

TRAUMA CARE SYSTEM

A trauma system is an organized, coordinated effort in a defined geographic area that delivers the full range of care to all injured patients and is integrated with the local public health system. The fundamental components of a trauma care system are:

- Injury Prevention
- Pre-hospital Care (emergency medical services)
- Acute Care (hospitals and physicians)
- Post-hospital Care (rehabilitation services)

Source: American Trauma Society. (2004).

MISSISSIPPI'S ACUTE SYSTEMS OF CARE

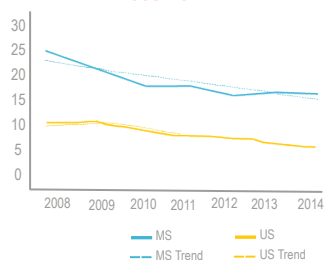
Mississippi is the only state with three statewide acute systems of care:

- Trauma
- STEMI (heart attack)
- Stroke

The STEMI and stroke systems were built on the framework established by the trauma system and were implemented in 2011 and 2013, respectively.

Source: National Academy of Sciences. (2013).

MOTOR VEHICLE CRASH DEATH RATES PER 100,000 IN MS & US, 2008-2014



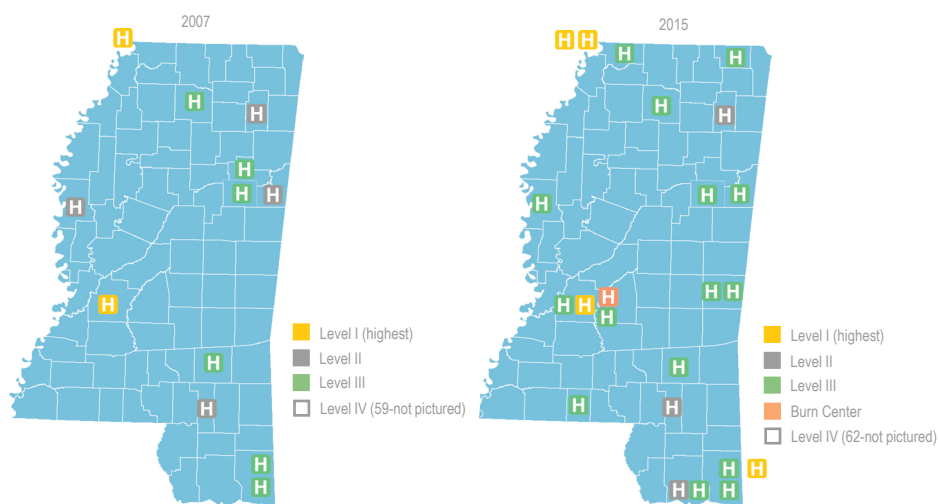
Source: National Highway & Traffic Safety Administration. (2016).

Mississippi has enacted policies that are considered a model for trauma system development by other states. Much of the success of Mississippi's system is derived from a stable funding structure established in statute. Recent statutory changes threaten to weaken this structure. This brief summarizes the impact of these changes and explores options for strengthening funding for the system.

In 2008, the Mississippi Legislature enacted HB 1405, providing a steady funding stream to support the state's trauma care system. Key to the funding structure were assessments and fees targeting risky behaviors associated with trauma care.

In 2012, a study published by researchers in the *Journal of Trauma Care and Acute Care Surgery* lauded the policy provisions enacted by Mississippi policymakers as "foresighted" and a successful model for other states to consider. The researchers documented a statistically significant increase in hospital participation in the state trauma system following enactment of the law. Figure 1 compares hospitals' participation in the trauma care system in 2007 to hospitals' participation in 2015.

FIGURE 1. MISSISSIPPI HOSPITAL PARTICIPATION IN THE TRAUMA CARE SYSTEM, 2007 VS. 2015



Source: Mississippi State Department of Health. (2007 & 2015).

Researchers have documented decreases in injury death rates after implementation of formal trauma care systems. Unintentional (accidental) injuries comprise the majority of Mississippi's injury deaths at 67 percent and motor vehicle crash deaths are the leading cause of unintentional injury deaths statewide. Motor vehicle crash death rates have declined significantly ($p < .01$) faster in Mississippi when compared to the United States from 2008 to 2014 (see figure on the left).

