

# Letter from the Director

The winds of change continue to blow since September 11, 2001. Public healthcare will never be the same. This year has seen many changes related to 9/11, events and accomplishments.

The largest and most obvious change occurred to this author. There was a comprehensive restructuring of the Mississippi Department of Health organizational structure. Mr. Jim Craig, the State EMS Director for the past four years, was promoted to Director of Health Protection. I was previously the Director of Trauma System Development and Injury Control in the Bureau of EMS. Subsequent to Mr. Craig's promotion, I was given the opportunity to serve as the State's new EMS Director on March 1, 2004.

Other major events that occurred during this fiscal year include:

- The National Highway Traffic Safety Administration (NHTSA) conducted a "Reassessment of Emergency Medical Services"
- Continued Trauma Care Center Educational/Consultative Visits
- Revised Trauma Care Regulations
- Implemented the EMS/EMSC/Trauma Web Sites

In April 2004, the Mississippi EMS System was tested by a derailment of "The City of New Orleans" Amtrak train in Yazoo County. Nearly 100 passengers were injured and over 20 ambulances responded to assist with transporting patients to local hospitals.

In FY'04, \$7,510,172 was distributed to trauma centers and eligible physicians for uncompensated care reimbursement. The EMS Operating Fund disbursed \$1,711,221 to 52 counties for enhancement to EMS services.

Finally, in January 2004, BEMS conducted an "EMS Bioterrorism Needs Assessment" of all EMS Providers in the state. This assessment concluded the need for EMS Bioterrorism Awareness Training and pertinent equipment. Additionally, BEMS conducted an "Assessment, by County, of Paramedic Coverage in Mississippi." This assessment demonstrated a possible misalignment of paramedic coverage in the state.

As I began this letter discussing changes, I can feel the winds of change blowing again. This coming year will bring more and greater changes to BEMS. Our responsibilities will grow as will our staff. We will continue to enhance our EMS/Trauma System to remain the National model it has become.

I cannot conclude this letter without pausing to thank my friend and mentor, Jim Craig. Without Jim's patience and continuing assistance, I would not be in the position to write this letter.

I look forward to working with all of you, continuing to improve our EMS and Trauma System.

Sincerely,



Keith E. Parker, Director  
Bureau of Emergency Medical Services

# Mississippi Department of Health

Brian W. Amy, MD, MHA, MPH  
State Health Officer

Jim Craig, BS, CSM, NREMT-B  
Director, Health Protection

Keith E. Parker, BS, RN  
Director, Bureau of Emergency Medical Services

## **Bureau of Emergency Medical Services**

Karey Riddle, NREMT-B  
Policy/Planning Director

Stan Welch  
Director of Licensure Certification & Evaluation

Gail Lambert, NREMT-P  
Director of EMS System Evaluation

Scott Stinson, NREMT-P  
Director of EMS Testing, Training, & Certification

Jim Wadlington, RN  
Director of Trauma System Development & Injury Control

Christy Craft, RN  
Director of Trauma System Development

## **Office of Health Protection**

Alisa Williams, BS, NREMT-P  
Policy/Planning Director

## **Consultants**

Kathleen Martin, MSN, RN  
Bob Heilig, RN, JD

Bureau of Emergency Medical Services  
Mississippi Department of Health  
PO Box 1700 Jackson, MS 39215  
(601) 576-7380 – Voice (601) 576-7373 - Fax

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# Section I

## Overview of the Bureau of Emergency Medical Services

### History

The Emergency Medical Services (EMS) System is a component of the Mississippi health care system. EMS addresses all possible injuries and illnesses, and treats all ages. The Mississippi EMS System was created to meet the immediate needs of the acutely ill and injured; provide stabilization and transportation to the most appropriate facility that meets the patients needs.

The components of an EMS System include:

- Manpower
- Training
- Communications
- Transportation
- Facilities
- Critical care units
- Public Safety agencies
- Consumer participation
- Access to care
- Patient transfer
- Patient records
- Public education
- Evaluation
- Disaster planning
- Mutual Aid

The Federal Government, through the Emergency Medical Services Act of 1973, established standards for the organization of emergency services. Prior to 1973, government involvement in emergency medical services was primarily limited to providing an emergency department in the public hospital. Private operators, predominantly funeral homes, provided emergency transportation.

The Mississippi EMS Act of 1974, and subsequent amendments, authorized the Mississippi Department of Health to create a Bureau of Emergency Medical Services. The Act authorized this Bureau to license all ambulance services in Mississippi, to require specific equipment and standards for emergency vehicles, to provide for training and certification of emergency medical technicians (EMT's) and Medical First Responders, and to assist with the creation and the provision of technical assistance.

### Certification, Education, and Testing

The Mississippi Board of Health (BOH) is responsible for the establishment, maintenance, and improvement of a system to regulate emergency medical services (EMS) in the state of Mississippi. The Board has established standards for the training, testing, and certification of all pre-hospital personnel. (Mississippi Code, 1972, Title 41, Chapters 59 and 60, The Emergency Medical Services Act of 1974)

The Branch of Certification, Education, and Testing is responsible for insuring that providers of emergency care are properly trained and competency tested prior to state certification.

The Branch includes:

- EMS Testing, Training & Certification
- First Responder Coordinator/Inspector
- Driving and Basic Life Support (BLS) Certifications
- Advanced Life Support (ALS) Certifications

The Mississippi Board of Health has designated the Department of Transportation's National Standard Curricula as the minimum training standards for all levels of EMS providers. The National Registry of Emergency Medical Technicians' (NREMT) examination and certification system is utilized for verification of competencies for Medical First Responders and all levels of EMTs.

The Mississippi Community College system and the University of Mississippi Medical Center provide EMT training in the state. Sixteen Community Colleges offer EMT – Basic training and six offer Paramedic training. All training facilities utilize curricula developed by the Research and Curriculum Unit at Mississippi State University.

National Registry testing is offered at least four times per year in Jackson. Additional regional test dates have been offered corresponding with the end of college semesters.

Mississippi EMT certification is dependent on National Registry certification and affiliation with a Mississippi licensed ambulance service. The affiliation with an ambulance service is required to insure physician oversight for the EMTs.

Applications for certifications are received by mail or in person at the Bureau of Emergency Medical Services (BEMS) office. Personal information is entered in the MEMSIS data system, training and National Registry certifications are verified, and State certifications are issued.

## **Licensure and System Evaluation**

Mississippi Code of 1972 Annotated requires that ambulance inspections be performed at least two times per year. The Licensure and System Evaluation Branch of the Division of EMS Licensure, Certification and Evaluation assures compliance with Mississippi EMS: The Law, Rules, and Regulations. This includes licensing ambulance services by location and issuing permits for each vehicle operated. Licenses are issued for ground and air ambulance services.

The Branch is responsible for developing and implementing a statewide performance improvement plan for prehospital care. The "Statewide Performance Improvement Plan for Prehospital Care" will establish a framework for monitoring, evaluation, and improvement of care being rendered by local emergency medical services.

## **Trauma System Development and Injury Control**

With the passage of legislation during the 1991 Mississippi legislative session, the Bureau of Emergency Medical Services (BEMS), Mississippi Department of Health (MDH), was designated as the lead agency to develop a trauma care plan for the state.

The law provides that BEMS act as the lead agency in consultation with and having solicited advice from the Emergency Medical Services Advisory Council, shall develop a plan and submit it to the Legislature for the triage, transport, and treatment of major trauma victims.

The Mississippi Trauma Advisory Committee (MTAC) was developed as a subcommittee of the EMS Advisory Committee. In 1998, they developed the Mississippi Trauma Care Regulations that were subsequently adopted by the Mississippi Board of Health in October of that year. These Regulations describe the requirements for Regional Plan development and the Trauma Center designation process. They also describe the hospital requirements for trauma program development which includes the entire continuum of care from injury to rehabilitation.

The Mississippi legislature added \$6 million to the Trauma Care Trust Fund during the 1999 Legislature Session. These additional monies brought the total amount in the Trauma Care Trust Fund to approximately \$8 million per year. Legislators authorized annual funding for regional support and uncompensated trauma care, as defined by the trauma registry through regional contracts with the Department of Health.

Additionally, in 1999, seven trauma care regions were designated by the Mississippi Department of Health. Each designated Trauma Care Region is a federally recognized, not-for-profit organization.

Hospitals that voluntarily choose to participate in the Mississippi Trauma Care System are designated as either Level I, II, III, or IV Trauma Centers. A designation process is preformed for Level I, II, and III Trauma Centers. Out of state consultants and the trauma staff comprise the designation site survey team. The designation process for Level IV Trauma Centers is conducted by in-state consultants and trauma staff. Technical support for trauma system development to Trauma Care Regions and Trauma Care Centers is provided in a timely manner by the Division of Trauma System Development and Injury Control (DTSDIC).

The Trauma Registry data bank is stored and maintained at BEMS. Data from trauma centers are required to be submitted to BEMS semiannually. The data submitted is used by the DTSDIC to show trends in events. The DTSDIC conducts training of the statewide Trauma Registry, called Trauma One, to trauma center staff.

The DTSDIC provides educational workshops to trauma care regions and trauma care centers to improve care and system development. These workshops are conducted by trauma staff and consultants.

Through BEMS, reimbursements are given to eligible physicians and trauma centers for uncompensated care submitted. By receiving these funds, the DTSDIC is required to conduct financial audits on physicians and trauma centers on an annual basis. These audits are conducted to verify that funds received for trauma care are appropriated according to guidelines. Funds that are paid back to The Mississippi Department of Health, due to audits, are deposited back into the trauma trust fund for disbursement. Trauma Care Regions receive administrative funds from BEMS through contractual agreements.

Emergency Medical Services for Children (EMSC) is the only Federal program that focuses on improving the quality of children's emergency care. It builds upon existing Emergency Medical Services (EMS) systems.

The goals of the EMSC Program are to ensure that state-of-the-art emergency medical care is available for ill or injured children and adolescents, to ensure that pediatric service is well integrated into an emergency medical services system, and to ensure that the entire spectrum of emergency services - including primary prevention of illness and injury, acute care, and rehabilitation - are provided to children and adolescents.

The Bureau of Emergency Medical Services (BEMS) was awarded an EMSC Program Planning grant in August of 1998. The goals of the planning phase were to evaluate the current state of pediatric care in Mississippi; to develop programs to improve the care of pediatric patients in the state; and to develop programs geared toward injury prevention and community involvement in pediatric issues. This was accomplished by conducting a pediatric needs assessment survey. This survey was sent to every hospital and pre-hospital provider in Mississippi.

As result of this survey, two areas of need in pediatric care were discovered: advanced pediatric education and injury prevention programs. These areas were addressed and programs were researched and developed to provide an advanced pediatric education course and a comprehensive school-based injury prevention program.

BEMS was awarded the EMSC Program Implementation grant in August 1999. This grant provided funding to implement programs development during the planning grant. The programs implemented include: advanced pediatric education courses and a comprehensive school-based injury prevention curriculum. The education courses include Pediatric Education for Pre-hospital Professionals (PEPP) course and Pediatric Basic Trauma Life Support (PBTLS) course. The injury prevention curriculum that was implemented is a program developed by the National Fire Protection Association called "Risk Watch".

PEPP represents a comprehensive source of pre-hospital medical information for the emergent care of infants and children. It teaches pre-hospital professionals how to better assess and manage ill or injured children. This course is administered at eight sites across the State. This course has been offered by the Mississippi EMSC Program to Mississippi physicians, nurses, and state certified EMT's at all levels, at no cost to the participants.

The PBTLS course is a one-day training program devoted to pediatric trauma care. This program provides information about pediatric trauma and pediatric assessment skills for critically injured children. The participant learns airway management, pediatric extrication, and immobilization skills from hands-on skill stations. Participants also learn how to communicate with various ages of pediatric patients and how to communication with the parents who accompany them. The PBTLS course is offered by the Mississippi EMSC Program to Mississippi physicians, nurses, and State Certified EMT's at all levels at no cost to the participant.

Risk Watch is a comprehensive school-based injury prevention program designed for children in preschool through eighth grade. The Mississippi EMSC Program is providing

the Risk Watch curriculum to any school in Mississippi that wishes to participate in the program. Each school is provided the resource material and an educational workshop to each participating teacher. This curriculum and workshop is provided to each participating school at no cost.

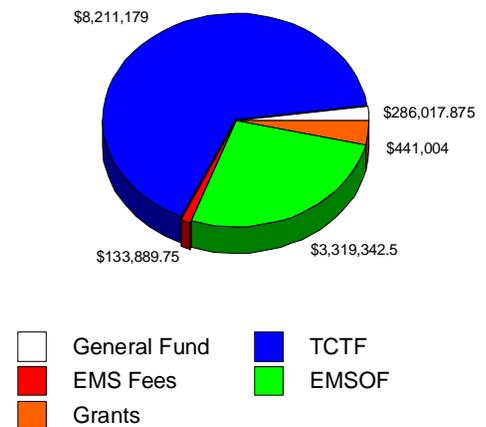
The EMSC branch implemented and continues to house the “Watch Out Program”. The program provides safety education to children and youth throughout the state. Programs are geared toward children, adolescents, youth and parents/care givers. The Branch of Injury Control will continue to collaborate with local organizations and determine the education needs of the community.

The equipment used in the presentation of these programs include: a smoke house for use with fire prevention and safety, “Andy” the Ambulance and “Pluggie” the Fire Plug for interaction with the kids at these safety programs.

## Funding

The Bureau of Emergency Medical Services receives funds from a number of sources including:

- General State Funds
- EMS Fees
  - Licensure Fees
  - Certification Fees
  - Permit Fees
  - Testing Fees
- EMSOF Fees
  - \$5 Moving Traffic Violation
- Trauma Care Trust Fund
  - \$5 Moving Traffic Violation
  - Uncompensated Care Appropriation
- Grant Funds
  - Health Resources Services Administration Trauma-EMS Program Grant
  - Emergency Medical Services for Children (EMSC) Grant



## Emergency Medical Services Operating Fund (EMSOF)

The Emergency Medical Services Operating Fund (EMSOF) was established in 1982 through legislation that added \$5.00 to fines assessed statewide on hazardous moving traffic violations. The funds are then distributed on a per capita basis to eligible governmental units (cities, counties, EMS districts) for local level EMS support. BEMS has administered the EMSOF since its establishment.

BEMS makes disbursements annually, upon request from each governmental unit. According to law, these distributions must be used in addition to existing annual emergency medical services budgets of the governmental units.

## EMSOF Disbursements

The criteria used for determining priority for local expenditures is as follow:

- Basic Life Support (BLS) – To increase the availability and/or improve the quality of basic ambulance service as described in Sections 41-59-1 through 41-59-49 of the Mississippi Code of 1972 as amended.
- Advanced Life Support (ALS) – To increase the availability and/or improve the quality of advanced life support services as defined in the Sections 41-60-11 through 49-60-13 of the Mississippi Code of 1972 as amended.
- Regionalization – To support or increase support for the establishment, administration, and/or expansion of EMS districts as defined in Sections 41-59-51 through 41-59-59 of the Mississippi Code of 1972 as amended.

The total collections since 1983 are \$27,719,462; disbursements since 1984 are \$24,342,096.

The use of the cumulative EMSOF disbursements are categorized below.

<b>Item</b>	<b>Amount</b>
Ambulances	\$9,793,323.60
ALS Equipment	\$3,002,065.67
Communications	\$2,205,842.30
Personnel	\$1,246,633.00
Training	\$1,481,267.95
BLS Equipment	\$1,070,972.90
Regionalization	\$1,337,556.10
Support Services	\$1,890,903.89

FY'04 utilization remained similar to previous years, with 48% of funds used for purchasing new ambulances or paying lease purchase notes on ambulances.

<b>Item</b>	<b>Amount</b>	<b>Percent</b>
Ambulances	\$892,997.00	48%
Support Services	\$56,221.89	3%
ALS Equipment	\$371,912.11	20%
Communications	\$328,730.30	18%
Training	\$105,412.70	6%
BLS Equipment	\$8,774.90	1%
Regionalization	\$98,590.10	4%

## **Emergency Medical Services and Trauma Care Regulation Development Process**

The Mississippi Department of Health (MDH) - Bureau of Emergency Medical Services (BEMS) aspires to set the standard of excellence for regulatory agencies by making decisions that are legally sound, fiscally responsible, operationally efficient, technology integrated, quality driven, and publicly accountable. The Mississippi Code 1972 gives the Mississippi Board of Health the authority to promulgate rules and regulations to govern the development and implementation of a comprehensive EMS and Trauma system in Mississippi. BEMS is responsible for regulating these rules and regulations.

These rules and regulations have been compiled in two documents:

- Mississippi EMS: The Law, Rules, and Regulations
- Mississippi Trauma Care Regulations

The process for developing and implementing rules and regulations is a long and detailed. It is an open process in which the public has multiple opportunities to provide feedback to the various committees assigned to approved and adopt the regulations. “Sunshine” laws in Mississippi require that all meetings of government bodies be open to the public. All public meeting must be posted within the Mississippi Department of Health building and on the Agency’s web site at least 30 days prior to the meeting.

In order for a *new* regulation to become adopted, it must be approved by a series of committees. However, before any major changes are made to regulations, BEMS will conduct a series of public hearings to obtain input for those that will be most affected by a change in regulations. The comments obtained in the public hearing are used to develop the draft regulation changes that will be presented to the various committees charged with development of the regulation changes.

The next step in the process is to submit regulation changes to the five-member Medical Direction, Training, and Quality Assurance (MDTQA) Committee. This committee is made up of physicians with expertise in EMS and/or trauma care. The State EMS Director acts as chairman and appoints the other members. The MDTQA committee reviews all regulation changes as well as any pertinent research or documentation that supports and/or opposes that the regulation change. Additionally, interested parties are able to present supporting and/or opposing views to the committee. After reviewing all documentation and public comment, the MDTQA committee makes recommendations that is then forwarded to the Emergency Medical Services Advisory Council (EMSAC) Regulation Subcommittee for EMS regulation changes or the Mississippi Trauma Advisory Committee (MTAC) Regulation Subcommittee for Trauma regulation changes.

Both the EMSAC and the MTAC have a Regulation Subcommittee that consists of six members appointed by the Chairman. The purpose of these subcommittees is to finalize the draft language for all regulation changes. Upon the subcommittee’s approval, the final draft changes to the regulations are sent to the full advisory council for approval.

The EMSAC is a 24-member multidisciplinary group of individuals that are appointed by the Governor for a four-year term. The MTAC is a subcommittee appointed from the EMS Advisory Council by the Chairman. These advisory councils were created in EMS Statute to advise the Mississippi Board of Health for issues related to EMS and Trauma. The advisory councils review all EMS and Trauma regulations and determine the impact it may have. Revisions to the draft regulations may or may not be made by the advisory council. Upon review of the draft regulations, the advisory council makes recommendations regarding regulation changes that are then submitted to the Mississippi Board of Health for adoption.

