

DELAWARE OFFICE OF EMERGENCY MEDICAL SERVICES

SYSTEMS OF CARE OFFICE

SYSTEMS OF CARE OVERVIEW



DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

Office of Emergency Medical Services

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Delaware Office of Emergency Medical Services - Systems of Care Overview

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Overview of Delaware's Systems of Care

What is a System of Care?

A System of Care is an **inclusive**, statewide structure that incorporates **all** patients, **all** providers, and **all** facilities into an **all-encompassing** continuum of care. (**See Figure 1**). Each System implements evidence-based and data-supported standards to continuously improve this continuum. A system of care's purpose is to reduce morbidity and mortality.

Benefits of a System of Care

- Improved communication and collaboration among stakeholders.
- An organized approach to patient management throughout the continuum of care statewide.
- Patients receiving the same quality of care no matter where in the state they enter the system.
- Coordination of care, prehospital transport, and inter-facility transfer.
- System data to document incidence, availability of resources, and assure quality.
- A data-driven public education program targeted to high-risk populations.
- Improved patient outcomes.

Overarching Goals

- Reduce morbidity and mortality
- Match resources with the needs of the patients
- Get each patient to the right facility in the right amount of time
- Preserve lives and livelihoods
- Save healthcare dollars

Systems of Care are Legislated

Delaware has four Systems of Care that are created and defined by Delaware State Code, Title 16, Part X, Chapter 97.

- Trauma System of Care – Enabling legislation: 1996
- Pediatric System of Care – Enabling legislation: 2012
- Stroke System of Care – Enabling legislation: 2016
- Overdose System of Care – Enabling legislation: 2018

Per legislation, the Division of Public Health Office of Emergency Medical Services, is responsible for the development, implementation, and maintenance of the Systems of Care.

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Requirements for Each System

- **Oversight Committee:** Membership to reflect phases of care from prevention through rehabilitation.
- **Quality Evaluation Committee:** Identify areas for improvement and suggest changes to make those improvements.
- **Facility Designation Process/Committee:** Process to become designated by the state of Delaware and to advertise as a Delaware designated facility
- **Specific System of Care Rules and Regulations:** Make up the specific system's plan

Rules and Regulations Requirements per Legislations

- Prevention/Public Education
- Prehospital Care
- Hospital Care
- Rehabilitative Care
- Continuing Education/Training for Personnel/Providers
- System Evaluation

Delaware's System of Care Provides

- Clinical patient care guidance
 - EMS standing orders
 - Acute care treatment
 - Post-acute care treatment
- Operational and programmatic infrastructure
- Policy development
- Voluntary participation – but with participation come requirements
 - Standards
 - Site visits
- State designation, recognition, and achievement
- System quality/performance improvement

System of Care Components

Oversight Committee: Each system of care is required to have an oversight committee with membership defined by the enabling legislation. This committee is given the authority for designing, planning, implementing, evaluating, and maintaining each system of care.

Subcommittees: Each system of care has its own standing and ad hoc subcommittees. They include, but are not limited to:

- Data and Quality Improvement
- Prevention
- Nomination
- Designation
- Education
- Rural

Data: Each system collects data for the purpose of evaluating the system and making data-driven changes.

