Appendix I

Tidewater EMS Council Inc. Prehospital and Interhospital Regional Trauma Plan

Developed by the Tidewater EMS Council Trauma Triage Committee Final Draft Adopted March 26, 1999 7th Revision October 2008 – Topics Revised October 2009 Approved, Board of Directors, April 29, 1999 Approved, Office of EMS, Virginia Department of Health, January 25, 2000

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TEMS *Executive Summary*

The Tidewater EMS Council Inc. recognizing the complexity of its region's variability in demographics and geography has therefore adopted the State Trauma Plan as the template for the TEMS Regional Trauma Plan. Through the regionalized QA/QI Plan issues in trauma triage, trauma care on scene, in transit and within hospitals can be addressed.

The State Trauma Triage Plan operates under the *Code of Virginia* **§** *32.1-111.3*. The Office of Emergency Medical Services (OEMS) acting on behalf of the Virginia Department of Health has been charged with the responsibility of developing a Statewide Trauma Triage Plan. This plan is to include prehospital and interhospital patient transfers.

The *Code* states that the State Trauma Triage Plan shall incorporate, but not be limited to, the plans prepared by the regional emergency medical services councils. The *Code* further directs the collection of data through The PPCR Program and State Trauma Registry and protects its ability to be used by Trauma Committees that report to the Governors EMS Advisory Board. In accordance with § 32.1-116.2 of the *Code*, any such data or information in the possession of or transmitted to the Commissioner (OEMS as the designee), the EMS Advisory Board, or any committee acting on behalf of the EMS Advisory Board, any hospital or prehospital care provider, or any other person shall be privileged and shall not be disclosed or obtained by legal discovery proceedings, unless a circuit court, after a hearing and for good cause shown arising from extraordinary circumstances, orders disclosure of such data.

The Virginia Trauma System is an inclusive system, but all hospitals participate in the Trauma Triage Plan. Establishing a comprehensive statewide emergency medical care system, incorporating healthcare facilities, transportation, human resources, communications, and other components as integral parts of a unified system that will serve to improve the delivery of emergency medical services and thereby decrease morbidity, hospitalization, disability, and mortality.

These goals can be achieved by reducing the time period that acutely injured patients are identified and assisted in reaching definitive high quality trauma care. A coordinated effort between ground and air prehospital resources, as well as hospitals, whether trauma designated or not, can lead to getting the right patient to the right hospital, in the shortest amount of time possible, while maximizing resources.

The TEMS Regional Trauma Triage Plan will provide a uniform set of proposed criteria for prehospital and inter hospital triage and transport of trauma patients. The development and monitoring of these criteria is performed by the TEMS Regional Trauma Triage Committee.

These improvements can be accomplished by conducting, promoting, and encouraging programs of education and training designed to upgrade the knowledge and skills of healthcare providers involved in trauma care. These criteria are not meant to supersede applicable laws such as EMTALA and HIPAA.

Our Vision: Victims of injury in the Tidewater EMS region . . .

- Will be promptly entered into the emergency medical services system, when appropriate, by knowledgeable family members or bystanders through the universal 9-1-1 emergency telephone number.
- Will be assisted and reassured by family members or bystanders until emergency medical assistance arrives through guidance provided by trained emergency medical dispatchers with specific emphasis on the maintenance of a viable airway, bleeding control, spinal immobilization, and the prevention of shock.
- Will receive prompt at-scene treatment and stabilization by trained first responders and emergency medical personnel in accordance with regional medical protocols.
- Will receive prompt transportation to the closest, most appropriate emergency department or trauma center using the quickest ground and/or air transportation available.
- Will receive continuing care and rehabilitation in such a manner as to provide for the highest chance of a complete recovery in the shortest time frame possible.

This vision can only be realized with the active involvement of the general public, public safety dispatchers, first responder agencies and personnel, public and private emergency medical services agencies and personnel, hospital administrators, physicians, nurses, and the many technicians involved in the daily care of the injured patient.

Trauma Patient Transport & Transfer Criteria

Trauma Victim:

A person who has acquired serious injuries and or wounds brought on by either an outside force or an outside energy. These injuries and or wounds may affect one or more body systems by blunt, penetrating or burn injuries. These injuries may be life altering, life threatening or ultimately fatal wounds.

Two-tiered System for the recognition of a trauma patient:

- Initial triage in the prehospital setting
- Secondary triage at local hospitals

The purpose of the Regional Triage Plan is to establish prehospital and hospital criteria for the purpose of identifying the trauma patient. The Regional Trauma Triage Plans should identify the best point of entry plan for these patients. Many factors such as geography, hospital capabilities, air medical services and others will help to guide where the identified trauma patient will be transported or transferred to.

Pre-Hospital Trauma Triage Criteria

Adult/Pediatrics

Indications: Trauma patients who meet any of the following criteria shall be transported to the **closest appropriate** trauma center within a 30-minute ground transport time. Trauma patients who are not within 30 minutes ground transport time of a trauma center should be transported to the closest hospital if they cannot be delivered to an appropriate facility more rapidly by air ambulance.