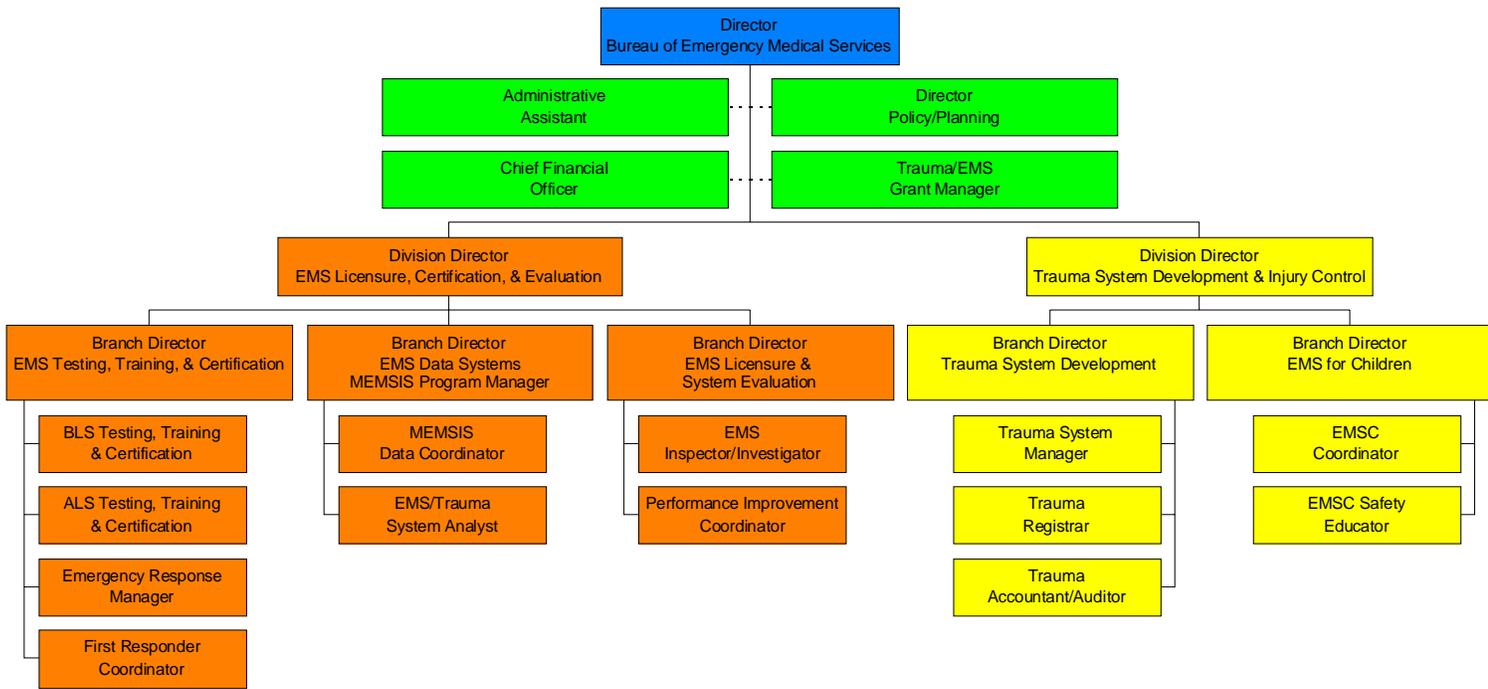
The Mississippi Board of Health (BOH) is a 12-member board which is appointed by the Governor and meets on a quarterly basis. Through statutory authority, the BOH promulgates all regulations regarding EMS and Trauma.

The first time a regulation change is presented to BOH, it is presented as an “intent to adopt” motion. This enables the regulation change to be published for public comment for at least three months. The regulation change is then presented at the next quarterly meeting of the BOH as a “final adoption” motion. At which time, if no other public comment is received, the regulation change is adopted into regulation.

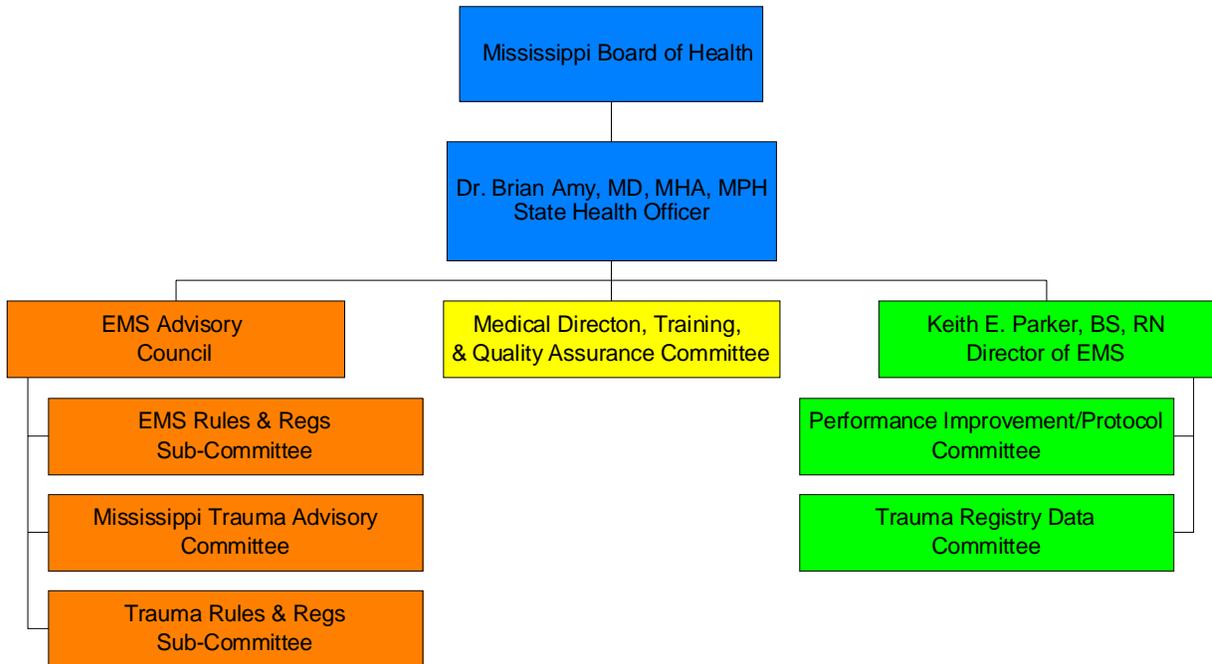
Under the rules of governance, all regulation changes must be submitted to the Secretary of State’s Office at least 30 days prior to final adoption. Additionally, upon the BOH adoption of regulations, they must be re-filed with the Secretary of State’s office for an additional 30 days prior to implementing the regulation change. The intent of this additional 30 days is to provide time for parties affected by the regulation changes to be notified and prepare to implement the changes.

The process for making changes is a long process; however, it is designed to ensure that any change to existing regulations is carefully researched and reviewed. It also ensures that all affected interested parties has ample time to provide comment on any change that is proposed. EMS and Trauma Regulations are constantly changing documents due to changes in national standards as well as changing issues within the state. This process is under constant review and changes to this process will be made on an as needed basis to ensure the public’s right to due process is protected

# BEMS Organization Chart



# Mississippi Advisory Groups



## Section II

# Emergency Medical Services (EMS)

### Mission Statement

*The mission of the Bureau of Emergency Medical Services (BEMS) is to organize, regulate, and maintain a statewide program to improve emergency medical care. BEMS strives to maintain and promote the highest standards of prehospital care for the citizens and visitors of Mississippi.*

### Introduction

Many people with greatly diverse backgrounds and talents contribute to the Emergency Medical Services System in Mississippi. These include: Bystanders, Firefighters, Law Enforcement Officers, Emergency Medical Dispatchers, Medical First Responders, Emergency Medical Technician – Basic (EMT-B), Emergency Medical Technician – Intermediate (EMT-I), Emergency Medical Technician – Paramedic (EMT-P), Nurses, and Physicians.

Quality is a priority for our patients. Our patients expect the highest quality care and it is the duty of BEMS, as a regulatory agency, to ensure that this is the product they receive. In addition, we strive to enhance the EMS system in Mississippi by providing technical assistance to services and personnel. Through teamwork and quality assurance, our goal is to provide the highest quality EMS to the citizens of Mississippi.

At present, 98 percent of the population of Mississippi has access to Paramedics. This is a significant achievement considering the rural nature of the State of Mississippi.

### Mississippi EMS Providers

All levels of EMS providers are certified by the Bureau of Emergency Medical Services (BEMS). The Division of Licensure, Certification, and Evaluation is responsible for testing, certifying, and maintaining provider records. There are five levels of Emergency Medical Services (EMS) providers. They are as follows:

- Medical First Responder
- Emergency Medical Services – Driver
- Emergency Medical Technician – Basic
- Emergency Medical Technician – Intermediate
- Emergency Medical Technician – Paramedic

## **EMS Personnel Training**

All emergency medical services providers are trained to the standards established by the United States Department of Transportation (USDOT).

Mississippi utilizes the National Registry of Emergency Medical Technicians' system of certification and testing. The National Registry establishes and implements uniform requirements for medical first responders and emergency medical technicians, their training, examination, and continuing education. The Registry is an independent, free-standing, non-governmental, not-for-profit organization. This is a system used by 46 states to insure competencies of knowledge and skills for prehospital providers. The Registry has bi-annual education and skill evaluation requirements to maintain these competencies

The Director of Testing, Training, and Certification is responsible for overseeing and approving all EMS Educational programs in the State of Mississippi. Fourteen days prior to the beginning of each course, an outline, course schedule, syllabus, clinical affiliation, course location, and instructor information must be submitted to BEMS for approval. All course instructors must be credentialed by the Department of Education. A brief description of each level of certification is listed below:

### **Medical First Responder**

The Medical First Responder is the first designated level of professional emergency medical care as outlined by the National EMS Education and Practice Blueprint. A Medical First Responder is usually the first medically trained person at the scene of an emergency. He or she uses a limited amount of equipment and life-saving procedures to perform patient care. Medical First Responders initially control the scene of an emergency and prepare for the arrival of other prehospital care providers. The training for Medical First Responders is a minimum of forty hours and is based on the United States Department of Transportation's National Standard Curriculum.

### **Emergency Medical Technician – Driver**

Mississippi requires operators of ambulance vehicles to be EMS-Driver certified. Driver programs must adhere to the USDOT Training Program in Operation of Emergency Vehicles.

### **Emergency Medical Technician – Basic**

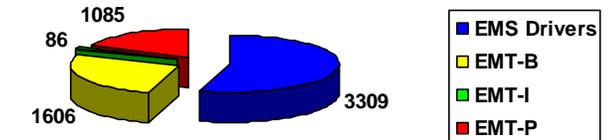
EMT-Basic (EMT-B) is the second level of training in the EMS Blueprint. The course covers all techniques of basic life support and provides a solid foundation for care of injured or ill patients in the pre-hospital setting. The minimum classroom time for the EMT-Basic course is 110 hours. Each student must also document five emergency ambulance runs and 10 hours clinical training to complete the course.

## Emergency Medical Technician – Intermediate

EMT-Intermediates (EMT-I) provide skills of EMT-Basics plus limited Advanced Life Support (ALS) skills (defibrillation, initiate IV fluids, draw blood samples, and limited advanced airway management). The EMT-I training program includes a minimum of 150 didactic hours, 40 hours of clinical, and 40 hours of field experience. EMT-I training is no longer available in Mississippi. There are 86 EMT-I's still certified in Mississippi.

## Emergency Medical Technician – Paramedic

EMT-Paramedics (EMT-P) provide the highest level of pre-hospital care. EMT-P's are trained to perform advanced cardiac resuscitation, emergency medications, and advanced IV therapy for medical and trauma emergencies along with advanced airway management. The minimum hours for EMT-Paramedic training are 800 didactic, 200 clinical, and 200 field experience.



*Total Certified Personnel in FY'04*

## Provider Education

### Emergency Medical Technician - Basic

EMT-Basic training is offered through the Mississippi Community College System and University of Mississippi Medical Center. Each training program and each individual class must be approved by BEMS.

All Mississippi Community Colleges in Mississippi, offer the EMT-B course on campus and at offsite locations.

In FY'04, 52 separate courses were provided through the Community College system, resulting in 500 individuals completing the course. Upon completion of an approved EMT course and verification of competence in each of the required practical skill areas, students may apply to take the National Registry Examination. This exam is offered, at minimum, four times a year.

### EMT-B National Registry Exam Results

	<b>1<sup>st</sup> Attempt Pass Rate</b>	<b>National Average Pass Rate</b>
<b>FY'02</b>	53%	68%
<b>FY'03</b>	57%	69%
<b>FY'04</b>	58%	66%

## **Emergency Medical Technician-Paramedic**

EMT-Paramedics provide the highest level of prehospital care in Mississippi. EMT-P's are trained to perform advanced cardiac resuscitation, administer emergency medications, IV therapy, and advanced airway management for medical and trauma emergencies.

All EMT-P's must first complete an EMT-B course. Minimum hours of training for EMT-P are: 800 didactic; 200 clinical; and 200 field experience.

EMT-Paramedic training in Mississippi is provided by six community colleges and the University of Mississippi Medical Center. The U.S. Department of Transportation's National Standard Curriculum serves as the standard for EMT-P training. Mississippi requires Advanced Life Support training programs be accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) based on the recommendation of the Commission on Accreditation of Educational Programs for the Emergency Medical Services Profession (CoAEMSP). All seven schools are accredited.

### **EMT-P National Registry Exam Results**

	<b>1<sup>st</sup> Attempt Pass Rate</b>	<b>National Average Pass Rate</b>
<b>FY'02</b>	46%	64%
<b>FY'03</b>	76%	63%
<b>FY'04</b>	54%	64%

## **Emergency Medical Services-Driver**

Mississippi requires drivers of ambulance vehicles to be EMS-Driver certified. Driver programs must adhere to the U.S. Department of Transportation's National Standard Curriculum for emergency vehicle operation. BEMS approves programs offering EMS-Driver Programs. Approved programs in Mississippi include:

- Allsafe
- Emergency Vehicles Operators Course
- National Academy of Professional Driving
- National Institute of Fire and EMS
- National Safety Council (Coaching the Emergency Vehicle Operator)
- U.S. Fire Administration (Emergency Vehicle Driving Training)
- Volunteer Fire Insurance Service

## **Level of Ambulance Service Licensure in Mississippi**

### **Ground Ambulance Services**

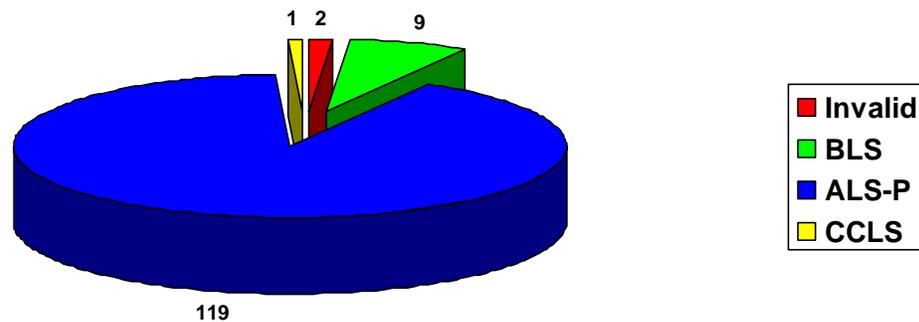
There are five types of ground ambulances that transport patients in Mississippi:

- Type 1 ambulances are cab and chassis ambulances with separation between the cab and patient care box;

- Type 2 ambulances are van-type ambulances;
- Type 3 ambulances are cab and chassis ambulances without partition between the cab and chassis;
- Invalid vehicles are stretcher vans that may be Type 1, 2, or 3; and
- Special-use vehicles are supervisory or sprint cars permitted for emergency operation in connection with emergency medical service calls.

Included in the above types of ambulances are mobile intensive care units which provide specialized services such as neonatal and cardiac transfers. Most ambulances are Type 2 ambulances.

### Number of Licensed Ground Ambulance Services For FY'04



### Air Ambulance Services

Nine licensed providers offered air ambulance services in Mississippi for FY'04:

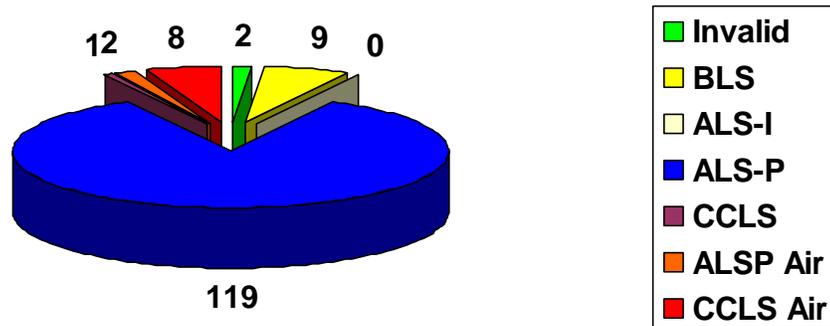
- North Mississippi Medical Center Ambulance Service; Tupelo, Mississippi
- Southeast Air Ambulance District; Hattiesburg, Mississippi
- University Medical Center – Aircare; Jackson, Mississippi
- Air Evac Lifeteam; Tuscumbia, Alabama
- Critical Care Transport; Birmingham, Alabama
- Air Evac Lifeteam; Jackson, Tennessee
- Hospital Wing; Memphis, Tennessee
- Acadian Air Medical Services; Lafayette, Louisiana
- Oschner Flight Care; New Orleans, Louisiana

Air service is provided through helicopter and fixed wing aircraft. Six licensed helicopter services provide emergency scene flights to designated areas of the state. Complete state coverage of emergency air ambulance service has not yet been accomplished. Non-emergency coverage is available statewide through 13 helicopter and three fixed-wing aircraft.

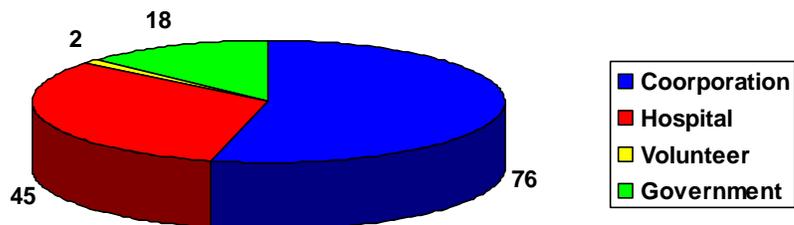
The compliance branch of the Bureau, under statutory authority (MS Code 41-59-9), licenses ambulance services by location and issues permits for each vehicle the service operates. Licenses are issued for ground and air services.

