

SAVING LIVES

... THROUGH INNOVATIVE PARTNERSHIPS

The msTraffic/MED-COM Project



1. Project Description

a) What is the Purpose of the Project?

The purpose of the Mississippi Department of Transportation (MDOT) and Mississippi MED-COM Partnership Project was to integrate the rapidly expanding travel information network resources of the Mississippi state-wide Intelligent Transportation System (known as msTraffic) with a new state-wide medical emergency response system known as Mississippi MED-COM.

The Mississippi MED-COM Center serves as a statewide hub for emergency management information. Through this unique project the MED-COM communications center has been directly integrated with the MDOT state-wide traffic management center so that medical response of all types throughout the state can benefit from msTraffic information. Live streaming video of major interstates and intersections in Mississippi are provided which allows MED-COM operators to assist and guide emergency service vehicles in reaching emergency scenes and then reaching medical facilities. The integration of these two state government systems not only exemplifies innovation in both of these critical public health and safety programs, it also creates a new dimension of performance not possible without this collaborative, interagency approach to serving the citizens of Mississippi.

The effectiveness of emergency medical services across the state is dependent upon the ability of first responders to efficiently and safely

reach accident scenes, most of which requires travel on the state's major street network. In most cases, those medical services are dependent on that same transportation network to transport the injured to the closest medical facilities for treatment. The ability for the MED-COM center to have direct access to the most current travel information and control over MDOT's traffic camera surveillance system as needed allows for optimal safety and efficiency in delivering these critical emergency services. It also allows for early assessment of incidents to facilitate the appropriate response.

The MED-COM Center supports and coordinates emergency response on three levels:

- **Local operations** – Paramedics communicate patient condition and treatment information to the center. Center staff contact receiving ERs, manage diversion plans and schedule diversion rotations. The center provides access to AirCare, including in-flight tracking and dispatch.





Mississippi MED-COM Center



MDOT msTraffic Center

- **Regional operations** – The center is part of regional response efforts for all hazardous events and works in conjunction with local emergency management agencies to provide accurate, timely information. All inbound aircraft or ambulances contact the center, which notifies hospitals of basic patient information, triage classification and hospital destination.
- **Statewide operations** – During national disasters or mass casualty incidents, the center assists with the coordination of victim transfers into Jackson-area hospitals. The center is part of the state’s response efforts for all large-scale emergencies, providing current information for emergency preparedness needs to state agencies.

b) What needs and challenges does it address? Whom does it serve?

Live streaming video of major interstates and intersections in Mississippi are provided which allows MED-COM operators to first assess the situation, then assist and guide emergency service vehicles in

reaching emergency scenes and subsequently reaching medical facilities.

The msTraffic/MED-COM system also improves communications regarding critical weather information, providing emergency weather alerts to area hospitals/EMS agencies based on live Doppler radar and a direct link to Jackson, Memphis and Slidell National Weather stations.

The system improves transport efficiency by monitoring EMS transports, providing assistance to rural hospitals in determining the best method of transfer, and providing increased coverage for inbound EMS traffic with radio coverage.

MED-COM will eventually provide more than 120 direct dial phones to hospitals, EMS agencies and EOC’s



msTraffic Surveillance Cameras

throughout Mississippi for communication in the event of a disaster or need for Emergency referral to UMMC.

Three primary missions of the MED-COM center include:

1. **Improving the efficiency** of transporting critical patients to emergency facilities and trauma centers, including assisting in out-of-state transfers (burns, etc),
2. **Increasing access** to the emergency management and disaster preparedness services, as well as field crews responding to special situations (HAZMAT, special trauma, etc).
3. **Improving communications** between emergency responders, hospitals and inter-hospital. This includes routine communications as well as disaster/emergency communications and notifications.