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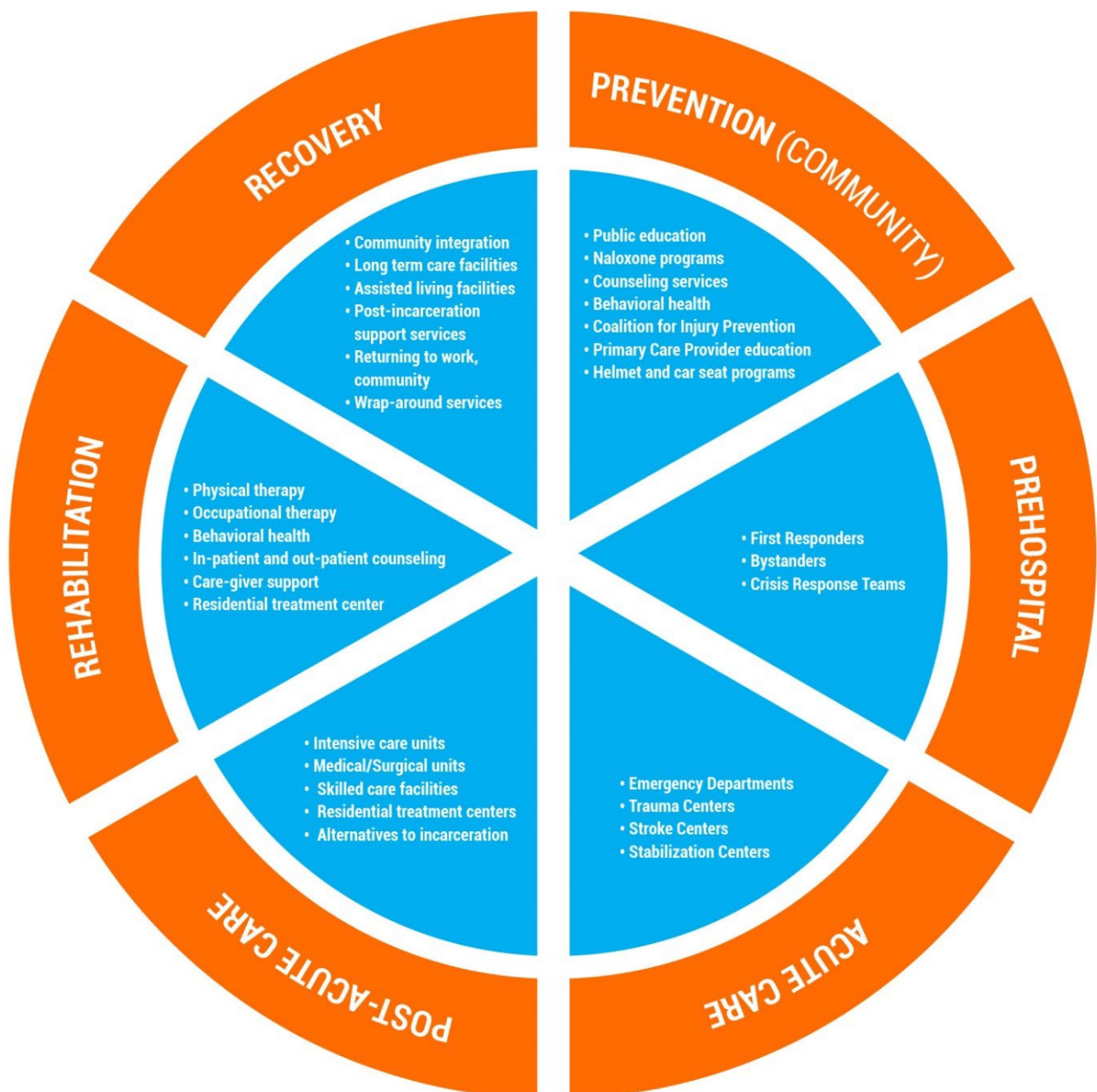
What a System of Care DOES NOT do

- Does not take over anyone's duties or obligations.
- Does not tell any agency what they must do.
- Does not overcomplicate or change effective processes

What it Means to Delawareans

Wherever an injury, stroke or overdose occurs to adults or children in Delaware, the Systems of Care provides timely access to a system that ensures optimal, equitable and accessible care throughout the entire continuum of care, from the time a patient enters the system, through their treatment and through their rehabilitation and recovery. ***The right patient to the right facility in the right amount of time.***

Figure 1 – Continuum of Care



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Trauma System of Care

June 30, 2021, marked the 25th anniversary of passage of the enabling legislation that created the Delaware Statewide Trauma System.