In Mississippi, corporate ambulance service ownership exceeds the number of hospital and government owned ambulance services. This trend is similar to the national trend towards the privatization of ambulance services. However, 45 of Mississippi's EMS providers are hospital based, which include public, private, non-profit, church, and public-lease hospitals.

**Number of Licensed Services by Level  
In FY'04**



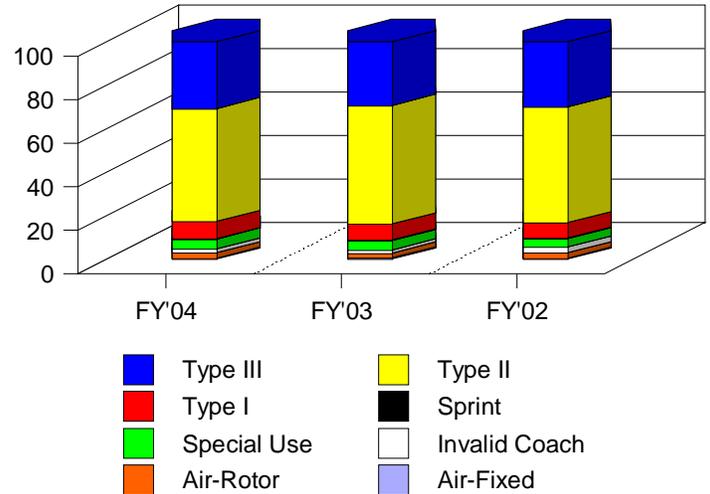
**Licensed Services by Ownership  
In FY'04**



Every ambulance vehicle permitted in the State of Mississippi is inspected, on average, four times each year to ensure compliance with EMS Law, Rules, and Regulations.

Air service is provided through helicopter and fixed wing aircraft. Six licensed helicopter services provide emergency scene flights to designated areas of the state.

Complete state coverage of air ambulance service has not yet been accomplished. Non-emergency coverage is available statewide through 13 helicopter and three fixed-wing aircrafts.



## Compliance

The compliance branch assures compliance with the Mississippi EMS: The Law, Rules, and Regulations. This includes the licensing of ambulance services and inspection of vehicles. The compliance branch licenses ambulance services by the level of care they provide. These levels include:

- Invalid transport services
- Basic Life Support (BLS)
- Advanced Life Support-Intermediate (ALS-I)
- Advanced Life Support-Paramedic (ALS-P)

An Invalid Transport level of service offers:

- Minimum of an EMS driver
- Transportation of non-emergency patients

The Basic Life Support (BLS) level offers:

- Minimum of an EMS driver and one EMT-Basic
- Transportation of emergency and non-emergency patients in prehospital and/or inter-facility situations

The Advanced Life Support-Intermediate (ALS-I) offers:

- Minimum of an EMS Driver and one EMT-Intermediate
- Transportation of emergency and non-emergency patients in prehospital and/or inter-facility situations
- Initiation IV Therapy
- Cardiac defibrillation and advanced airway management

**Note: This level of care is being phased out in the State of Mississippi.**

The Advanced Life Support-Paramedic (ALS-P) level offers:

- Minimum of an EMS Driver and one EMT-P
- Transportation of emergency and non-emergency patients in the prehospital and/or inter-facility situations

- Advanced airway management, cardiac monitoring, drug therapy, and advanced techniques that exceed other levels of service

## **Mississippi Emergency Medical Services Information System (MEMSIS)**

Mississippi established the first Mississippi EMS Information System (MEMSIS) in 1992. Every licensed ambulance service was required by The Mississippi Code Section 41-59-41 to report every EMS response to the Bureau of EMS (BEMS). This data collection system was modeled after the National Highway Traffic Safety Administration's (NHTSA) minimum data set for pre-hospital providers. In 1993, BEMS added the second component that maintained information on testing, certification, and ambulance licensing.

In FY'01, BEMS began implementation of the new MEMSIS. The new MEMSIS is a paperless patient encounter form system. Software is provided by BEMS to all licensed ambulance services. EMS encounter information is entered into the computer locally and is then transmitted to the state via modem. The new system minimizes errors and shortens time frames of when information is available to fill report requests. It also allows BEMS to collect a larger amount of data, which gives a better picture of EMS care in Mississippi.

The implementation of MEMSIS began with beta testing that was conducted by American Medical Response-South and King's Daughters Medical Center Ambulance Service. BEMS has upgraded the certification portion of MEMSIS internally. In May, 2000, deployment of the new software began. *As of July 1, 2001, all providers are required to submit data utilizing the new system.* (Mississippi Code 41-59-41)

The new MEMSIS has several significant changes. Previously, there were two types of calls, medical and trauma, with inter-facility transfers documented as medical calls. Now MEMSIS recognizes four types of calls: medical, trauma, transfers (which are only between acute care facilities), and transports.

Trauma and medical calls represent the true emergency responses since most transfer, transport and standby calls are scheduled in advance. To more accurately reflect the status of true emergency calls, the numbers used in this section as "Total Calls" are trauma/medical responses only.

<b><u>FY'04</u></b>		
Transfer	16%	of total calls
Transport	13%	of total calls
Medical	49%	of total calls
Trauma	19%	of total calls
Other (standby)	2%	of total calls

In FY'04, Mississippi providers responded to 333,743 total calls. This number includes all emergency and cancelled calls.

Age and gender statistics for patients encountered by EMS personnel in FY'04 are shown and compared to Mississippi population statistics.

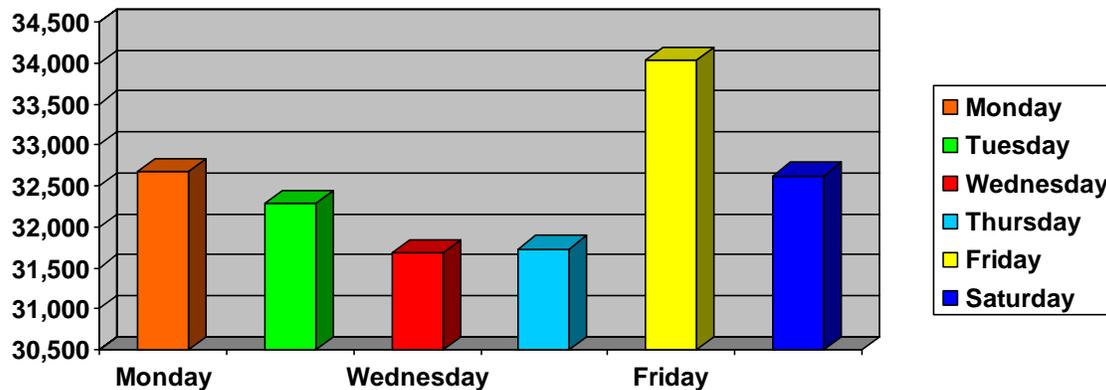
Ages	Total	Federal Total*
Infant - 4	3%	7.2%
5 thru 9	1%	7.6%
10 thru 14	2%	7.7%
15 thru 19	5%	8.2%
20 thru 24	5%	7.5%
25 thru 34	8%	13.4%
35 thru 44	10%	15%
45 thru 54	12%	12.7%
55 thru 59	6%	4.6%
60 thru 64	6%	4.0%
65 thru 74	14%	6.5%
75 thru 84	16%	4.0%
85 and over	13%	1.5%

\*US Census Bureau 2002 Summary for Population in age range for Mississippi

Fifty-four percent of all emergency call patients were white, 41% were black and four percent were other.

The 2002 Census statistics indicated that, in Mississippi, 61.4% of the population is white; 36.3% is black; and 6% are in other categories.

The highest call volume occurred on Fridays, with 15% of the total calls. This is the same as last year and FY'02. As noted previously, this data does not include "transfers, transports or standbys."



### Calls By the Day of the Week in FY'04

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29,410	32,678	32,288	31,688	31,731	34,029	32,625

The busiest times of the day for EMS calls are from mid morning through early evening. The following chart reflects the busiest 16 hours of the day by rank busiest = 1.

HOUR	FY'02	FY'03	FY'04
0700	16	15	15
0800	13	13	13
0900	10	9	10
1000	7	5	7
1100	4	3	3
1200	2	2	5
1300	6	7	6
1400	5	6	2
1500	1	1	1
1600	3	4	4
1700	8	8	8
1800	9	10	9
1900	12	11	11
2000	11	12	12
2100	14	14	14
2200	15	16	16

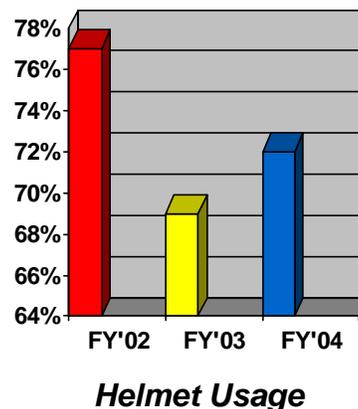
### **SAFETY DEVICES**

The majority of EMS Trauma calls involve motor vehicle crashes. The following chart shows the use of various safety devices for the past three years.

Safety Device	FY'02	FY'03	FY'04
Lap Belt	60%	60%	63%
Shoulder Belt	61%	60%	63%
Automatic Belt	2%	2%	3%
Air Bag	9%	10%	12%
Safety Seat	2%	2%	2%
None	21%	20%	22%
Unknown	13%	14%	15%

There appears to be a slight increase in the use of safety devices during the 2004 Report Year.

Mississippi has a mandatory helmet law; however, compliance remains below 80% in EMS patients.



## Response Times

During the evaluation of response times this year, it was discovered that the current reporting structure produces reports of each county's average by individual response unit. Obtaining statewide average response times requires calculating the counties' averages. To help alleviate problems we have weighted the response times based on unit call volume. Prior to producing next years report we will develop a better reporting system to alleviate this mathematical anomaly.

### Trauma Response Times\*

	<b>2002</b>	<b>2003</b>	<b>2004</b>
Received-Dispatch	0.1	0.2	<b>0.1</b>
Dispatch-En route	0.3	0.3	<b>0.3</b>
En route-On Scene	5.8	5.7	<b>5.8</b>
Time On Scene	8.7	8.5	<b>7.6</b>
Scene-Destination	6.6	6.3	<b>6.5</b>
Time at Destination	8.5	8.5	<b>8.3</b>
Total Call Time	36.5	35.7	<b>36.4</b>

\*(decimals are tenths of a minute)

Personnel time at scene appears to be decreasing. This may be the result of prehospital personnel becoming more familiar with trauma treatment protocols and the need to expedite transport.

### Medical Call Response Time\*

	<b>2002</b>	<b>2003</b>	<b>2004</b>
Received-Dispatch	0.2	0.2	<b>0.1</b>
Dispatch-En route	0.3	0.3	<b>0.4</b>
En route-On Scene	6.2	5.9	<b>6.3</b>
Time On Scene	10.9	11.0	<b>10.7</b>
Scene-Destination	10.1	10.2	<b>10.3</b>
Time at Destination	12.1	12.3	<b>13.0</b>
Total Call Time	45.5	45.8	<b>47.6</b>

\*(decimals are tenths of a minute)

When comparing the time at destination for medical calls versus trauma calls, the medical response times for medical runs is, on average, four minutes longer. This most likely reflects the presence of a trauma team awaiting the trauma patient. Frequently, with medical patients, ambulance crews must wait for hospital staff to take over care of their patients.

Consistent with previous years, over 50% of all call responses were to a residence. Differences this year were the elimination of hospitals. As previously discussed, the categories of "transfer, transport, and standby" have been removed from the database.

<u>Location</u>	<u>Percent</u>
Residence	54%
All Roads/Highways	19%
Nursing Homes	9%
Public Place	6%
School	1%
Restaurant/Bar	1%
Doctors Office	1%
Clinic	1%
Other	6%

In FY'04, 215,609 patients were transported to a hospital emergency department. During this year, 3,853 patients were transported to a Tennessee hospital. Listed in order are the ten hospitals receiving the largest number of patients, excluding transfers.

<u>Hospital</u>	<u>City</u>
North Mississippi Medical Center	Tupelo, Mississippi
Forrest General Hospital	Hattiesburg, Mississippi
The University of Mississippi Medical Center	Jackson, Mississippi
Memorial Hospital at Gulfport	Gulfport, Mississippi
Baptist Memorial Hospital-DeSoto	Southaven, Mississippi
Mississippi Baptist Medical Center	Jackson, Mississippi
Baptist Memorial Hospital-Golden Triangle	Columbus, Mississippi
Delta Regional Medical Center	Greenville, Mississippi
South Central Regional Medical Center	Laurel, Mississippi
Central Mississippi Medical Center	Jackson, Mississippi

### **Types of Call—Trauma**

EMS personnel responded to 63,431 trauma calls during FY'04. This is, approximately, a 3% increase in calls from FY'03.

	<u>FY'02</u>	<u>FY'03</u>	<u>FY'04</u>
MVC	35,042	35,234	36,819
Fall	14,303	14,526	14,138
Assault	5,663	6,084	5,443
Gunshot	893	926	790
Stabbing	1,301	1,442	1,201
<u>Other</u>	<u>5,117</u>	<u>5,016</u>	<u>5,040</u>
<b>Total Calls</b>	<b>62,319</b>	<b>63,228</b>	<b>63,432</b>

Motor vehicle crashes continue to be the largest percent of all reported trauma calls. This number has consistently been greater than 50%. There does appear to be a slight decline in violent crime trauma overall (assault, GSW, stabbing). Since this is a one

year change, the category will need to be watched in subsequent years for trending purposes.

BEMS collects information on the injured body region on all trauma calls. As in previous years, the head region is the leading body area for injury.

During FY'04, there were 63,341 trauma calls resulting in the following injuries.

## **TRAUMA SUMMARY**

	Amputate	Blunt	Burn	Fx/Dislocate	Lacerate	Pain	Penetrate	Soft Tissue	<b>Totals</b>	
Abdomen	0	312	42	7	99	1,713	114	255	2,542	3.8%
Arm/Hand	56	433	233	921	1,933	6,220	212	1,725	11,733	17.6%
Back	0	245	55	41	116	6,255	88	243	7,043	10.6%
Chest	0	619	86	96	110	2,694	189	350	4,144	6.2%
Eye	3	162	38	9	323	527	15	265	1,342	2.0%
Face	4	790	125	140	1,790	2,255	77	1,407	6,588	9.9%
Head	10	1,815	72	120	3,167	5,956	174	1,622	12,936	19.4%
Hip/Pelvis	0	212	25	490	60	3,181	45	113	4,126	6.2%
Leg/Foot	21	449	113	1,266	896	6,644	279	1,121	10,789	16.2%
Neck	1	177	54	49	87	4,811	35	171	5,385	8.1%
<b>Totals:</b>	95	5,214	843	3,139	8,581	40,256	1,228	7,272	66,628	
	0%	8%	1%	5%	14%	63%	2%	11%		

Total of 63,431 Trauma Calls

(Out of 224,444 calls in specified range)

The largest category is "Pain." Injuries not on the body surface (sprains, etc.) are generally reported as "pain," hence the large numbers of pain in the area of the arm/hand; back; leg/foot; and head. Motor vehicle collisions produce large numbers of lacerations making this the second largest category of injury.

### **Type of Call—Medical**

Medical emergency-related calls remain the largest category of calls, comprising 49% of all calls. As noted in this report previously, we have removed all "transfer and transport" calls from the baseline data. Due to removing these calls, comparison of FY'04 data with previous years' data may be inaccurate. However, the incidence of "stroke" related calls appears to have remained stable (1.3%).

Illustrated below are the major illnesses and symptoms reported during FY'04.

<b><u>Reported</u></b>	<b><u>Percent</u></b>
Weakness	16.2%
Pain	14.1%
Breathing difficulty	13.7%
Chest Pain	8.2%
Altered LOC	7.7%
Seizure	4.6%
Nausea	4.6%
Abdominal distress	4.3%

Vomiting	4.2%
Behavioral	3.9%
Diabetic	3.0%
Syncope	2.9%
Fever	2.2%
Cardiac Arrest	1.8%
Drug/ETOH	1.5%
Stroke	1.3%

“Weakness” continues to be the largest medical complaint. However, “weakness” has dropped from nearly 30% in FY’03 to 16.2% in FY’04. This reflects the removal of inter-facility transports from the database.

### **Prior Aid Given**

There appears to be a significant trend over the past three years for increased assistance being provided to trauma victims prior to the arrival of EMS personnel. In particular, the use of AEDs and airway/CPR prior to the arrival of EMS personnel has increased substantially.

### **EMS Aid Providers**

	<u>FY’02</u>	<u>FY’03</u>	<u>FY’04</u>
AED	7	23	149
Airway	14	97	673
CPR	40	89	424
Extricate	57	155	810
Other	395	1820	14,365
Oxygen	69	193	750
Splinting	19	47	178
Wound management	59	130	617

Basic Life Support (BLS) procedures performed by EMS personnel for FY’04 remain consistent with previous years.

<u>BLS Procedures</u>	<u>Percent of Total Calls</u>
Oxygen Therapy	64%
Spinal Immobilization	22%
Crisis Intervention	<1%
Airway	<1%
Wound Management	6%
Splint Extremity	3%
CPR	1%
Suction	1%
Ventilation	1%

Advance Life Support (ALS) procedures differ from BLS procedures in that they can only be performed by personnel certified as an EMT-Intermediate or EMT-Paramedic.

**ALS Procedures****Percent of Total Calls**

Cardiac Monitor	26%
Vascular Access	23%
Drug Administration	14%
Pulse Oximetry	22%
Blood Glucose Check	11%
Intubation-oral	<1%
Intubation-nasal	<1%
12 Lead EKG	2%

As discussed with BLS procedures there is little variation in the number of ALS procedures from previous years.

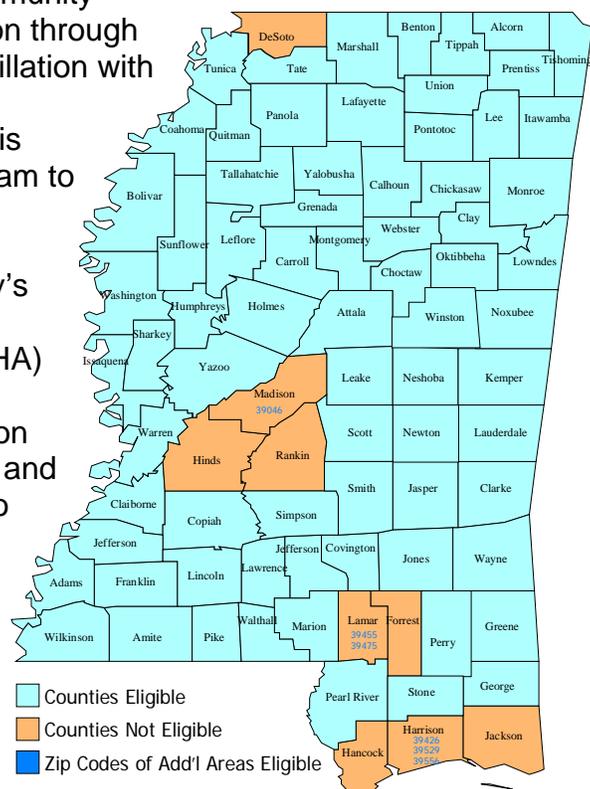
As shown above, approximately 14% of the ALS procedures were drug administration. Listed below are the medications and their usage. Similar to the procedures there are few variations from previous years.