Respiratory: Assisted ventilations, Intubated, Partial or complete airway obstruction or unable to establish or maintain an airway

CNS: Unconscious/Unresponsive, Any suspicious change in metal status, does not follow commands or
combative, or unable to move extremities

Penetration Injury *(Non superficial)* to Head, Neck, Chest *(Torso)*, or Abdomen

Hemodynamics: Signs and Symptoms of Shock *(Diaphoretic, hypotension, tachycardia)* Uncontrolled Bleeding,
Extremity with loss of pulse, Major Amputation above the Elbow or Knee

Special Considerations: Critical Burns *[25% BSA or 20% TBSA (10% , 10 years or > 50 years) or Circumferential burns or burns to face, feet, hands, groin]*, Evidence of pelvic instability, Crush injury to Torso or upper thighs

Pediatric Trauma: Less than 12 years of age with meeting adult trauma or having poor peripheral pulses
and/or poor perfusion

Blunt Trauma: Significant signs of bruising and/or tenderness to the Head, Neck, Chest *(Torso)*, or Abdomen

Use mechanism of injury cases to perform a closer detailed physical exam

Procedure:

Agencies operating ***within a 30-minute ground transport time*** of a trauma center (e.g., Sentara Norfolk General, Sentara Virginia Beach General and Riverside Regional Medical Center):

1. Immediate transport (< 10 minutes scene time) otherwise document the reason for the delay.
2. Provide appropriate care and initiate immediate transport towards trauma center.
3. Establish early contact to alert trauma center staff.
4. Technicians can request air ambulance transport without authorization by medical control.

Agencies operating ***outside a 30-minute ground transport time*** to a trauma center:

1. Transport all patients with trauma-center injuries to the closest hospital if air transport is delayed or unavailable
    a. Scene time should not be greater than 10 minutes.

2. Establish early contact to intended receiving hospital. Facility may divert patient to a trauma center enroute or expedite transfer after arrival.

Notes:

1. Transport all patients with unmanageable airway problems to the **closest** hospital emergency department.
2. ***Traumatic cardiac arrest with <u>any</u> electrical cardiac activity*:** Transport to designated trauma center if transport time is < 10 minutes difference from the closest hospital.
3. Consider transport to a Level 1 Trauma Center for ***pediatric patients*** and ***patients with critical burns.***

   (e.g. Sentara Norfolk General, or MCV Medical Center)

1. Pregnant patients (<u>≥</u> 24 weeks) that do not meet the trauma criteria should be transported to closet OB/GYN facility
2. Consider contacting medical control to address concerns about patient care, appropriate receiving facility, or air transport decisions.
3. See *Air Medical Transport* (Transports by Helicopter) p. 11.

Inter-Hospital Criteria Of a Trauma Patient to a Designated Trauma Center

Inter-hospital transfer to trauma center will require a physician to physician consult. The referring and receiving physician may use the following criteria for determination of that transfer:

Adult	***Pediatric***
	Any pediatric patient with a Pediatric Trauma Score ≤ 6. * See pediatric trauma score below
Respiratory Bilateral thoracic injuries Significant unilateral injuries in pt's >60 (e.g. pneumothorax, hemo-pneumothorax, pulmonary contusion, >5 rib fractures). Significant unilateral injuries in patients with pre-existing cardiac and/or respiratory disease. Respiratory compromise requiring intubation. Flail chest.	**Respiratory** Bilateral thoracic injuries Significant unilateral injuries in patients with pre-existing cardiac and/or respiratory disease. Flail chest.
CNS Unable to follow commands Open skull fracture Extra-axial hemorrhage on CT, or any intracranial blood. Paralysis Focal neurological deficits GCS ≤ 12	**CNS** Open skull fracture Extra-axial hemorrhage on CT. Focal neurological deficits
Cardiovascular Hemodynamic instability as determined by the treating physician. Persistent hypotension. Systolic B/P (<100) without immediate availability of surgical team.	
Injuries Any penetrating injury to the head, neck, torso or extremities proximal to the elbow or knee without a surgical team immediately available*. The combination of trauma with burns. Significant abdominal to thoracic injuries in patients where the physician in charge feels treatment of injuries would exceed capabilities of the medical center.	**Injuries** Any penetrating injury to the head, neck, chest abdomen or extremities proximal to the knee or elbows without a surgical team immediately available. Combination of trauma with burn injuries Any injury or combination of injuries where the physician in charge feels treatment of the injuries would exceed the capabilities of the medical center.

BURN RELATED INJURIES

The American Burn Association has identified the following injuries that usually require referral to a burn center.

- Partial thickness and full thickness burns greater than 10% of the total body surface area (BSA) in patients under 10 or over 50 years of age.
- Partial thickness burns and full thickness burns greater than 20% BSA in other age groups.
- Partial thickness and full-thickness burns involving the face, eyes, ears, hands, feet, genitalia or perineum of those that involve skin overlying major joints.
- Full-thickness burns greater than 5% BSA in any age group.
- Electrical burns, including lightning injuries; (significant volumes of tissue beneath the surface may be injured and result in acute renal failure and other complications).
- Significant chemical burns.
- Inhalation injuries.
- Burn injury in patients with pre-existing illness that could complicate management, prolongs recovery, or affects mortality.
- Any burn patient in whom concomitant trauma poses an increased risk of morbidity or mortality may be treated initially in a trauma center until stable before transfer to a burn center.
- Children with burns seen in hospitals without qualified personnel or equipment for their care should be transferred to a burn center with these capabilities.
- Burn injury in patients who will require special social and emotional or long term rehabilitative support, including cases involving child abuse and neglect.