The MED-COM center also facilitates multi-agency coordination and communication by creating the ability to cross patch between numerous radio frequency ranges and radio systems in support of emergency services in Mississippi. Having the latest msTraffic travel information available at the MED-COM center allows it to be efficiently



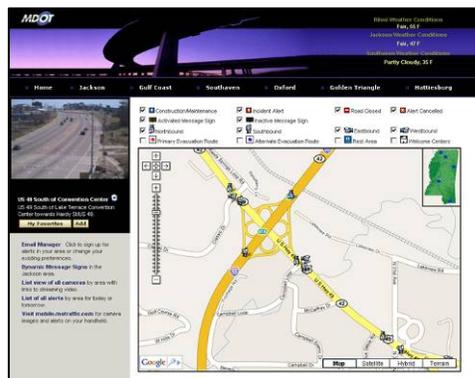
msTraffic camera images at the MED-COM Center

shared with all statewide emergency medical agencies.

The center has improved communications especially among radio systems, including the Mississippi State Wireless System (MSWIN) and the State wide 700 MHz digital system. These systems are phased in as towers are built from the gulf coast north following the Mississippi Highway Patrol's districts. There is 95% mobile radio coverage anywhere in the state of Mississippi as the system is deployed, and more than 40 Fire Departments (paid/ volunteer), law enforcement agencies, police departments, sheriff departments and emergency management agencies are involved. There is also a Mississippi Hospital Satellite Network, FEMA NAWAS System (National Alert Network), and extensive phone patch capability. All of these agencies will now have the benefit of msTraffic information through this extensive communication network.

c) Was it designed as a short-term or long-term effort?

The Mississippi msTraffic/MED-COM project is designed to function as a permanent service to the emergency response agencies, hospitals and first responders of Mississippi. This state-of-the art communications center



msTraffic Website



serves many functions, many as listed below. MED-COM is staffed twenty-four hours a day, seven days a week with experienced paramedics and emergency medical technicians who are ready to assist emergency responders and medical facilities.

Mississippi MED-COM functions include:

- Traffic updates on major intersections monitored through live MDOT feeds from the msTraffic surveillance cameras
- Assistance to the Mississippi Department of Health and Mississippi Emergency Management Agency as requested during disasters or other state wide emergencies
- Critical weather information
- Medical and logistical support of area fire departments and EMS agencies, including patching between agencies at the request of both agencies in the event of a mutual aid event
- Communication support to area agencies as requested
- Communication and logistical support to the State Medical Assistance Team (SMAT)
- Communication of multi-casualty incidents to hospitals in the Jackson Metro area.
- Communication of Jackson Regional Hospital Diversion Status
- Assistance in contacting Med-Control via radio/phone
- Communication center for AirCare

d) How does it further the development and/or deployment of ITS? How does it help the organization achieve its goals?

In the past decade the Mississippi Department of Transportation has invested heavily in the planning, design and deployment of its state-wide Intelligent Transportation System program. It is imperative to MDOT and ITS Program leadership to fully utilize the growing resources of this program for the benefit of Mississippi citizens, businesses and visitors, and engage in partnerships wherever possible to do so. This project helps to achieve that goal.



The U.S. Department of Transportation (USDOT) initiated the Intelligent Transportation Systems (ITS) Public Safety Program in 2000 to increase transportation safety and mobility through new and dynamic partnerships linking the transportation and public safety communities – including law enforcement, fire and rescue, emergency medical service (EMS) providers, emergency managers, and



MISSISSIPPI MED-COM
888-UMC-2345
601-984-4367

Attending Physicians | Bed Count | Regional Diversion | EMS Inbound Transports | Aircare Flight Crew

Jackson Metro Area
In-Bound EMS Transports

- Current In-Bound EMS Transports
- Search In-Bound EMS Transports

Admin Tools

- Hospitals
- Chief Complaints
- Transport Units

WELCOME TO MISSISSIPPI MED-COM

Jackson Metro Area In-bound EMS Transports

Hospital:

Triage Status: Critical Urgent Non-Urgent

Chief Complaint:

Transport Unit:

Call Type: Inpatient Scene Transport

ETA (Minutes):

Age:

Gender: Female Male

Comments:

Emergency Notification:

MED-COM EMS Web-Tracker



MISSISSIPPI MED-COM
888-UMC-2345
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Attending Physicians | Bed Count | Regional Diversion | EMS Inbound Transports | Aircare Flight Crew

In-Bound EMS Transports Form

WELCOME TO MISSISSIPPI MED-COM

ALERT! ALERT!