Funding Levels

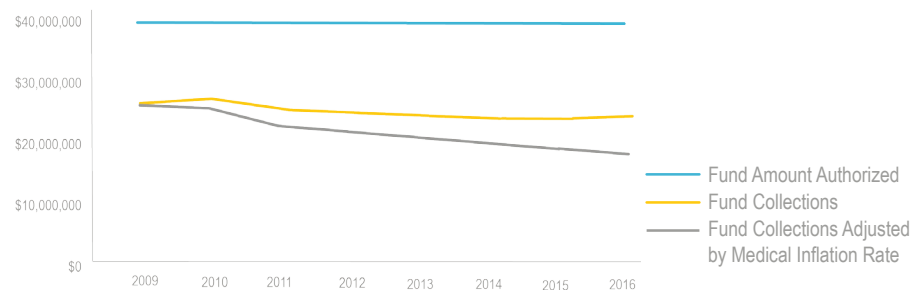
STATE FUNDING ASSESSMENTS TRAUMA & EMS SYSTEMS, FY 2008-2016

FUND	ASSESSMENT	AMOUNT
Trauma Care Systems Fund	Speeding, Reckless, & Careless Driving Violations	\$80.00
Trauma Care Systems Fund	Point-of-Sale Fee	\$50.00
Trauma Care Systems Fund	ATVs/Motorcycles	\$44.00
Trauma Care Systems Fund	Distinct License	\$44.00
Trauma Care Systems Fund	Tag Plate Fees	\$30.00
Trauma Care Systems Fund	Implied Consent Law Violations	\$30.00
Trauma Care Systems Fund	Special License Tag Fees (EMS Technicians)	\$25.00
Trauma Care Systems Fund	Special License Tag Fees (Trauma Care)	\$24.00
Trauma Care Systems Fund	Special License Tag Fees (EMS Supporter)	\$24.00
EMS Operating Fund	Implied Consent Law Violations	\$15.00
Trauma Care Systems Fund	Traffic Violations	\$15.00
EMS Operating Fund	Traffic Violations	\$5.00
Trauma Care Systems Fund	License Plate Tags/Decals	\$4.00
Trauma Care Systems Fund	Uninsured Motorist Liability Insurance Penalties	Varies

Source: Mississippi Code of 1972. (2015).

At the time of enactment of the 2008 law, it was projected that the new assessments would generate over \$30 million in additional revenue, which could be added to the \$8 million already deposited annually in the Trauma Care Systems Fund. Collections, however, were less than estimated. As shown in Figure 2, the funding levels for the trauma care system have never reached the amount authorized for trauma care in the Mississippi State Department of Health's appropriations bills, averaging about 60 percent of the authorized amount from 2009 to 2016. When the amounts are adjusted to account for medical inflation over the time period, the funding levels were even lower.

FIGURE 2. TRAUMA CARE SYSTEMS FUND AUTHORIZATION, COLLECTIONS, AND COLLECTIONS ADJUSTED FOR MEDICAL INFLATION RATE, 2009-2016



Source: Mississippi State Department of Health. (2016).

Funding Changes & Potential Impacts

TASK FORCE FOR TRAUMA AND EMS FUNDING NEEDS

In July 2016, the State Board of Health formed a Task Force for Trauma and EMS Funding Needs and charged the ad hoc committee with advising the Board on funding options pursuant to the goal of preserving support for the trauma and emergency medical services (EMS) system. The Task Force's findings and recommendations can be found on-line at <http://www.mshealthpolicy.com/wp-content/uploads/2016/10/Trauma-and-EMS-Task-Force-Report-to-SBOH-10-12-16>.

During the 2016 regular legislative session, the Mississippi Legislature amended some of the state funding mechanisms that affected the trauma and EMS systems (Mississippi Code § 99-19-73) by redirecting certain fees and assessments related to moving traffic violations, the Implied Consent Law, and speeding/reckless/careless driving violations into the State General Fund rather than to continue to deposit the assessments into the Trauma and EMS Funds.