Trauma is a time-sensitive disease that can occur to anyone at any time. Those with critical injuries need definitive care within a short period of time to minimize their risk of death and disability. The role of a Trauma System is to organize resources and ensure their immediate availability to the injured and in all geographic areas of the system. These resources include public education and prevention, 911 Emergency Communications Centers, Basic and Advanced prehospital providers, multidisciplinary trauma teams in hospital emergency departments, in-hospital resources such as operating rooms and intensive care units, and rehabilitative services.

Emergency Medical Services

Delaware's Emergency Medical Services system consists of county Advanced Life Support (Paramedics) and rely on local Basic Life Support agencies for transport. Delaware's Paramedics utilize aggressive trauma treatment and transportation protocols, including transport to designated trauma centers and simultaneous dispatch of air medical (helicopter) from the Delaware State Police or ChristianaCare LifeNET for certain incidents.

Delaware Trauma Centers

Delaware's Trauma System requires hospitals be designated as a Trauma Center to accept injured patients from EMS. For a hospital to be designated as a Trauma Center, it must meet the highest national standards set by the American College of Surgeons Committee on Trauma (ACS COT). Successful verification by the ACS COT is a requirement that must be achieved and maintained every three years. Once a hospital receives this verification from the ACS, the Delaware Trauma Center Designation Committee meets to review the verification and to designate the hospital as a Delaware Trauma Center.

The ACS COT recognizes 4 levels of Trauma Centers:

- Level I Regional Trauma Center
- Level II Regional Trauma Center
- Level III Community Trauma Center
- Level IV Participating Hospital

REGIONAL LEVEL 1 TRAUMA CENTER: A Regional Resource Trauma Center has the capability of providing System leadership and comprehensive, definitive care for every aspect of injury from prevention through rehabilitation.

ChristianaCare, Newark Campus

PEDIATRIC REGIONAL LEVEL 1 TRAUMA CENTER: A Pediatric Regional Resource Trauma Center has the capability of providing comprehensive, definitive pediatric trauma care for the most severely injured children within its geographic area. It assumes a leadership role in the care for injured children within its Trauma System.

Nemours Children's Hospital of Delaware

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COMMUNITY LEVEL 3 TRAUMA CENTERS: A Community Trauma Center provides 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.

Bayhealth Medical Center, Kent Campus, Dover

Bayhealth Medical Center, Sussex Campus, Milford

Beebe Healthcare, Lewes

ChristianaCare, Wilmington Campus

St. Francis Healthcare, Wilmington

TidalHealth, Nanticoke Hospital, Seaford

Peninsula Regional Medical Center (Salisbury Maryland) via reciprocity

Currently, there are no Level 2 or Level 4 Trauma Centers in Delaware.

Coalition for Injury Prevention

As part of the overall Trauma System of Care, the Delaware Coalition for Injury Prevention provides leadership through state-wide injury prevention initiatives and policy, injury surveillance, training, and evaluation.

Values

The Delaware Coalition for Injury Prevention's values promote collaboration in the areas of:

- Leadership, excellence and integrity in violence and injury prevention through professional expertise and population-based health.
- Decision-making which embraces consensus building that upholds inclusion and equality, while reducing disparities in the incidence of violence and injuries.
- Improved community health through effective violence and injury surveillance, training, coalition building, intervention design, and evaluation.
- Informed public policy through quality data and evidence-based practices.

Goals

Goal 1: The Delaware Coalition for Injury Prevention to become a statewide leader in violence and injury prevention through community education and engagement.

Goal 2: Increase access to and use of injury (morbidity and mortality) data to inform strategies and policy.

Goal 3: Implement and evaluate community interventions that address individual behaviors, physical environments, access to services and social environments/norms.

Goal 4: Develop and execute a policy agenda to impact community and societal level changes through legislation, regulation, and enforcement.

