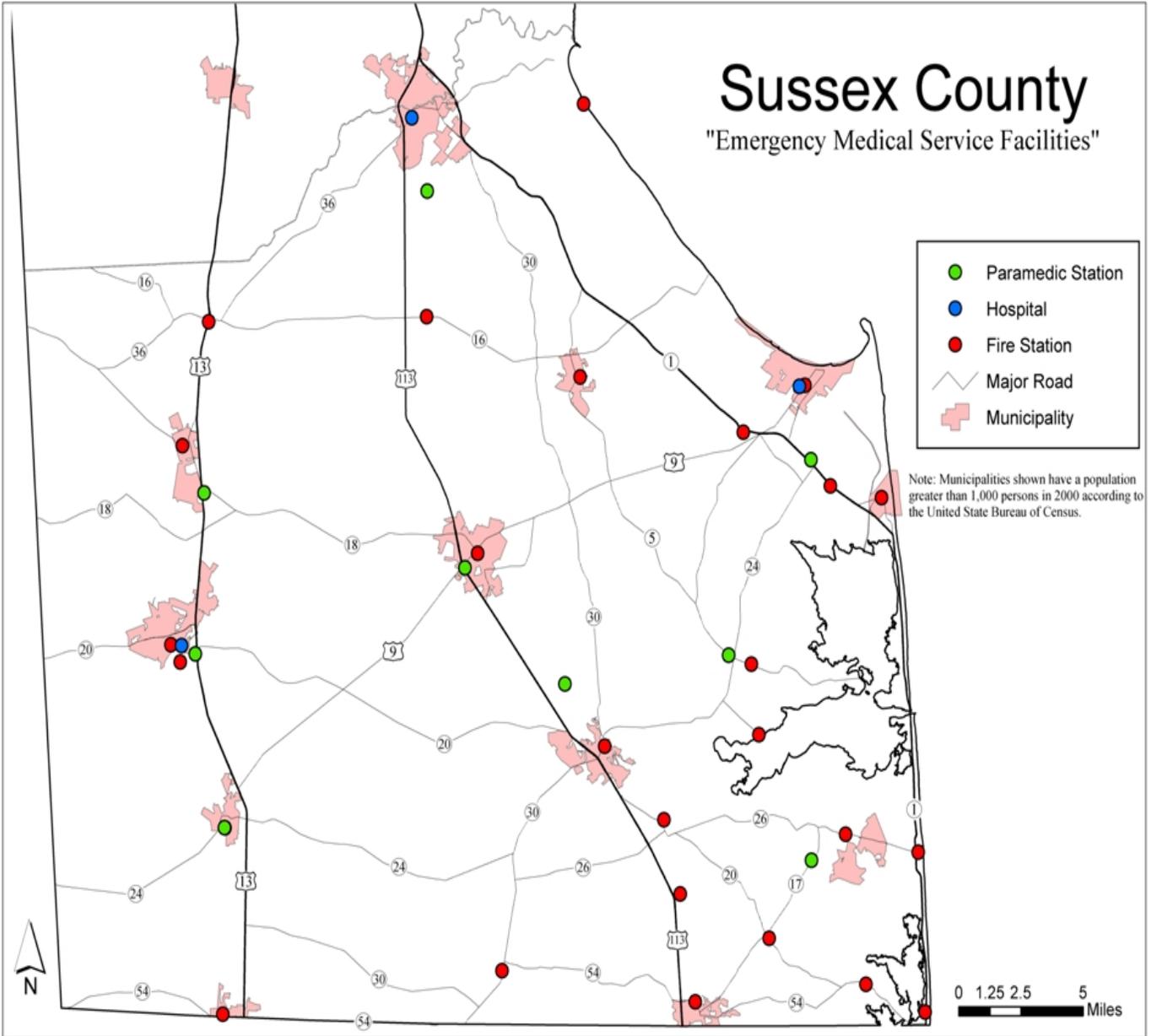
PAID PERSONNEL STATS PER COMPANY

AGENCY NAME	TOTAL NUMBER OF PAID PERSONNEL	SHIFTS COVERED	RESPOND ON FIRE CALLS	RESPOND ON EMS CALLS
Bowers Fire Co.	2	6AM - 6PM	YES	YES
Camden-Wyoming Fire Co.	6	24/7	YES	YES
Carlisle Fire Company	3 F/T – 12 P/T	M-W 6am-5pm Thurs-Sun 24hrs	YES	YES
Cheswold Fire Co.	4 F/T - 10 P/T	24/7	YES	YES
Felton Community Fire Co.	4	2487	YES	YES
Frederica Vol. Fire Co.	2	6AM - 4PM & 8AM - 6PM	YES	YES
Harrington Fire Co.	2	6AM -6PM 7 DAYS	YES	YES
Hartly Fire Co.	1	M-F 8AM - 5PM	YES	YES
Leipsic Fire Co.	0	N/A	N/A	N/A
Magnolia Vol. Fire Dept.	0	N/A	N/A	N/A
Marydel Fire Co.	0	N/A	N/A	N/A
Smyrna American Legion	5 F/T - 5 P/T	6 AM - 6PM 7 DAYS	NO	YES



Sussex County

"Emergency Medical Service Facilities"



SUSSEX COUNTY EMERGENCY MEDICAL SERVICES

HISTORY

Following the passage of legislation in 1990, creating a state-wide paramedic system, the Sussex County Council hired Bill Stevenson, a Lewes native and Paramedic from Florida, to develop “Sussex County Paramedics”. Ten Paramedics from other nearby states were hired as the charter members of the service, and became known affectionately as the “Golden Ten”. Sussex County Paramedics placed a single Medic unit in service to cover the entire county, using a vehicle borrowed from the Rehoboth Fire Company.



Sussex County's 1st paramedic unit



Paramedic unit of today

Sussex County Paramedics, now known as Sussex County EMS, has grown steadily since its inception. Medic 104, Sussex County's 2nd paramedic unit, was placed in service in 1991, and the department answered 4,000 emergency calls during that year. In 1992, three new paramedic stations were opened in the Blades, Lincoln, and the Millville/Clarksville areas. By 1993, SCEMS had grown to a staff of 60 employees, 48 of whom were paramedics. In response to growth in the area, a new station in Long Neck was dedicated during National EMS Week in 2003. An additional unit was added in Bridgeville in 2004, along with a second supervisor for each shift.

Throughout its history, Sussex County EMS has been a leader in clinical care. In 1996, SCEMS introduced the use of 12-lead EKG's, becoming the first on the Delmarva Peninsula to provide this level of care. In 2000, the department became one of the first ALS services in the country to use Continuous Positive Airway Pressure (CPAP) in the field to treat patients with trouble breathing. In 2004, Sussex County EMS became the first in the state to institute Drug Facilitated Intubation, utilizing medications to induce paralysis so that patients, particularly those with head injuries, can be adequately ventilated. SCEMS educators went on to educate paramedics in other jurisdictions on the technique. In 2005, Sussex County's paramedics were among the first in the nation to utilize the EZIO Adult Intraosseous Infusion device.

Sussex County EMS has been proactive in many areas. In 1992, the department established a Hazardous Materials Medical Response Team, and in 1998 accepted delivery of the first Hazardous Materials Decontamination Trailer for use by the team. In 1999, the department instituted its Special Events Bike Team. In 2005, four members of Sussex County EMS volunteered to form a Competition Team, and participated in the “Jems Games” International Paramedic Competition in Philadelphia. The team captured the Gold Medal that year, and returned in 2006 to capture Silver.

SUSSEX COUNTY EMS ACCOMPLISHMENTS AND INITIATIVES



Shift “A”



Shift “B”



Shift “C”



Shift “D”

15 Years of Service

The year 2006, Sussex County EMS celebrated 15 years of service to the community at its Annual Awards Banquet during EMS week. The original ten members of the service, along with members of the first paramedic class, were recognized.

Station 103 Relocation

With the implementation of Station 108 in Georgetown and the imminent loss of our space at the Stockley Center, we identified a facility in the Millsboro/Dagsboro area that will suit our needs. The new station will not only improve response times to the south/central portion of the county, but will improve our ability to back up the unit in the rapidly growing Clarksville/Millville/Roxana area.

Station 100/104 Relocation

A permanent structure was erected by the owner of the site of our Lewes/Rehoboth station, and we arranged for rental space in the new structure for the facility, which houses both Medic Unit 104 and Supervisor 100. The new three-bay station will also house a reserve medic unit.

Paramedic Student Program

Five SCEMS students graduated from the paramedic program at DTCC, and began working in the field. An additional five students began their paramedic studies in the spring of 2006, and will graduate in 2007.

Employee Assistance Program

A comprehensive program for assistance to employees was initiated. This service is available 24 hours a day, 7 days a week for employees to address both counseling needs and work/life issues.

Medic 108

Medic 108 was staffed during the summer on a part-time basis, primarily providing additional resources to the busy coastal area. The added resource resulted in better coverage and shorter response times at the beach communities, and reduced the need to deploy central and west units into the beach area. In late fall, the unit became a full-time medic unit serving the Georgetown area.

Mobile Data Computer System:

The MDC project was completed, with emergency calls being dispatched directly from the Sussex County EOC to the computers in medic, supervisory and administrative vehicles. In addition to call information, the system includes GPS technology, providing a map showing the location of the unit, location of the call, and the best route for response. The computer aided dispatch program also identifies the resource nearest to the location of the emergency, resulting in the best possible response time.

CPAP Upgrades

We replaced our aging Constant Positive Airway Pressure (CPAP) devices with newer devices that are less bulky, easier to operate, and utilize less oxygen. Working with the Division of Health Preparedness, we identified a new combination CPAP/Ventilator unit which will provide both the CPAP function and work as a transport ventilator for extended transports. The devices will be available for use by DPH in the event of an influenza pandemic or other emergency requiring ventilatory assistance for large numbers of patients.

Robert Stickels' Retirement

Sussex County Administrator Robert Stickels retired in October, 2006. Mr. Stickels was one of the original members of the Delaware EMS Oversight Council, and was an ardent supporter of the EMS system in Delaware. The new County Administrator, David Baker, previously served as Director of Finance for the County. Sussex County EMS Director Glenn Luedtke replaced Mr. Stickels on DEMSOC.



Championship Paramedic Team Wins Silver at International Competition

The SCEMS Paramedic Competition Team won Silver Medals at the “Jems Games” competition as part of the “EMS Today” Conference in Baltimore, Maryland. Eighteen teams from as far away as London, Australia and Canada participated in the event, which culminated in a final scenario involving a simulated helicopter crash. The SCEMS team included Paramedics Joseph Hopple, Stuart Hensley, District Supervisor Holly Donovan and Education Coordinator Robert Mauch. SCEMS Director Glenn Luedtke served as a member of the conference faculty, delivering a lecture on geriatric emergencies. The paramedic competition team is planning to compete again at the 2007 Jems Games, which will again be held in Baltimore.

FUTURE INITIATIVES

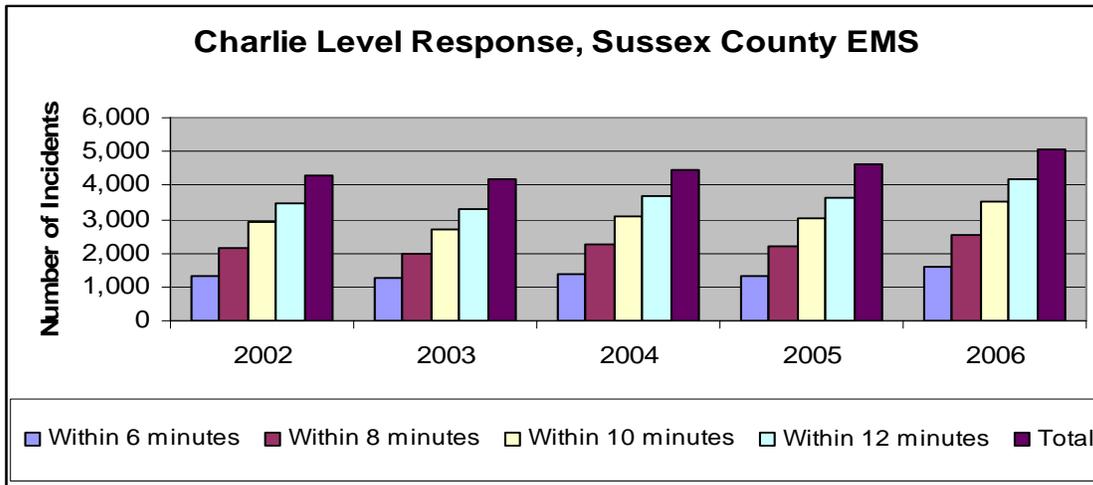
During the fiscal year beginning July 1, 2007, Sussex County plans to accomplish a number of objectives. Due to the increased number of responses during the summer months, the department will staff a part-time “Power Unit” 12 hours per day from Friday through Sunday, as well as during the Memorial Day, 4th of July, and Labor Day holiday periods.

As a result of recent research and the revised standards issued by the American Heart Association, Sussex County EMS will complete the upgrade of all of its cardiac monitors from the current “mono-phasic” wave-form to “bi-phasic” technology. The department also plans to install an emergency power generator at its headquarters for use during power outages associated with weather and other emergencies. As part of an initiative by the County government, SCEMS is beginning to plan for a new headquarters facility.

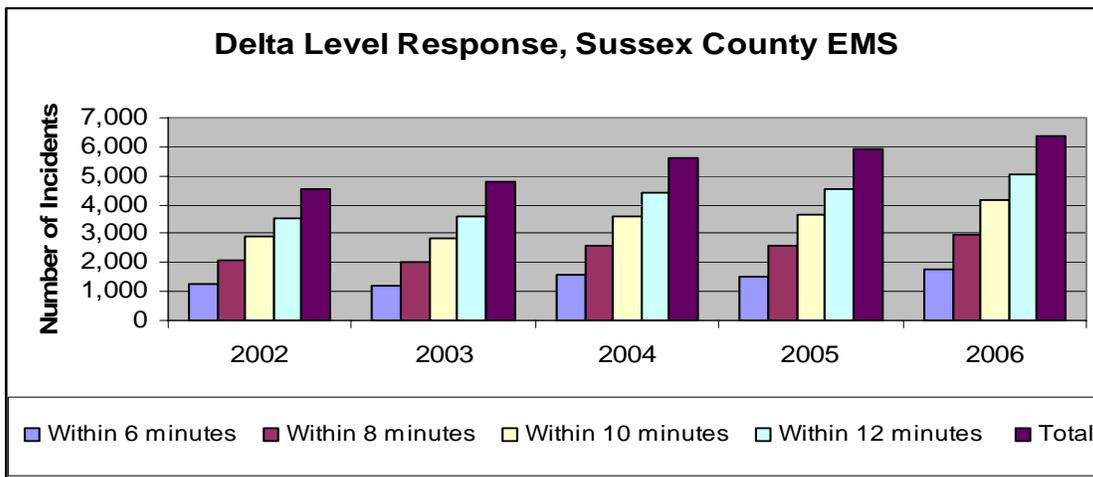
In conjunction with the National Association of EMS Educators and the DEMSOC Workplace Diversity Sub-Committee, Sussex County EMS will institute programs promoting the EMS profession aimed toward improving the ethnic and racial diversity of its work force. Initial efforts will include providing instructors for an Emergency Medical Services curriculum for high school seniors at the Sussex Technical School District.

RESPONSE TIME DATA

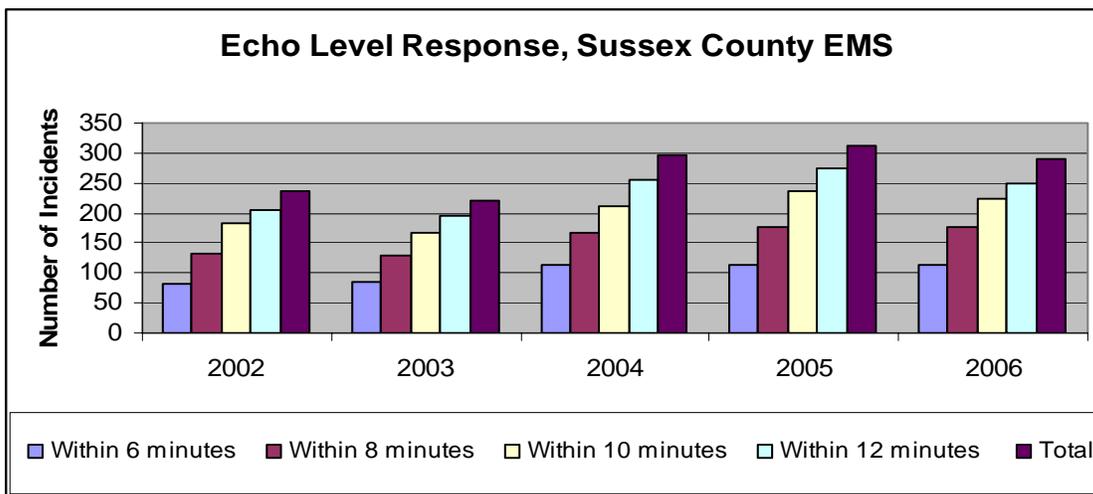
Legislated goal; paramedics on scene 90% of the time within 8 minutes, for each response level.



(Within 8 minutes; 2002-50%, 2003-48%, 2004-50%, 2005-47%, 2006-50%)



(Within 8 minutes; 2002-45%, 2003-43%, 2004-46%, 2005-43%, 2006-47%)



(Within 8 minutes; 2002-56%, 2003-58%, 2004-56%, 2005-57%, 2006-61%)

SUSSEX COUNTY BASIC LIFE SUPPORT

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. The only other fire district, which does not operate BLS services in Sussex County, is Bethany Beach. This company has mutual aid agreements with bordering fire companies to supply ambulance services.



Sussex County Ambulance Association

In 1978, the Sussex County Ambulance Association was formed. This association is designed to bring all EMS agencies together and to provide a forum for discussion on local and national issues that pertain to the pre-hospital field. Officers of the association are actively involved in EMS activities at the county and state level and are dedicated to providing EMS personnel with the most up-to-date information. Both the president and vice-president sit on numerous committees, such as the EDIN users committee and the BLS protocol committee to help resolve issues and make the system work more efficiently. The biggest initiative for the association this year is to activate the panic buttons located on portable radios carried by EMS to keep them safe while practicing on-scene.