Specifically, moving traffic violation penalties that designated \$15.00 of every \$20.00 assessed to go to the Trauma Care Systems Fund and the remaining \$5.00 to the EMS Operating Fund now go into the State General Fund. Implied Consent Law violation penalties that designated \$30.00 of every \$45.00 assessed to go to the Trauma Care Systems Fund and the remaining \$15.00 to the EMS Operating Fund now go into the State General Fund. All the assessments that were collected for speeding (\$60.00), reckless driving (\$10.00), and careless driving (\$10.00) violations that had been designated for deposit into the Mississippi Trauma Care Systems Fund now also go into the State General Fund.

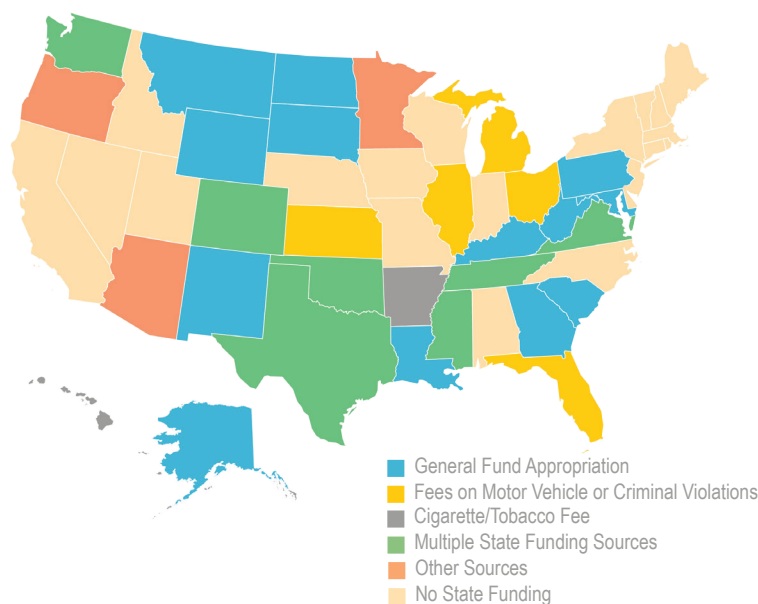
The results of these changes are that the EMS Operating Fund no longer has a designated state funding mechanism and the revenue designated to be deposited into the Trauma Care Systems Fund is reduced. In Fiscal Year 2016, the Mississippi State Department of Health reported the EMS Operating Fund had collected \$1,790,736. Collections for the trauma system from moving traffic violations were \$7,205,971 out of the total \$22,763,620 collected, about one-third (32%) of the trauma fund collections. Unless the Legislature appropriates the money from the State General Fund, there is projected to be approximately \$9 million less revenue supporting the state's trauma and EMS systems.

Alternative Funding Sources

There is no designated federal funding for trauma or emergency medical systems outside of occasional grants for specific purposes, and states vary in their funding sources for these systems. Most states employ a combination of funding sources to support trauma and EMS services on the state level. A majority of states fund the trauma and EMS systems separately, while a few states provide joint funding for these services.

Sources of state funding for trauma and emergency medical systems include general fund revenue appropriations by state legislatures; fees assessed on motor vehicle or other violations, vehicle registrations, driver's licenses, and ambulance or emergency medical technician (EMT) operations; and tobacco taxes. Figure 3 illustrates the variety of sources of state trauma systems funding.

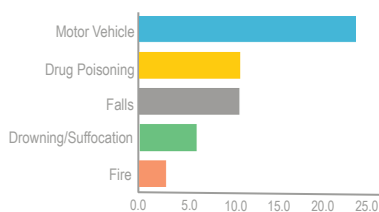
FIGURE 3. STATE FUNDING SOURCES FOR TRAUMA CARE SYSTEMS BY STATE



Source: National Conference of State Legislatures. (2012).

The State of Louisiana received approval from the Centers for Medicaid and Medicare (CMS) to implement a Medicaid Upper Payment Limit (UPL) program for EMS services. Under this program, Medicaid provides a supplemental payment for emergency medical transportation services rendered by land and air ambulance providers. Since the state match is paid by the ambulance providers, the program does not use state general funds. In the Mississippi State Department of Health's appropriations bill, the Legislature has authorized the use of trauma funds in Mississippi through collaborative efforts between the Division of Medicaid and the State Department of Health to obtain federal Medicaid matching dollars, but the program has not been implemented.