Transports by Helicopter

1. All trauma patients transported by air must meet the clinical trauma triage criteria for transport to the closest Level I or Level II trauma center or burn center
2. Patient requires a level of care greater than can be provided by the local hospital.
3. Patient requires time critical intervention, out of hospital time needs to be minimal, or distance to definitive care is long.
4. Utilization of local ground ambulance leaves local community without ground ambulance coverage.

Implementation of the Hampton Roads MCI Plan

Mass Casualty Incidents will be considered in one of five (5) categories:

1. Expanded Medical Incident - Requires the use of local resources and/or mutual aid to manage the incident.
2. Major Medical Incident - Requires the use of regional and/or multi-regional resources to manage the incident.
3. Disaster - Requires the use of state and/or federal resources to manage the incident.
4. Catastrophe - Destruction and loss of local infrastructure, outside resources required.
5. HAZMAT/WMD – Requires the use of the local or regional HAZMAT team may include the Hampton Roads Metropolitan Medical Response System Strike Team (HR-MMST).

After the implantation of the Hampton's Roads MCI plan the following communications will occur to determine the proper destinations of trauma patients.

Scene-to-Hospital Communications

Ambulance-to-Hospital Communications - During an MCI, routine ambulance to hospital communication procedures are suspended. TRANSPORTATION (or EMS/MEDICAL COMMUNICATIONS COORDINATOR) will communicate patient information directly to the Coordinating ED. The Coordinating ED will relay the information to the receiving hospitals.

Scene-to-Hospital Communications - TRANSPORTATION (or EMS/MEDICAL COMMUNICATIONS COORDINATOR) will work with the Coordinating ED via the most reliable channels. Contact options are as follows:

- Local agency-to-hospital radio channel *
- COR
- HEAR
- Telephone

* If the dedicated local channel is utilized, the Incident Commander should request that the dispatcher restrict usage of the channel to this incident only. Ambulances working calls elsewhere in the community will need to utilize alternate means of communications.

Coordinating ED - In the early stages of the incident, a Coordinating ED must be established. TRANSPORTATION or INCIDENT COMMANDER should contact the closest hospital to advise them of the emergency. It is anticipated that the nearest facility will receive many patients who leave the scene on their own, so early notification is essential.

The closest hospital should be advised of the situation, number of patients, and types of injuries involved. It will be that hospital's decision based on their capabilities at the time as to whether they will accept or decline the role of "Coordinating ED." Should the closest hospital opt not to assume the role of "Coordinating ED," contact should be made with Sentara Norfolk General for incidents in the TEMS area or Riverside Regional Medical Center for incidents in the PEMS area. Each of these facilities is the default coordination site for their respective areas.

Patient Distribution - Once hospital capacities are provided by the Coordinating ED, TRANSPORTATION will start distributing patients in accordance with those capacities. He/she will determine the destination for each patient on site. The Coordinating ED will serve as an advisor when distributing unique cases (i.e. multiple burn victims in excess of the capacity of the nearest Burn Center).

Should patients be ready for transport prior to receipt of capacities from the Coordinating ED, TRANSPORTATION will commence distributing patients based on normal transport patterns.

PI/QI Process

The TEMS Trauma Triage Committee will be responsible for the effective identification, analysis, and correction of problems related to the TEMS Regional Trauma Triage plan. This requires an objective review by qualified, appropriate members of EMS and hospitals programs within the TEMS Region, protected by a process which ensures confidentiality.

Regional EMS System Analysis *(PI/QI)*

Quality Improvement is critical to the evaluation of the EMS & Trauma System in the Tidewater EMS Region. A broad look at what contributes to community health must include data from hospitals and prehospital agencies, so comprehensive care at the right time and at the right place can be ensured in each community. Accurate regional data can provide specific information about the health of our EMS & Trauma System and individual communities, facilities, and about prehospital services.

1. The goal of TEMS QI Committee is to:
    a. Design and implement QI projects that are practical and are able to collect patient care statistics to evaluate system effectiveness and identify trends in patient care.
    b. Establish Regional Clinical Bench Marks to measure the TEMS Regional system effectiveness.
    c. Request for projects may be directed by the Operational Medical Direction (OMD) Committee, PI/QI Committee or other EMS agencies or hospitals.
    d. Trend data and outcomes to identify strong and weak points in the region's trauma care system with the goal of no preventable trauma deaths as identified by a multi-disciplinary quality improvement (QI) committee.
2. The Trauma Triage QI Committee Membership is comprised of the following membership:
    a. 2 ED physicians
    b. 2 trauma surgeons
    c. 1 OEMS approved OMD
    d. 2 ED nurses
    e. 1 trauma nurse coordinator
    f. 2 hospital administrators
    g. prehospital provider from Air Medical Service
    h. prehospital provider from Fire Based EMS Service
    i. prehospital provider from Career Based EMS Service
    j. prehospital provider from Volunteer Based EMS Service
    k. 2 EMS administrators
    l. 1 medical examiner
    m. 1 TEMS support staff
    n. additional representatives of hospitals are added to ensure that each hospital in the region has at least one hospital on the committee.