Accomplishments and Notable Events during 2006

Fire Safety Poster and Essay Winners

November 19th, the Laurel Fire Dept. honored the Winners of the 2006 Fire Prevention Poster and Essay Contest, a program of the Delaware Volunteer Firemen's Association. The State of Delaware is the only state in the Union to have a Statewide Fire Prevention Program. The Master of Ceremonies was Ron Marvel, 1st Vice-President of the Delaware Volunteer Firemen's Association. Over twenty children were in attendance with their families and teachers. Winners received a plaque and a Walmart® Gift Card. Teachers were also presented with an award in appreciation of their time and effort that they gave the program.

Lewes Fire Department Scholarship Award

The Lewes Fire Department, Inc. awards the T. A. Shipley Scholarship Award annually. This scholarship will be given in the name of a deceased member of the Lewes Fire Department to honor that member and assists a deserving student in his/her quest for a higher education. The scholarship is a freshman year grant for \$1,000. Student must be a resident of the Lewes Fire District.

Sussex County Dive Teams

Blades Fire Company

Blades Volunteer Fire Company is proud to announce the addition of a 16 member Dive Team to complement their Rescue Boat.

Millville Fire Company

The Millville Vol. Fire Co. DIVE TEAM is leaping into the future with an advanced Underwater Communications System that is allowing divers to stay in voice contact with surface officers. The system incorporates full-face dive masks, a command box and a deployable 25-foot underwater antenna. Inside the face piece is a microphone, which transmits the divers' voices to the underwater antenna. The divers also have a receiver/speaker located next to their left ear, which allows them to hear instructions from the surface. All sounds which are transmitted results in a remarkably clear voice, both on the surface and underwater. Both divers are also able to communicate amongst themselves all with the push of the transmit button. The units have a communications rating of up to 250 meters in depth and a radius of 200 meters. In the near future this system will be adaptable for use in Confined Space Rescue and there is also some discussion of integrating the system with NEXTEL for use with cellular phones.



Laurel Fire Dept. Recognizes Mutual Aid Company for their Support

On March 11th, at the Sharptown Fire Department's Annual Banquet, representatives from the Laurel Fire Dept. made a presentation to their officers recognizing them for their support to Laurel and the citizens of Sussex County. In October of last fall, Laurel was awaiting delivery of two new ambulances. With one being sold, it was not feasible to have only one ambulance in service. Contact was made with Sharptown, who graciously agreed to loan Laurel an ambulance until delivery could be made of their new units. A-14, Sharptown's Ford/Wheeled Coach ran as A-81 for almost three months. Sharptown

runs mutual aid with Laurel regularly, also Delmar, Blades and Seaford. They have an outstanding reputation. A plaque was presented to Chief Billy White, EMS Officers, Bob Cooper and Cecil Bradley by Laurel's President Gerald Brown, Asst. Chief Alan Schweitzer and EMS Capt. Mike Lowe.

Improvements and Initiatives

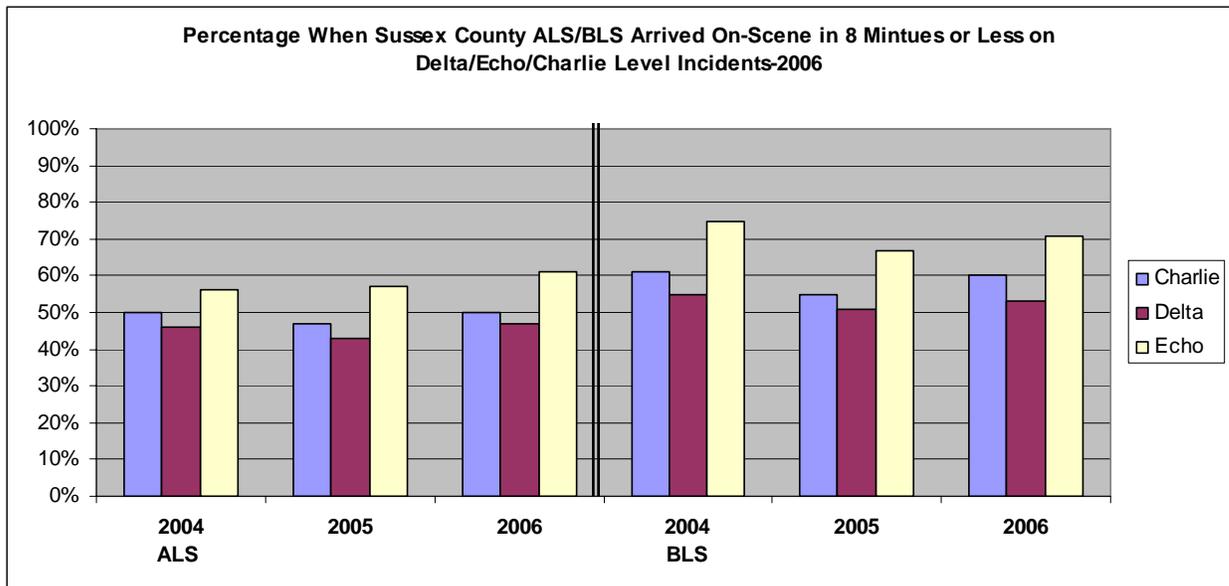
Sussex County's main concern is the future of the EMS system; where are we going and how are we going to get there? These questions remain unanswered because the future of EMS is unpredictable. The "EMS agenda for the future" is a document that addresses a new direction for EMS. The document describes "an EMS system that will be community-based health management that is fully integrated with the overall health care system. It will improve community health and result in more appropriate use of acute health care resources." However, it still remains to be seen if this new direction will become a reality.

Summary

EMS is an ever changing discipline in Sussex County due to the increase in growth and development. These changes create difficult challenges for the companies that provide BLS services. Although these companies know that changes and mandates are forthcoming, they are willing to make the necessary changes to better meet the needs of their community. This positive attitude combined with a dedicated group of pre-hospital providers ensures that Sussex County EMS will continue to provide quality medical services long into the future.

PAID PERSONNEL STATS PER COMPANY

AGENCY NAME	TOTAL NUMBER OF PAID PERSONNEL	SHIFTS COVERED	RESPOND ON FIRE CALLS	RESPOND ON EMS CALLS
Blades Fire Co.	1	6AM - 4PM M-F	YES	YES
Bridgeville Fire Company	2	6AM - 6PM	YES	YES
Dagsboro Fire Co.	4	6 AM - 6PM 7 DAYS	YES	YES
Delmar Fire Co.	8	24/7	NO	YES
Ellendale Fire Co.	2 F/T - 20 P/T	M-F 6AM - 5PM/ SAT 6-5/ Sun 24hr	YES	YES
Frankford Fire Co.	3	2 @ 6am-6pm (4 on 4 off) 1 @ 6pm-6am (4 on 4 off)	YES	YES
Georgetown American Legion	3	6 am-6pm M-F	NO	YES
Greenwood Fire Co.	2 F/T	6 AM - 6PM 7 DAYS	YES	YES
Gumboro Vol. Fire Co.	2 F/T - 6 P/T	24/7	YES	YES
Laurel Fire Dept.	4	6AM - 6PM	YES	YES
Lewes Fire Dept	8	24/7	YES	YES
Memorial Fire Co.	1	6am-6pm	YES	YES
Mid Sussex Rescue Squad	8	24/7	YES	YES
Millsboro Fire Co	6 F/T - 5 P/T	5AM - 5 PM M-SAT	YES	YES
Millville Vol Fire Company	8	24/7	YES	YES
Milton Fire Co.	9 P/T	24/7	NO	YES
Rehoboth Beach Vol. Fire Co.	6 F/T - 10 P/T	24/7	NO	YES
Roxana Vol. Fire Co.	2	4 ON 4 OFF 6AM-6PM	NO	YES
Seaford Vol Fire Co.	6	24/7	YES	YES
Selbyville Fire Co.	3	24/ 6 NO SUNDAYS	YES	YES



DELAWARE STATE POLICE AVIATION



DELAWARE STATE POLICE AVIATION

HISTORY

The Delaware State Police became involved with aviation in 1956, when they rented a local farmer's Cessna airplane to support special missions. The aircraft was flown by previously trained troopers, on a part time basis. The activity was limited to scheduled surveillance and reconnaissance type flights.

In 1970, the state police received their first rotorcraft, a Bell Jet Ranger, through a federal grant. This was the genesis of the Aviation Section. At that time, the aircraft and the section members (5) were housed in Dover Delaware at the Headquarters complex. The helicopter was available during the daytime hours only. It quickly became obvious that the workload was significant, and a second aircraft was obtained in the late 1970's. A Huey was acquired through the military acquisition program, and in the early 1980's, the Division began purchasing helicopters outright.

Through the years, the Division also added fixed wing aircraft to its fleet. A Cessna 182 was purchased in 1978. In the early 1990's, a 1956 Aero-commander was obtained through a drug forfeiture, and in 1995, King Air 200 was acquired through the military.



In 1985, the Section left the Headquarters complex and regionalized in an attempt to better address the ever-increasing mission. Also in 1985, the Section added Nationally Registered EMT-Paramedics to their crews. The crews provided service from two bases, from 0700 hrs. to midnight each day. This was the beginning of the "medivac" program.

Today the fleet consists of:

- Four Bell 407 helicopters
- One Cessna 182
- One Aero-commander
- One King Air 200

There are twenty-five sworn troopers in the Section, with half trained as paramedics and half trained as pilots. The Section provides 24 hr. service seven days per week. Approximately 51% of the mission involves emergency medical service, with the rest being comprised of search and rescue, open water rescue, surveillance, reconnaissance, pursuit support, criminal searches and marijuana eradication. The airplanes are involved in prisoner extradition, VIP transport, traffic enforcement, surveillance and reconnaissance.

The Section has grown over its 35 years from a one unit, part-time operation to a full-time Section comprised of three units. Today the Aviation Section has an administration consisting of a commander at the rank of Captain, Captain Jeffrey R. Evans, a deputy commander at the rank of Sergeant, Sgt. David Valeski, a Trooper Medic Commander at the rank of sergeant, Sgt. Paul Shavack, a safety and training officer at the rank of sergeant, Sgt. Chris Dooner, and two unit non-commissioned officers in charge. The Section continues to support law enforcement agencies throughout the state and local region. Under the direction of the Secretary of Safety and Homeland Security, the mission has expanded to include work with the U.S. Coast Guard and other federal agencies to mitigate risks associated with domestic and foreign terrorism. The most important component of the mission continues to be, however, preservation of life.

2006 ISSUES AND IMPROVEMENTS

The year 2006 was a very busy for the Aviation Section. While they continue to provide effective support services to our law enforcement, medical and search and rescue communities, we have also faced new challenges regarding technological advances and training.

This year, the Section's two most senior pilots retired from the Division. On April 28, 2006, Sgt. Lloyd Massey worked his last day with the state police. Lloyd was assigned to the Section in June of 1984. He has worked in both the north and south facilities. At the time of his retirement, Lloyd was the NCOIC of the Aviation North Unit. Cpl./3 Robert McMahon also retired this year. Bob's last crew day with the Section was November 29, 2006. He began his career with the Section in February of 1982. Over the years, Bob became one of the most highly rated pilots in the Section, and in addition to his regular duties, he functioned as a certified flight instructor for our Section. Many of the pilots who fly today were trained by Bob.

With the loss of the Section's two most senior pilots, the Section has been very busy with training. When the crews aren't on emergency calls, they are conducting flight training on both the helicopters and airplanes. All members of the Section are now trained and certified in the use of night vision goggles (NVG). NVG technology not only helps with search and rescue and criminal searches, but enhances our flight safety during the nighttime hours. It is important to note that with our expansion to 24-hour service, 48% of our missions are flown in the dark.

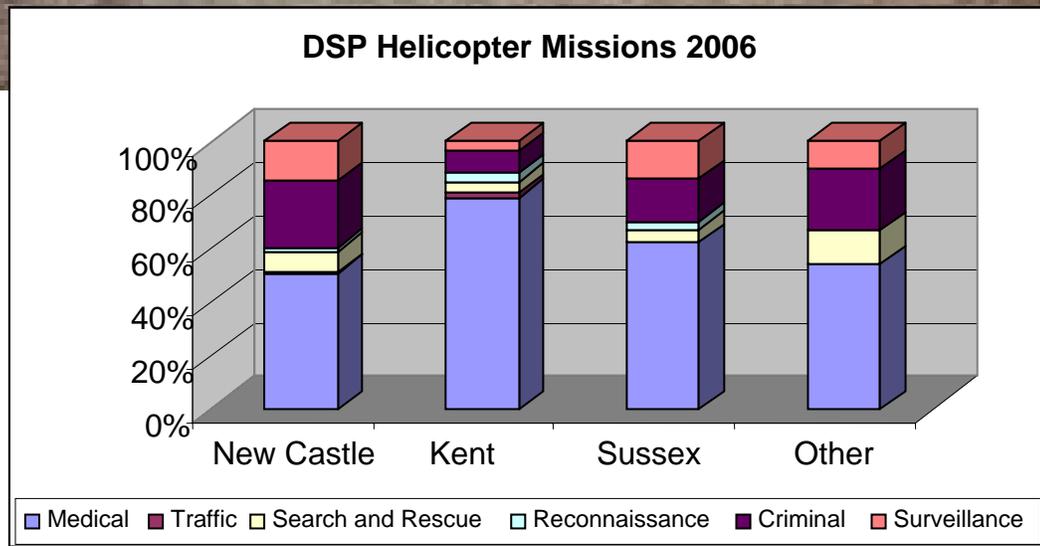
The Section formed an Aircraft Selection Committee which was responsible for researching a new aircraft capable for special operations. The Bell 412 was recommended to and supported by our Executive Staff. The Legislature approved the purchase, and the committee is busy with the completion process for this aircraft. The 412 is larger and stronger, and is a twin engine. Up to six patients can be transported at once. An entire SORT cell can be moved at once. The bomb robot can be loaded and transported and a fire bucket can be deployed. We look forward to the extra capabilities of the aircraft and the increased service we will be able to provide.

The helicopters flew 3,630 missions in 1,778.5 flight hours. Lifesaving medical missions continue to account for about ½ of our missions. The next largest category is criminal searches. Our fixed wing unit flew 28 extradition flights bringing 43 prisoners back to the state. In addition, 38 non-extradition flights transported 89 passengers.

In the future, the Section looks forward to expanding its homeland security mission by becoming a regional resource. One important component of this expanded role will be more involvement with the protection of the region's waterways. The Executive Staff of the Division is working closely with Secretary Mitchell to ensure that the Section has the proper equipment and training to handle this mission. Currently, the Division is awaiting final receipt of a larger, twin-engine helicopter to facilitate the Section's ability to meet the new challenges that are faced everyday.

The Delaware State Police Aviation Section will continue to work with our law enforcement and other public safety partners to deliver the very important service we provide. We look forward to the new missions we will become involved with once the 412 helicopter and other new technologies are realized.

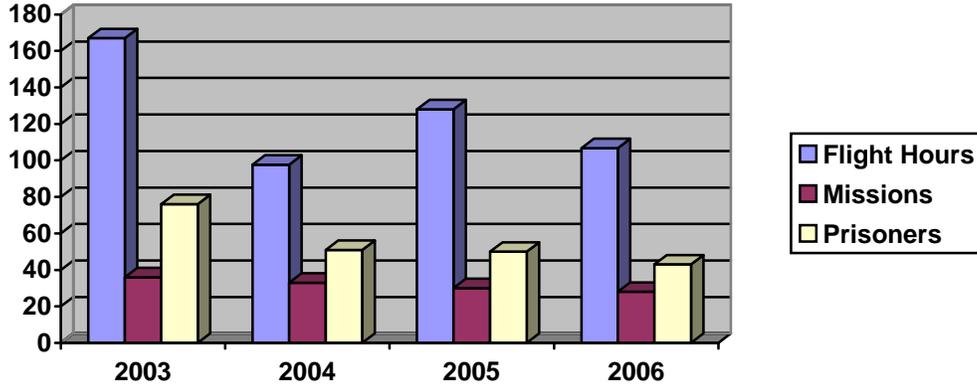
HELICOPTER MISSIONS



FIXED WING MISSIONS

Extraditions:

During 2006 the fixed wing unit flew a total of 28 extraditions; it logged 106.8 flight hours and transported 43 prisoners.

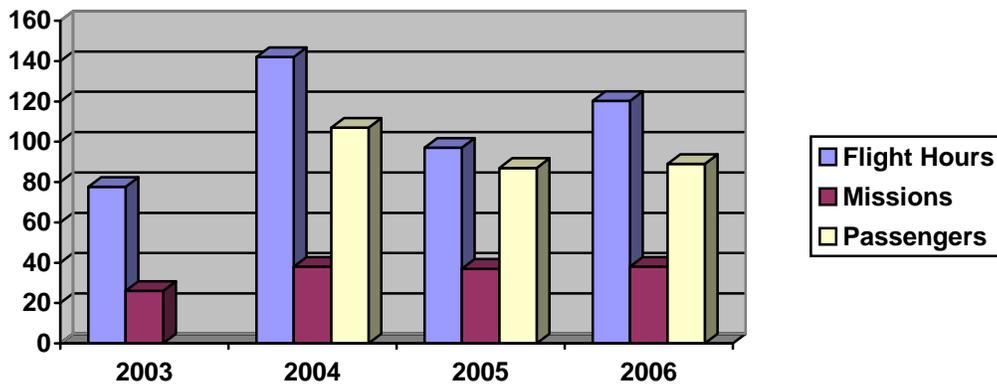


Missions	36	33	30	28
Prisoners	76	51	50	43



Non Extradition Flights:

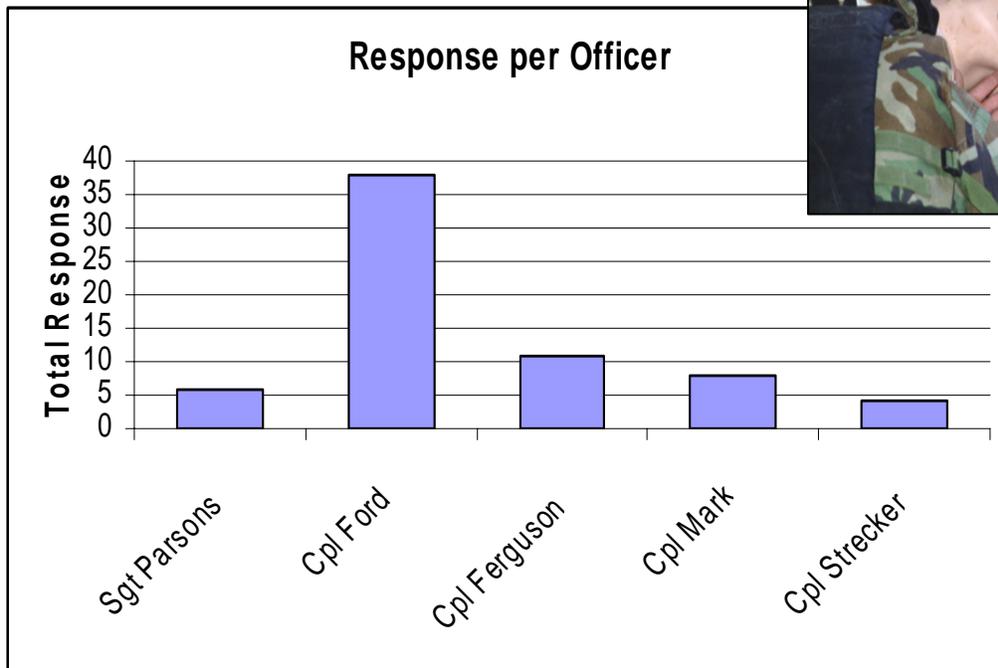
The fixed wing unit flew a total of 38 non-extradition flights. It logged 120.3 flight hours and transported 89 passengers. Of the 37 non-extraditions; seven were for Home Land Security, four were for the Governor, 22 were for DSP and seven were for various other agencies.