Goal 5: Evaluate the impact of Delaware's Coalition for Injury Prevention program activities to ensure they meet objectives and achieve improvements in key health status indicators.

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Pediatric System of Care

Children account for approximately 10% of all Emergency Medical Services (EMS) transports. In Delaware, children account for approximately 7% of all EMS responses. Since the needs of children treated in the prehospital setting are different from those of adults, prehospital care providers must have appropriate equipment and training, along with safe and effective protocols to treat children.

Nationwide, children account for nearly 20% of Emergency Department (ED) patients, or about 30 million children per year and the vast majority are not seen in children's hospitals. While as many as 50% of U.S. hospitals see fewer than ten pediatric patients per day, all hospitals can and should be pediatric ready. All ED's must have the staff, policies, equipment, and supplies in place to care for children. Children respond differently than adults to illness and injury. They have unique physical, emotional and physiological needs that require a specialized approach to care.

Delaware has eight acute care hospitals. In 2018, approximately 11,000 pediatric patients were treated in their respective Emergency Departments.

Unintentional injuries are a leading cause of death and hospitalization for children. There were 538 Delaware children injured seriously enough to require hospitalization in 2017, an increase from the 485 in 2016. The leading causes of injury hospitalizations in this age group are falls (47%) and highway incidents (24%). Violent injuries such as those involving firearms lead to longer hospital stays, and motor vehicle crashes are responsible for a higher number of severe injuries.

In 2018, 133 children and adolescents between the ages of 1 and 19 died in Delaware, representing 0.5% of total deaths that occurred during that time (Delaware Vital Statistics Annual Report 2018, page 189). Unintentional injuries are the leading cause of death for Delaware's children, resulting in 35 deaths per year.



Safe Kids Delaware

Safe Kids Delaware is a member of Safe Kids Worldwide, the nation's primary organization dedicated solely to prevention of unintentional childhood injuries. Safe Kids Delaware was established in 1992 to educate the public on a variety of child injury prevention topics. By partnering with numerous community, civic, and state organizations, Safe Kids Delaware provides educational programs to further their goal of reducing the number of childhood injuries in our state.

Through three county chapters, Safe Kids Delaware participated in 627 events reaching over 115,374 people in 2018. These events covered many safety areas including Fire Prevention, Car Seat Safety, Water Safety, Poisoning Prevention, Bicycle, Pedestrian, and Teen Driving Safety, Fall Prevention, Halloween Safety, Bus Safety, ATV Safety, Concussion Awareness, and Gun Safety.



Emergency Medical Services for Children (EMSC)

Pediatric Emergency Care Facility (PECF) Recognition Program

All of Delaware's eight acute care hospitals and two freestanding emergency departments voluntarily participate in the Emergency Medical Services for Children (EMSC) Pediatric Emergency Care Facility (PECF) Recognition Program, which assesses hospital resources and capabilities to provide pediatric care. The Recognition Program supports a continuous process focused on achieving excellence in statewide pre-hospital and hospital pediatric care. The hospitals recognized as Delaware Pediatric Emergency Care Facilities are:

Level 1 – The Level 1 facility can provide comprehensive specialized pediatric medical and surgical care to all acutely ill and injured children. This facility serves as a regional referral center for the specialized care of pediatric patients.

Nemours Children's Hospital of Delaware

Level 2 - The Level 2 facility can identify and stabilizing pediatric patients who are critically ill or injured and providing ongoing inpatient care or appropriate transfer to a Level 1 facility.

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Level 3 – A Level 3 facility can identify and stabilizing critically ill or injured pediatric patients and providing appropriate timely transfer to a higher level of care. Level 3 facilities have capabilities for the management of minor pediatric inpatient problems.