<b>ALS Medications</b>	<b>FY'03</b>	<b>FY'04</b>
Activated Charcoal	19	20
Adenosine	124	165
Aspirin	4100	3562
Atropine	3059	2546
Bretylol	22	24
Bronchodilator	7418	6260
Calcium	25	19
Decadron	27	33
Demerol	149	109
Dextrose 50%	2804	2546
Diazepam	653	550
Diphenhydramine	244	205
Dopamine	115	43
Epi (1:1,000)	612	382
Epi (1:10,000)	3919	3232
Furosemide	1256	1021
Glucagon	393	400
Isuprel	0	4
Lidocaine	587	456
Mannitol	2	4
Morphine	1987	1486
Naloxone	507	527
Nitroglycerine	10524	8626
Nitrous Oxide	64	8
Oral Glucose	294	327
Other	1597	1344
Oxygen	87,339	66,003
Oxytocin	4	1
Procainamide	14	8
Sodium Bicarbonate	357	310

Thiamine	98	83
Vasopressor	23	12
Verapamil	8	5
<b>TOTAL ALS MEDICATIONS</b>	<b>100,311</b>	<b>100,321</b>

## Automated External Defibrillator Program

The Mississippi Rural Access to Emergency Devices (MRAED) program is supported by the Bureau of Emergency Medical Services and the Office of Rural Health. The broad goal of the MRAED Program is to reduce the incidence of cardiac arrest and increase the survivability of cardiac arrest by developing community partnerships to educate the public in early notification through 911 or emergency numbers, early CPR, early defibrillation with Automatic External Defibrillators (AEDs), and early intervention by ALS. To achieve this goal, MRAED is providing rural community partnerships with a program to promote placement of (AED's). This program is in compliance with the Office of Rural Health Policy Placement Model. The Office of Rural Health Policy's program is to provide basic life support and AED training through the American Heart Association (AHA) or the American Red Cross (ARC); develop public relations templates and promote public information on early warning signs and symptoms of heart disease and cardiac arrest; utilize a data collection mechanism to collect data on all AED use in First Responder and Public Access Programs; and to develop a mechanism for continued funding of the MRAED program after federal funding expires.



In Mississippi, all training – for both Public Access as well as First Response – follows the guidelines of the American Red Cross and the American Heart Association. Trainers are located throughout the state and travel to each training area to provide the needed classes. Standard refreshers are offered in much the same manner with frequency of re-certification for providers to be every two years. The make and model of AED units to be purchased are left up to the community partnership. This enables them to choose a unit compatible with their existing EMS system. Several counties chose units listed on state contract.

Regardless of First Response or Public Access unit placement, data collection will be compiled at the Mississippi Department of Health (MDH), Bureau of Emergency Medical Services (BEMS). Currently, AED information from an incident involving an AED with EMS arrival and treatment is entered into Mississippi Emergency Medical Services Information System (MEMSIS). By state law, all licensed ambulance services are required to encode data into this system, creating a local database at each service.



Year Funded	Training 1 <sup>st</sup> Response	Training Public Access	AED Placement Location	AED Usage	AED Successful	AED Placement 1 <sup>st</sup> Responder	AED Placement Public Access	Total AEDs Placed
2002 1 year grant	348	92	12 counties	124	8	31	9	40 22-Volunteer Fire Dept 2-Courthouse 1-School 1-Sheriff Office 9-Deputy Vehicles 2-Recreation Centers 1-Correction Facility 1-Health Dept 1-Manufacturing Co
2003 1 <sup>st</sup> yr of 3 year grant	217	744	27 counties	103	11	81	9	90 76-Volunteer Fire Dept 2-Courthouses 2-School 1-Sheriff Office 5-Deputy Vehicles 2-Recreation 2-Health Dept
2004 2 <sup>nd</sup> yr of 3 year grant	143 thus far	131 thus far	34 counties Pending	86 thus far	6 thus far			75 estimated
2005 3 <sup>rd</sup> yr of 3 year grant <b>Pending</b>								

## Mississippi EMS Rural Paramedic Scholarship Program

The Mississippi Board of Health, in its January 14, 2004 meeting, requested an assessment of EMT-Paramedics by county in Mississippi to further investigate shortages of Advanced Life Support personnel. This assessment has been completed and a review of the data from 1996 through 2003 indicates a net increase in EMS ambulance calls of 23% while the number of EMT-Paramedics certified for the same period shows a net increase of 43%. Results of the data analysis of EMT-Paramedic per population and per EMS ambulance call show a possible misalignment of resources. This misalignment of resources primarily occurred in the rural areas of the state.

The Bureau of Emergency Medical Services (BEMS) has partnered with the Mississippi Rural Hospital Flexibility (MFLEX) Program which is administered by the Health Services Resources Administration's (HRSA) Office of Rural Health. Through this grant program, BEMS has established a Rural Paramedic Scholarship Program.

Thirty-six of Mississippi's counties which have Critical Access Hospitals (CAH) and potential CAHs are short 106 EMT-Paramedics based on the counties' populations. Such statistics are particularly troubling for rural EMS services. For the past four years, MFLEX has provided money for scholarships each year in return for practice year for year in rural services that operate in a CAH or potential CAH county. To date, the

scholarship program has graduated nine students that are currently working in rural areas of the state. There are 37 students currently enrolled in the scholarship program.

The Mississippi Rural Paramedic Scholarship program has chosen to address rural emergency medical services needs for additional EMT-Paramedic manpower through the provision of scholarships at the community college and medical center training programs around the state.

The intent of this scholarship is to provide funding for students who, upon graduation, agree to be employed in an area of Mississippi that is considered to be at-risk for emergency medical services, as determined by the Mississippi Department of Health, Office of Rural Health. This scholarship is available to incoming freshmen as well as students already enrolled in an EMT-Paramedic program. This scholarship is designed to cover the cost of tuition, books, room, board, and other fees.

Recipients must agree to serve, upon graduation, in an at-risk area for a number of years equal to the number of years that the scholarship is received. This stipulation is contingent on the availability of employment in an at-risk area.

Additional requirements of the scholarship are as follows:

1. Recipients must meet all the necessary qualifications for admission into the college's EMT-Paramedic program.
2. Recipients will be selected on the basis of academic ability, character, leadership, and professional attitude.
3. Recipients must maintain a minimum of 12 hours per semester and be making satisfactory progress toward completion of the program.
4. Recipients must remain in academic good standing.
5. Recipients must successfully complete the Paramedic National Registry Exam.
6. Recipients agree to repay all funds awarded should they fail to abide by the requirements set forth in this scholarship.

## **Future Initiatives**

### **Division of EMS Licensure, Certification, and System Evaluation**

A lack of uniformity and consistency in ambulance service inspections within our Bureau has been identified. The Bureau of Emergency Medical Services (BEMS) has experienced difficulty in conducting at least two inspections annually on every licensed ambulance service in the state as required by law. BEMS plans to partner with the Bureau of Emergency Preparedness to utilize the Emergency Response Coordinators (ERC's), to conduct the periodic ambulance inspections within their respective regions.

BEMS is responsible for regulating all EMS educational courses and conducting investigation regarding infractions reported to BEMS. In order to ensure a thorough inquiry of these reports, regulate EMS educational courses and to perform annual licensure inspections of ambulance services, a compliance officer position is slated to be implemented.

The position of Performance Improvement Coordinator will be filled to re-evaluate and further implement use of the State Performance Improvement Plan. The primary focus of the Performance Improvement Coordinator will be to reorganize the Statewide Performance Improvement Committee with the first task being to restructure the existing Mississippi Prehospital Protocols and Guidelines.

### **Emergency Medical Services/Bio Terrorism**

Since September 11, 2001, EMS in America has faced a new enemy that comes unannounced and often undetectable. The federal government has provided large sums of money for education and training for public safety entities throughout the United States. Regional response teams began to pop up throughout Mississippi and local law enforcement, local fire departments, and hospitals received this invaluable training. Most of the grant money came from two federal sources and, in the end, EMS fell through the funding cracks. This occurred because both funding sources assumed the other source was focusing on EMS.

Recognizing this, the Bureau of EMS has developed a program that would make the Office of Domestic Preparedness training available to all EMS providers.

This training will be initially rolled out in two phases. First, Awareness Level training will be offered throughout Mississippi in a live format, free of charge, to all EMS personnel. This training will be delivered at two locations in each section of the state - North, Central, and South. This will provide six opportunities for personnel to receive training that is convenient to their schedules and obligations. The second round of training will be Operations level training that will be offered in concert with EMS Conventions and stand alone venues, again free of charge, and at convenient locations throughout Mississippi. Once this initial training is completed, plans exist to increase this training to even more advanced Weapons of Mass Destruction topics to assure that all Mississippi EMS providers have the knowledge and expertise to respond safely to Weapons of Mass Destruction and mass casualty events.

### **EMS Data Systems**

BEMS is making efforts streamline our filing systems. We will soon begin scanning all of the documents currently held in paper files into an electronic filing system. This will allow for fast access to the materials and will dramatically reduce the costs and office space currently required for storage. The information contained in this filing system will be secure, redundant, and will have multiple off-site back-up locations.

In the future, we hope to implement an entirely paperless, web based, system for all certifications, licenses, and permits.

## Section III

# Mississippi Trauma Care System

### Mission Statement

*The mission of the Mississippi Trauma Care System is to develop and maintain a statewide trauma system to ensure Mississippians receive the highest quality of care possible, provide a continuum of care from initial injury detection through definitive care including rehabilitation, and decrease injury and death due to traumatic injury.*

### Mississippi Trauma Care System Review

This Trauma report is an updated analysis of the activities and efforts of the Mississippi Trauma Care System. The purpose of this report is to inform the public, decision makers, trauma centers, and the medical community regarding how the Mississippi Trauma System has improved the care and outcomes of the injured trauma patient.

A trauma system entails an organized approach to care for patients. Trauma is a disease, not an accident. Like heart disease and cancer, trauma has identifiable causes with established methods of treatment and defined methods of prevention. A trauma care system reduces death and disability by identifying the cause of injury and promoting activities to prevent injury from occurring.

The data used in the development of this report originated from trauma centers submitting registry data to BEMS on a semiannual schedule. The data collected by the registry regards the causes of injury, emergency response, referring facility care, emergency department treatment, demographics, admission information, outcomes, and payment sources.

The primary goal of the Mississippi Trauma System Care Program is “to provide the architecture for a trauma system which will decrease morbidity and mortality from traumatic injury.”

Development of trauma care systems throughout the United States became a renewed focus of attention with passage of the Trauma Care Systems Planning and Development Act of 1990. The inception of the program began in Mississippi with the 1991 Mississippi legislative session where laws were written to designate the Mississippi Department of Health (MDH), Bureau of Emergency Medical Services (BEMS), as the lead agency in the development of a trauma care plan for the state.

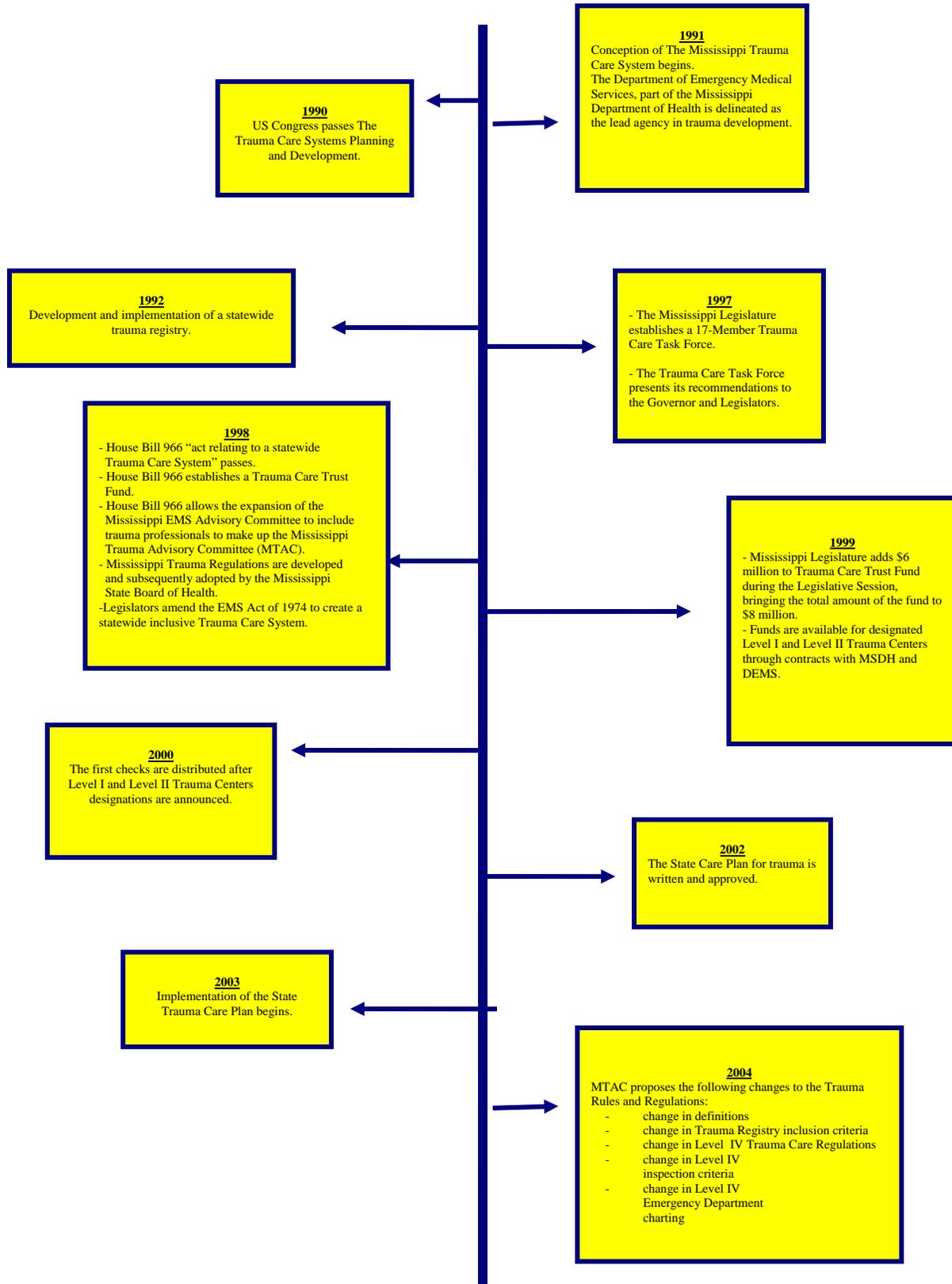
To date, each hospital participating in the Mississippi Trauma System is actively collecting and submitting trauma data. This data provides a stable foundation for the development of the Mississippi Trauma System.

In 1997, the Mississippi Legislature established a 17-member Trauma Care Task Force (TCTF) to review the status of trauma and its impact on the public's health. The recommendations of the TCTF were compiled into a report presented to the Governor and Legislature on December 15, 1997. The report was used as a guideline for drafting and subsequent passage of House Bill 966, an act relating to a statewide Trauma Care System.

Based on the TCTF report, the 1998 Legislature passed legislation (HB 966) giving MDH-BEMS the authority to develop a statewide trauma care system. This legislation also established a permanent funding source through a \$5 assessment on all moving traffic violations, creating the Trauma Care Trust Fund. This money is available for administrative functions at both the state and regional levels. The legislation also expanded the Mississippi Emergency Medical Services Advisory Council to include trauma professionals, which make up the Mississippi Trauma Advisory Committee (MTAC).

MTAC was developed as a subcommittee of the EMS Advisory Committee. In 1998, they developed the Mississippi Trauma Care Regulations and subsequently were adopted by the Mississippi Board of Health.