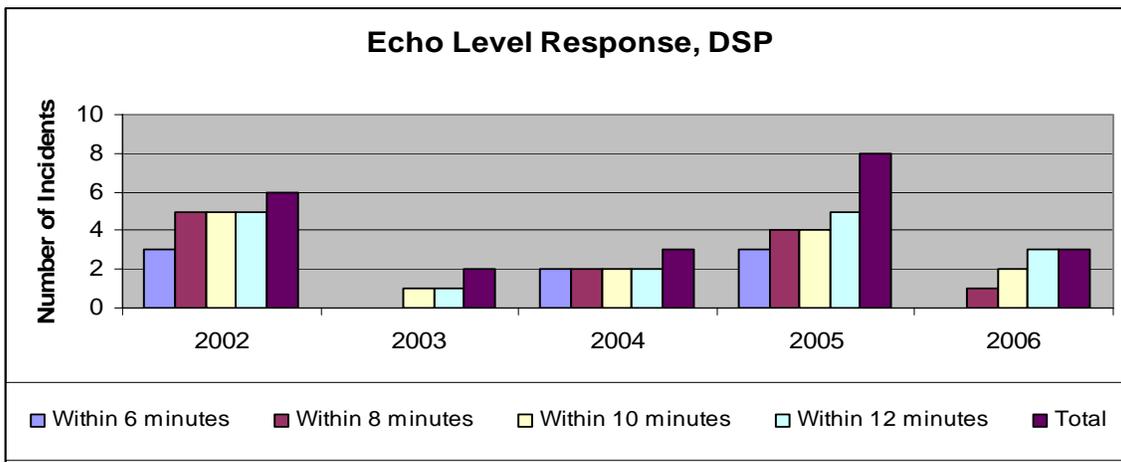
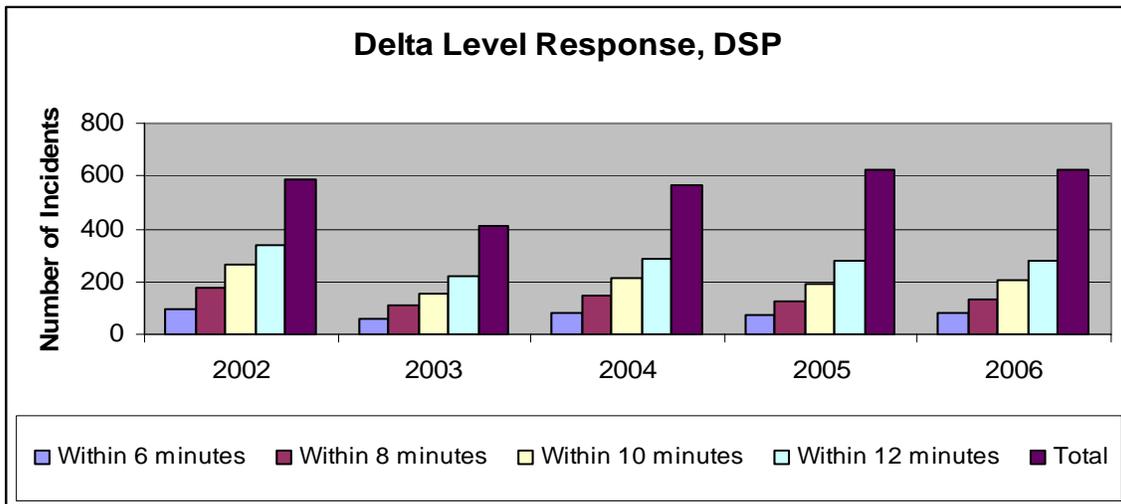
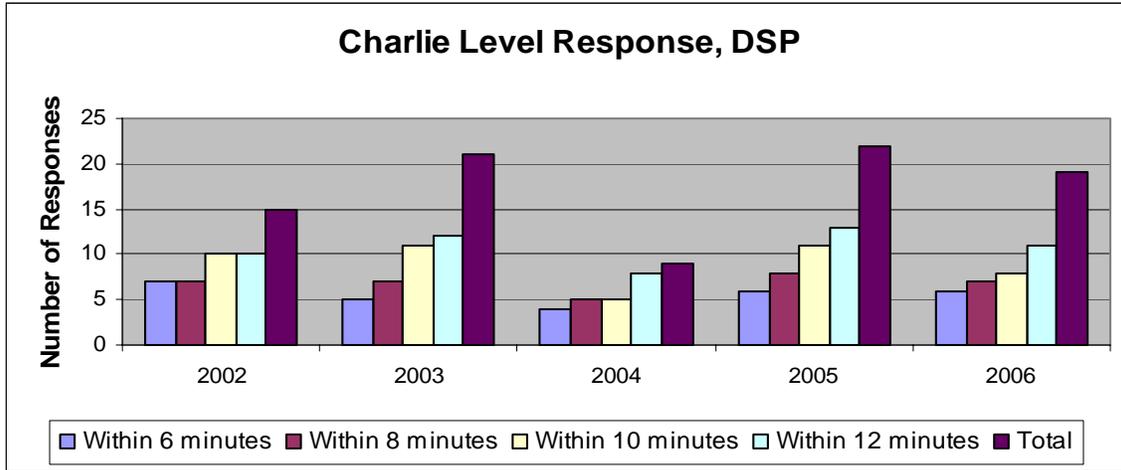
TACTICAL EMS MISSIONS

The DSP tactical paramedics continued the trend of past years with increased support of the DSP “SORT” team. Tactical paramedics provided medical support on a total of 66 missions with multiple medics responding to several high risk/multiple site incidents. It is note worthy that during the months of November and December, our medics were actively involved in operation “Cold-Shot” which targeted the Pagan Motorcycle gang and its illicit drug activities. This operation required the deployment of two, and on a few occasions three, tactical medics to cover multiple target sites that were to be “hit” at simultaneous times. There were several other missions that involved multiple sites, which in effect created double and triple the threat for injury requiring medical assistance. In short, although 66 missions were logged, there were nearly 100 actual tactical situations covered by our medical support Troopers.

There were a total of ten incidents where medical support was provided by our tactical medics. Most cases were minor, ranging from the disbursement of over-the-counter medications to basic first-aid. However, two incidents did require advanced life support care. There were also training scenarios that involved the tactical medics in extrication and treatment during simulated “hot zone conditions”.



The Delaware State Police (DSP) Aviation Section has responsibility for primary scene response throughout Delaware. Response time performance goals are not defined for DSP. The nature of airmedical services makes this difficult.



AIR MEDICAL SERVICES

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 quickly and safely served with a high standard of care. Subsequent revisions in 2001 and 2002 described the application and state certification process and resulted in the emergence of a well-developed system of air medical transportation in our 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 only one way transport to or from Delaware.
- 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.
- PREHOSPITAL 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.

The initial certification period is three years, and reapplication for recertification is required every three years thereafter.

PROGRAM HIGHLIGHTS

Scene Response

The Delaware State Police (DSP) Aviation Section has responsibility for primary scene response throughout Delaware. Additionally, the following private air medical services are state-certified to be dispatched by the Emergency Operations Centers when DSP is not available to respond to a scene:

Christiana Care LifeNet, Newark and Georgetown DE
MedSTAR, Easton MD

The *Delaware 911 Air Medical Dispatch Process*, which was developed based on proximity of the aircraft hangar 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 are certified to perform point-to-point within Delaware interfacility transports:

Christiana Care LifeNet, Newark and Georgetown DE

MedSTAR, Easton MD

STAT Med Evac, Baltimore MD, providing air transport for the duPont Hospital for Children transport team

PHI for Maryland ExpressCare, Baltimore MD

The following private air medical services are certified to perform flights bringing patients either into or out of Delaware:

Christiana Care LifeNet, Newark and Georgetown DE

MedSTAR, Easton MD

STAT Med Evac, Baltimore MD, providing air transport for the duPont Hospital for Children transport team

PHI for Maryland ExpressCare, Baltimore MD

PennSTAR, Philadelphia PA

Sky FlightCare, Coatesville PA

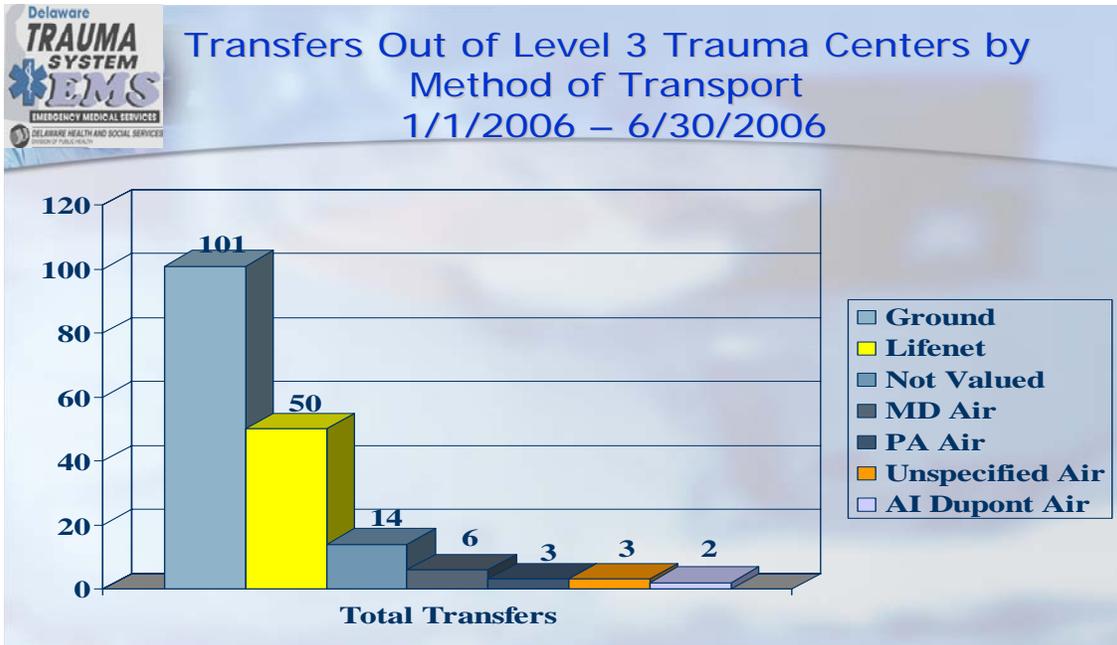
University MedEvac, Pottstown/Doylestown PA

JeffSTAT, Philadelphia PA

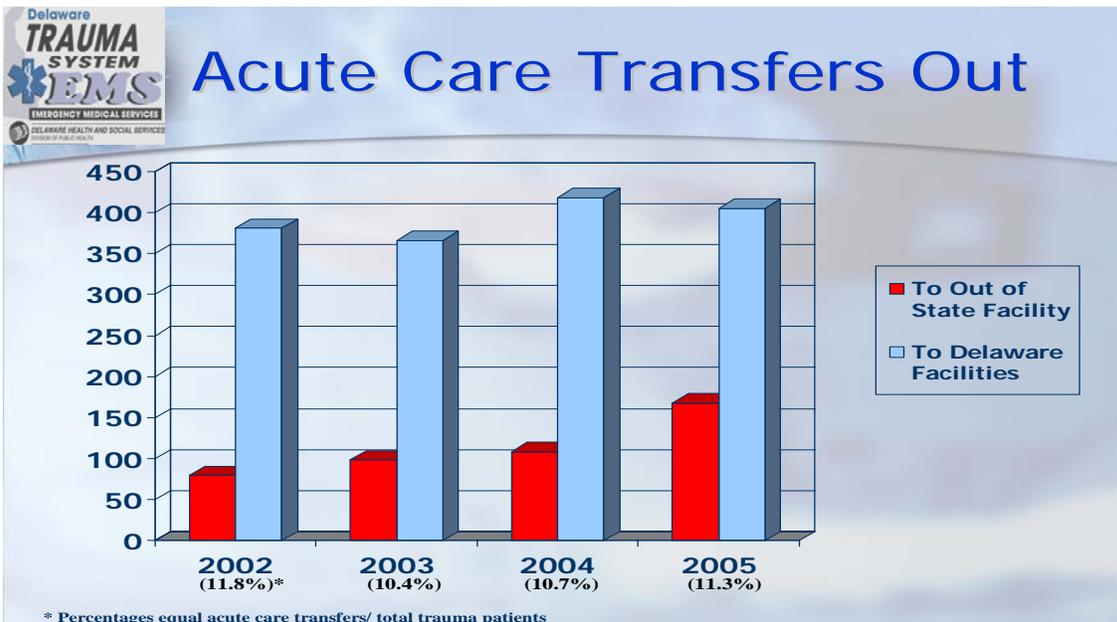
The following air medical services are available to serve our state through Mutual Aid agreements:

Maryland State Police Aviation Section

New Jersey State Police Aviation Section



Data from the Trauma System Registry illustrates, above, the method of transport of patients from the four downstate Level 3 Trauma Centers during the first half of 2006. Below, trends in numbers of transfers of injured patients to instate and out-of-state acute care facilities are shown.



CHALLENGES

The Trauma System Quality Committee analyzes data to determine optimal distribution of patients throughout the Trauma System. This includes identification of the most seriously injured patients and utilization of air medical transport to move them directly to the Level 1 Trauma Center 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 sole tertiary care center and underutilization of the resources available close to the patients' homes in the Community Trauma Centers.

SUMMARY

Integration of air medical services to appropriately transport patients has progressed significantly over the past several years. Delaware is now served by a more than adequate number of services. Further refinement, communication, and understanding on the role of air medical services within the EMS and Trauma Systems is the next developmental step.

SPECIALIZED PROGRAMS



POISON
Help
1-800-222-1222



Application Portal Interface

Provided by Delaware Health & Social Services



DELAWARE STATEWIDE TRAUMA SYSTEM

Celebrating 10 Years of Excellence

June 30, 2006 marked the 10th anniversary of the passage of legislation creating Delaware's Statewide Trauma System. That legislation was the culmination of years of hard work by the state's hospitals, the Division of Public Health, the Delaware Hospital Association, and prehospital, fire and police agencies statewide. The passage of this enabling legislation was the first step in systematically improving the care provided to the injured throughout our state. Since this bill was passed, 39,524 people have been cared for by Delaware's Trauma System.

On Sunday July 23rd, more than 75 professionals representing 12 Trauma System agencies joined together to present **"Answering a 911 Call", An Emergency Response Event in Recognition of the Trauma System's 10th Anniversary**, in the Wilmington Trust Grandstand at the Delaware State Fair. Some of Delaware's everyday heroes demonstrated for the public the emergency response to a car crash, with both air and ground transport to our Level 1 Trauma Center and a Level 3 Community Trauma Center. The trauma team, made up of trauma program leaders from all six Delaware Trauma Centers, then demonstrated assessment and management of a major trauma patient, complete with ultrasonography. They moved the patient quickly out of the Emergency Department to surgery before spending time with the patient's family. Injury prevention messages were included in the narration. Keynote speakers were Governor Ruth Ann Minner, who read a special proclamation in recognition of the anniversary and of the lifesaving work done by Delaware's Trauma System, Representative Bruce C. Ennis, primary sponsor of the original Trauma System bill, and Randolph Mantooth, an EMS advocate who portrayed a paramedic on 1970's television and helped to introduce the country to the concept of paramedics and EMS Systems.

Delaware TRAUMA SYSTEM

New Castle
Kent
Sussex

Basic Life Support
Advanced Life Support
Delaware State Police
Trauma Centers
Participating Hospitals

In recognition of the Delaware Trauma System's 10th Anniversary

"ANSWERING A 911 CALL"
An emergency response event

- EXCITING SIMULATED RESCUE
- EMERGENCY VEHICLES
Ambulances, helicopters and fire trucks!
- TRAUMA CENTER SCENARIO
- GIVEAWAYS
- FREE WITH PAID FAIR ADMISSION
- EDUCATIONAL FOR ALL AGES

Participation of Local Emergency Care Providers:
Sussex County Emergency Operations Center
Harrington Volunteer Fire Company
Sussex County EMS
Delaware State Police Helicopter

Trauma Centers:
Alfred I. duPont Hospital for Children
Bayhealth Medical Center
Milford Memorial Hospital & Kent General Hospital
Bosche Medical Center
Christiana Hospital
Nanticoke Memorial Hospital

Special thanks to the Delaware State Fair, Bayhealth Foundation, Delaware State Fire School and the Delaware Office of Highway Safety for their support of this event.

Delaware TRAUMA SYSTEM EMS
EMERGENCY MEDICAL SERVICES

Sunday JULY 23
12:45 - 2 p.m.
Delaware State Fair's
Wilmington Trust Grandstand

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

Delaware's Trauma System Committee continued working to develop one of the nation's few truly inclusive statewide Trauma Systems, which was fully implemented in January 2000. An inclusive Trauma System is one 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. More importantly, it means that no matter where in the state a person is 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.

Unintentional traumatic injury is the # 1 killer and disabler of Delawareans ages 1 to 44 years, and the # 5 killer for all age groups combined (Delaware Vital Statistics Annual Report 2004). It includes injuries such as those caused by highway crashes involving motor vehicles, bicycles or pedestrians, falls, and farm and industrial mishaps. Intentional injury adds assaults, shootings, and stabbings. Records show that 4,769 citizens and visitors of Delaware were injured seriously enough to require hospitalization in 2005 and of these, 152 persons sustained fatal injuries (Delaware Trauma System Registry, 2005). 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 our nation of its most precious resource---its youth.