Bayhealth Medical Center, Kent Campus, Dover

Bayhealth Medical Center, Sussex Campus, Milford

Beebe Healthcare, Lewes

ChristianaCare, Wilmington Campus

St. Francis Healthcare, Wilmington

TidalHealth, Nanticoke Hospital, Seaford

EMSC in Delaware has provided training and pediatric-sized equipment to the acute care facilities as well as Emergency Medical Services. EMSC staff have also assisted in the development of EMS treatment protocols for pediatric-specific emergencies.



Stroke System of Care

The Delaware Vital Statistics Annual Report 2019 (page 166) lists Cerebrovascular Disease as the fourth leading cause of death in the state. While Delaware stroke-related mortality rates for both white and black races continued declining, the black population's stroke mortality rate of 55.9 deaths per 100,000 population remained approximately 39% higher than the white population rate of 40.3 deaths per 100,000 population (Delaware Vital Statistics Annual Report 2019 page 170). Addressing these disparate rates is part of the mission of the Delaware Stroke System of Care.

Delaware's population growth impacts the future needs for efficient and effective care of the stroke patient. The total Delaware population increased 21.3% between 2000 and 2016. However, the 65 years and older population in Sussex County grew an amazing 86.8%, in the same timeframe. Kent and New Castle Counties also saw growth in this demographic, with 51.3% and 39.5% increases respectively (Delaware Population Consortium Annual Projections). This demographic trend is unlikely to change and highlights the need for an organized system of stroke care that will be able to efficiently manage increasing utilization.

Medical literature emphasizes that stroke is a time-sensitive condition. The time of onset of symptoms to the time of treatment have a significant impact on the outcome of the stroke patient. Continued development of an organized Stroke System of Care will enable effective management of increasing patient populations with improved patient outcomes.

In 2005 the need for a statewide organized system of medical care for people exhibiting stroke symptoms was identified through the Delaware Stroke Task Force. A statewide system encompassing all aspects of stroke care from prevention, prehospital dispatch, treatment, and transport through acute hospitalization and rehabilitation was envisioned. Legislative support developed early, led by Representative, now Lieutenant Governor, Bethany Hall-Long.

In 2016, the Stroke System became reality through the persistence of passionate leaders who understood the importance of an organized, cohesive, system of care staffed with knowledgeable professionals at all levels when Senate Bill 265 became law.

The Stroke System of Care is still in its infancy. Rules, regulations and state designation processes are being developed.

Emergency Medical Services

State-wide Emergency Medical Services Standing Orders have aggressive protocols for the immediate transport of a stroke patient, by using the VAN Stroke Severity Score to identify large vessel occlusions and transport protocols that define what level a stroke patient should be transported to based on that scale. This includes, as necessary, the use of air medical (helicopter) services.

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Stroke Center Certification

Delaware Stroke Center certification occurs through the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in collaboration with the American Heart Association/American Stroke Association. Site visits occur every two years, with review of the entire hospital system for stroke care, including policies and protocols, medical resources, performance improvement program with stroke registry, and professional and public education programs.

The Joint Commission recognizes 4 levels of Stroke Center Certifications:

- Comprehensive
- Thrombectomy Capable Center
- Primary Stroke Center
- Acute Stroke Ready Hospital

Current Delaware Stroke Center certifications are:

COMPREHENSIVE STROKE CENTER – The most demanding certification awarded by the Joint Commission is designed for those hospitals that have resources, staff and training that are necessary for the treatment of the most complex stroke cases.

ChristianaCare – Newark Campus

PRIMARY STROKE CENTERS – includes a dedicated interdisciplinary stroke team, availability of advanced cerebrovascular imaging, and an inpatient stroke unit, to admit and care for patients with an ischemic stroke.

Bayhealth Medical Center, Kent Campus, Dover

Bayhealth Medical Center, Sussex Campus, Milford

Beebe Healthcare, Lewes

ChristianaCare, Wilmington Campus

St. Francis Healthcare, Wilmington

TidalHealth, Nanticoke Hospital, Seaford

ACUTE STROKE READY HOSPITAL – defined as a hospital or emergency center with a dedicated program for stroke care. Requires transportation plans and agreements to transfer patients to the appropriate level stroke center.