3. The term for members of the Trauma Triage Committee will be two years, unless determined otherwise by the chairperson, with half of the committee, rotating every year. The trauma surgeons, trauma nurse coordinators, and medical examiner will rotate their positions among themselves without specific terms.

4. Meetings will be held bi-monthly and will be rotated amongst the region's hospitals. A yearly scheduled will be posted on the region's website and distributed to all committee members at the beginning of each year.

Trauma Triage Project *(QI)*

1. The goals of the Trauma Triage project is to identify the frequency of
(i) incorrect triage in comparison to the total number of trauma patients delivered to a hospital prior to pronouncement of death
(ii) incorrect diversions of EMS transport to hospital

2. Data collection will be gathered from the following sources:
(i) Trauma Triage Data Form *(Complete by each EMS agency)*
(ii) Trauma Registry *(Sentara Norfolk General, Sentara Virginia Beach General, Riverside Regional Medical Center)*

3. A Regional Clinical Bench Mark will be established to watch trends in the TEMS Trauma Triage Program

Month	Major Blunt Trauma	Over/Under Triage	Pediatric Trauma	Penetrating Trauma
January	X			
February	X CNS			
March	X Geriatric			
April				X
May				X Torso
June	X Water Sports			X Extremity
July	X Water Sports		X	
August	X Water Sports		X	
September			X	
October		X		
November		X		
December		X		

2010 Schedule of Topics for Trauma PI

EMS Agency Name:

Month:

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DATE		Blunt Y or N	Penetrating Y or N	Pediatric Y or N	Survival to ED Y or N	Level ALS or BLS	Comments
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
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18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
TOTAL							

DATE		Trauma Transport Criteria Y or N	Appropriate Destination Y or N	Level 1 or 2 TC Y or N	Level 3 or > TC Y or N	Comments
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
TOTAL						

TEMS Trauma Centers/Hospitals/Burn

Centers Level I Trauma Centers

Level I trauma centers have an organized trauma response and are required to provide definitive care for every aspect of injury, from prevention through rehabilitation. These facilities must have adequate depth of resources and personnel with the capability of providing leadership, education, research and system planning.

Includes: Sentara Norfolk General Hospital (600 Gresham Drive, Norfolk)

Level II Trauma Centers

Level II trauma centers have an organized trauma response and are also expected to provide initial definitive care, regardless of the severity of injury. The specialty requirements may be fulfilled by on call staff that is promptly available to the patient. Due to some limited resources, Level II centers may have to transfer more complex injuries to a Level I center.

Level II centers should also take on responsibility for education and system leadership within their region.

No Level II center located in the

TEMS region. Level III Trauma

Centers

Level III centers, through an organized trauma response, can provide prompt assessment, resuscitation, stabilization, emergency operations and also arrange for the transfer of the patient to a facility that can provide definitive trauma care.

Level III centers should also take on responsibility for education and system leadership within their region.

Includes: Sentara Virginia Beach General Hospital (1060 First Colonial Road)

Non Trauma Center Hospitals

Non centers, can provide prompt assessment, resuscitation, stabilization, and arrange for the transfer of the patient to a facility that can provide definitive trauma care.

Includes: Bon Secours Maryview Medical Center, Bon Secours Depaul Medical Center, Sentara Obici, Sentara Bayside, Sentara Leigh, Chesapeake General Hospital, Children's Hospital of the King's Daughters, Shore Memorial Hospital, Southampton Hospital, Naval Medical Center; as well as the following free-standing emergency departments: Bon Secours Harbourview ED, Sentara Belle Harbour ED and Sentara Princess Anne ED.

Burn Centers

Sentara Norfolk General Hospital serves as the Burn Center for the TEMS Region.

TEMS Regional Demographics

The Tidewater Region Defined

EMS regions are defined by the Virginia Board of Health. The Code of Virginia, §32.1-111.11, charges regional EMS councils with the development and implementation of an efficient and effective regional emergency medical services delivery system (Appendix 1 e). A board of directors representing the localities served and other related organizations enters into a contract with a private, nonprofit regional EMS organization to provide various planning and coordination functions within each region. In the Tidewater region, the Tidewater EMS Council, Inc. is the contracted agency.

Geography and Climate

The Tidewater EMS region encompasses six cities and four counties in southeastern Virginia. It is bordered by the Atlantic Ocean to the east, North Carolina to the south, Maryland's Eastern Shore to the North, and Hampton Roads, the James River, and several rural counties to the west.

The 2717–square mile EMS region subdivides into two distinct geographical areas. The rural Eastern Shore (Planning District 22) lies to the north and is separated from the remainder of the region by the Chesapeake Bay and linked by a 17.6-mile bridge and tunnel. The Eastern Shore's two counties are Accomack and Northampton.