Trauma can occur at any time. It can happen to anyone. Those with critical injuries need to receive definitive care within a short period of time in order to minimize the risk of death and disability. The role of a Trauma System is to organize resources and assure their immediate availability to the injured at all times and in all geographic areas of the system. These resources include 911 Emergency Communications Centers, Basic and Advanced Prehospital Providers, multidisciplinary Trauma Teams in hospital Emergency Departments, and in-hospital resources such as Operating Rooms and Intensive Care Units. Research has shown that the coordination of these resources which takes place as a Trauma System is developed can result in dramatic reductions, up to 50%, in preventable deaths due to injury¹.

Delaware's Trauma System regulations are based largely 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 completed every 3 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 DPH 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.

Community Level 3 Trauma Centers:

Alfred I. duPont Hospital for Children

Beebe Medical Center

Kent General, Bayhealth Medical Center

Milford Memorial, Bayhealth Medical Center

Nanticoke Memorial Hospital

Peninsula Regional Medical Center (Maryland) via reciprocity

A Community Trauma Center has the capability 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 Hospital:

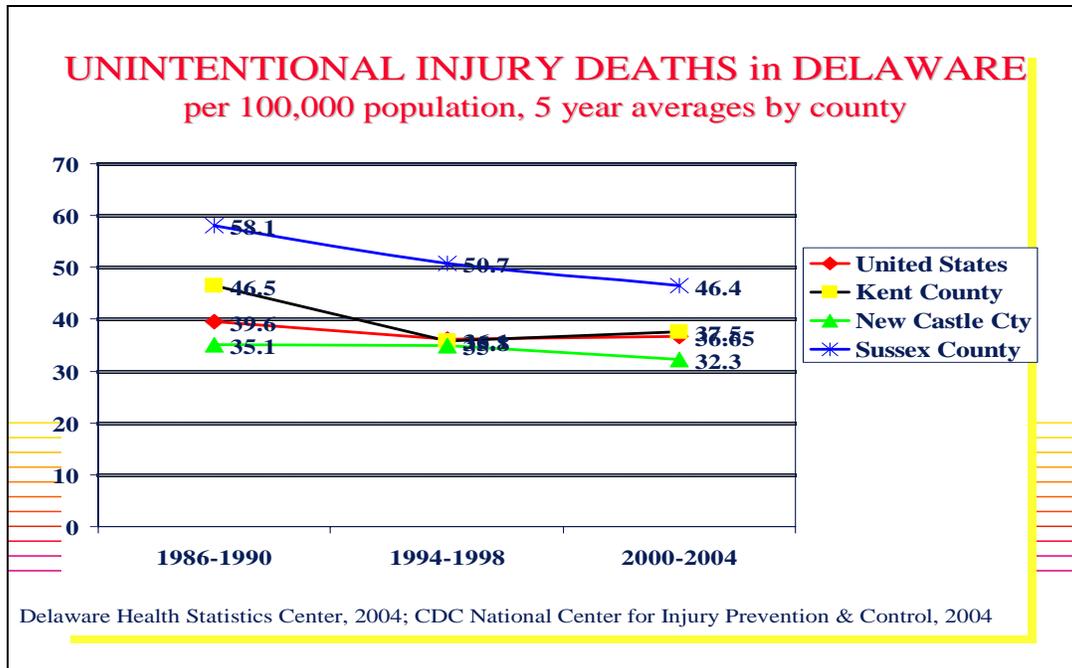
St. Francis Hospital

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. These hospitals quickly

identify and transfer these patients 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.

Delaware's Trauma System Registry*



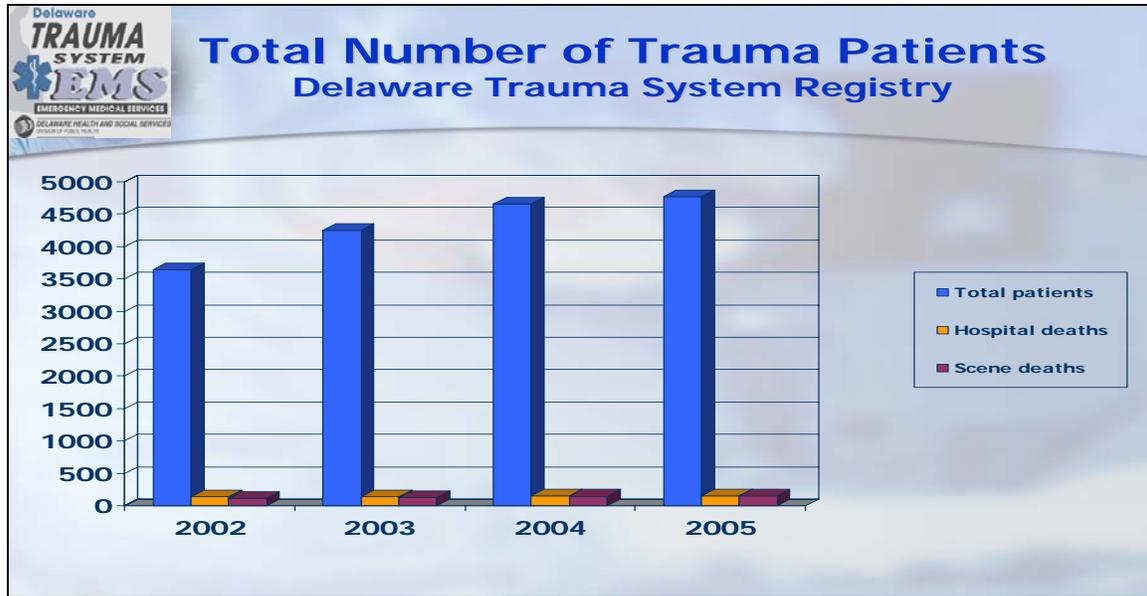
As shown above, deaths from unintentional injury in our state have declined over the past 20 years, as the state Trauma System has grown. While Sussex County has shown an impressive decrease, deaths there remain above the national rate. This is at least in part due to the nature of rural trauma, where a car crash may not be observed at night on a country road, delaying transport to a Trauma Center. New Castle County, more urban and within a Level 1 Trauma Center's primary catchment area, demonstrates a lower death rate than the national average. This may result from years of county trauma system development related to Christiana Hospital's verification by the American College of Surgeons as a Level 1 Trauma Center.

Analysis of Delaware's Trauma System Registry data for the five-year periods preceding and following Trauma System implementation in 2000 have demonstrated positive steps in Trauma System maturation. *Comparison of Pre- and Post-Trauma System implementation data shows a significant decrease in the injury*

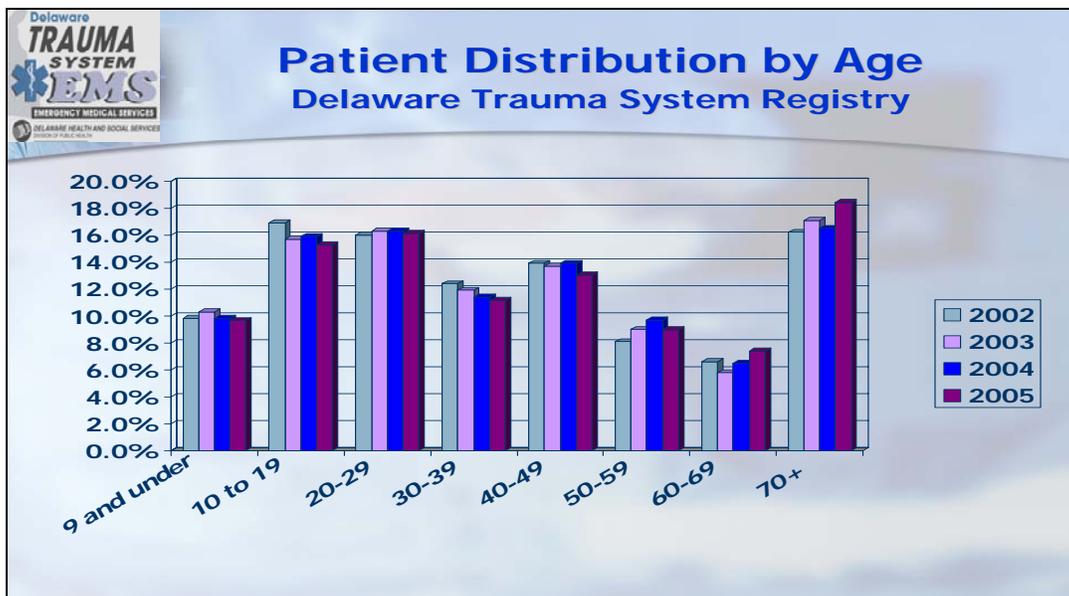
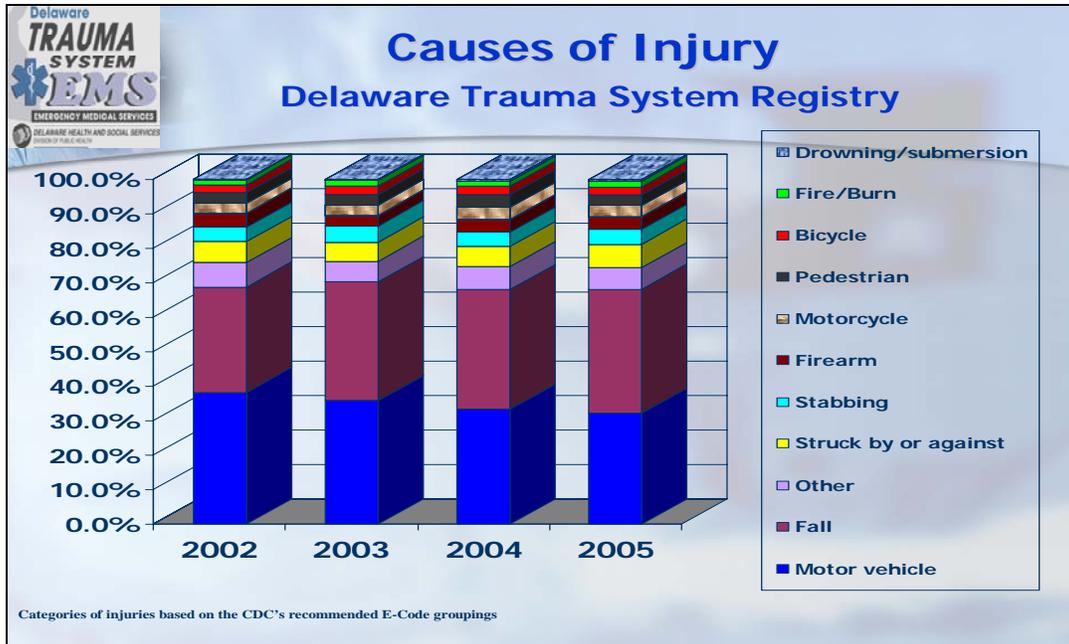
mortality rate for the Level 3 Trauma Centers, with a significant increase in the percentage of patients they are transferring to higher levels of care. These changes demonstrate a positive impact of Delaware's Trauma System through appropriate utilization of the Level 1 and Level 3 Trauma Centers.

Trauma Systems DO Save Lives!

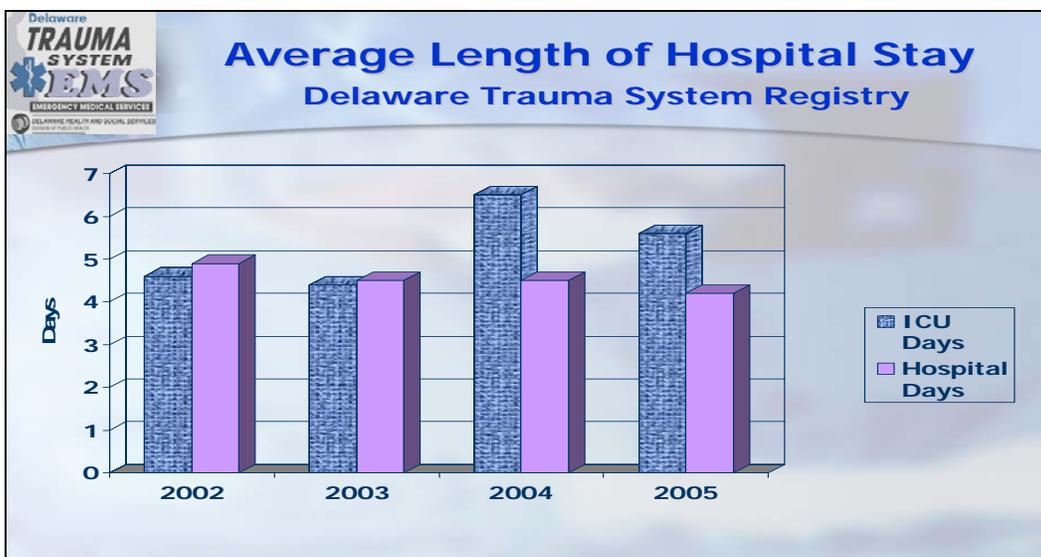
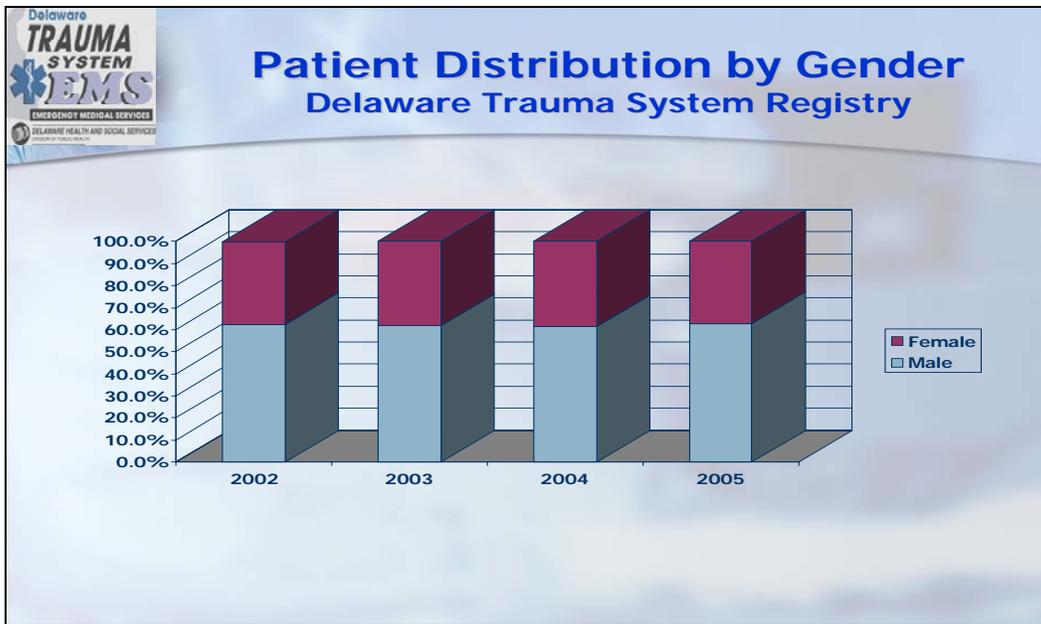
*Latest data available with all hospitals reporting. Excludes patients not transported to a hospital. Data quality may cause discrepancies in total number of patients for some parameters.



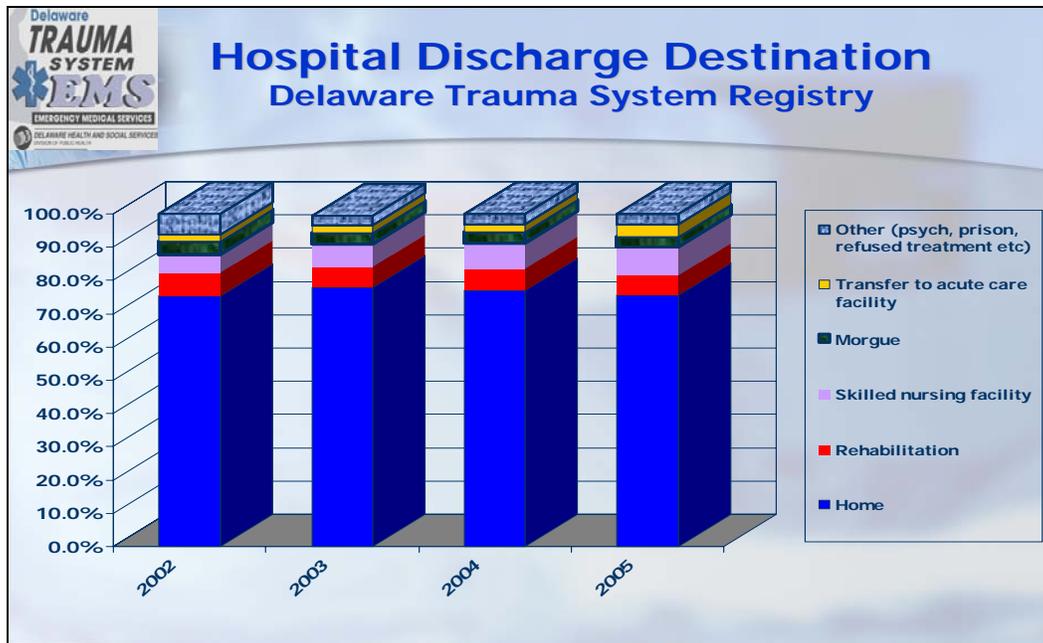
Data submitted by all eight Delaware acute care hospitals is compiled into the Trauma System Registry. The above graph reflects hospitalized trauma patients and scene deaths. The breakdown below shows falls and motor vehicle crashes to be the most frequent injury causes.



The graph above demonstrates the increased incidence percentage of traumatic injury in the teen through young adult age group, and again in the elderly population. Below, males consistently make up about 62% of the significant trauma population, with females making up about 38%.



The graph above shows the average number of days all trauma patients statewide spent in the hospital, and the average number of days spent in the Intensive Care Unit (ICU) for those patients admitted to an ICU during their hospitalization. Trauma Systems enable more critically injured patients to survive, which can impact System ICU resources as patients need these services longer. The graph below shows that most trauma patients are being discharged directly home from the hospital. Transfers to acute care facilities are primarily from Community Level 3 to the Level 1 Trauma Center, or to specialty centers such as burn centers.