# History of the Mississippi Trauma Care System



## MISSISSIPPI LEGISLATIVE HISTORY

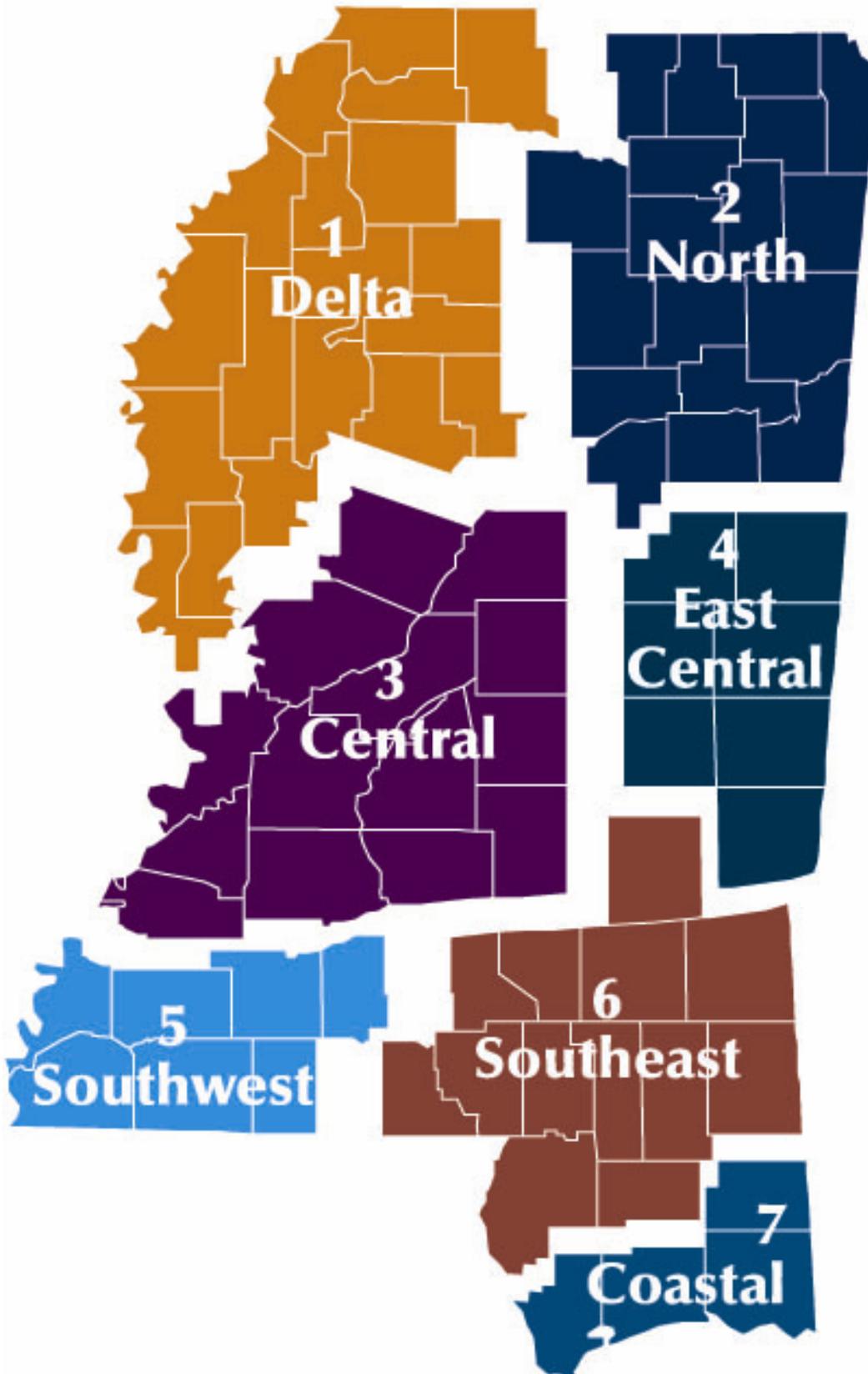
House Bill 966

1998 Regular Session, Public Health and Welfare; Appropriations

By: Representatives Fredericks, Barnett (92nd), Malone

AN ACT RELATING TO A STATEWIDE TRAUMA CARE SYSTEM; TO AMEND SECTION 41-59-3, MISSISSIPPI CODE OF 1972, TO DEFINE THE TERMS "TRAUMA CARE SYSTEM," "TRAUMA CARE FACILITY" AND "TRAUMA REGISTRY"; TO AMEND SECTION 41-59-5, MISSISSIPPI CODE OF 1972, TO DELETE THE SPECIFIC AUTHORITY OF THE STATE BOARD OF HEALTH TO APPOINT AN EMERGENCY MEDICAL SERVICES DIRECTOR; TO AUTHORIZE AND DIRECT THE STATE BOARD OF HEALTH TO DEVELOP, ISSUE REGULATIONS FOR AND ADMINISTER A UNIFORM STATEWIDE TRAUMA CARE SYSTEM; TO SPECIFY THE COMPONENTS OF THE STATEWIDE TRAUMA CARE SYSTEM; TO PRESCRIBE THE ADDITIONAL RESPONSIBILITIES OF THE STATE DEPARTMENT OF HEALTH IN IMPLEMENTING THE TRAUMA CARE SYSTEM AND TRAUMA EDUCATION PROGRAMS; AND TO AUTHORIZE THE STATE BOARD OF HEALTH TO RECEIVE AND DISBURSE MISSISSIPPI TRAUMA CARE SYSTEM FUNDS; TO AMEND SECTION 41-59-7, MISSISSIPPI CODE OF 1972, TO EXPAND THE MEMBERSHIP OF THE EMERGENCY MEDICAL SERVICES ADVISORY COUNCIL AND PROVIDE FOR THE MISSISSIPPI TRAUMA ADVISORY COMMITTEE AS A COMMITTEE OF THE EMS ADVISORY COUNCIL; TO CODIFY SECTION 41-59-75, MISSISSIPPI CODE OF 1972, TO PROVIDE FOR THE ESTABLISHMENT OF A MISSISSIPPI TRAUMA CARE SYSTEMS FUND; TO CODIFY SECTION 41-59-77, MISSISSIPPI CODE OF 1972, TO PROVIDE FOR THE CONFIDENTIALITY OF DATA IN THE TRAUMA REGISTRY; TO AMEND SECTION 41-63-1, MISSISSIPPI CODE OF 1972, TO PROVIDE THAT THOSE STATUTES AUTHORIZING ACCREDITATION AND QUALITY ASSURANCE REVIEW OF PROFESSIONAL HEALTH SERVICES PROVIDERS SHALL BE FULLY APPLICABLE TO ANY TRAUMA QUALITY IMPROVEMENT COMMITTEE ESTABLISHED AT A LICENSED TRAUMA CARE HOSPITAL OR ANY REGIONAL OR STATE TRAUMA CARE SYSTEM COMMITTEE DESIGNATED BY THE STATE DEPARTMENT OF HEALTH; TO AMEND SECTION 99-19-73, MISSISSIPPI CODE OF 1972, TO INCREASE THE "EMERGENCY MEDICAL SERVICES OPERATING FUND" FEE COLLECTED AS A PENALTY ON TRAFFIC VIOLATIONS AND IMPLIED CONSENT LAW VIOLATIONS; AND FOR RELATED PURPOSES.

# Mississippi Trauma Care Regions



## **Hospital Status System**

The Hospital Status System (HSS) is a user-friendly, web-based application designed to assist trauma centers with matching the Mississippi health care system resources to the needs of the trauma patient. This is accomplished by giving the hospital staff a bird's eye view of the status of services offered by all the Mississippi Trauma Care Centers, as well as non-designated hospitals as they join the program. This system has been approved by the Mississippi Trauma Advisory Committee (MTAC) and the Mississippi Hospital Association (MHA).

The HSS is capable of running on most web browsers. For maximum performance, either Netscape 6.2 (or higher) or Internet Explorer 6.0.2 (or higher) are recommended when accessing the HSS.

The hospital user IDs and passwords are administered by BEMS. Upon entering the system, the hospital is sent a letter with a unique user ID and password, as well as a copy of the HSS User Guide.

This system allows each hospital the ability to change the status of all the services they provide and to view the status of services offered by other hospitals in the system. No hospital has the capability to change any information regarding another hospital.

## **Trauma Center Designation Levels**

Designation levels set specific criteria and standards of care that guide hospital and emergency personnel in determining the level of care a trauma victim needs and whether that hospital can care for the patient or transfer the patient to a Trauma Center that can administer more definitive care.

### **Level I**

Level I Trauma Centers must have a full range of trauma capabilities, including an emergency department, a full-service surgical suite, intensive care unit, and diagnostic imaging. Level I Centers must have a residency program, ongoing trauma research, and provide 24-hour trauma service in their facility. These hospitals provide a variety of other services to comprehensively care for both trauma patients, as well as medical patients. Level I Trauma Centers act as referral facilities for Level II, III, and IV Trauma Centers.

### **Level II**

Level II Trauma Centers must be able to provide initial care to the severely injured patient. These facilities must have a full range of trauma capabilities, including emergency department, a full service surgical suite, intensive care unit, and diagnostic imaging. Level II Trauma Centers act as referral facilities for Level III and IV Trauma Centers. For specialty care a patient may be transferred to a Level I Trauma Center.

### **Level III**

Level III Trauma Centers must offer continuous general surgical coverage and can manage the initial care of many injured patients. Level III Trauma Centers must also provide continuous orthopedic coverage. Transfer agreements must be in place with Level I and II Trauma Centers for patients that exceed the Level III Trauma Center's resources. Level III may act as a referral facility for Level IV Trauma Centers.

### **Level IV**

Level IV Trauma Centers provide initial evaluation and assessment of injured patients. Most patients will require transfer to facilities with more resources dedicated to providing optimal care for the injured patients. Level IV Trauma Centers must have transfer agreements in place with Level I, II, and III Trauma Centers.

## **Trauma Center Application Process**

Mississippi licensed hospitals, with a functioning emergency department, may apply for trauma center designation. The applicant hospital must be an active participant within a designated trauma care region to obtain designation, however, BEMS may prioritize the designation process for hospitals located within, and participating as, a member of a designated trauma care region.

To receive state designation as a Trauma Center, any applicant hospital and its medical staff shall set forth such intention in a letter to BEMS accompanied by two completed copies of BEMS "Application for Trauma Center Designation."

Within thirty days of receipt of the application, BEMS shall provide written notification to the applicant hospital of the following:

- application has been received by the Department;
- MDH accepted or rejected the application;
- if accepted, the date is scheduled for hospital inspection
- if rejected, the reasons for rejection and a deadline for submission of the corrected "Application for Trauma Center Designation" to BEMS.

## **Trauma Center Inspection Process**

BEMS shall provide for the inspection of the applicant hospital, provided that its application has been formally approved by BEMS, on the date scheduled and indicated in BEMS acceptance letter to the applicant hospital, unless:

- BEMS provides written notification with justification of change to the applicant hospital fourteen days prior to the inspection date; or
- The applicant hospital provides written request with justification for a change thirty days prior to the inspection date; or
- The Level IV hospital applicant does not require an on-site inspection.

BEMS shall provide multidisciplinary teams for all Trauma Center inspections. Trauma Center Inspection Teams shall consist of disciplines as follows:

- Level I and II Trauma Centers  
As a minimum, teams shall consist of the following representative disciplines: trauma surgeon, emergency physician, a person knowledgeable in trauma center administration, and a trauma nurse. (BEMS may add additional team members as it deems necessary). All members of teams for Levels I and II shall reside and practice outside of Mississippi.
- Level III Trauma Centers  
As a minimum, teams shall consist of the following representative disciplines: trauma surgeon, emergency physician, and a trauma nurse. One member of each team for Level III applicants must reside outside of Mississippi. The remaining two members may reside and practice in Mississippi; however, they may not practice or reside in any hospital or area of the trauma care region in which the applicant hospital is located.
- Level IV Trauma Centers  
The Level IV Trauma Center inspection process shall consist of a review of the completed trauma center application, compliance with all of the “Essential” elements listed in the Mississippi Trauma Care Regulations Essential and Desirables Chart, and satisfactory review of specific trauma registry data reports as identified in the trauma center application. These documents shall be reviewed off-site by BEMS staff. If the information contained in the completed application and the trauma registry data reports do not demonstrate compliance with the Mississippi Trauma Care Regulations, there will be a request for additional information and an opportunity to supply supplementary data/information for review. If this additional information does not demonstrate compliance with the Mississippi Trauma Care Regulations, an on-site survey inspection will be scheduled. At a minimum, the on-site team shall consist of one member of the BEMS’ Trauma System Development Staff and of one of the following representative disciplines: a physician or trauma nurse. The member of the inspection team that is not Trauma System Development Staff may reside and practice in Mississippi; however, they may not practice or reside in any hospital or area of the Trauma Care Region in which the applicant hospital is located.

Results of trauma inspections will be provided by BEMS in writing to each applicant hospital. Details related to the hospital’s inspection will be considered confidential and will not be released. Each applicant hospital which fails to meet the requirements for “Complete Designation” as a Trauma Center shall submit to BEMS a “Plan of Correction” within 30 days. The “Plan” shall address each of the deficiencies noted by the inspection team and outline a corrective process and timeline for completion. Upon acceptance by BEMS of the “Plan of Correction” and concurrence by the inspection team, the hospital shall receive “Provisional Designation” as a Trauma Center. “Provisional Designation” qualifies the hospital to participate in all aspects of the State and Regional Trauma Systems with the exception of allocated funds. “Provisionally Designated” hospitals and participating physicians, except as described below, will

receive 50% of their normally allocated funds until such time as they become “Completely Designated.”

Upon receipt of notice of “Provisional Designation” the hospital will have not more than 15 months to complete and fully implement the “Plan of Correction.” During this period of time BEMS will work with and provide assistance to the hospital in the implementation of their “Plan of Correction.”

The hospital is responsible for contacting BEMS to request a “Focused Survey” at any time prior to the end of the 15 months by BEMS. Upon such a request, BEMS shall assemble a survey team to review the hospital’s “Plan of Correction” for complete implementation. If the Focused Survey Team deems the “Plan of Correction” fully implemented the hospital will receive a “Complete Trauma Center Designation.” Failure to pass the “Focused Survey” does not extend the original 15 month time period.

Failure to fully complete and implement the “Plan of Correction” within the 15 month period shall result in the automatic lapse of the “Provisional Designation” and the hospital will automatically return to its original “Non-Designated” status. If the “Provisional Designation” status lapses, the hospital shall not be eligible for any allocated trauma funds.

Those hospitals not demonstrating complete implementation of their “Plan of Correction” during the focused survey, for the **sole reason** that they have not met the specialty physician requirements due to the loss of one or more specialty physicians, will receive a continuing “Provisional Designation.” The facility must report to BEMS any loss of 24-hour specialty physician coverage that is required within the Mississippi Trauma Care Regulations. The facility must provide a “Plan of Correction” that details how the facility will become compliant.

If the **sole reason** a facility receives a “Provisional” status is due to the lack of specialty physician coverage, the facility will continue to receive 100% of the trauma funds allotted for uncompensated patients. The hospital must submit to the BEMS evidence of recruiting efforts. The Mississippi Trauma Care Advisory Committee (MTAC) must determine if such evidence is appropriate.

This “Provisional Designation” may continue for a period not to exceed three years. In the event a hospital is unable to fulfill their physician requirement at the end of three cycles, the hospital will have its Trauma Center Level status reduced to the next lowest, most appropriate, level.

No inspection or designation process provided by any other agency, organization, or group may be substituted in lieu of BEMS.

## **Length of Trauma Center Designation**

BEMS shall designate Trauma Centers for a period not to exceed three years. “Complete” designations shall remain active for three years provided no substantive changes or variances have occurred and that the “Designated Trauma Center” continues to comply with all rules and regulations of BEMS after receipt of the Trauma

Center designation. BEMS may perform periodic trauma center audit/reviews at each designated Trauma Center.

Trauma Centers may request designation by BEMS a level higher or lower than its current designation level prior to the expiration date of that designated Trauma Center by following the processes previously described.

### **Trauma Center Designation Renewals (Re-designation)**

Designated Trauma Centers shall provide written notification to BEMS, regarding re-designation six months prior to the designation's expiration date, of its intent to seek or not seek re-designation or designation at a level different from its original designation level. BEMS will acknowledge receipt of such notification in writing within 30 days to the applicant hospital and begin the application process as previously described.

### **Process of Appeal for Failing Trauma Center Inspection**

If a hospital fails a trauma center inspection, the hospital shall have 30 days from the date of notification of the failure to appeal the decision in writing BEMS. BEMS shall make a determination within three months of receipt of its decision. If the decision of BEMS is unfavorable to the hospital, the hospital may request to be inspected for Trauma Center Designation at another level but must pay all costs associated with the request.

### **Categories of Trauma Center Designation**

There are four levels of trauma center designation recognized by the state of Mississippi. They are as follows:

- Complete Designation - The hospital has completed all of the requirements for designation at their application level. This is a three year designation subject to periodic compliance audits.
- Provisional Designation - The hospital has completed all of the requirements for "Complete Designation" at their application level with the exception of minor (no patient or regional operations impact) deviation(s). This designation category may be used for initial designations or an interim change in status from "Complete Designation" due to a temporary loss of a capacity or capability.
- Suspended Designation - The hospital has completed the requirements for "Complete Designation" at their application level. However, upon receipt of information and verification by BEMS of regulation violations and a determination by BEMS that it is in the best interest of patient care or regional operations, BEMS may temporarily suspend the Trauma Center Designation for said hospital.
- Non-Designated Trauma Centers - Any hospital that has not completed the Trauma Center Application Process or who has had their Trauma Center

Designation revoked by BEMS will be considered a “Non-Designated” Trauma Center. Such facilities shall not advertise nor hold themselves out to the public as a “Designated Trauma Center.”

## **Revocation of Trauma Center Designation**

Hospitals that have been designated as Trauma Centers may have their designation status revoked for any of the following reasons:

- By the State Health Officer for reasons of serious threat or jeopardy to patients’ health or welfare; and/or
- Refusal to satisfactorily complete the reinstatement process, described above, for hospitals having had their Trauma Center Designation suspended.

Hospitals having their Trauma Center designation status revoked may reapply for Trauma Center designation after resolution of all issues related to the revocation and completion of a complete new Trauma Center designation process.

## **Educational Consultative Visits**

An applicant hospital may request an initial “Consultative Review” of its facilities. Such a review is used to assist the applicant hospital in preparation for a Trauma Center inspection.

Results of Trauma Center Consultative Reviews will be provided by BEMS in writing to each applicant hospital. These results will be held in confidence by BEMS. BEMS will work with and provide assistance to the applicant hospital to correct any deficiencies noted during the Consultative Review.

If an applicant hospital requests a Trauma Center inspection without first having received a Consultative Review and said hospital fails to meet designation criteria, the inspection shall be deemed a Consultative Review. A Consultative Review, regardless of outcome, confers no designation status of the applicant hospital.

A hospital, having completed a Consultative Review, may apply for a Trauma Center inspection at any time after receiving the Report of Survey from the Consultative Review.

During FY’04, multiple trauma centers requested educational visits throughout the state. An Educational Visit consists of the following:

- Meet with Trauma Director, Hospital Administrator, and Trauma Program Manager;
- Review of Trauma Care System Regulations;
- Overview of the American College of Surgeons, Committee on Trauma document titled: Trauma Performance Improvement Manual ([www.facs.org](http://www.facs.org)).
- Review of the Trauma Performance Improvement Process: issue identification, analysis, action plan development, implementation, evaluation, and loop closure;
- Review of current hospital policies specific to the trauma program;

- Trauma Committee Functions;
- Trauma Registry and data collection;
- Review medical records and death charts; and
- Discuss the Significant Issues from last inspection report and review corrective action plan.

The following Mississippi trauma centers underwent Educational Visits from the Mississippi Trauma Care System:

- Coastal Trauma Region
  - Singing River Hospital
  - Biloxi Regional Medical Center
- Northern Trauma Region
  - Clay County Medical Center
  - Baptist Medical Center
- Central Trauma Region
  - River Region Health Systems

## **Current Trauma Centers and Regional Maps**

Trauma Centers in the Mississippi Trauma System care for a variety of injured patients. These patients are provided immediate resuscitation and stabilization, and definitive acute care. It is their mission to provide optimal trauma care to these patients. The Trauma Centers, in collaboration with the Trauma Regions are dedicated to trauma care, teaching and injury prevention in an effort to decrease both death and disabilities. There are rules and regulations mandated by the Mississippi Department of Health, Division of Trauma System Development and Injury Control, with which compliance is necessary to be a designated Trauma Center. These rules and regulations are examined on a frequent basis as to their compliance.