To the south, a combination of urban, suburban, and rural jurisdictions form the larger portion of the region. This area, known as Southside Hampton Roads (formerly Planning District 20, now part of Planning District 23), includes the cities of Norfolk, Virginia Beach, Portsmouth, Chesapeake, Suffolk, and Franklin, and the counties of Southampton and Isle of Wight.

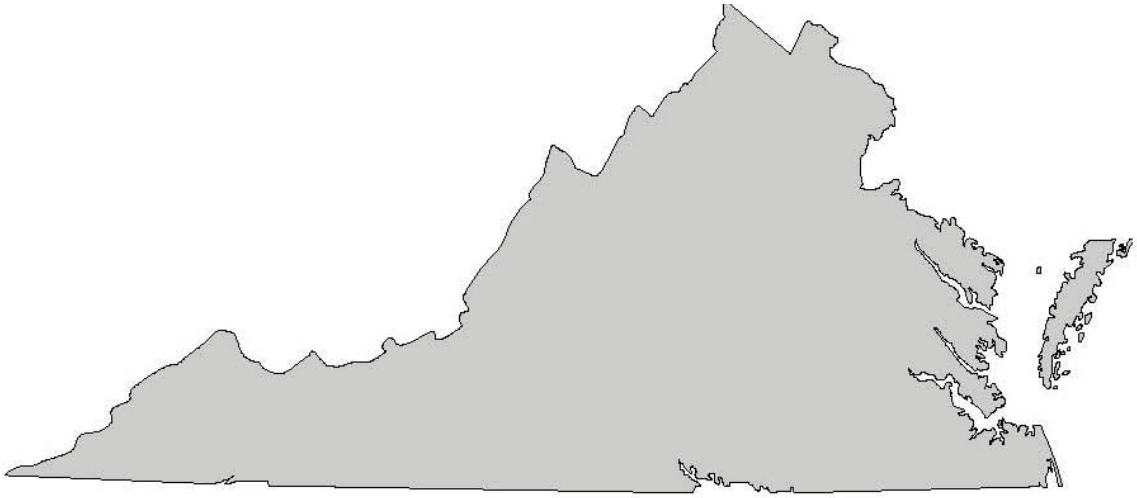
The region is generally low-lying and topographically unremarkable. Combined with its coastline location, the region is vulnerable to coastal storms and hurricanes. Subsequent storm surge, particularly along the heavily populated Virginia Beach resort and residential coast, and widespread flooding pose significant threats. Other weather phenomena of significance are tornadoes, usually spawned by hurricanes or severe thunderstorms, and winter snow. The normal annual snowfall is 8.2 inches (National Weather Service, Norfolk), though over 40 inches were recorded in 1980 and over 18 inches hit the area in one storm in 1982. Generally, the climate is not extreme, moderated by the effect of the Atlantic Ocean and the Chesapeake Bay.