**TOP CAUSES OF UNINTENTIONAL INJURY
DEATH RATES PER 100,000 IN MISSISSIPPI,
2008-2014**



Source: Mississippi Vital Statistics. (2014).

Collecting assessments and fees on sources related to the risky behaviors associated with the leading causes of unintentional injuries is a common method to fund trauma and EMS system operations. Motor vehicle crashes, drug poisonings, falls, drowning/suffocation, and fires were the top reasons for unintentional injury deaths in Mississippi from 2008 to 2014 (see figure on the left).

Policy Considerations

Research has documented the success of the trauma system in Mississippi as established by the State Legislature. Key to sustaining the system is maintaining a stable source of funding. Recent statutory changes have the potential of seriously reducing the revenue designated to support the system.

The Legislature has multiple options for ensuring adequate financial support of the state's trauma system, including the following:

- Appropriate funds from the State General Fund;
- Restore the revenue streams diverted to the General Fund in FY 2017;
- Consider new revenue streams from similar sources; and/or
- Implement the Medicaid EMS Upper Payment Limit Program (UPL) authorized in law using trauma funds for the state match.

Sources

American Trauma Society. (2004). Trauma system agenda for the future. Washington, D.C.: National Highway Traffic Safety Administration. <http://www.nhtsa.gov/people/injury/ems/emstraumasystem03/index.htm>.

Brooks, B. (2012). Letter to Mr. Don Gregory, State Medicaid Director, Louisiana Department of Health and Hospitals. <http://www.louisianaambulancealliance.org/Resources/Documents/Approval%20letter%2011-23.pdf>.

Center for Mississippi Health Policy. (2007). Mississippi trauma care task force final report. <http://www.mshealthpolicy.com/wp-content/uploads/2012/06/MSTraumaCareTaskForceFinalReportNov07.pdf>.

Eastman, A.B., Mackenzie, E.J., & Nathans, A.B. (2013). Sustaining a coordinated, regional approach to trauma and emergency care is critical to patient health care needs. *Health Affairs*, Vol. 32(2): 2091-2098.

House Bill 1405. (2008). Mississippi Regular Legislative Session.

House Bill 1651. (2016). Mississippi Regular Legislative Session.

Mississippi State Department of Health. (2016). EMS and trauma funding. Health Protection.

Mississippi State Department of Health. (2015). List of Mississippi trauma care system designated and undesignated hospitals. Acute Care Systems.

Mississippi State Department of Health. (2007). Mississippi trauma care system designated hospitals. EMS Annual Report.

Mississippi State Department of Health. (2014). Mortality data. Office of Vital Statistics. <http://mstahrs.msdh.ms.gov/forms/morttable.html>.

National Academy of Sciences. (2013). Mississippi's acute systems of care presentation by Norman Miller, Ph.D. at the Institute of Medicine workshop, session 2, November 18, 2013. <http://nationalacademies.org/hmd/activities/publichealth/medprep/2013-nov-18.aspx>.

National Highway & Traffic Safety Administration. (2016). Fatality Analysis Reporting System (FARS). [http://www.nhtsa.gov/Data/Fatality-Analysis-Reporting-System-\(FARS\)](http://www.nhtsa.gov/Data/Fatality-Analysis-Reporting-System-(FARS)).

National Conference of State Legislatures. (2012). The right patient, the right place, the right time: A look at trauma and emergency medical services policy in the states. <http://www.ncsl.org/documents/health/ncsltraumareport812.pdf>.

Zarzaaur, B.L., Croce, M.A., Fabian, T.C. (2012). Play or pay: a financial model for trauma care in a regional trauma system. *Journal of Trauma Care and Acute Care Surgery*. Vol. 72(1): 78-85.

Center *for*
Mississippi
Health
Policy

Plaza Building, Suite 700
120 N. Congress Street
Jackson, MS 39201

Phone 601.709.2133
Fax 601.709.2134

www.mshealthpolicy.com