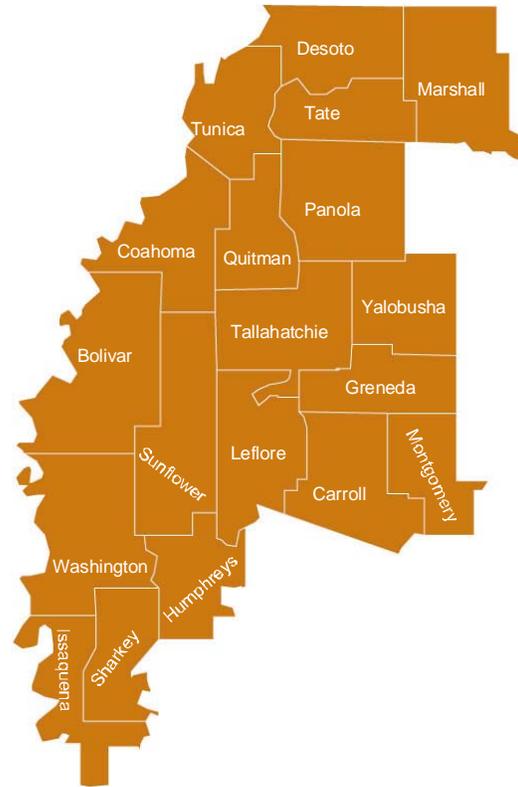
Trauma patients are cared for at these Trauma Centers regardless of that patient's financial status. The multi-disciplinary approach follows the patient throughout the continuum of care from pre-hospital to rehabilitation.

Trauma Centers work to continually improve critical elements of trauma care. This is done by the performance improvement process. The Trauma Centers are required to maintain a Trauma Registry with up to date information. This registry provides assistance in the performance improvement process to the centers. Also this data is required twice a year to BEMS for statistic information and once a year for indigent reimbursement.

## Regional Maps

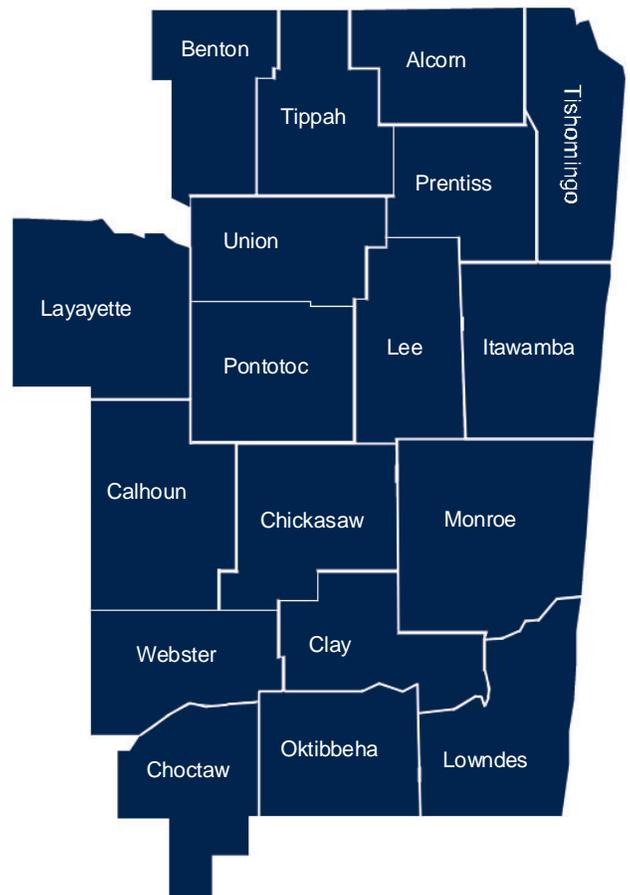
### Region 1 – Delta Trauma Care Region

**Regional Director: Gerry Whitfield**  
**617 Middleton Rd.**  
**Winona, MS 38967**  
**601-662-283-4831**



### Region 2 – North Trauma Care Region

**Regional Director: Renee Trainer**  
**2168 S. Lamar Blvd.**  
**Oxford, MS 38655**  
**601-662-236-9912**



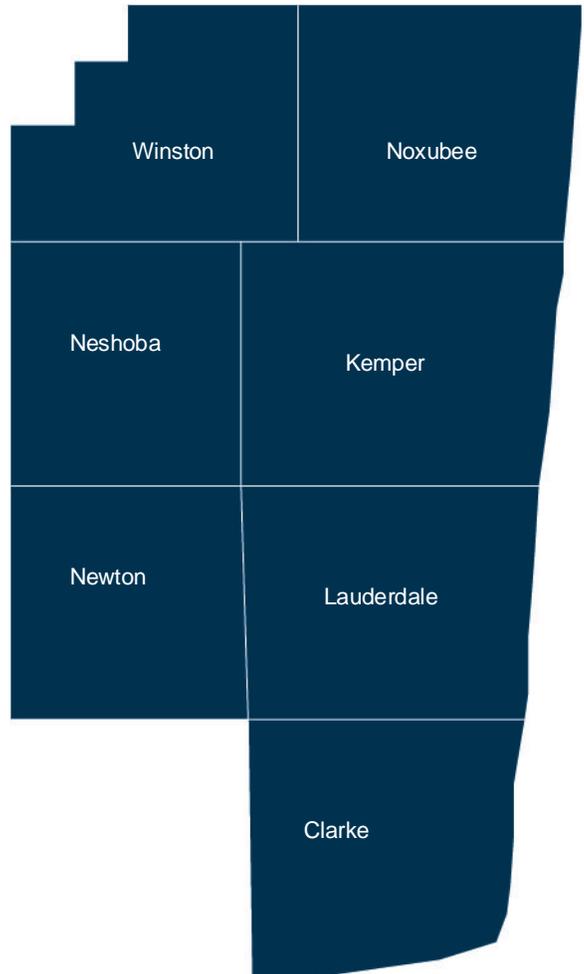
**Region 3 – Central Trauma Care Region**

**Regional Director: Brad Carter**  
**855 Pear Orchard Rd.**  
**Ridgeland, MS 39157**  
**601-206-1771**



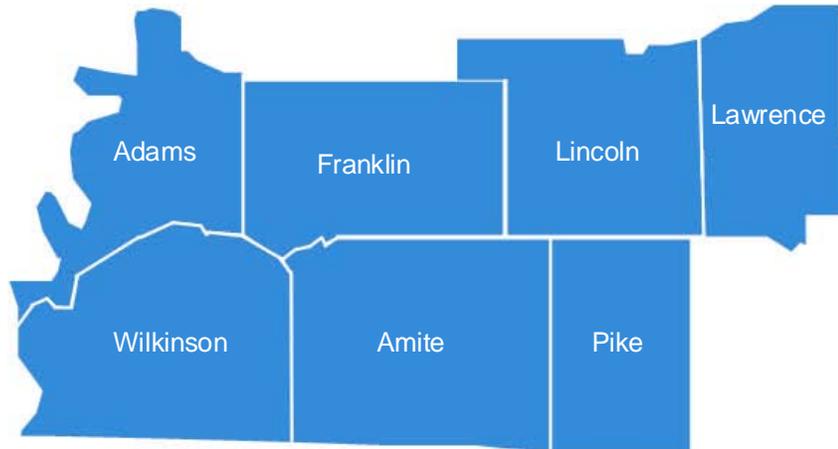
**Region 4 – East Central Trauma Care Region**

**Regional Director: Fred Truesdale**  
**605 S. Archusa Ave.**  
**Quitman, MS 39355**  
**601-766-6925**



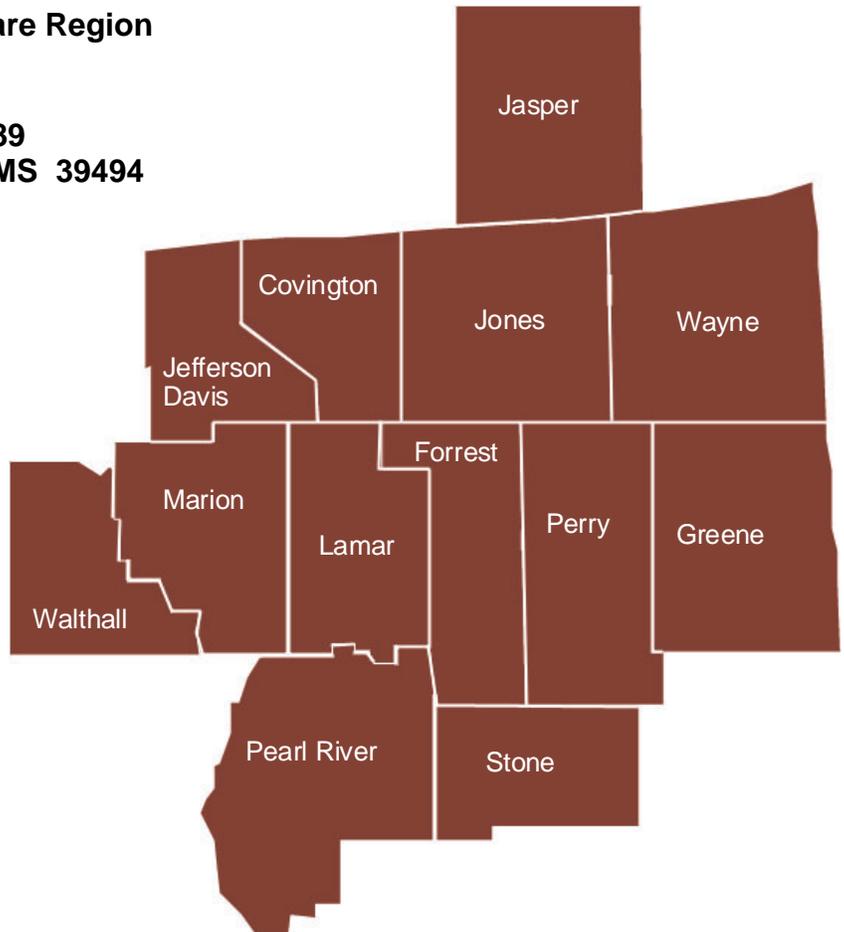
**Region 5 – Southwest Trauma Care Region**

**Regional Director: Jimmy McMannus**  
**P.O. Box 17709**  
**Natchez, MS 39122**  
**601-446-8240**



**Region 6 – Southeast Trauma Care Region**

**Regional Director: Wade Spruill**  
**P.O. Box 17889**  
**Hattiesburg, MS 39494**  
**601-264-5433**



## Region 7 – Coastal Trauma Care Region

**Regional Director: Gail Thomas**  
2512 Redwood Ave.  
Pascagoula, MS 39567  
228-712-2866



## Mississippi Trauma Advisory Committee (MTAC)

### Committee Review

The Mississippi Trauma Advisory Committee (MTAC) acts as the advisory body for the Trauma Care System development and provide technical support to the Mississippi Department of Health, Office of Emergency Planning and Response in all areas of Trauma Care System design, trauma standards, data collection and evaluation, continuous quality improvement, trauma care system funding, and evaluation of the trauma care system and trauma care programs.

The MTAC membership consist of one licensed physician which is appointed from a list of nominees presented by the Mississippi Trauma Committee, American College of Surgeons; one licensed physician which is appointed from a list of nominees who are actively engaged in rendering emergency medical services presented by the Mississippi State Medical Association; one registered nurse whose employer renders emergency medical service which is appointed from a list of nominees presented by the Mississippi Nurse Association; two hospital administrators who are employees of hospitals which provide emergency medical services which is appointed from a list of nominees presented by the Mississippi Hospital Association; one licensed physician which is appointed from a list of nominees presented by the Mississippi Chapter of the American College of Emergency Physicians; one representative from each designated Trauma Care Region which is appointed from a list of nominees submitted by each Trauma Region; one EMT-Paramedic whose employer renders emergency medical service in a designated Trauma Care Region; one representative from the Mississippi Department of Rehabilitation Services; one member who is a person who has been a recipient of trauma care in Mississippi or who has an immediate family member who has been a recipient of trauma care in Mississippi; and one licensed neurosurgeon which is

appointed from a list of nominees presented by the Mississippi State Medical Association.

*\* Note: Committee Members are listed in the Appendix*

## **MTAC Regulation Subcommittee**

### **Committee Review**

The Mississippi Trauma Advisory Committee (MTAC) Regulation Subcommittee acts as an advisory body for the MTAC related to recommendations for changes in to the Mississippi Department of Health, Trauma Care System regulations design. The Regulations Subcommittee membership consists of volunteer representative from the MTAC Committee.

Recommendation was made related to changes to the Mississippi Trauma Care System Regulations related to Level IV Regulations, Designation Process and Reimbursement Guidelines. These recommendations were approved by the MTAC Rules and Regulations Subcommittee and forwarded to the MTAC for final approval.

*\* Note: Committee Members are listed in the Appendix*

## **Mississippi Trauma Registry Committee**

The State Trauma Registry provides a forum to discuss issues and concerns regarding the Trauma One software and the Statewide Trauma Registry. The Trauma Registry Committee is made up of Trauma Coordinators and Trauma Registrars from across the State along with members from the Bureau of Emergency Medical Services (BEMS). It also provides a forum to discuss other topics such as additional needs and how to enhance the software to address needs of the Trauma Care System. Because the Trauma Registry is a vital tool in the development of the Trauma System, it is essential to address the problems related to software and look for areas of improvement through this committee.

The Trauma Registry Committee has developed a data dictionary for the use clarifying the data that is put into the registry. This group is also evaluating new software to enhance the productivity of the Statewide Trauma Registry.

*\* Note: Committee Members are listed in the Appendix*

## **Continuing Education Opportunities**

On October 2003, hospitals and healthcare providers were presented with a variety of educational opportunities at the First Annual Mississippi Trauma Care Symposium. The Symposium was intended to help members of trauma teams prepare for worst case scenarios and to perform at their best. Members of our national faculty are considered experts in their field, addressing issues related to the clinical, financial, and legal aspects of operating a successful Trauma Center. Sessions incorporated current

advances in techniques and provided practical solutions as well as creative ways to meet new national trauma standards.

The main objectives for course participants were to describe the role and function of the Mississippi Trauma Care System and discuss current trends in the treatment of trauma patients.

The Society of Trauma Nurses Trauma Outcome Performance Improvement Course (TOPIC®) is taught to all members of the trauma system team who participate in the ongoing assessment, evaluation, and improvement of trauma care. The Modules are taught with a focus on didactic, operational definitions, sample tools, case study examples, and take home points. TOPIC® is a registered trademark of the Society of Trauma Nurses and all course materials are covered by copyright law.

The American College of Surgeons, Advanced Trauma Life Support refresher course was also conducted allowing physicians who may not have the opportunity to attend ATLS to maintain their certification.

Mississippi trauma center providers were able to receive continuing medical education courses (CME) for physicians and CEU's for registered nurses with a focus on the following presentations: damage control management in and out of the operating room, learning to make quick critical decisions that save lives, safeguarding reputations with proven legal strategies, getting the picture on the financial aspects of the Trauma Center, and networking and exchanging ideas with colleagues were only a few of the highlights provided by the symposium.

## **Mississippi Emergency Medical Services for Children**

The Emergency Medical Services for Children (EMSC) Program is a federally-funded initiative designed to reduce child and youth disability and death due to severe illness or injury. The first EMSC legislation was passed in 1984. At present, all 50 states have received funding through the EMSC Program. The EMSC Program is jointly administered by the U.S. Department of Health and Human Services (DHHS) through the Health Resources and Services Administration's Maternal and Child Health Bureau and the U.S. Department of Transportation's (USDOT) National Highway Traffic Safety Administration.

EMSC is the only Federal program that focuses on improving the quality of children's emergency care. It builds upon existing Emergency Medical Services (EMS) systems. Its goals are to ensure that state-of-the-art emergency medical care is available for ill or injured children and adolescents, to ensure that pediatric service is well integrated into an emergency medical services system, and to ensure that the entire spectrum of emergency services including primary prevention of illness and injury, acute care, and rehabilitation – are provided to children and adolescents. To reach these goals, the EMSC Program provides grants to states to improve and enhance pediatric emergency care.

The Mississippi Department of Health, Bureau of Emergency Medical Services (BEMS), was awarded the EMSC Program Planning grant in August of 1998. The goals of the

planning phase were to evaluate the current state of pediatric care in Mississippi, to develop programs to improve the care in Mississippi, to develop programs to improve the care of pediatric patients in the state, and to develop programs geared toward injury prevention and community involvement in pediatric issues. This was accomplished by conducting a pediatric needs assessment survey.

As a result of this survey, two areas of need in pediatric care were found: advanced pediatric education and injury prevention programs. Programs have been developed to address these needs.

BEMS was awarded the EMSC Program Implementation grant in FY'00. This grant provided funding to implement programs developed during the planning grant. The programs implemented include advanced pediatric education courses and a comprehensive school-based injury prevention curriculum. The courses are Pediatric Education for Pre-hospital Professionals (PEPP) and Pediatric Basic Trauma Life Support (PBTLS). The injury prevention curriculum that was implemented was a program developed by the National Fire Protection Association called Risk Watch.

For the FY'04, over 2,500 professionals were trained in both the PEPP and PBTLS courses. Risk Watch has been implemented in 45 schools across the state. It is the goal of the Mississippi EMSC Program to expand these programs throughout the duration of the grant.

In the coming years, the Mississippi EMSC Programs plan to address several other areas of need as they pertain to children's issues. There remains much to be done to ensure children receive optimal medical care. Health care providers, parents, caregivers, teachers, and local organizations involved with or interested in child health care can play a significant role in the effort to improve the care that children receive in Mississippi.

## **Trauma Registry Review**

The Trauma Registry came about as a result of the passage of legislation during the 1991 Mississippi legislative session. The law provides that Mississippi Department of Health (MDH), Bureau of Emergency Medical Services (BEMS) - acting as lead agency - shall develop a plan and submit to the Legislature a plan for the triage, transport, and treatment of major trauma victims that at a minimum addresses the following:

- The magnitude of the trauma problem in Mississippi and the need for a statewide system of trauma care;
- The structure and organization of a trauma care system for Mississippi;
- Pre-hospital care management guidelines for triage and transportation of major trauma victims;
- Trauma system design and resources, including air transportation services, and provision for inter-facility transfer;
- Guidelines for resources, equipment, and personnel within facilities treating major trauma victims;
- Data collection and evaluation regarding system operation, patient outcome, and

- quality improvement;
- Public information and education about the trauma system;
- Medical control and accountability;
- Confidentiality of patient care information;
- Cost of major trauma in Mississippi; and
- Research alternatives and provide recommendations for financial assistance of the trauma system in Mississippi, including, but not limited to, trauma system management and uncompensated trauma care.

In 1992, BEMS took the first steps in developing a statewide trauma system by implementing a statewide trauma registry. The trauma registry was originally installed in five regional hospitals strategically located throughout the state. To date, each hospital participating in the Mississippi Trauma System is actively collecting trauma data and submitting it to BEMS. This data provides a stable foundation for the development of the Mississippi Trauma System.