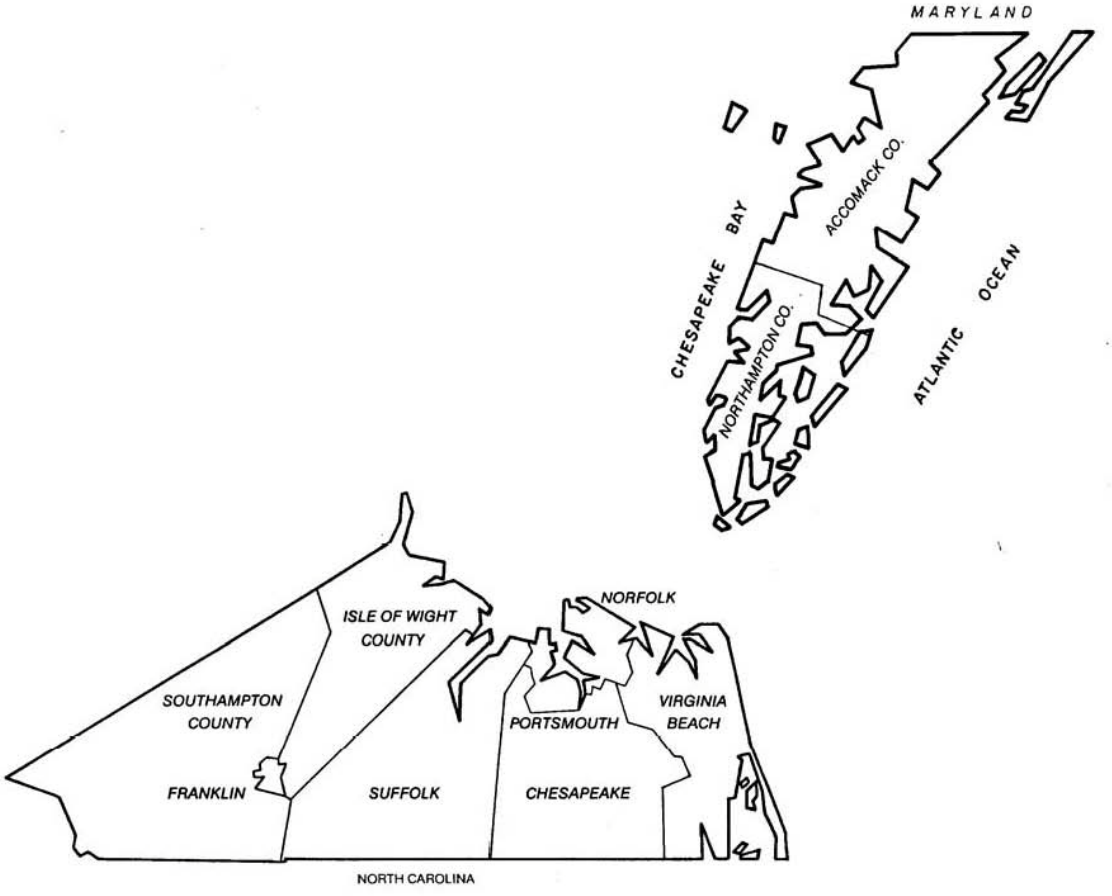
Demography

Between 1997 and 2000, the population of the Hampton Roads region grew from 1,099,000 to 1,130,000 (provisional estimate, Weldon Cooper Center for Public Service, University of Virginia). During that period, the population of Hampton Roads grew by about 0.7% annually and population on the Eastern Shore grew by about 0.1% annually.

During the past decade, the greatest total growth occurred in the suburban and rural areas of Chesapeake, Virginia Beach, and Suffolk. The greatest growth, relative to population, occurred in Chesapeake, Suffolk, Accomack County, and Isle of Wight County. The two core cities of Norfolk and Portsmouth lost population during the decade.

This growth represents a slowdown from the average 1.22% annual growth in the previous period between 1970 and 1984. Continued growth at the 1997–2000 rate would result in a year 2004 regional population of approximately 1,144,125.




MARYLAND
CHESAPEAKE BAY
ACCOMACK CO.
NORTHAMPTON CO.
ATLANTIC OCEAN
NORFOLK
ISLE OF WIGHT COUNTY
SOUTHAMPTON COUNTY
PORTSMOUTH
VIRGINIA BEACH
FRANKLIN
SUFFOLK
CHESAPEAKE
NORTH CAROLINA

Trauma Care Resources

EMS Agencies

Daily pre-hospital emergency care in the region is provided by a combination of municipal and volunteer EMS services. Three types of services predominate: a. combination municipal fire and EMS departments, b. volunteer rescue squads with career or wage personnel support provided by a county and c. the all-volunteer systems.

The Cities of Norfolk, Chesapeake, Suffolk and Portsmouth are served by municipal combined fire and EMS
departments with cross-trained, dual role personnel. Chesapeake and Suffolk are also served by volunteer components. The City of Virginia Beach EMS has a paid EMS staff of 32 career medics and a large volunteer component which compliments the municipal fire department.

The western portion of the Tidewater region, including Isle of Wight and Southampton counties and the city of Franklin and town of Smithfield, is served by a combination volunteer and career providers. The Eastern Shore region of the TEMS region, including Northampton and Accomack counties, is also served by a combination of volunteer and career providers.

EMS Personnel

Adequate numbers of qualified emergency physicians, emergency and critical care nurses, allied health personnel, and pre-hospital personnel are generally available throughout the region to deliver a complete, responsive emergency medical service on a 24-hour basis. There are over 2,400 certified EMS providers involved in the delivery of EMS in the TEMS Region not including public safety personnel (police, fire, etc.) who are not affiliated with licensed EMS agencies. Pockets of staffing deficiency which exist are improving due to provision of paid daytime responders in some rural areas.

The regional CISM team consists of professional health care providers and peer debriefers (EMS, fire, dispatchers and law enforcement personnel) who volunteer for this duty and are available on a 24-hour basis. Operational policies have been developed by the team, and all members participate in standardized CISM training programs. The team typically sponsors at least one basic training course per year that is used as a recruitment tool. The state Office of EMS conducts an annual CISM conference in Virginia Beach that also includes basic CISM training as well as various advanced topics for team member continuing education.

EMS Vehicles

The TEMS Region has approximately 217 ground ambulances, and relies on rotary wing and one fixed wing aircraft from adjoining regions to meet emergency patient transportation needs. An additional 198 sedans, utility vehicles and fire apparatus provide basic or advanced life support first response. All EMS vehicles conform to the established design and equipment standards as certified by the state Office of EMS through periodic inspections. In addition to the EMS vehicles, there are other varied vehicles throughout the region licensed for wheelchair transportation.

EMS response times average from 8 - 15 minutes in the rural areas to 6 minutes or less in the urban/suburban section of the region, where the majority of the population resides. Although geographic distribution of ambulances is generally appropriate, occasional pockets of under coverage exist. Vehicles are sometimes relocated for an effective response position.

Each ALS vehicle in the Tidewater region is equipped with a locked medication box containing 30 emergency medications. In agreement with the adjacent Peninsula Emergency Medical Service Council, medication boxes in both regions are stocked with the same medications to facilitate interregional transport of patients, technician training and box exchange.