Challenges for Trauma Systems

Trauma Systems cost money. They often do not generate enough revenue to pay for the many resources and professionals who are ready to respond at a moment's notice when they are needed, 24 hours a day, 7 days a week, 365 days a year. Nationally, some Trauma Centers have closed their doors, unable to continue maintaining the required level of availability of specialized staff. The increasing costs of malpractice insurance, along with the frequent disruptions to both office and home schedules, have caused some specialists to choose to decline to take trauma calls and to stop participating in hospital trauma programs. But when Trauma Centers close, injured patients are the ones who suffer. The remaining Trauma Centers have to take on increased patient loads, and patients often don't receive the same level of care due to the higher numbers of patients needing care. Ambulances have to travel farther from their home districts to take injured patients to available Trauma Centers, meaning that their constituents may have to wait a little longer for a neighboring agency to respond should they need an ambulance during this time. Inpatient beds in Trauma Centers are full, and patients sometimes need to be held in Emergency Departments while beds are found or patients are discharged.

A Harris poll was commissioned in 2004 by the Coalition for American Trauma Care to find out what the public knows and thinks about Trauma Centers and Trauma Systems. One thousand persons nationwide were polled following Harris Interactive routine procedures. Highlights of the information obtained included:

- Most Americans failed to identify injury as the leading cause of death for children under 10 years of age, for youth ages 10-18 years, and for young adults ages 19-34 years.

- After hearing a description of a Trauma Center, Americans valued them highly and appreciated the importance of having one within easy reach.
- Nine in ten Americans indicated it is extremely or very important for their state to have a Trauma System, after hearing a description of a Trauma System.
- Nearly eight in ten Americans were willing to pay a dime or more a year to have Trauma Centers and Systems in their state. Over half were willing to pay \$25. or more.

Federal funding for state trauma system development has come and gone since the landmark whitepaper, *Accidental Death and Disability: The Neglected Disease of Modern Society*, was published in 1966. The Health Resources and Services Administration's most recent Trauma System program ended in 2006 following Congress' failure to appropriate funding. While the loss of federal funds has caused trauma system development in many states to flounder, some states have chosen to assure that their trauma systems continue to develop, with or without federal support, by passing various types of special or usage fees to fund them. Delaware too may find itself faced with this decision in the future, as care for the seriously injured becomes increasingly more expensive, the specialists needed to provide it more difficult to recruit and retain, and our population continues to grow. Yet we must always keep the needs of injured patients at the forefront of our vision as we strive to successfully resolve the issues and challenges of the future.

1. 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.

INJURY PREVENTION

The goal of the Trauma System is to decrease death and disability from injury. In Delaware between 2002 and 2005, 524 persons died instantly from their injuries. No amount of Trauma System resources, specialists, organization, or planning could have saved this group of people. The solution to effectively decreasing this kind of injury death lies in prevention of the injury entirely, or in decreasing its intensity through safety measures such as wearing a seatbelt or decreasing speed. Only by teaching people to make safer choices and to learn and use safer habits can the number of these scene deaths be decreased. This is the role of the injury prevention component of the Trauma System. It addresses the public education needs that can impact the statistics on scene deaths, as well as decrease the numbers of injured overall. In response to Chapter 97's public information, prevention, and education mandate, the Office of EMS staffs the *Delaware Coalition for Injury Prevention* and the *Safe Kids Delaware* program.

In 2001, a group of individuals representing Delaware organizations active in injury prevention came together to form a *Coalition for Injury Prevention* under the auspices of the Division of Public Health, Office of Emergency Medical Services. This program is committed to supporting statewide injury prevention efforts through surveillance, training and technical support, community partnerships, encouraging development of interventions at multiple levels, and determining the effectiveness of interventions through evaluation. The program strives to ensure the existence of optimal conditions necessary to allow injury prevention practitioners and support staff statewide to effectively perform this important work.

In order to give direction to this collaboration, the Coalition developed a *Strategic Plan for Injury Prevention*. The purpose of this Strategic Plan is to provide a framework for injury prevention efforts and their development in Delaware. The Plan addresses the nine major causes of injury and disability in Delaware – falls, motor vehicle crashes, suicide, poisoning, fire injuries, dog bites, firearm injuries, drowning and water injuries, and traumatic brain injury. A plan for each focus area was developed by teams consisting of Coalition members - professionals and citizens with a passion for and experience in each focus area. Because injuries have modifiable risk factors that can be predicted systematically, the teams used the public health approach to define and identify risk factors for each topic area. Teams reviewed the literature for best practices and identified implementation strategies based on effectiveness and financial, social, technical, and political feasibility in Delaware. They identified goals, objectives, action steps, and evaluation methods to aid in effectively addressing each injury topic.

The Office of Emergency Medical Services is coordinating the implementation of this Plan. Strategies will be implemented through existing injury prevention programs statewide. The Coalition's goal is that through this plan the vision of promoting safe communities in Delaware will be realized, as measured by fewer fatal and non-fatal injuries, fewer risk taking behaviors, safer environments and reduced incidence of injury-related disabilities. Through effective surveillance, partnerships, interventions, training

and evaluation, the Coalition's goal is to help Delawareans learn that injuries are preventable and take steps to reduce their risks.



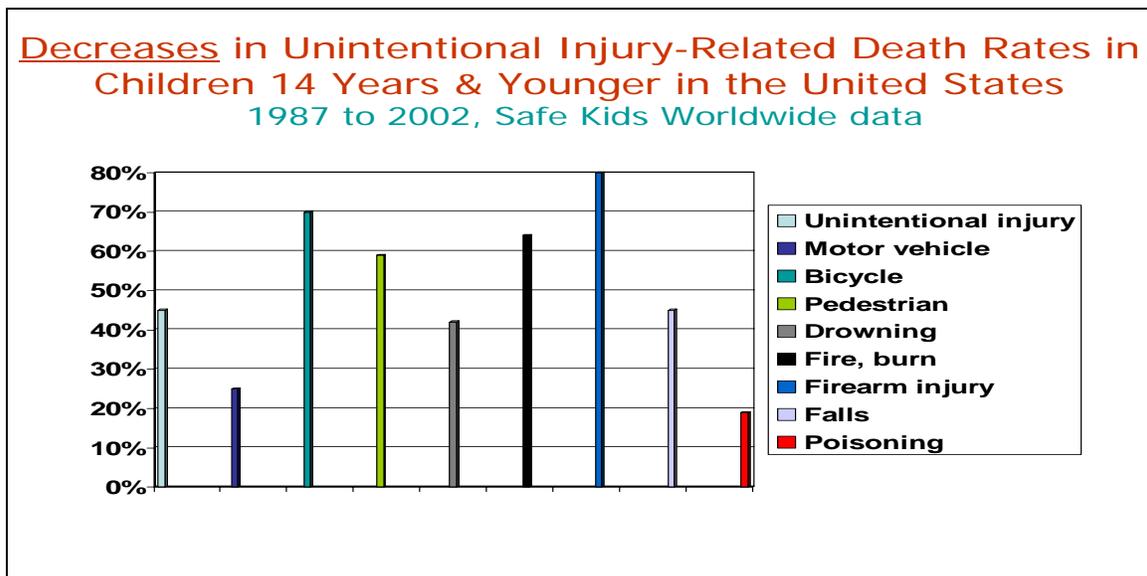
SAFE KIDS DELAWARE

Safe Kids Delaware (previously the Delaware SAFE KIDS Coalition) is a non-profit organization established in 1989, comprised of volunteers dedicated to reducing unintentional injury in children from birth to age 14. The Office of EMS in the Delaware Division of Public Health serves as the Lead Agency. An affiliate of Safe Kids Worldwide®, it is a state level coalition, led by an expert Board of Directors, with active chapters in each county.

Unintentional injury is the leading cause of death and disability to our most precious resource, our children. The mission of Safe Kids is to prevent accidental injury to children under 14 years of age. This is accomplished by raising awareness of current preventable injury issues in Delaware, educating individuals in injury prevention strategies, and motivating people to share the vision of an injury-free life for all children.

Since its inception in 1992, Safe Kids Delaware has provided a myriad of child safety educational events and activities for children and their parents as well as for professionals. Throughout the year, Safe Kids is showcased at many community health and safety fairs in Delaware. The program provides Child Passenger Safety Education and car seat inspections. Multiple fire and burn safety awareness events with smoke detector distribution are held by the organization. Each year since 2000, Safe Kids and Emergency Medical Services for Children (EMSC) have partnered to provide a statewide childhood injury prevention conference. In 2006, approximately 80 people attended the conference. Some other areas of focused education include gun safety, water safety, playground safety, poison and fall prevention.

Safe Kids participates in many childhood injury prevention events and activities each year. Successful Safe Kids events held in 2006 included a Sussex County Safe Kids Day attended by 750 people, Safe Summer Day in Kent County, featuring the Lowes Home Safety Council mobile child safety education unit, “the Great Safety Adventure”, which was attended by 3,500 people; and, in cooperation with duPont Hospital for Children, New Castle County’s Safe Kids Day, which provided child safety education to 250 participants.



Safe Kids Worldwide cites significant declines in injury-related death rates since they were founded in 1988:

EMERGENCY MEDICAL SERVICES FOR CHILDREN (EMSC)



INTRODUCTION

In 1997, Delaware was awarded a federal grant through the Maternal Child Health Bureau to improve Emergency Medical Services for Children (EMSC). In 2006 we are still dependent upon yearly federal grant funding for EMSC to meet children's needs in our ever-changing EMS System. Delaware is using the information system to better address pediatric EMS issues and reduce child mortality and morbidity sustained from severe illness and/or trauma. We are identifying Children with Special Healthcare Needs (CSHCN), through implementation of the Special Needs Alert Program (SNAP) and we are working towards improving EMSC by meeting objectives that institutionalize EMSC in Delaware.

EMSC HIGHLIGHTS FOR THE YEAR

February 28, 2007 will mark the close of a three-year grant cycle for EMSC. Accomplishments include:

- A step towards institutionalization of EMSC in proposed DEMSOC legislation for 2007.
- Three Safe Kids Delaware /EMSC injury prevention conferences held in June of 2004, 2005 & 2006.
- Risk Watch in 79 Delaware schools, 982 classrooms serving 24,477 students as of December 31, 2006. The Risk Watch program was physically moved over to the Delaware State Fire School in July of 2005 to facilitate delivery of the program as it continues to grow.
- ALS providers in the three counties and the State Police Aviation Section completed the Pediatric Education for Prehospital Professionals (PEPP) Course in February 2006 (approximately 250 paramedics).
- The "Triaging Kids During a Disaster CD" was used for ALS distance learning continuing education in May of 2006 and was shared with Delaware State Fire School for BLS dissemination.

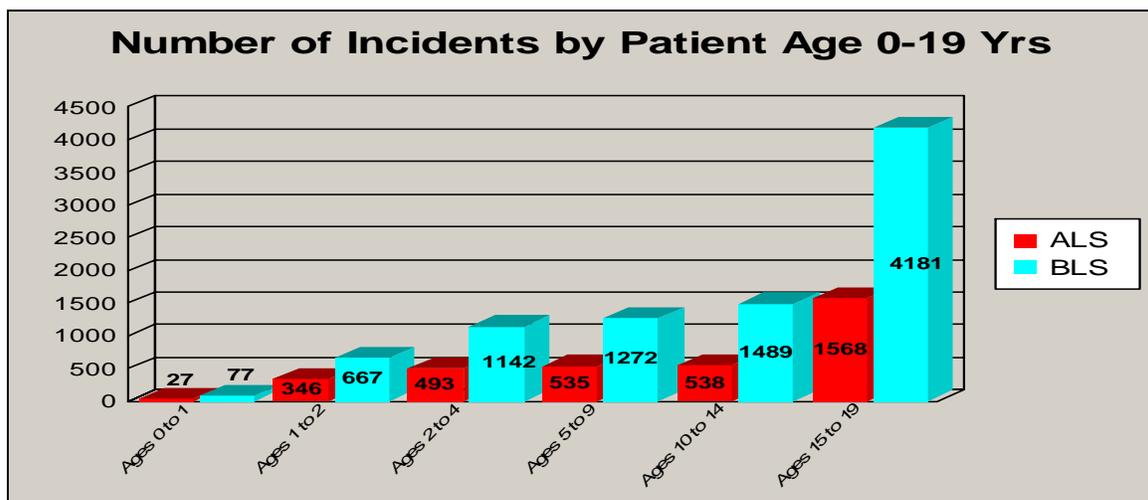
- The Special Needs Alert Program (SNAP) for children with special health care needs was created and now has 62 families enrolled in the program statewide.
- A SNAP evaluation was completed and data was analyzed by the University of Delaware Center for Disabilities Studies. Opportunities for improvement were identified.



This is the third year the OEMS is using EDIN to determine the number of pediatric calls, where the calls are occurring in Delaware, the most frequent primary impressions, and which procedures ALS and BLS providers most frequently perform on children.

EMSC DATA

Total Number of Pediatric Reports (Ages 0-19) According to Patient Age



* Please note that adding ALS and BLS numbers in each age group will lead to inaccurate totals. Adding the two numbers may count patients twice.

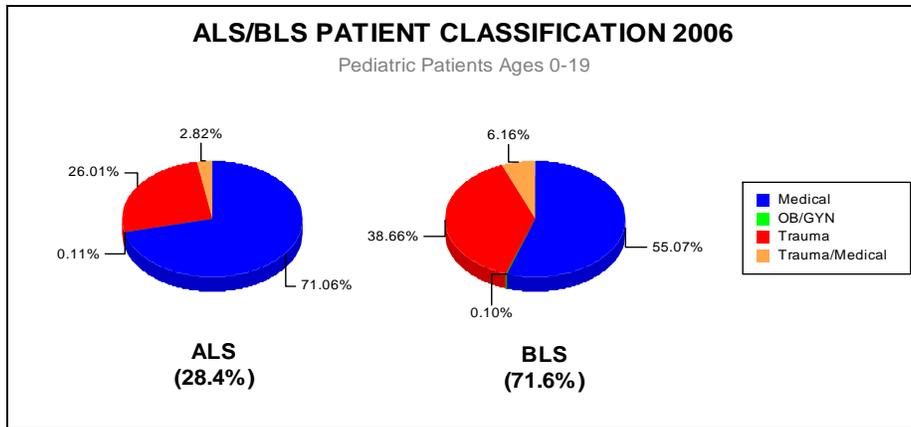
In previous graph the highest number of incidents for BLS providers is in the 15-19 year old age group. Upon further investigation 30% of those BLS runs are due to motor vehicle crashes, while 21% of the ALS runs in the 15-19 year old group are due to motor vehicle crashes. This differs significantly from 2005 where 20% of BLS calls and 31% of ALS calls were due to motor vehicle crashes.

The number of pediatric emergency calls in 2006 remained similar to the number of calls in 2005. The only significant change noted is a 6% increase in the number of ALS calls in the 15-19 year old age group.



EDIN information also reveals that ambulance services with the highest volumes of calls also see the highest number of children. For the BLS agencies - First State Quality Transport, Aetna Fire Company, and Christiana Fire Company saw the highest volumes of children in the state respectively.

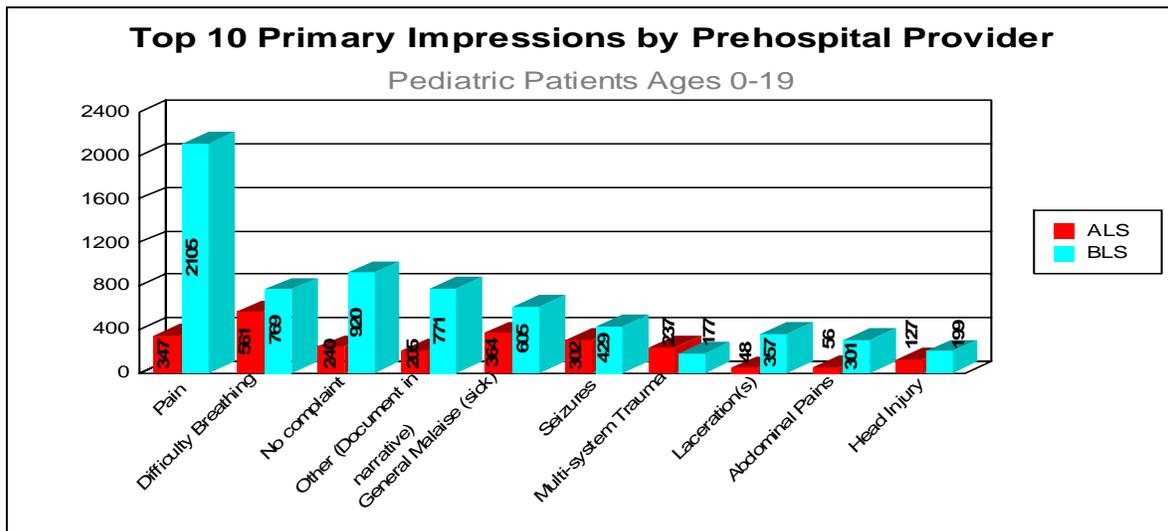
For the ALS agencies: New Castle County saw 1,871 (1,840 in 2005), Sussex saw 930 (up from 865 in 2005) and Kent saw 610 (down from 683 in 2005) pediatric patients during 2006. This is an 8% increase in pediatric calls for Sussex County EMS. Information on where pediatric calls are located by fire district can be used to identify local training needs.



Total Incidents =12,335

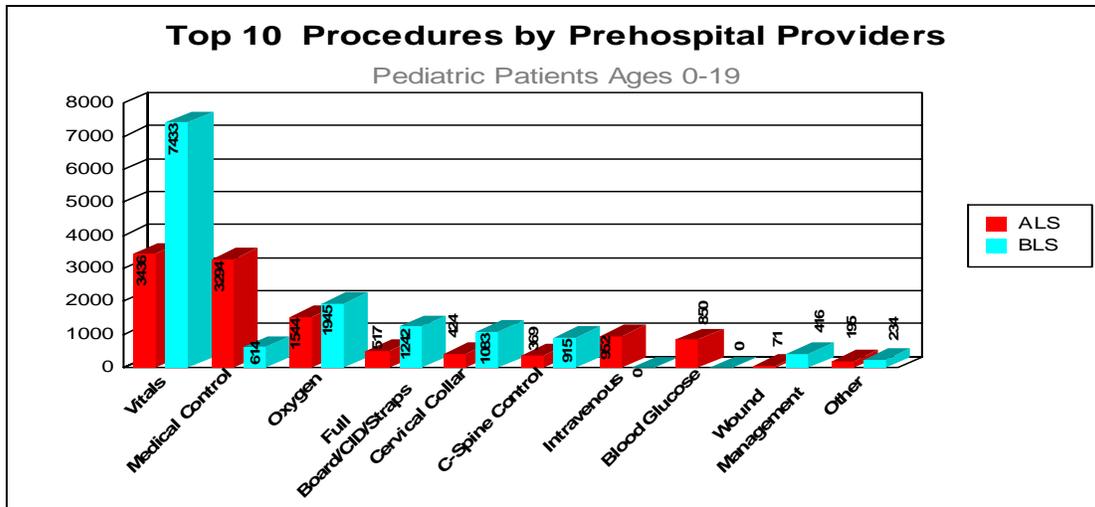
*** Please note this includes Dead on Paramedic Arrival (DOPA), Refusal, Transport and Transfers of Service calls.**

The majority of pediatric ALS emergency calls are for medical reasons (71%). A little over half of all pediatric BLS calls are medical in nature (55%). Trauma calls made up 26% of the ALS pediatric calls and 39% of the BLS trauma calls.