ChristianaCare, Middletown Emergency Center



Overdose System of Care

In 2013, Delaware recorded 187 overdose deaths. In 2021, there were 515 deaths – a 275% increase. According to the Centers for Disease Control and Prevention (CDC), Delaware ranks third in the nation, behind West Virginia and Kentucky, in per capita overdose deaths. According to an analysis by the Division of Substance Abuse and Mental Health (DSAMH), Delaware's primary drug threats are from illicit opioids, cocaine, and heroin.

In 2019, Delaware's Division of Substance Abuse and Mental Health (DSAMH) reported over 14,000 admissions of substance use disorder (SUD) clients throughout Delaware.

In March of 2018, a state-wide Acute Overdose Management System of Care Forum brought together partners and agencies from around the state with an active role in SUD, to jump-start the creation of the state's Overdose System of Care. The enabling legislation was created later that year.

Overdose System of Care Status

Delaware's Overdose System of Care (OSOC) is in its infancy. The Office of Emergency Medical Services has partnered with the Office of Health Crisis Response Health (OHCR), Division of Substance Abuse and Mental Health (DSAMH), and Health Management Associates to coordinate and further develop the Overdose System of Care into a system modeled after the other systems of care.

There are many components in the treatment of persons suffering from Opiate Use Disorder (OUD). OSOC looks at the overdose management and its immediate treatment and pathways into the overall OUD treatment system.

This includes creating/developing and enhancing:

- Minimum treatment guidelines for all levels of providers, from emergency medical services, hospitals, professional counseling services, in-patient and outpatient treatment facilities, etc.
- Identifying levels of treatment facilities, comparative to the levels available in trauma, stroke, and pediatric facilities.
- Centralized data collection.
- Consistent education and training for providers and the public.
- Making naloxone widely available to the public with the intent to lower the fatality rate from opioid overdoses.
- Recognize the key roles that prevention and rehabilitation plays in recovery.

Oversight Committee

Since 2019, an oversight committee has been formed along with several subcommittees. The oversight committee meets quarterly and has set goals and established workgroups for each goal.

These goals are:

1. Establish a structured and universal Overdose System of Care to improve the care, treatment, and survival of overdose patients in Delaware.

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2. Fully implement the first responder, hospital, and correctional institution naloxone leave-behind program.
3. Establish Stabilization Centers in Delaware, in accordance with OSOC legislation.
4. Use existing and build new data systems and tools to drive timely and informed responses to addressing overdoses deaths across Delaware.

Subcommittees

- The Rural Subcommittee was formed to address circumstances that are unique to rural areas of the state. It is funded in part by a Health Resources and Services (HRSA) Grant.
- The Acute Opiate Use Disorder (OUD) Stabilization Subcommittee is working to develop processes by which a patient can enter appropriate community treatment programs.
- The Naloxone Subcommittee is working towards and identifying new ways to get naloxone into the hands of patients, their families, and acquaintances.
- The Quality & Evaluation Subcommittee is identifying data metrics and working with various federal and state partners to track data and to develop a Quality Improvement process.

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Other Systems of Care Responsibilities:

Air Medical Transport Certification

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

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

Limited State Certification:

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

Full State Certification:

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

911 Certification:

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

The initial certification period is three years, with recertification required every three years subsequently.



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 and tissue donor awareness educational programs in Delaware. These programs include various types of public education initiatives aimed at educating residents about the need for organ and tissue donation and encouraging them to become designated organ donors through the state driver's license or identification card program.

The Board awards grants and enter contracts with moneys from the Organ and Tissue Donor Awareness Trust Fund for Delaware awareness programs. It is currently funding a scholarship through the Gift of Life Program for high school students who create organ donor awareness videos.