## **Utilization of the Trauma Registry**

The Trauma Care System requires all designated trauma hospitals to participate in the state trauma registry system. There are four objectives of maintaining the trauma registry. These are *performance improvement, hospital operations, injury prevention, and medical research*. Of the four, performance improvement is the primary reason for maintaining a trauma registry. If utilized appropriately, performance improvement can be done in a much more efficient manner than if done manually. Secondly, the registry can help in managing resource utilization through daily logs, summaries, etc. Additionally, a requirement of all designated trauma centers in Mississippi is to participate in some way in injury control activities (injury prevention). The registry helps to identify injury control issues at the local, regional, and state levels. Finally, by all designated facilities capturing standardized data, the information can be used in clinical research. This will be done primarily at the state level.

The state registry system is designed primarily to collect data on only those patients with serious injuries. It is also designed to identify system issues, such as over and under triage, at the regional and state levels. In order to track these patients effectively, BEMS has identified criteria for a patient to be included in the registry at the local level. This is the inclusion criterion that is **REQUIRED** for all designated trauma centers. **ALL CENTERS MUST INCLUDE, AT A MINIMUM, ALL PATIENTS THAT MEET THESE CRITERIA.** This is regardless of payment source, indigent status, etc. This is the data that a trauma center must capture in order to maintain an effective trauma program.

## **Inclusion Criteria**

All state designated patients must have a primary diagnosis of ICD-9 diagnosis code 800-959.9; plus any one of the following:

- o Transferred between acute care facilities (in or out);
- o Admitted to critical care unit (no minimum);
- o Hospitalization for three or more calendar days;

- o Died after receiving any evaluation or treatment;
- o Admitted directly from Emergency Department to Operating Room for major procedures, excluding plastics or orthopedics procedures on patients that do not meet the three day hospitalization criteria;
- o Triage (per regional trauma protocols) to a trauma hospital by pre-hospital care regardless of severity; and
- o Treated in the Emergency Department by the trauma team regardless of severity of injury.

**The following primary ICD-9 diagnosis codes are excluded and should NOT be included in the trauma registry:**

- o ICD9Code 905-909 (Late effects of injuries);
- o ICD9Code 930-939 (Foreign bodies); and
- o Extremities and/or hip fractures from same height fall in patients over the age of 65.

If the primary diagnosis falls within the range of 905-909 or 930-939, they should not be included. These injuries do not have an AIS value associated with them, making it impossible to calculate an Injury Severity Score (ISS). If a patient has any of these injuries, secondary to a qualifying primary diagnosis, then they should be included and documented, along with any other injuries, burns, etc.

The trauma registry is designed to evaluate serious injuries caused by mechanical forces. For this reason, isolated injuries, such as extremities and/or hip fractures from same height fall in patients over the age of 65, are excluded. This will primarily be seen in elderly patients who suffer from the injury not because of the event, but because of osteoporosis. Some of these may have to be evaluated and may come down to clinical judgment. Also, trauma hospitals may want to collect this information for reasons internally. This is recommended if the volume is manageable by the facility. However, it is not a requirement of the state.

**Inclusions requirements after prerequisite**

After a patient meets the prerequisite requirements for inclusions, they must meet any one of the following:

1. Transferred between acute care facilities in or out: If a trauma center receives a patient that has sustained an injury that the center is unable to treat and transfers the patient to a higher or more appropriate level of care, this patient must be included in the registry at both the transferring and receiving hospital. This will allow regions to identify over and under triage that is occurring.
2. Admitted to intensive care (no minimum); any injury sustained that warrants admission to ICU must be included.
3. Hospitalization for three or more calendar days; any patient hospitalized for three or more calendar days must be included. In some situations, patients may be hospitalized for reasons other than the injury; i.e. medical, social, etc. It is recommended that

hospitals include all of these for evaluation in their own facility, but only those hospitalized due to the injury should be submitted to the state.

4. Died after receiving any evaluation or treatment; All trauma deaths that receive any evaluation or treatment in the Emergency Department must be entered in the registry and evaluated for preventability at all levels: pre-hospital, transferring hospital, and receiving hospital.

5. Admitted directly from Emergency Department to Operating Room for major procedure, excluding plastics or orthopedics procedures on patients that do not meet the three day hospitalization criteria; all patients that are admitted directly from the ED to the operating room for a major procedure must be included. Any plastic and/or orthopedic procedures that do not meet one of the other criteria for inclusion must not be entered into the trauma registry.

6. Triage (per regional trauma protocols) to a trauma hospital by pre-hospital care regardless of severity; If any patient is triaged to a trauma center by pre-hospital care providers (per regional trauma protocols), the patient must be included in the registry. This is how medical direction for pre-hospital care at the local and regional levels will monitor appropriateness of triage protocols.

7. Treated in the emergency department by the trauma team regardless of severity of injury; Any trauma patient triaged or transferred into a trauma center that results in the activation of the trauma team must be entered into the registry. This will allow a hospital's trauma program manager to monitor appropriateness of trauma team activation protocols.

### **Criteria for Including Burn Patients into the Trauma Registry Special note for coding injuries for burn patients (ICD-9-CM 940-949)**

The ICD-9 codes for burn patients are 940.00 – 949.00. To be able to calculate an ISS for burn patients, you MUST code the injury under the 948.00 sub-classification group. This pertains to burns classified according to extent of body surface involved. This is the only group of ICD9 codes for burns that give an AIS value. No other burn ICD-9 codes should be included into the trauma registry.

## **Trauma Registry Training Workshops**

Workshops were conducted for trauma center staff in order to become proficient in data entry and report writing from the Trauma One Database.

### **Course Outline**

Review Data Dictionary

Basic Concepts –

Starting Trauma One

Logging In

Using Master Desktop/Modules

Maintaining System Security

## Data Entry

- Creating Patient Records
- Navigating in Data Entry
- Working with Picklists
- Altering Picklist
- Erasing Data
- Attaching Notes
- Closing and Opening Records

## Exporting

## Importing

## Reporting Concepts

- Reports Module
- Repeat Sets Module
- Batch Reporting Module

## Report Types

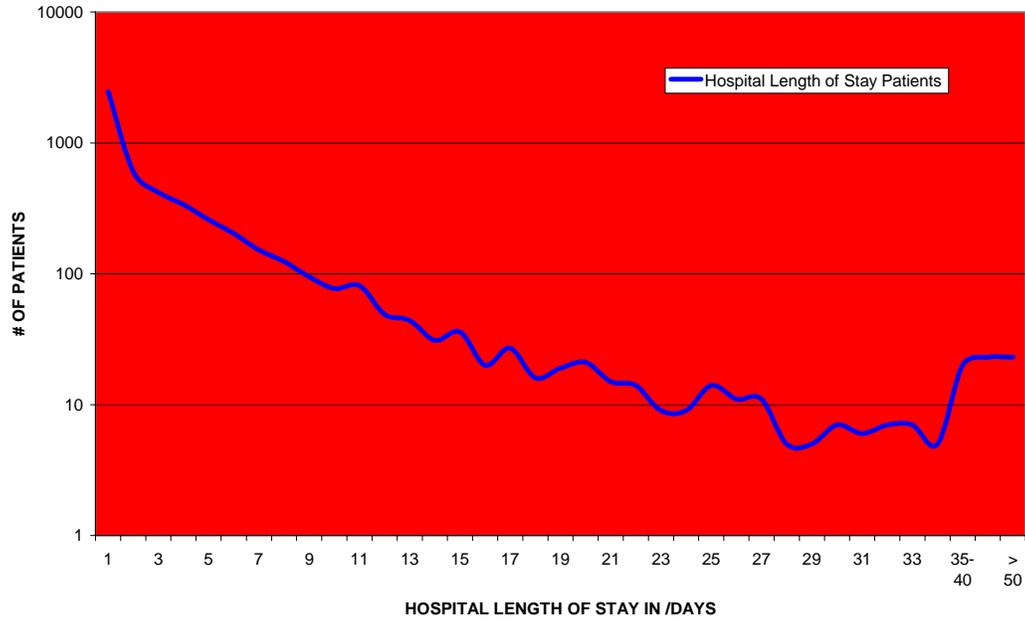
## Creating Reports

## Creating Populations & Repeat Sets

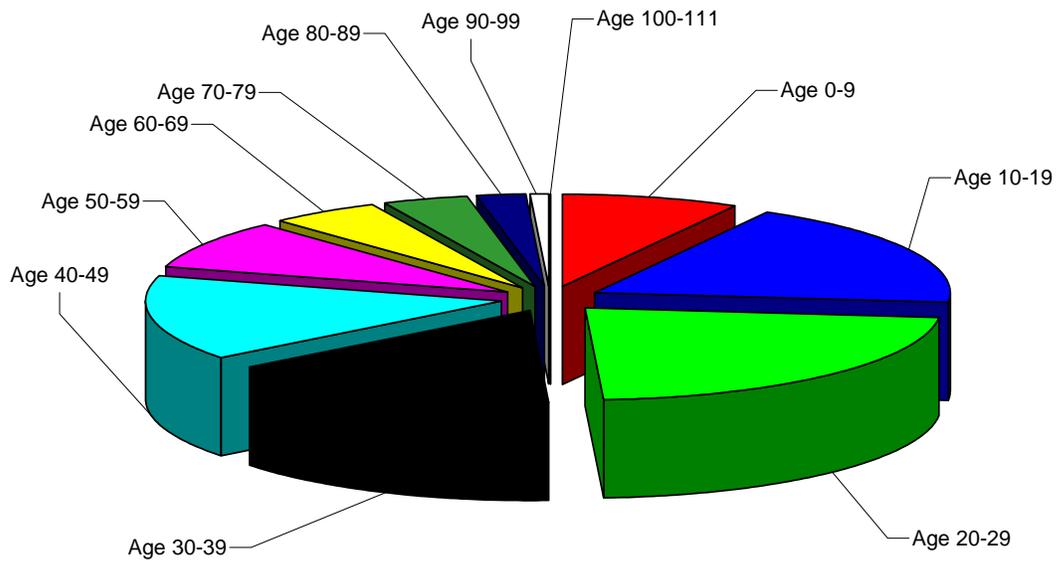
- Operators, Operands, and Steps
- Validating
- Generating Universes

# MISSISSIPPI TRAUMA REGISTRY DATA

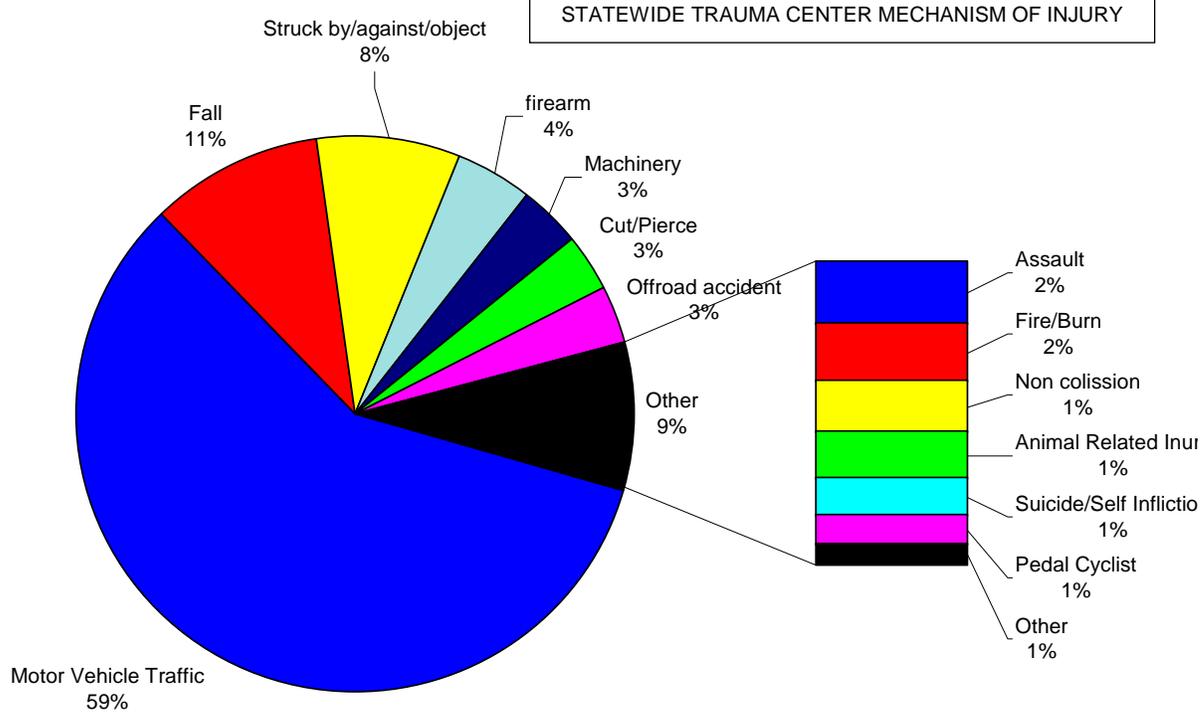
MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER HOSPITAL LOS



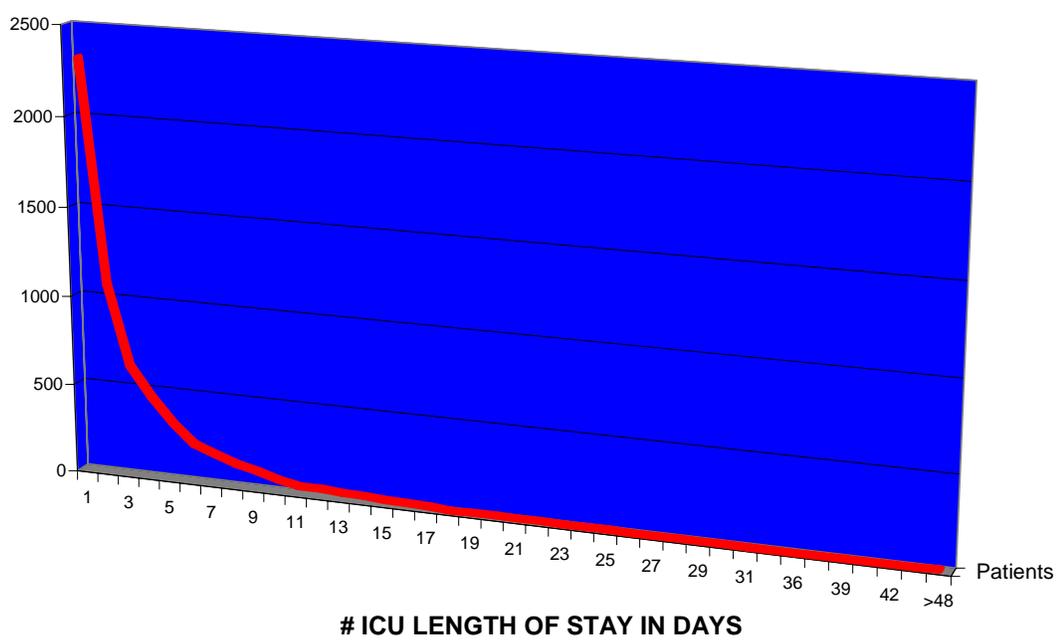
MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER ADMISSION: AGE BY DECADES



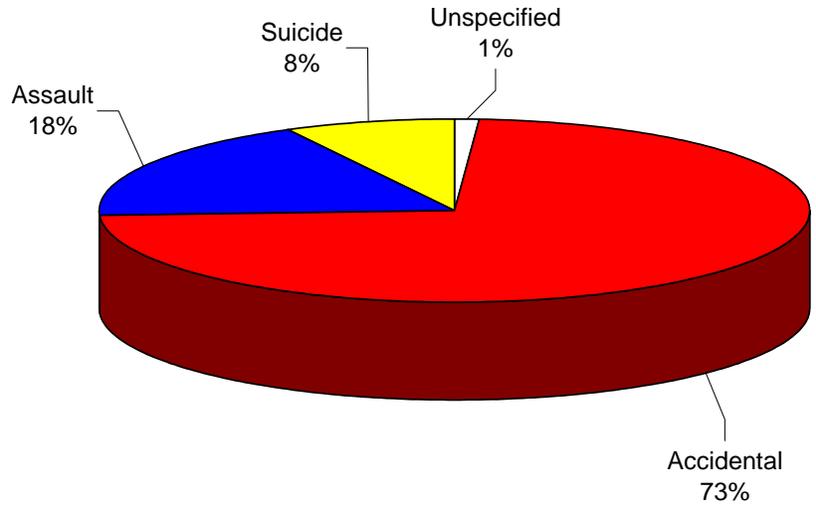
MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER MECHANISM OF INJURY



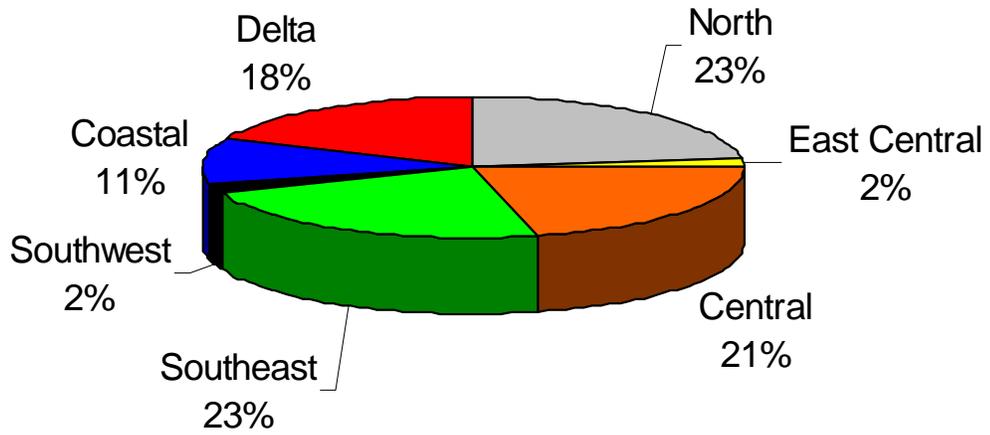
MISSISSIPPI TRAUMA CARE SYSTEMS FY'04  
STATEWIDE TRAUMA CENTER ICU LENGTH OF STAY IN DAYS