Graph EMSC - 3

“Pain” remains the top primary impression reported by BLS providers. ALS providers cite “difficulty breathing” as their top primary impression for children. This fits with how children are anatomically different from adults with small airways. It is also noted that there is an increasing rate of childhood asthma in Delaware. The “no complaint” and “other” categories reflect a significant number of calls for children. This high number of calls for these two impressions warrants further investigation.



Graph EMSC - 4

As in previous years the most frequent procedure performed for pediatric patients in 2006 by ALS and BLS is assessment of vital signs. It is noted that BLS agencies infrequently contact medical control for guidance in the field. Of the top ten procedures performed in the field three of the procedures are related to spinal stabilization and OEMS will look at this field to assess if it can be consolidated into one procedure. ALS and BLS both frequently administer oxygen to children. ALS providers also frequently start intravenous lines and monitor blood glucose in children.

IMPROVEMENTS AND INIATIVES

The goal of EMSC is reduce death and disability to children by improving pediatric emergency care.

Objectives for the next grant cycle from March of 2007 through February 2010 are to:

- 1.** Develop and implement a process to collect and report baseline data for the federal EMSC Performance Measures.
- 2.** Ensure the operational capacity to provide pediatric emergency care in Delaware by:
 - A.** working with the EMSC Advisory Committee to develop a feasible plan for pediatric emergency care hospital recognition by March of 2008.
 - B.** working with the eight acute care hospitals in Delaware to assure that pediatric transfer guidelines and agreements are in place.
- 3.** Ensure a minimum of sixteen hours of pediatric continuing education is provided every two years to paramedics state wide
- 4.** Establish a permanent EMSC program within the Delaware Office of EMS by:
 - A.** establishing the EMSC Advisory Committee through Delaware Emergency Medical Services Oversight Council legislation, by March of 2008.
 - B.** appointing a pediatrician to the Delaware Emergency Medical Services Oversight Council by March of 2008.

C. funding the EMSC Program Manager position in OEMS permanently (by the State or other Delaware based organization) by March of 2010.

5. Develop a plan for pediatric emergency care quality improvement using the EMS data system by March of 2010.



SUMMARY

EMSC has many notable accomplishments over the last nine years. The year 2006 marks the end of the third cycle of federal funding. Despite nine years of federal funding, the program remains unstable as long as it depends upon federal funding. Although OEMS and DEMSOC are taking steps towards permanence, there is still a great deal of work to be done to assure children's needs are addressed in all aspects of the EMS system.

CARDIOVASCULAR CARE

Perhaps the greatest enhancement to our EMS system since 1999 is the expansion of our Automatic External Defibrillation (AED) program. To support the 1999 goal of defibrillation within 6 minutes of a cardiac arrest, the use of automatic external defibrillators has been extended to law enforcement vehicles in all jurisdictions in the state. Increased AED deployment and the accompanying training increase the chances for resuscitation of cardiac arrest victims. Data from 2006 showed a significant increase in Return of Spontaneous Circulation in cardiac arrest patients (32% in 2006 compared to 19% reported in 2002). These statistics are among the best in the nation, and show the significant role that the AED program has played in Delaware.

An essential focus of any EMS system is its ability to effectively treat cardiac arrest patients. As our EMS system matures, we realize that more effort and better organization is needed to provide optimum EMS care for patients with cardiac and cardiovascular related complaints.

Two of the leading causes of death in Delaware are Heart-related disease and Stroke, which according to the Delaware Office of Vital Statistics accounts for 34.6% of all deaths.

By expanding on the existing CPR/AED program within the OEMS, this initiative will provide a platform of data and research useful in prevention activities, as well as treatment and care. Goals of this initiative include:

- Working with EMS providers and other agencies to address specific issues concerning the prevention and prehospital treatment of cardiac disease and stroke.
- Organize statewide EMS efforts in the areas of prevention and public education, public access defibrillation and prehospital treatment of cardiac/stroke patients in order to measurably reduce mortality and morbidity associated with these disease processes.

Automatic Defibrillator and CardioPulmonary Resuscitation Program (AED/CPR)

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 16, Chap 97).

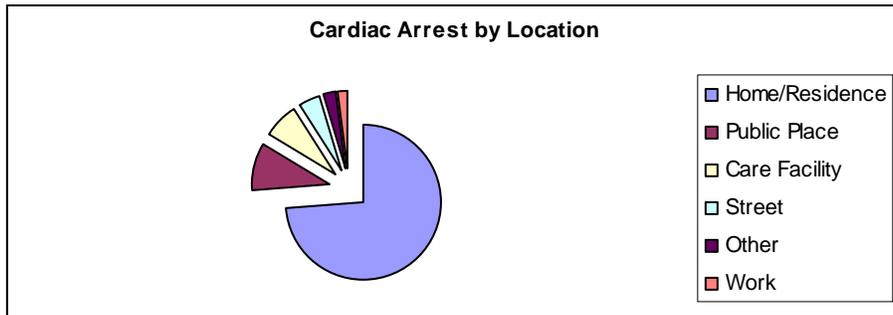


In 1999, Delaware implemented, with funding and support from the Health Advisory Committee, the Public Access Defibrillation Program (First State, First Shock). This program was charged with:

- Decreasing death and disability in Delaware by decreasing the time to defibrillation in cardiac arrest patients.
- Supporting heart health promotions and early recognition of heart attack activities.
- Increasing the accessibility to Automatic External Defibrillators (AED) within our state.
- Increasing the number of Delawareans trained in Cardiopulmonary Resuscitation (CPR) and AED usage.
- Tracking outcomes to guide future efforts.

Since its inception, the program has grown exponentially placing over 1,200 AED's in-service and training more than 4,000 people in Cardiopulmonary resuscitation (CPR) and the use of an AED. The targeted groups for public access defibrillation include sites such as schools, worksites, food establishments, communities, first response programs and health care settings.

	Number of Cardiac Arrests	Patients Pronounced Dead by Paramedics	Patients Transported to Hospital	Patients that experienced a return of circulation
2004	780	170	610	158 (26%)
2005	770	185	585	170 (29%)
2006	756	166	590	190 (32%)



One major challenge for the program is the sale of over-the-counter AEDs that are FDA approved. This type of AED does not require a doctor's prescription and the public can purchase these units without consideration of the state's rules and regulations. This type of purchase makes it difficult to maintain an accurate database of all AEDs placed in-service throughout the state.

The waiting list for a state funded AED continues to grow and currently has 134 agencies waiting for 728 devices. A major factor contributing to the inability to significantly reduce the AED waiting list, is the continuing effort for replacing the out-dated AEDs

that are currently in-service but do not meet the 2005 American Heart Association's guidelines.

Cardiovascular Disease refers to a variety of diseases and conditions effecting the heart and blood vessels. The two most common cardiovascular diseases in Delaware are heart disease and stroke. Since most cases of cardiovascular disease are preventable, we can decrease the number of patients with cardiovascular issues through public education and awareness. The cardiovascular care programs within Delaware emphasize this type of education and awareness to help decrease risk factors for cardiovascular disease, which helps to create a healthier life-style for the public.

Cardiovascular disease is one of the leading causes of death in the State of Delaware. In 2006, Delaware Paramedics treated over 5200 patients with cardiovascular related complaints. With the increasing elderly population combined with the diverse settings within our state, this number is on the rise. Many hospitals within the state are expanding their cardiovascular capabilities, and EMS resources must be integrated with the hospitals to ensure seamless care of patients as they are brought from the field to the hospital.

The Paramedic statewide standard treatment protocols have begun to address appropriate transportation and treatment of patients who present with a cardiovascular complaint. Currently any patient who presents with signs and symptoms of Acute Myocardial Infarction (AMI) are to have a 12-lead EKG performed. Any patient who has an EKG that is suspicious of an AMI is transported to directly to an appropriate hospital with cardiovascular capabilities. In 2006, 430 patients were diagnosed with an AMI after a 12-lead EKG was performed and these patients were transported directly to hospitals with this specialized cardiovascular care.

Cardiac Alert/Cardiac Code, is a strategy to identify the AMI in the field, notify the hospital immediately and then transport the patient to a specialized care hospital that utilizes cardiac catheterization for the treatment of AMI. This systematic response is a goal for our system. Studies have shown that this strategy may reduce the diagnostic time to about 30 minutes. A recent study conducted by Christiana Care Health System, the largest hospital system in Delaware, evaluated the effect of a systematic response to AMI and found that the patients reviewed had a lower mortality rate as well as a shorter hospital stay when identification and treatment followed a systematic response model. This rapid treatment has a tremendously beneficial effect on the patient because during a heart attack "time is muscle".

Similar to a heart attack, a stroke also requires rapid appropriate care and transportation. Studies on acute stroke management have shown that there is a narrow therapeutic window that mandates rapid identification, transport, diagnosis, and treatment; any delay undermines the system and the quality of care available to the acute stroke patient.

EMS plays an important role in the management of a stroke patient. EMTs and paramedics are responsible for transport decisions regarding level of transport, speed of

transport, and destination of transport. There is strong evidence to support improved outcomes of stroke patients who are managed in established stroke centers.

EMS training curricula needs to place more emphasis in the areas of stroke. If possible, EMS providers should attempt to identify the time of onset of symptoms. In addition, the American Heart Association recommends consideration of transporting a witness (family member, co-worker, ect) with the patient to assist with the gathering of time-sensitive information.

Statewide integration and development of a cardiovascular system is a goal that will make Delaware a leader in the treatment of cardiovascular complaints. This type of system is expected to “decrease death and disability, improve quality of life, and maximize patient outcomes by delivering evidence-based effective, efficient and safe care from pre-hospital management through transport in a timely fashion to the most appropriate care facility.”



DOMESTIC PREPAREDNESS

Developing and maintaining EMS preparedness for disaster response remains an item of paramount importance. EMS provider agencies throughout the state continue to work with local, state and federal government to ensure that our providers are prepared to respond to any type of disaster, naturally occurring or a terrorist event. This preparation falls into several key areas: Planning, Training, Exercises, and Equipment.

Efforts to ensure that EMS is incorporated into all preparedness plans at all levels continued throughout 2006. All paramedic services in the state and a large number of BLS services have received National Incident Management System (NIMS) training, which ensures that Delaware is 100% compliant with federal mandates in this area. Various EMS capabilities have been tested during numerous exercises in 2006, with more training and exercises scheduled throughout 2007.

Representatives from the Public Health Preparedness Section of the Division of Public Health attend each DEMSOC meeting and brief the membership on issues such as Pandemic Flu preparedness, Hospital Preparedness and statewide training and education opportunities. These important briefings ensure EMS involvement and awareness of ongoing preparedness activities.



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.

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.

Throughout 2006 and into 2007, the Office of Emergency Medical Services is working with EMS agencies to ensure that their MARK I kits are serviceable and available for use. In addition, the EMS community is working through the Homeland Security Terrorism Preparedness Working Group to obtain Mark I kit replacements for those kits that have or are going to expire.

PANDEMICS

Our EMS providers throughout the state are preparing to meet the challenges that would be presented through the effects of a pandemic incident. Several exercises and training sessions have been completed concerning Avian Flu, smallpox and other diseases that could affect Delaware. In pandemic events, protecting the provider workforce from infection is essential in order to ensure adequate EMS coverage to meet the needs that arise from the pandemic incident as well as day-to-day EMS demands.

TRAUMA

The majority of potential terrorist events involve some sort of blast or traumatic injury inflicted upon the victims. Emphasis on our statewide trauma system and the EMS care of patients injured by blast or trauma has become more important than ever. EMS agencies throughout the state continue working together to develop plans that ensure trauma patients in mass casualty situations get to proper care as quickly as possible.

TECHNICAL ASSISTANCE

In 2006, the Office of Emergency Medical Services worked with the Office of Public Health Preparedness and the Delaware State Fire School to create a contractual agreement that provides EMS agencies with technical assistance on domestic preparedness issues. A senior paramedic with extensive preparedness training is available to assist agencies with planning, development of policies and procedures, and training and equipment issues. In conjunction with this effort, a baseline assessment of EMS readiness is underway that will, when finished, provide EMS agencies with direction and focus for the further development of their domestic preparedness programs.

MASS CASUALTY TRANSPORT

DEMSOC created a subcommittee in 2006 to look at the issue of mass casualty transportation issues. This committee is addressing issues and completing work required by some federal agencies concerning response to mass casualty events. The committee's work is focusing on both potential terrorist events as well as natural events that might require mass evacuation of injured or ill patients.

IN-STATE STOCKPILE

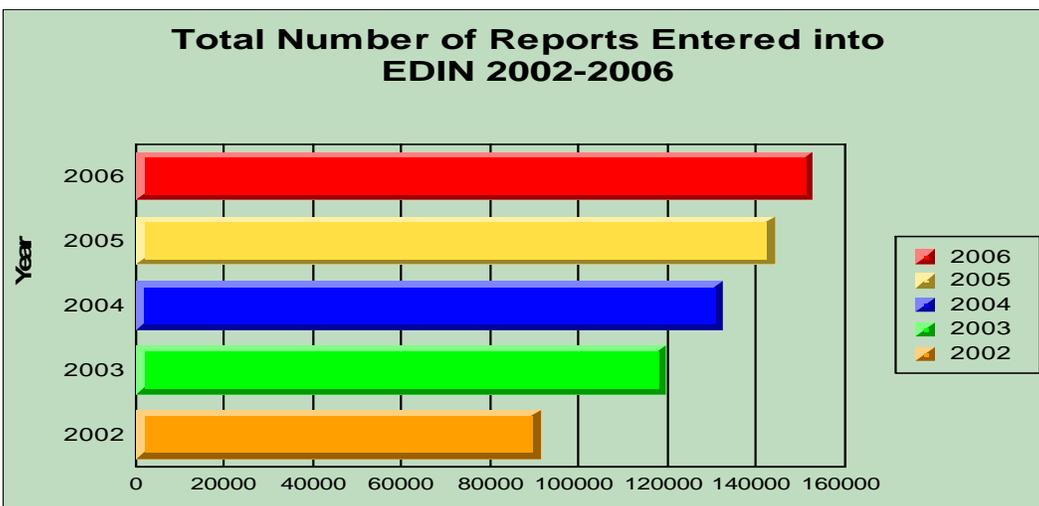
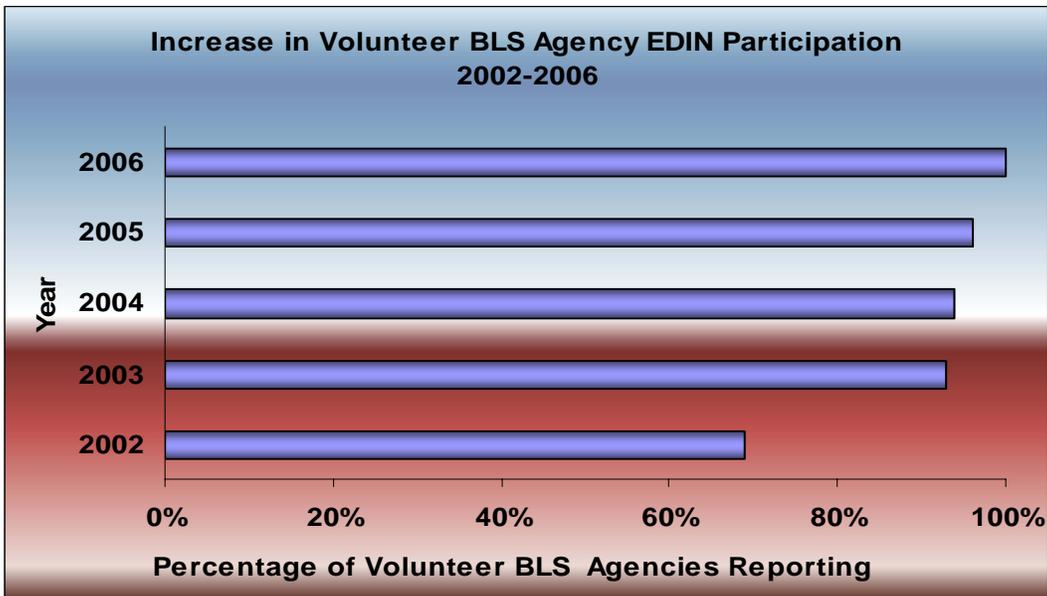
The In-State Stockpile (ISS) which provides pharmaceutical prophylaxis to essential workers and their families has been received by Delaware's EMS community with great interest and support. Sussex and Kent County EMS offices have provided necessary information for the packing, pre-positioning, and distribution of the antibiotic cache for all county EMS staff and their families, as well as for other disciplines such as local fire companies, emergency management agencies, local law enforcement, 9-1-1 communication centers, public works, and essential administrative workers within the county and local municipalities. New Castle County EMS offices in collaboration with their county EMA have coordinated the distribution and dispensing of the ISS cache to all county essential workers and their families. Public Health Preparedness staff will provide in-service training to EMS personnel on the procedures associated with dispensing the medications.

EQUIPMENT

Public Health Preparedness has purchased 110 - CareVent ALS+ CPAP ventilators and supplies as part of a state-level ventilator cache. These transport ventilators will be distributed to and maintained by Delaware's County Emergency Medical Services (EMS) Advance Life Support (ALS) agencies. The ventilators feature adequate alarms to include loss of power source (gas and/or electricity), abnormal airway pressures, failure of the circuit and are also lightweight for portable. The ventilators will be placed on each first-line and reserve medic unit, supervisor units, and selected administrative units to be used when a transport ventilator is required. The ventilators primary purpose is for pre-hospital use and they may be requested and utilized by DPH during a Mass Casualty Event (MCE). In addition to the 110 CareVents, 100 Impact 73X ventilators have also been purchased as part of the state-level cache that can be used during a MCE. Selection of the CareVent and IMPACT ventilators were chosen based upon the ability to care for patients resulting from a biological, chemical, or traumatic MCE. The ventilators are user-friendly, safe, and easy to train health professionals, especially with Just-In-Time training.