Other ground transport services available to the Tidewater region include three neonatal/pediatric ambulances operated by the Children's Hospital of the King's Daughters (CHKD) in Norfolk, and two

specially equipped cardiac catheterization (Stat 1) transport ambulances operated by Sentara Medical Transport. The neonatal/pediatric units are staffed with personnel trained to handle pediatric patients, neonatal patients and the high-risk mother. These units serve eighteen hospitals in a seventy-mile radius of the hospital including certain North Carolina hospitals. The Stat 1 ambulances primarily provide interfacility transport of high-risk patients requiring coronary artery catheterization and other similar procedures.

Rotary wing air transport within the region is provided by the Nightingale Air Ambulance Service, operated as a non-profit entity of the Sentara Health System. Supplemental services are available from the Virginia State Police Medflight program, the Maryland State Police, Life-Evac, the U.S. Coast Guard and the U. S. Navy.

Nightingale utilizes one dedicated twin-engine helicopter (BK-117) capable of cruise speeds of 140-145 miles per hour. The service, based at Sentara Norfolk General Hospital, operates with a three-person flight crew (pilot, nurse and paramedic) and an on-duty mechanic. Watercrafts are an important link in the regional EMS system that is bordered and interwoven by bodies of water. The local police departments maintain their shorelines with small craft, and assist EMS agencies as needed. Various EMS agencies also operate some small watercraft for rescue and recovery operations. Additional locally based dive and surf rescue teams are available on an as-needed basis.

EMS Communications

There are two systems utilized in the region for medical communications. The VHF (or HEAR) radio system is used by all ambulances for patients receiving basic or routine advanced life support care. The UHF (or COR) system is utilized for more critical patients requiring physician communication for consultation, orders and refusals (COR). The UHF system supports biomedical telemetry.

It is standard in the region that all ambulances have the VHF system and that mobile radios have all four frequencies of the Virginia Office of EMS VHF Initiative (155.205, 155.340, 155.380, 155.400). These frequencies are also the foundation of the regions' hospital-to-hospital, ambulance-to-ambulance, and scene-to-hospital mass casualty communications plan.

It is the standard in the region that all advanced life support ambulances have the UHF mobile system, accessing all ten MED channels. The UHF system is a back-up system in the mass casualty communications plan, and might be promoted as the VHF system becomes overloaded during major incidents. Many agencies also use the 800 MHz radio frequencies as a means of communication to local hospitals. It is imperative, however, that some forms of communication take place between the EMS crew and the receiving hospital during the care and treatment of the trauma patient. Every attempt at communication should be made.

Trauma Education

Sixty percent of the region's 3,400 EMS providers are EMT-certified. 1% are certified at the First Responder level, 51% are certified at the EMT level, 1% are certified as Shock-Trauma Technicians, 25% are Enhanced level, 7% are certified at the Cardiac level, 5% are Intermediate level, and the remaining 16% are Paramedics. Other personnel are in training or are driver only/auxiliary members.

All EMS personnel in Virginia require certification by the state. The Code of Virginia assigns the Department of Health the responsibility for ensuring that all providers of emergency medical services are adequately trained to perform their duties as emergency medical technicians. Local EMS agencies and their medical directors then verify training and competency of EMS providers through local orientation and street supervision.

The state Office of EMS has developed examination and certification guidelines for six levels of prehospital care providers. The EMT, Intermediate and Paramedic levels conform to nationally established Department of Transportation (DOT) training standards.

Tidewater Community College offers EMT, EMT-Enhanced, EMT-Intermediate and EMT-Paramedic training. Norfolk Fire and Rescue is offering EMT-Intermediate training. The Center for Emergency

Health Services is a private non-profit training entity operating in cooperation with The Center for EMS Training offering EMT, EMT-Intermediate, and EMT-Paramedic training. Network Medical Systems offers EMT-Intermediate and EMT-Paramedic refresher training.

With passage of revised EMS regulations in 2003, the state requires providers of initial Intermediate and Paramedic courses to be accredited training sites. Accreditation follows a detailed application and site review process, with guidelines to ensure adequate educational resources to provide a high quality of advanced level training. Coordinators of these programs must receive additional training as ALS Course Coordinators and be pre-approved by the region.

First Responder, EMT, EMT-Shock Trauma, EMT-Enhanced classes are conducted throughout the region as needed by the community college, EMS agencies, fire departments or other public and private groups and individuals.

Testing of students who complete initial state certification courses (and for others who are recertifying, re-entering the system or challenging state certification with national or another state's certification) is coordinated by the council under a contract with the Office of EMS. Known as "consolidated testing", large test sites are scheduled by the council in cooperation with test site coordinators throughout the region. Site coordinators arrange the test facilities, evaluators and "victims"; the council promotes test dates and handles the registration process; and state staff officiates at each site. Typically, 16 consolidated tests are scheduled annually throughout the region. Those who evaluate candidates during testing are trained, and retrained periodically, in standardized evaluation techniques by the council.

The state requires recertification of all EMS training levels at certain intervals: EMT, every 4 years; Enhanced, and Intermediate and Paramedic, every 3 years; and EMT Instructor and ALS Coordinator, every 2 years. Individual agencies have traditionally assumed the responsibility of providing refresher and required continuing education topics.