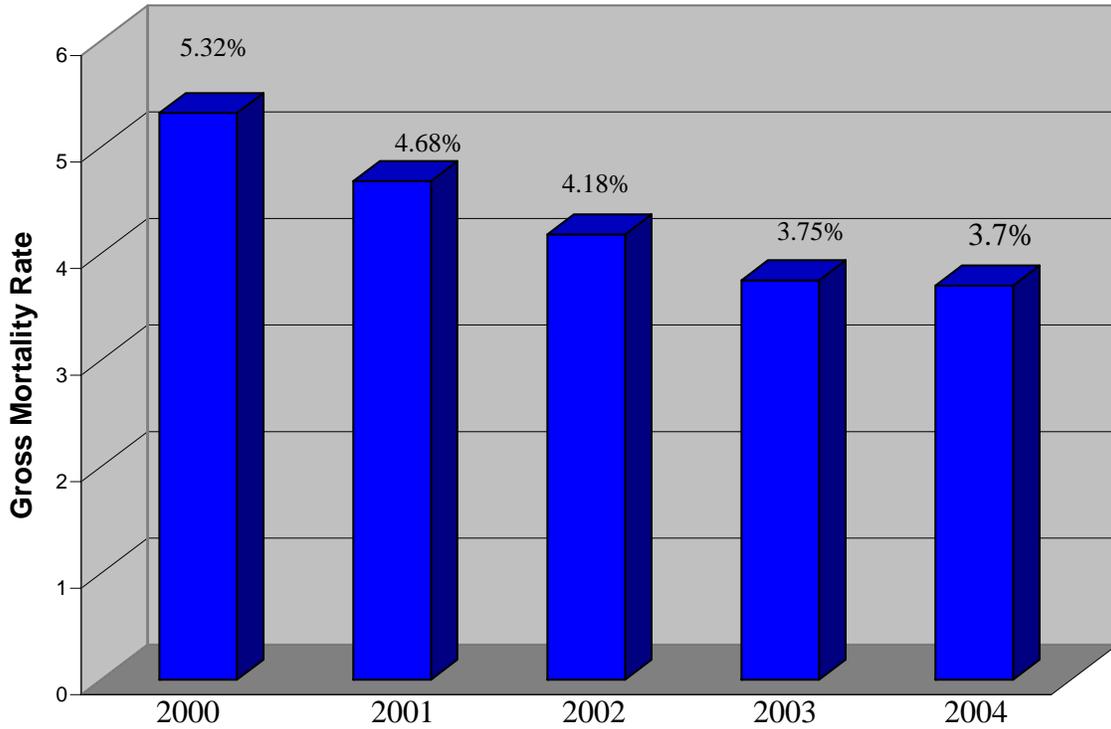
MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER DEATHS: INTENT OF INJURY



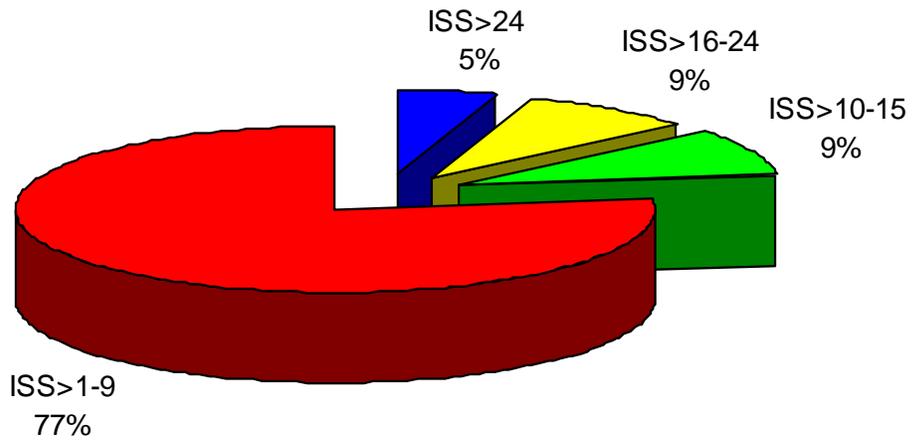
MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
PATIENTS BY REGION



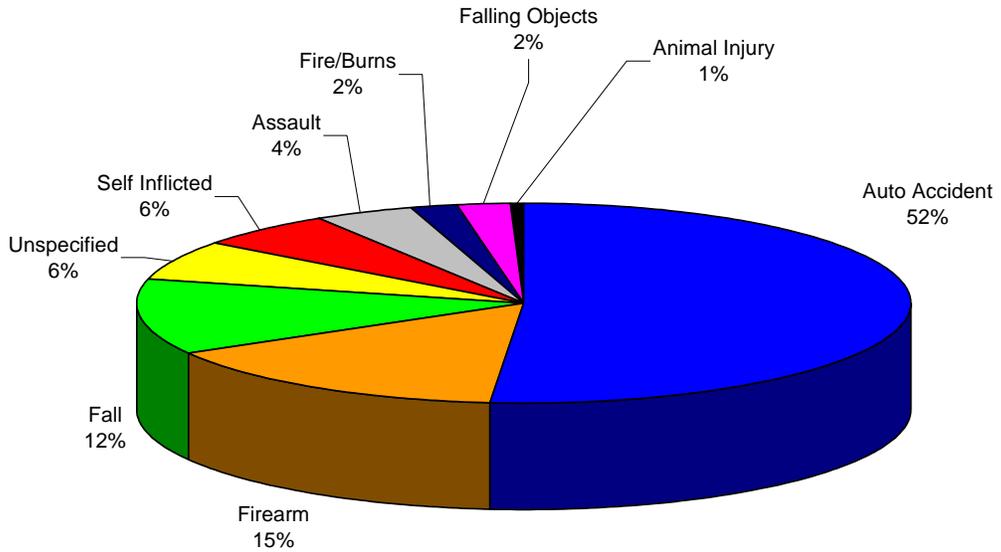
**MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER  
GROSS MORTALITY RATE STATEWIDE**



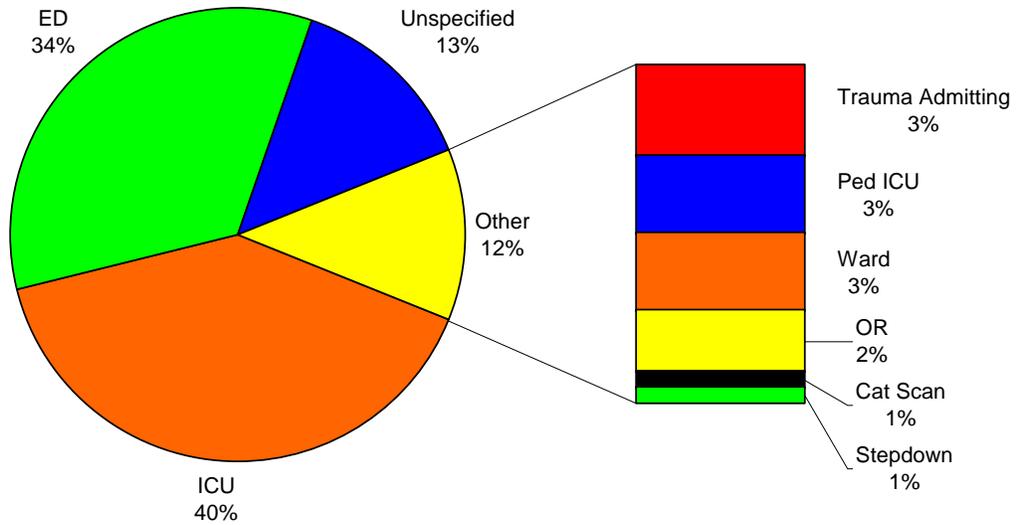
**MISSISSIPPI TRAUMA CARE SYSTEM  
PATIENTS BY INJURY SEVERITY SCORE (ISS)**



**MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER DEATHS BY MECHANISM OF INJURY**



**MISSISSIPPI TRAUMA CARE SYSTEM FY'04  
STATEWIDE TRAUMA CENTER DEATHS  
LOCATION DEATH OCCURRED WITHIN HOSPITAL**



## TRAUMA CARE TRUST FUND REPORT

During the 1998 Mississippi Legislative Session, House Bill 966 created the Trauma Care Trust Fund to assist in the development of Mississippi's Inclusive Trauma Care System. Specifically, the law required that an additional \$5 be assessed on all moving traffic violations, deposited into the State Treasury as the Trauma Care Trust Fund, appropriated annually to, and administered by, the Mississippi Department of Health for:

- State and regional trauma system administration;
- State trauma-specific public information and education; and
- Hospital and physician uncompensated care funding to Mississippi Department of Health (MDH) designated trauma care centers.

During the 1999 Mississippi Legislative Session an additional \$6 million dollars was appropriated to the Trauma Care Trust Fund, to give a total of approximately \$8 million per year to the Mississippi Trauma Care System. Legislators authorized annual funding through the Trauma Care Trust Fund for regional support and uncompensated trauma care as defined by the state trauma registry through regional contracts with the MDH.

In 1998, representatives of the Mississippi Trauma Advisory Committee (MTAC) and the Bureau of Emergency Medical Services (BEMS) worked to create a formula to allocate available monies from the Mississippi Trauma Care Trust Fund ("Fund"). This would reimburse eligible hospitals and physicians for treating uncompensated trauma cases through trauma centers designated by BEMS. Only treatment of patients qualified for entry in the trauma center's trauma registry that also met the definition of "uncompensated" could be submitted for reimbursement from the Fund.

Physicians that qualify for reimbursement of uncompensated care currently include:

- Anesthesia;
- General/Trauma Surgeons;
- Orthopedic Surgeons; and
- Neurosurgeons.

## TRAUMA CARE TRUST FUND ALLOCATION

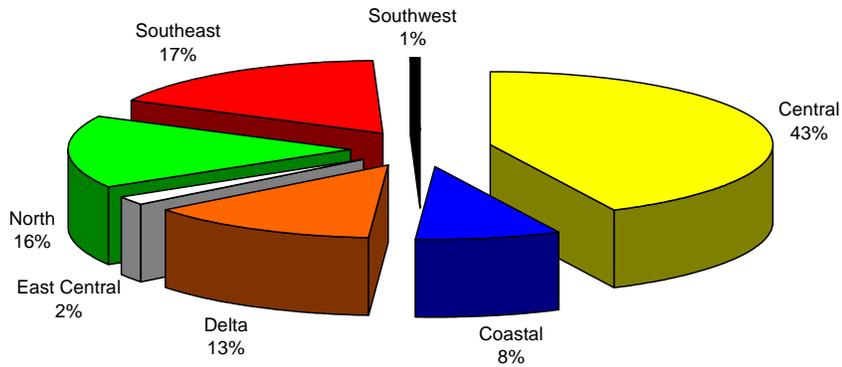
The following data shows the FY'04 uncompensated care disbursement for trauma patients treated through the calendar year 2003.

<b>YEAR</b>	<b>AVERAGE REIMBURSEMENT FOR PER PHYSICIAN</b>	<b>% CHANGE</b>
1999	\$12,494.04	
2000	\$9,627.76	-22.94%
2001	\$6,717.02	-30.23%
2002	\$6,183.45	-7.94%
2003	\$6,223.90	0.65%

YEAR	PARTICIPATING HOSPITALS	% CHANGE	PARTICIPATING PHYSICIANS	% CHANGE
1999	65		157	
2000	67	3.08%	216	37.58%
2001	70	4.48%	314	45.37%
2002	71	1.43%	366	16.56%
2003	70	-1.41%	362	-1.09%

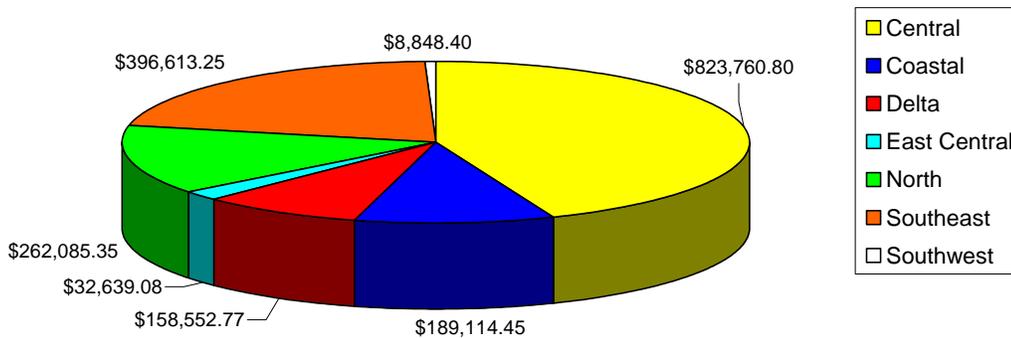
**TOTAL PERCENTAGE PER REGION  
OF THE 2003 TRAUMA CARE TRUST FUND DISBURSEMENT**

**TOTAL DISBURSEMENT: \$7,510,172.00**



**MISSISSIPPI TRAUMA CARE TRUST FUND  
2003 REGIONAL DISBURSEMENT: SURGEONS**

**TOTAL DISBURSEMENT: \$ 1,871,614.10**



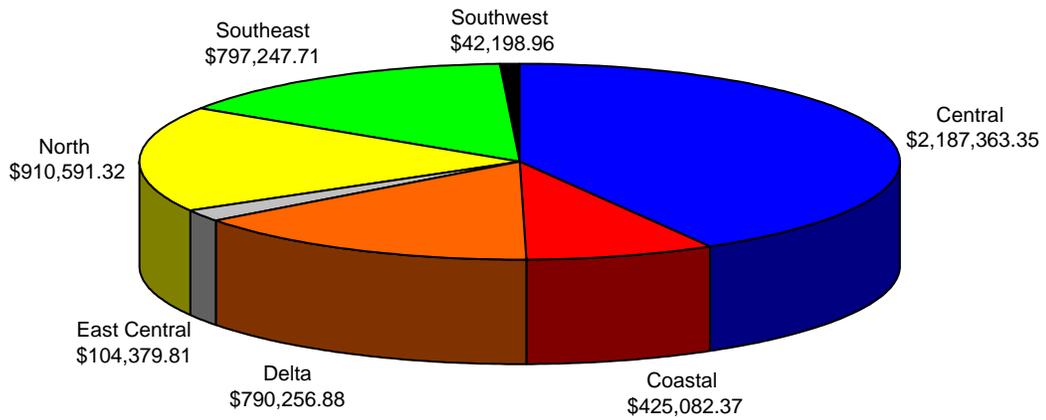
**MISSISSIPPI TRAUMA CARE TRUST FUND  
2003 REGIONAL DISBURSEMENT: ANESTHESIOLOGIST**

**TOTAL DISBURSEMENT: \$ 381,437.50**



**MISSISSIPPI TRAUMA CARE TRUST FUND  
2003 REGIONAL DISBURSEMENT: HOSPITALS**

**TOTAL DISBURSEMENT: \$ 5,257,120.40**



## **FUTURE INITIATIVES**

### **Trauma Care Strategic Planning Committee**

Strategic planning is a management tool used for the purpose of improving statewide organization and to focus its energy to ensure that all trauma centers are working toward the same patient outcome goals. The Trauma Care Strategic Planning Committee will be appointed and develop a strategic plan to shape and guide the future of trauma care in the State of Mississippi.

The newly formed Trauma Care Strategic Planning Committee will set goals and develop action plans to achieve those goals. It will be the responsibility of this committee to base future initiatives on past performance and quality data which will requires openness to questioning the status quo.

The committee will define each member's role, commitment within the committee, and measurable goals and objectives for each subsequent fiscal year. Recommendations will be submitted to MTAC for approval. Implementation and evaluation of the plan will be the responsibility of the Trauma Regions and Trauma Centers.

### **New Trauma Registry**

The Purpose of the Mississippi Trauma Data Collection System is to enable Mississippi Department of Health (MDH) personnel to electronically collect, manage, and report Trauma System data. After careful consideration of national trauma registries, a new registry will be selected and will be implemented during FY'05. There will be a more comprehensive data set, with mandatory field completion and data completion reports. Internal data quality checks will yield more timely and consistent data among trauma centers. The abstraction process will be monitored by the Division of Trauma System Development and Injury Control to evaluate validity and reliability of the data. Quarterly data checks will assist trauma centers in submitting authenticated data which will be used to identify, design and implement mechanisms to reduce trauma, ultimately improving health care for the citizens of Mississippi.

The new trauma registry database will assist trauma center staff with benchmarking of patient outcomes and additional performance improvement activities within the local hospitals where the trauma registry software is networked. The data collected will allow the trauma center to monitor and improve its trauma program. The trauma region will use the data to develop and monitor pre-hospital care, in-hospital clinical care, and outcomes and policies. The data will be used for injury prevention activities, legislative initiatives, and monitoring of the Trauma Care Trust Fund. Finally, BEMS plans to submit its valid and reliable data to the National Trauma Data Bank (NTDB).

### **Performance Improvement**

The main purpose of a trauma performance improvement plan is to deliver optimal care to injured patients treated in Mississippi Trauma Centers. The care of injured patients depends on a complex network of people working together as a team. The emergent nature of trauma care relies on each member of the team to perform well on a regular basis. The performance

improvement program is designed to monitor the system and determine ways in which it can improve function.

When a component of the system is not functioning, the performance improvement program should be able to identify that deficiency and formulate a plan to resolve the issue. System deficiencies can be of various types including: equipment failure, communication breakdown, resource deficiencies, and provider specific difficulties. An effective performance improvement process not only identifies that there is a problem, but determines why the problem exists and allows mediation of the issue in a dignified manner.

In order to sustain effectiveness, the performance improvement process must be an inclusive process that draws from the expertise of each individual trauma center. In addition, the performance improvement program must always maintain certain principles so that it can function in a fair and autonomous way. These principles include: objectivity, data driven, issue oriented process, efficient, effective, care directed, education oriented, and non-punitive.

It is essential that each trauma center engage in the performance improvement program as a member of this process. In this way, each trauma center will be able to directly enhance the system of care by offering expertise on how it may function better. The net result of the process should be a system of care that allows each trauma center and each trauma care region to supply the most appropriate care to the patient in an effective and efficient manner. The goals of the Trauma Care System in relation to Performance Improvement are:

- To develop a comprehensive statewide Trauma Performance Improvement Plan, which will assist trauma centers in developing methods to consistently assess performance improvement within trauma centers.
- To implement a statewide Mississippi Performance Improvement Committee with representatives from trauma centers, trauma regions, and experts in trauma performance improvement. The Mississippi Performance Improvement Committee (MSPIC) will report back to the Mississippi Trauma Advisory Council (MTAC) Committee.

### **Public Awareness Campaign**

Education and communication to the constituents of Mississippi and to the general public on to the definition of an inclusive trauma care system and an understanding of the regional approach to trauma care is needed.

There are major differences, which define the difference between a trauma center and a hospital that cares for the injured. Trauma Centers must define the Trauma Program, Trauma Services, Trauma Team Medical Director, Multidisciplinary Trauma Committee, Trauma Program Manager, and the Clinical components of the trauma team. Facility Standards outline the operations and equipment needs of a trauma center.

The continuous readiness of a trauma center is not well understood by the public. The Division of Trauma System Development and Injury Control will develop strategies to implement a Public Awareness Campaign, including publications, pamphlets and public service announcements.