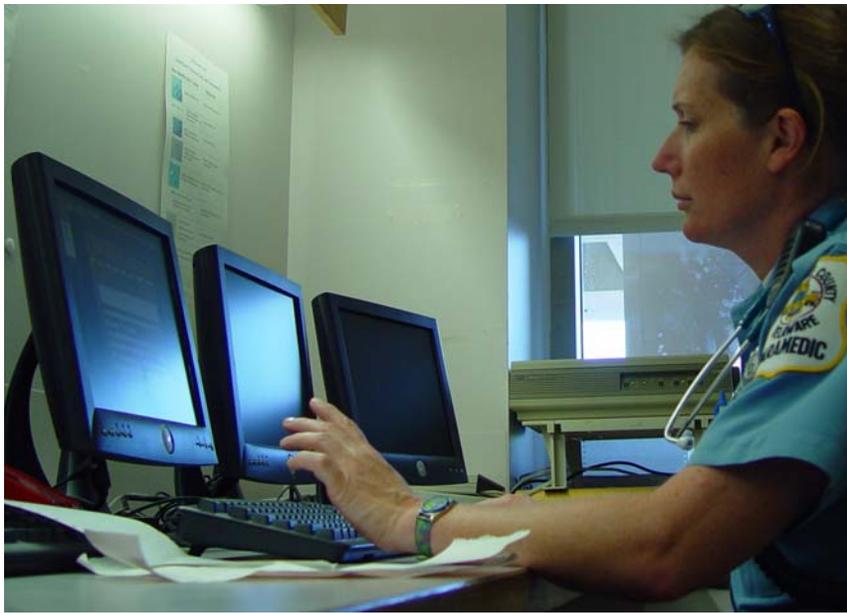
EMERGENCY DATA INFORMATION NETWORK

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 the demographic assessment and treatment phases of an EMS incident. The EDIN system has been online since January 1, 2000. Since its inception, over 600,000 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.

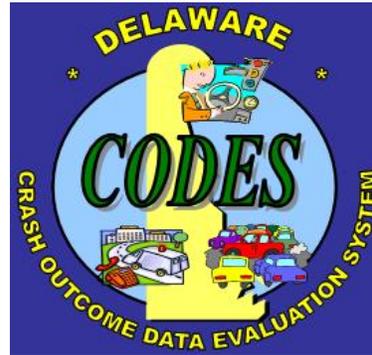
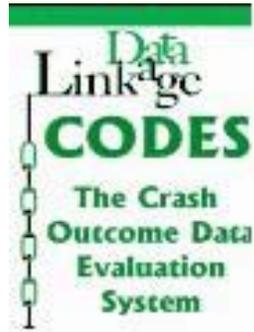


UPDATE ON EDIN SYSTEM

Like any software application, EDIN needs continuous improvements/upgrades to meet the needs of the EMS system. There are 3 urgent needs for the system: integration of CAD data directly into the patient care report, the ability to send reports directly from the system to the states hospitals and creation of a revised quality management system. These upgrades will improve the efficiency of the program. Future initiatives include integration into the National EMS Information System (national data system), to enable data sharing as well as benchmarking with other EMS systems.



CRASH OUTCOME DATA EVALUATION SYSTEM (CODES)

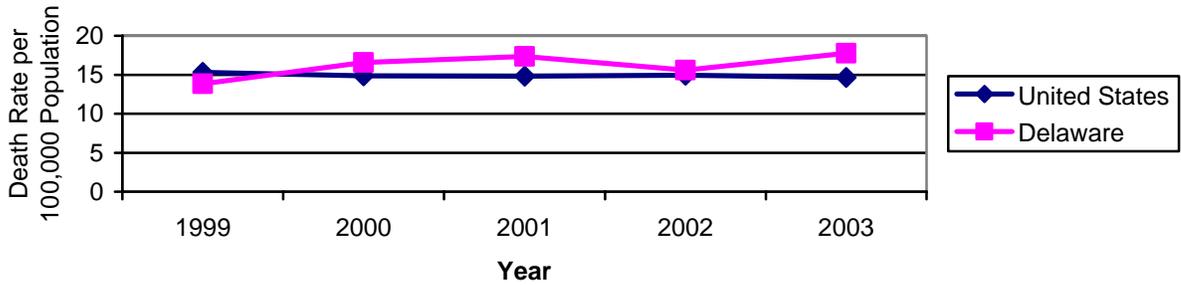


In 1999, the National Highway and Traffic Safety Administration (NHTSA) awarded the Division of Public Health's Office of Emergency Medical Services (OEMS) a grant to develop a Crash Outcome Data Evaluation System (CODES) in Delaware. The CODES Project is a collaborative effort between several state agencies including the State Police, Office of Emergency Medical Service, Health Statistics Center and Office of Highway Safety. Many types of data (e.g., demographic, injury severity, hospital charge, etc.) are collected from these agencies and are linked, analyzed and publicized so that state agencies, policymakers and the public can better understand the causes and impacts of motor vehicle crashes. With this information, the Division of Public Health can create and prescribe prevention programs with demonstrated potential for improved outcomes.

Based on the analysis of Crash Outcome Data Evaluation System (CODES) linked data, the following is the summary of traffic overview in crashes. From 1999 to 2003, vehicle drivers accounted for 61% of traffic fatalities and injuries. Passengers of vehicle accounted for 33% of traffic fatalities and injures. The remaining 6% were pedestrians, pedalcyclists, and motorcyclists. Although more females were reported to be injured (53%) than males (47%) in crashes, more males (65%) were killed than females (35%). The fatality rate per 100,000 population was 17.73 in 2003, an increase of 13% from the 2002 rate of 15.73. The injury rate per 100,000 population decreased from 1105 to 1249 from 2002 to 2003. Figure 1 and 2 shows the trends of the traffic¹ related fatality and injury rates for United State and Delaware from 1999 to 2003. The traffic related fatality and injury rates varied by age in Delaware, with the peak at 15-24 years old (Figure 3 and 4). Figure 5 shows the average hospital charges and estimated medical cost for those who involved in crashes were identified been hospitalized in Delaware. The age group between 45-64 had the highest average hospital charges.

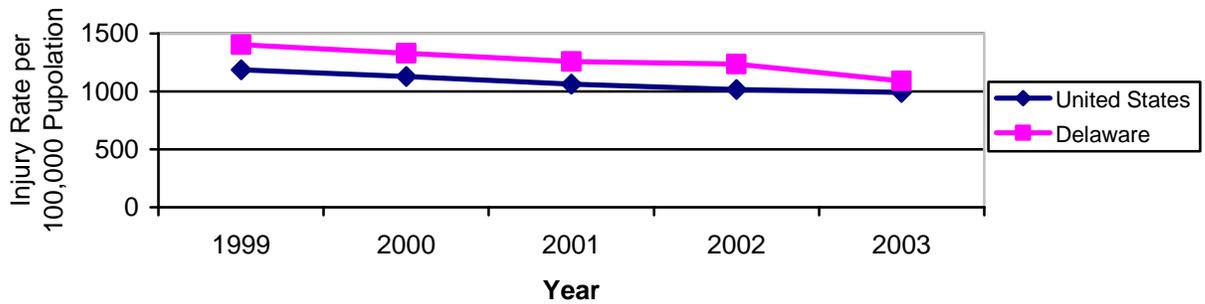
¹ Including car, trucks, motorcycles, and pedalcycles.

Figure 1: Traffic Related Death Rates, United States and Delaware, 1999 to 2003



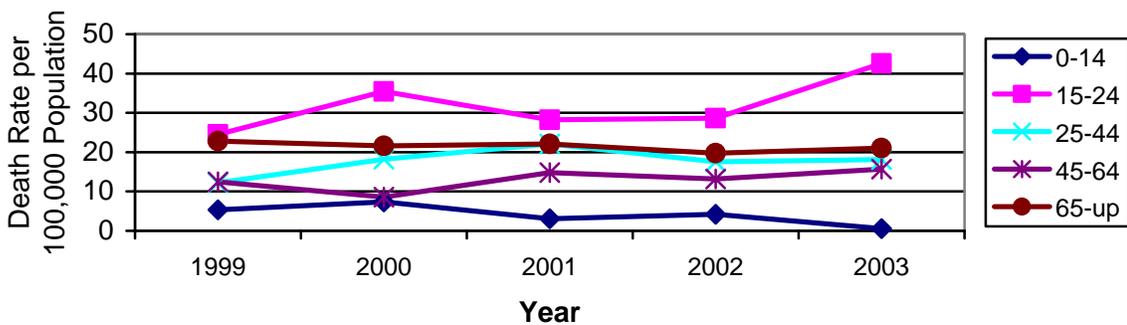
Data Source: 2003 Traffic Safety Facts, National Center for Statistics and Analysis, National Highway Traffic Safety Administration and Delaware Crash Outcome Data Evaluation System (CODES) program

Figure 2: Traffic Related Injury Rates, United States and Delaware, 1999 to 2003



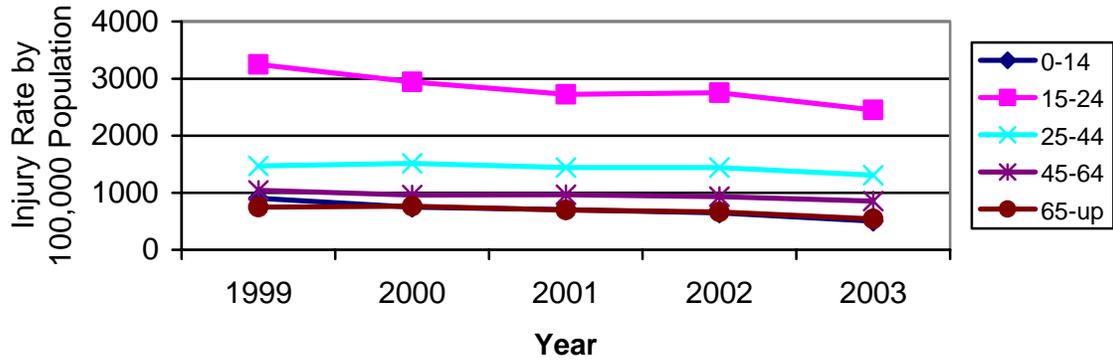
Data Source: 2003 Traffic Safety Facts, National Center for Statistics and Analysis, National Highway Traffic Safety Administration and Delaware Crash Outcome Data Evaluation System (CODES) program

Figure 3: Traffic Related Death Rates in Delaware by Age Group, 1999 to 2003



Data Source: Delaware Crash Outcome Data Evaluation System (CODES) program

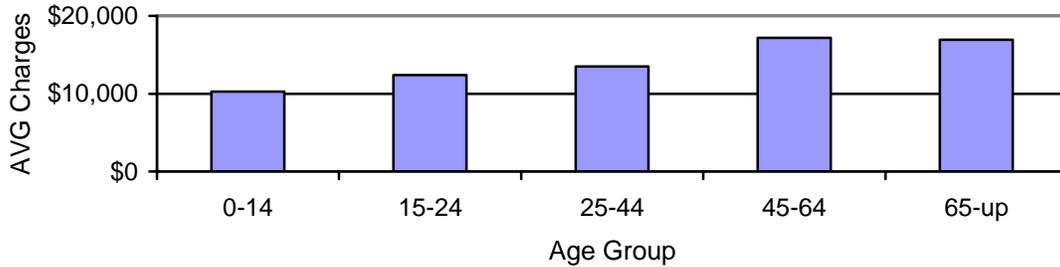
Figure 4: Traffic Related Injury Rates in Delaware by Age Group, 1999 to 2003



Data Source: Delaware Crash Outcome Data Evaluation System (CODES) program



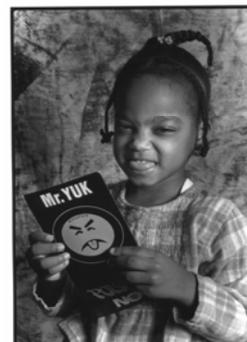
Figure 5: Average Traffic Related Hospital Charges by Age Group, 1999 to 2003



Data Source: Delaware Crash Outcome Data Evaluation System (CODES) program

Support of the highway safety legislations is one of the applications for CODES linked data. In 2005-2006, Delaware CODES linked data system developed the fact sheets to measure the effectiveness of Graduated Driver's License laws and compared the crash / hospital outcome on the factors of seatbelt, speeding, and drinking between 16- and 17-year-old drivers with and without passengers. An oral presentation, "Support for Passenger Limitation on 16-and 17-year-old Drivers", was presented by Diane Hainsworth, Paramedic Administrator, at 2006 CODES Technical Assistant Meeting. In June 2006, the State's General Assembly passed legislation that strengthened Delaware graduated Driver's License laws, including limiting passengers to one and increasing the age to 16 years before a teenager can apply for a driver license. The CODES program continues linking data in an effort to prevent and reduce motor vehicle deaths and injuries.

POISON CONTROL



At the direction of the legislature, the Division of Public Health enters into an annual contract with the Poison Control Center at the Children’s Hospital of Philadelphia to provide Poison Control Center services to the citizens of Delaware. These services include:

- At no charge to the public, provision of toll-free telephone access to the Poison Control Center 24 hours a day, 7 days per week.
- Provision of a staff of registered pharmacists and nurses, specially trained in providing poison control services, who will answer calls from the public and medical community through the toll-free telephone access.
- Provide medical oversight to the services through a board-certified toxicologist 24 hours a day, 7 days per week.
- Provide general information about poisoning in response to caller inquiries, immediate treatment advice in poisoning emergencies, and coordination of services among health care providers and poisoning victims through the toll-free telephone access number.
- Maintain certification by the American Association of Poison Control Centers.

In 2005, the Poison Control Center at the Children’s Hospital of Philadelphia handled over 110,000 calls, 7,640 of which originated in Delaware. 54% of these incidents involved children five years of age or younger and another 15% involved children and teens between 6 and 19 years of age. The number of poison exposures in these young people was more than twice that of adults. Overall, 74% of Delaware exposures did not require medical care, while 22%, or 1,241 cases, required medical evaluation. Of those, 190 people required intensive care, another 80 were hospitalized, and 4 people died. 51% of exposures were to drug-related substances, and 49% to chemical substances. In the 19 years and under age group, the most frequent non-drug exposures were to cosmetics and personal care products, toys and other foreign objects, and household cleaning substances. 87% of the Delaware exposures were unintentional, 10% were intentional, and 3% were related to adverse reactions and other miscellaneous reasons.

The Poison Control Center provides poison prevention information including speakers and educational handouts to help to educate the public on the dangers of unintentional poisoning and ways it can be prevented.

PREHOSPITAL ADVANCED CARE DIRECTIVE (PACD)

A Do Not Resuscitate (DNR) order is a written order from a doctor that resuscitation should not be attempted if a person suffers cardiac arrest. A DNR only applies to patients in cardiac arrest so all other conditions must be treated. Most DNRs pose practical problems in life-threatening situations when pre-hospital personnel are called for assistance because most are handwritten and impossible to verify on the scene. Furthermore, in most states, if an EMS provider is called to a scene, they are legally required to perform life-saving techniques (CPR) even if the individual's heart has stopped and they are clinically expired.

On July 10, 2003, legislation was signed into Delaware law to adopt a Pre-Hospital Advanced Care Directive (PACD). A Delaware Pre-hospital Advanced Care Directive is a specific order initiated by the individual and signed by a physician stipulating a specific authority to follow and adhere to a terminally ill patient's medical care and treatment wishes. The PACD form is a standardized document that can be immediately verified by pre-hospital personnel. In any situation where pre-hospital personnel have a good faith basis to doubt the validity of a signed PACD form, the provider is directed to resuscitate and contact on-line medical control. Should the PACD form be located and presented to pre-hospital personnel once life saving efforts have commenced, pre-hospital personnel will alter their course of action immediately based on information contained in the signed PACD form.

For the PACD to be valid:

1. The patient must have an official PACD form, issued by the State of Delaware Division of Public Health (reference example)
2. The patient must have a terminal illness, and proof of this must be documented by the patient's primary care physician
3. The official PACD form must be signed by both the patient and the patient's primary care physician
4. The PACD must denote the type of care (Option A, B, or C) the patient has elected to have.

The PACD form outlines three treatment options. The patient's physician is responsible for explaining the form to the patient and the three treatment options. Pre-hospital personnel are responsible for locating the signed PACD form, determining its validity, and adhering to the option of care chosen by the terminally ill patient at hand. A patient, who has a valid PACD, may also have a wallet card, bracelet or other similar identification mechanisms to alert pre-hospital personnel that a signed PACD form exists. The wallet identification card, a wrist bracelet, or any other form of PACD identification mechanism, however, is only secondary and not valid for pre-hospital personnel to honor without the presence of the physician and patients signed PACD form.

The three treatment options contained within the PACD are as followed:

Option A: Advanced Life Support (Maximal Restorative Care Before Arrest), then Do Not Resuscitate. Under this option, the patient shall receive the full scope of restorative interventions by the EMS field responder(s) permissible under the Delaware Statewide Advanced Life Support (ALS) treatment protocol prior to cardiac arrest. Upon cardiac arrest, no further type of resuscitative care will be administered.

Option B: Basic Life Support (BLS-Limited Palliative Care Only Before Arrest), then Do Not Resuscitate. Under this option, the patient shall receive comfort care for control of signs and symptoms only. Upon cardiac arrest, no type of resuscitative care will be administered.

Option C: Do Not Resuscitate-No Care Administered of any kind. With this option in place, no form of comfort care or life saving efforts of any kind will be administered by EMS personnel, unless the patient provides some form of communication such as verbally, eye blink, finger tap, or some other similar form of communication to indicate the desire to revoke the existing PACD order in place.

A PACD authorizes the Division of Public Health/Office of Emergency Medical Services in conjunction with the Board of Medical Practice, the Delaware Fire Prevention Commission, and other key groups within the State to develop and implement an EMS Pre-Hospital Advanced Care Directive protocol for EMS providers. This law and protocol standardize the legal advanced care directive documentation so EMS providers have a readily recognizable format upon which they may make a decision. This also allows EMS providers to honor the individual's wishes to the greatest extent possible and grant the individual the dignity, humanity and compassion they deserve.