Full refresher courses are offered by the Tidewater Community College, The Center for EMS Training, Network Medical Systems, Norfolk Fire Rescue and The Center for Emergency Health Services. Other continuing education programs, such as various rescue (e.g. vehicle extrication, emergency vehicle operation, etc.) and medical courses
(e.g. Basic Trauma Life Support, Advanced Cardiac Life Support, Pediatric Advanced Life Support, etc.) are offered by a variety of organizations and institutions on a regular basis.

The council publicizes available continuing education opportunities on its web site, through direct mailings, fax broadcasts and during various committee meetings. The council also coordinates a range of specialty courses not typically offered by the local agencies or educational institutions (e.g. Infection Control Officer courses, moulage courses, mass casualty management courses, CISM) on an as-needed basis. The state Office of EMS conducts annual EMT Instructor/ALS Coordinator renewal workshops, promoted by the EMS council.

References

Code of Virginia

§ 32.1-111.3. *Statewide Emergency Medical Care System*

A.

1. *Establishing a comprehensive emergency medical services patient care data collection and evaluation system pursuant to Article 3.1 (§ 32.1-116.1 et seq.) of this chapter;*
2. *Collecting data and information and preparing reports for the sole purpose of the designation and verification of trauma centers and other specialty care centers pursuant to this section. All data and information collected shall remain confidential and shall be exempt from the provisions of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.);*

B

1. A strategy for implementing the statewide Trauma Triage Plan through formal regional trauma triage plans developed by the Regional Emergency Medical Services Councils which can incorporate each region's geographic variations and trauma care capabilities and resources, including hospitals designated as trauma centers pursuant to subsection A of this section. The regional trauma triage plans shall be implemented by July 1, 1999, upon the approval of the Commissioner.

3. A uniform set of proposed criteria for prehospital and inter hospital triage and transport of trauma patients, consistent with the trauma protocols of the American College of Surgeons' Committee on Trauma, developed by the Emergency Medical Services Advisory Board, in consultation with the Virginia Chapter of the American College of Surgeons, the Virginia College of Emergency Physicians, the Virginia Hospital and Healthcare Association, and prehospital care providers. The Emergency Medical Services Advisory Board may revise such criteria from time to time to incorporate accepted changes in medical practice or to respond to needs indicated by analyses of data on patient outcomes. Such criteria shall be used as a guide and resource for health care providers and are not intended to establish, in and of themselves, standards of care or to abrogate the requirements of § 8.01-581.20. A decision by a health care provider to deviate from the criteria shall not constitute negligence per se.

§ 32.1-116.2. *Confidential nature of information supplied; publication; liability protections.*

A. The Commissioner and all other persons to whom data is submitted shall keep patient information confidential. Mechanisms for protecting patient data shall be developed and continually evaluated to ascertain their effectiveness. No publication of information, research or medical data shall be made which identifies the patients by names or addresses. However, the Commissioner or his designees may utilize institutional data in order to improve the quality of and appropriate access to emergency medical services.

B. No individual, licensed emergency medical services agency, hospital, Regional Emergency Medical Services Council or organization advising the Commissioner shall be liable for any civil damages resulting from any act or omission preformed as required by this article unless such act or omission was the result of gross negligence or willful misconduct.

***EMS* Regulation**

12 VAC 5-31-390. Destination/trauma triage.
An EMS agency shall participate in the Regional Trauma Triage Plan established in accordance with § 32.1-111.3 of the Code of Virginia.

Tidewater Regional Trauma Triage Quality Improvement Referral

Purpose: The purpose of this referral is to improve the quality and efficiency of trauma care in the Tidewater region. This form is intended for positive and negative comments regarding incidents in the Tidewater region. *The intent of this form is to identify "system" issues. Information obtained will be used by the Trauma Triage Quality Improvement Committee to identify and offer solutions to improve the trauma system as a whole, with the ultimate goal being improved patient care.* All information obtained through this process will remain confidential.

Your Name: _____Telephone:_____

EMS Agency: _____ EMS Incident #: _____

Receiving Hospital/s: _____ _ Date of Hosp. Adm.: _____

Injury/Diagnosis: _____ _ Date/Time of Events: _____

Patient Name: _____ Age: _____

Patient SSN: _____ Patient DOB: _____

Purpose of the referral:

___ Patient Care
___ Disposition/Destination/Referral
___ Equipment Issue
___ Other

Description of Events:

_____
_____
_____
_____
_____

Pursuant to sections § 8.01-581.16, 8.01-581.17, 32.1-116.2, of the Virginia Code, data or information in the possession of or transmitted to the Commissioner, the Advisory Board, or any committee acting on behalf of the Advisory Board, any hospital or prehospital care provider, or any other person shall be privileged and shall not be disclosed or obtained by legal discovery proceedings, unless a circuit court, after a hearing and for good cause shown arising from extraordinary circumstances, orders disclosure of such data.

Fax this form to (757) 963-2325. The original must be sent via U. S. Mail to the address provided or destroyed.

For QI Committee Use:

Date received: _____ Action taken:

_____
_____
_____
_____