Sample Only



DELAWARE HEALTH & SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH - OFFICE OF EMERGENCY MEDICAL SERVICES

**PRE-HOSPITAL ADVANCED CARE DIRECTIVE (PACD) FOR
TERMINAL ILLNESS ONLY**

SCOPE OF EMERGENCY MEDICAL SERVICES CARE

I, _____, (please print your full name), request the following emergency medical care in the event I am incapacitated due to my terminal illness.

Option A: (Advanced Life Support (ALS)) – Maximal (Restorative) Care Before Arrest, Then DNR.
Individual shall receive the full scope of restorative interventions permissible under the Delaware Statewide ALS treatment protocol.

Option B: (Basic Life Support (BLS)) – Limited (Palliative) Care Only Before Arrest, Then DNR.
Individual shall receive comfort care for control of signs and symptoms.

Option C: (Do Not Resuscitate (DNR)) – No Care Administered Of Any Kind
Individual is permitted to reject care of any kind provided there is a signed order clearly stating this course of action. Where this option is in place, no form of comfort care or life saving efforts of any kind will be administered by Emergency Medical Service personnel under any circumstances, unless the individual provides some form of communication such as verbally, eye blink, finger tap, or some other similar form of communication, to indicate the desire to revoke the existing PACD order in place.

I understand that *Do Not Resuscitate* means that upon my rejection of any life-saving care efforts, if my heart stops beating or I stop breathing due to my present terminal illness no medical procedure to restart breathing or heart functioning will be instituted by emergency medical service personnel.

Patient/Surrogate Signature Date

Surrogate's Relationship to Patient

I affirm that this patient/surrogate is making an informed decision and that this Pre-Hospital Advanced Care Directive is the expressed wish of the patient.

Physician Signature/ Date

Print Name Telephone

Address City State Zip

Patient's Name (Print) Telephone

Address City State Zip

As is cited in Section 2513(b) of the *Death with Dignity Act (Code of Delaware)*, and in the Pre-Hospital Advanced Care Directive Regulations Section 7.0, willful concealment, destruction, falsification or forging of an advance directive, without the individual's or authorized decision maker's consent, is a class C felony.

Record Keeping Instructions:

The original live-signature copy of this document is to be kept with the patient's permanent medical records/files at the facility providing the primary care for the patient; i.e., health care provider (physician's office), Hospital, Nursing Home, or other health care provider facility.

A copy of this document is to be kept with the patient either at the patient's home, or the health care facility where the patient is admitted and receiving medical care/treatment.

Patient PACD Card Instructions:

Once the information has been completed below, punch card out on the perforated lines, fold in half, and carry on your person at all times (wallet, purse, etc.). Present this card, along with the copy of your signed PACD form, to emergency medical personnel upon their response arrival.



Front of Card

**Delaware Health & Social Services
Division of Public Health
Pre-Hospital Advanced Care Directive (PACD)
Wallet Identification Card**

This PACD wallet identification card has been issued to the recipient listed below.

Patient Name **Date**

Patient Signature **[Option #]**

Back of Card

An official State of Delaware PACD Form signed by the patient's physician and the patient/surrogate must be presented to EMS personnel along with this wallet identification card at the time of emergency response for this wallet identification card to be valid and honored.

Physician Name **Date**

Physician Signature

This is the PACD form developed by the Office of Emergency Medical Services. Although this form has the word "SAMPLE" written on it, this is only for unauthorized duplication protection. This is an example of the actual form currently in use by licensed, practicing physicians within the State Of Delaware.

INFECTIOUS DISEASE CONTROL

Infection control refers to policies and procedures used to minimize the risk of spreading infections. The purpose of infection control is to reduce the occurrence of infectious diseases. These diseases are usually caused by bacteria or viruses and 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, and, finally, by such common vehicles as food or water. Hospitals and pre-hospital medical settings demonstrate higher levels of precaution around infectious disease management predominantly due to the higher risk of spreading infectious diseases in these environments.

The infectious control program for Delaware is outlined in Delaware Code, Title 16, Chapter 12A. Included in this law, emergency medical care providers may request notification concerning an exposure to an infectious disease. Every emergency medical care agency (volunteer or paid) shall designate an Infectious Control Officer who will handle the infectious control process. Delaware is one of the few states that conduct mandatory source testing.

Since 1993, Delaware has reviewed 39 potential exposures from the pre-hospital setting and in 2006 reviewed 18. The Table below represents the type of exposures reported in 2006.

<i>Type of Exposure for 2006</i>	<i>Reports</i>
Needle Sticks or puncture wound from contaminated object	1
Direct Mouth to Mouth	0
Patient blood or body fluid came in contact with Providers skin	3
Extensive Contact with Pt. blood or body fluid	4
Splash of Pt. blood or Body Fluid into eyes, nose, or mouth of the provider	5
Airborne Pathogen discovered by the Receiving Medical Facility	5

Education and training is required by all agencies yearly 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 such as hepatitis and tuberculosis, as well as other diseases that have become a current threat to pre-hospital providers such as severe acute respiratory syndrome (SARS) and avian flu. Self-learning CD's are under development about infectious disease education and pre-hospital providers are able to access *DE Train* which is a free online educational forum that has up-to-date information on infection control related issues.

Due to constant changes in our lifestyles and environments, new diseases are constantly appearing that people are susceptible to, making protection from the threat of infectious disease urgent. The required equipment lists for ambulances in Delaware now have increased mandatory personnel protective equipment such as HEPA masks. Alternative products are also being reviewed to help pre-hospital personnel deal with the increased demand of infectious disease protection, such as ways to safely sanitize equipment and ambulances. Delaware also offers assistance to pre-hospital providers to get immunizations against Hepatitis, flu, tetanus and tuberculin skin testing to detect exposure to tuberculosis.

The need for an effective infection control program has always been an essential and integral part of the pre-hospital practice in Delaware, because there is both the risk of health care providers acquiring infections themselves, and of them passing infections on to patients. Preventive and Proactive measures offer the best protection for individual and organizations who may be at an elevated exposure to these infectious diseases.



APPENDICES



APPENDIX A

HOUSE OF REPRESENTATIVES

140th GENERAL ASSEMBLY

HOUSE BILL NO. 332

AS AMENDED BY

HOUSE AMENDMENT NOS. 2,4,5, 6, 7 & 8

AN ACT TO AMEND TITLE 16 OF THE DELAWARE CODE RELATING TO PARAMEDIC AND OTHER EMERGENCY MEDICAL SERVICE SYSTEMS.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF DELAWARE:

WHEREAS, the Delaware Emergency Medical Services (EMS) system is made up of over 1700 emergency care providers including paramedics, emergency medical technicians, volunteers, dispatchers and first responders;

WHEREAS, the dedication of the emergency care providers has helped thousands of Delawareans in times of need and crisis;

WHEREAS, these individuals have a long history of dedication and commitment to improving and protecting the health and safety of all Delawareans;

WHEREAS, notwithstanding the dedication and commitment of these emergency care providers, the current EMS system has several weaknesses that must be addressed in order for the system to achieve optimal performance for the citizens of our State;

WHEREAS, Delaware's EMS system must focus on achieving specific goals for an optimal system that, if attained, will result in an improved system for the people of Delaware;

WHEREAS, specific goals for response times and other performance measures do not currently exist;

WHEREAS, the General Assembly hereby establishes a goal that the Delaware EMS system provide cardio-pulmonary resuscitation (CPR) within 4 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.

WHEREAS, the General Assembly hereby establishes a goal that the Delaware EMS system provide Automatic External Defibrillation (AED) within 6 minutes of Delta calls on at least 90 % of the times in urban areas and 70 % of the times in rural areas.

WHEREAS, the General Assembly hereby establishes a goal that 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 times.

WHEREAS, the General Assembly hereby establishes a goal that each Basic Life Support (BLS) ambulance agency within the Delaware EMS system provide a BLS ambulance unit on the 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.

WHEREAS, the General Assembly hereby establishes a goal that each 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 times.

WHEREAS, the General Assembly hereby establishes a goal that each BLS ambulance agency within the Delaware EMS system provide a BLS ambulance unit on the 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.

WHEREAS, the General Assembly hereby establishes a goal that each BLS ambulance agency within the Delaware EMS system provide a BLS ambulance unit on the scene within 12 minutes of the receipt of all Bravo calls on at least 90 % of the times in urban areas and 70 % of the times in rural areas.

WHEREAS, the General Assembly hereby establishes a goal that each BLS ambulance agency within the Delaware EMS system provide a BLS ambulance unit on the scene within 18 minutes of the receipt of all Alpha calls on at least 90 % of the times in urban areas and 70 % of the times in rural areas.

WHEREAS, the General Assembly hereby establishes a goal that in cases involving cardiac arrest, each EMD center within the Delaware EMS system process all calls for assistance within 45 seconds in at least 90 % of such cases.

WHEREAS, timely pre-hospital and inter-facility air medical transport should be available in 95% of cases where helicopter transport is appropriate;

WHEREAS, the General Assembly hereby establishes a goal that in all other cases, each EMD center within the Delaware EMS system process all calls for assistance within 72 seconds in at least 90 % of such cases.

WHEREAS, all components of the system should uniformly and electronically collect the data necessary to measure performance against the previously stated goals;

WHEREAS, the performance of each component of the system against the above stated goals should be routinely made available to the public;

WHEREAS, attainment of these goals will require changes to the current EMS system;

WHEREAS, the availability of CPR and AED within medically required time frames will require utilization of BLS as first responders, law enforcement officers on patrol and increased public awareness and access to AED;

WHEREAS, for the Delaware EMS system to meet its response time goals, the public must be active participants especially in providing CPR and the use of AEDs;

WHEREAS, current law overly restricts the ability of ALS managers to deploy their resources effectively and efficiently thus hampering performance;

WHEREAS, ALS managers need flexibility to deploy ALS resources, subject to appropriate medical oversight;

WHEREAS, the State Fire Commission lacks the statutory authority to manage BLS in terms of response times and performance;

WHEREAS, the regulatory authority of the State Fire Prevention Commission over BLS services should be significantly broadened and strengthened;

WHEREAS, the Delaware EMS system is a medical system that requires comprehensive medical involvement and oversight;

WHEREAS, medical oversight should be increased and restructured to ensure that all components of the system are performing according to generally accepted medical protocols;

WHEREAS, 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;

WHEREAS, all components of the EMS system should report revenues and expenses so that the system can be continually evaluated for its cost effectiveness;

WHEREAS, emergency medical services is a system with several providers and proper oversight of that system is necessary to ensure effectiveness and to reduce fragmentation;

WHEREAS, an EMS Oversight Council charged with the on-going responsibility of monitoring the system and making recommendations for system is necessary; and

WHEREAS, the General Assembly, the Governor and the public and other policy makers should recognize that in order to meet the goals of this legislation a commitment of money and other resources may have to be provided by the State of Delaware or other sources.

NOW, THEREFORE:

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF DELAWARE:

Section 1. This Act shall be known as the Delaware Emergency Medical Services System Improvement Act of 1999.

Section 2. Amend § 9703, Title 16, Delaware Code by deleting said section in its entirety and inserting in lieu thereof the following:

"§ 9703. Delaware Emergency Medical Services Oversight Council.

a. There is established the Delaware Emergency Medical Services Oversight Council (DEMSOC). The Council shall consist of the following members:

1. A representative of the Office of the Governor appointed by the Governor;
2. The Secretary of the Department of Public Safety;
3. The Secretary of the Department of Health and Social Services;
4. The Chair of the Delaware State Fire Prevention Commission or another Commissioner selected by the Chair;
5. The President of the Delaware Volunteer Fireman's Association;
6. The Colonel of the New Castle County Police Department or, at the Colonel's discretion, the Director of New Castle County Emergency Medical Services;
7. The Kent County Administrator or, at the Administrator's discretion, the Kent County EMS Chief;

8. The Sussex County Administrator, or at the Administrator's discretion, the Sussex County EMS Director;
9. The President of the Delaware Chapter of the American College of Emergency Physicians;
10. The State EMS Medical Director;
11. The Chair of the Trauma Systems Committee;
12. A practicing paramedic, certified and employed in the State of Delaware, appointed by the Governor;
13. The Chair of the DVFA Ambulance Advisory Committee;
14. Two (2) additional at-large members appointed by the Governor; and
15. The President of the Delaware Healthcare Association or, at the President's discretion, a representative of the Delaware Healthcare Association.
16. The Executive Director of the Medical Society of Delaware or, at the Executive Director's discretion, a representative of the Medical Society of Delaware; and
17. The Chair of the Delaware Police Chiefs' Council or, at the Chair's discretion, a representative of the Delaware's Police Chief's Council.

APPENDIX B

RESEARCH

Publications:

Articles (Peer Reviewed)

- 1) Wang HE, Davis DP, O'Connor RE, Domeier RM. Drug-Assisted Intubation in the Prehospital Setting (Resource Document to NAEMSP Position Statement) Prehosp Emerg Care. 2006 Apr-Jun;10(2):261-271.
- 2) Hedges JR, Sehra R, Van Zile JW, Anton AR, Bosken LA, O'Connor RE, Moore R, Powell JL, McBurnie MA, for the PAD Investigators. Automated External Defibrillator (AED) Program Does Not Impair CPR Performance Initiation in the Public Access Defibrillation (PAD) Trial. Acad Emerg Med. 2006 Jun;13(6):659-
- 3) O'Connor RE: Trauma Triage: Concepts in Prehospital Trauma Care. Prehosp Emerg Care 2006; 10:307-310.

Abstracts

- 1) O'Connor RE, Bittner L, DiSabatino A, Sullivan K, Davis KL, Hopkins J, Reese CL, Weintraub W. The Influence of Gender and Age on Primary Percutaneous Intervention Door to Balloon Times. Circulation 2006; 114:II-553-II-554.
- 2) O'Connor RE, McGinnis-Hainsworth D, Megargel RE, Bollinger M, Zamara D. Racial Disparities in the Rate of Bystander CPR. Circulation 2006; 114 :II-859-II-860.
- 3) O'Connor RE, McGinnis-Hainsworth D, Megargel RE, Bollinger M, Zamara D. Differences in the Rate of Bystander CPR Based on Location of Cardiac Arrest in the Out-of-Hospital Setting. Circulation 2006; 114:II-1191.
- 4) O'Connor RE, Megargel RE. The Role of Etomidate in Facilitating Endotracheal Intubation in Patients with Acute Head Injury. Circulation 2006; 114:II-1194-II-1195.
- 5) O'Connor RE, Bitner L, Megargel RE, Reese CL. Performance and Interpretation of the Prehospital ECG by Paramedics is Associated with a Reduced Time to Intervention, Shorter Hospital Length of Stay, and Reduced Mortality. Circulation 2005; 112:S.
- 6) Rowley J, McGinnis-Hainsworth J, Megargel RE, O'Connor RE. Value of Serial Prehospital ECGs in the Diagnosis of ST-Elevation Myocardial Infarction. Prehosp Emerg Care 2006; 10:116.
- 7) Cataldi E, McGinnis-Hainsworth D, Megargel RE, Bollinger M, O'Connor RE. A Comparison of Intraosseous and Intravenous Access in Adults and Children in the Prehospital Setting. Prehosp Emerg Care 2006; 10:124.
- 8) Khan M, McGinnis-Hainsworth D, Megargel RE, Bollinger M, O'Connor RE. The Incidence Of Rapidly Reversible Causes of Altered Mental Status in the Prehospital Setting. Prehosp Emerg Care 2006; 10:134.
- 9) Hsu A, Getto L, McGinnis-Hainsworth D, Megargel RE, Bollinger M, O'Connor RE. The Impact of Paramedic Response and Scene Times on Outcome Following Blunt Trauma Prehosp Emerg Care 2006; 10:142.

- 10) O'Connor RE, Bitner L, Reese CL. Out-of-hospital Identification of ST-elevation Myocardial Infarction Is More Effective Than Maintaining an In-house Cardiac Catheterization Team in Reducing the Time to Reperfusion. Acad Emerg Med 2006 13(5 Supplement 1): S13-S14.

Invited Lectures at other institutions

- 1) EMS Response to Stroke, Delaware Stroke Initiative Conference, November 2006

Research Paper Presentations

- 1) AHA Scientific Sessions. Chicago, IL, November 2006. "The Influence of Gender and Age on Primary Percutaneous Intervention Door to Balloon Times."
- 2) AHA Scientific Sessions. Chicago, IL, November 2006. "Racial Disparities in the Rate of Bystander CPR."
AHA Scientific Sessions. Chicago, IL, November 2006. "Differences in the Rate of Bystander CPR Based on Location of Cardiac Arrest in the Out-of-Hospital Setting."
- 3) AHA Scientific Sessions. Chicago, IL, November 2006. "The Role of Etomidate in Facilitating Endotracheal Intubation in Patients with Acute Head Injury."
- 4) NAEMSP Annual Meeting. Tucson, AZ, January 2006. Value of Serial Prehospital ECGs in the Diagnosis of ST-Elevation Myocardial Infarction."
- 5) NAEMSP Annual Meeting. Tucson, AZ, January 2006. A Comparison of Intraosseous and Intravenous Access in Adults and Children in the Prehospital Setting. Prehosp Emerg Care 2006: 10:124.
- 6) NAEMSP Annual Meeting. Tucson, AZ, January 2006. The Incidence Of Rapidly Reversible Causes of Altered Mental Status in the Prehospital Setting.
- 7) NAEMSP Annual Meeting. Tucson, AZ, January 2006. The Impact of Paramedic Response and Scene Times on Outcome Following Blunt Trauma.
- 8) SAEM Annual Meeting. San Francisco, CA, May 2006. "Out-of-hospital Identification of ST-elevation Myocardial Infarction Is More Effective Than Maintaining an In-house Cardiac Catheterization Team in Reducing the Time to Reperfusion."
- 9) SAEM Annual Meeting. San Francisco, CA, May 2006. "Emergency Physicians Who Use Emergency Ultrasound Demonstrate Higher Patient Charges, Patients Seen, and Relative Value Units per Hour When Compared with Colleagues Who Are Rare or Non-users of Emergency Ultrasound."
- 10) SAEM Annual Meeting. San Francisco, CA, May 2006. "Emergency Physicians Who Use Emergency Ultrasound on a Daily Basis Demonstrate Similar or Higher Performance Parameters When Compared with Colleagues Who Frequently or Occasionally Use Emergency Ultrasound."