UMMC - Adult									
Critical	AMR 122	Chest Pain: Non-specific	Inpatient	10 mins	47	M	Comments Entered	<input checked="" type="checkbox"/>	received
Critical	AirCore1	Active Cardiac Arrest	Scene	30 mins	82	M	Comments Entered	<input checked="" type="checkbox"/>	received
Urgent	AMR 120	ADB Pain: Non-specific	Transport	10 mins	30	F	Comments Entered	<input checked="" type="checkbox"/>	received
Non-Urgent	AMR 121	AMS: Diabetic	Inpatient	15 mins	32	M	Comments Entered	<input checked="" type="checkbox"/>	received

UMMC - Pediatric ED									
Critical	Grenada Lake EMS	S/P Cardiac Arrest	Transport	90 mins	18 mos	M	Comments Entered	<input checked="" type="checkbox"/>	received

UMMC - OB Receiving									
Urgent	AMR 190	Pregnancy: Imminent Delivery	Transport	10 mins	21	F	Comments Entered	<input checked="" type="checkbox"/>	received
Non-Urgent	AMR 100	Pregnancy: Gestation Birth	Transport	15 mins	25	F	Comments Entered	<input checked="" type="checkbox"/>	received

MS Baptist Medical Center									
Urgent	AMR 115	Pregnancy: Pre-term Birth	Transport	15 mins	2 hrs	M	Comments Entered	<input checked="" type="checkbox"/>	received

River Oaks Crossgates Medical Center									
Critical	AMR 122	Chest Pain: Pulmonary	Inpatient	10 mins	47	M	Comments Entered	<input checked="" type="checkbox"/>	received

Mississippi MED-COM - 2500 North State St. - Jackson, MS 39216 This site maintained by: Application Development Group

MED-COM Emergency Notification Display Screen

emergency communications providers – at the Federal, State, regional and local levels. To achieve these goals, the ITS Public Safety Program evolved as a collaborative effort among the Research and Innovative Technology Administration (RITA), FHWA, NHTSA, and FTA.

Through these partnerships, the program has developed and demonstrated innovative procedures and technologies for more coordinated public safety and transportation operations. This Mississippi msTraffic/MED-COM project is one such example of how the transportation and public health and safety communities can work together for a common goal.

A focal point of the USDOT partnership efforts was the Emergency Transportation Operations (ETO) Initiative. The ETO Initiative concentrated on providing the tools, procedures, and information that can be used to actively manage and, therefore, expedite the safe progress of an evacuation. This is a critical need for the State of Mississippi and all coastal communities given the recent experiences as a result of Hurricane Katrina and Gustav.

The collective efforts of the ITS Public Safety Program and the ETO Initiative encompass the functional areas described below, all of which have been enhanced in Mississippi by the deployment of this msTraffic/MED-COM project.

Public Access to Emergency Services – Public access to emergency services underpins the opportunity to reduce deaths and injuries from vehicular crashes and



Mississippi Emergency Responders

from medical conditions such as heart attacks, strokes, and respiratory emergencies. This msTraffic/MED-COM project improves the efficiency and safety of emergency access response.

Enhanced Information Sharing – The USDOT encourages various activities (transportation, law enforcement, fire, emergency management, and emergency medical personnel) to foster integration of traffic management information systems and public safety dispatch systems, identify common information interests of the transportation and public safety communities, and to develop methods for data sharing where their interests intersect.

Evacuation Management and Operations – Evacuation operations and planning resides with local public safety and emergency management offices and is based on preparations for local quick-onset incidents, such as hazardous materials releases or wildfires, or for larger regional events, such as hurricanes or tropical storms (a critical need for Mississippi), for which there is advance warning . . . all of which have occurred with this project.



Mississippi Traffic Crash Emergency Scene

Transportation Operations During Biohazard Situations – Prior to September 11, 2001, transportation agencies primarily focused on their role during weather-related incidents such as snowstorms, floods, and hurricanes. Since then transportation agencies now plan and prepare for a wide range of potential man-made accidents and malevolent events, including terrorist strikes that could occur without notice and that would require immediate, coordinated response efforts concurrent to accident, law enforcement, or national security investigations.

Preparedness and Response – The safe, efficient, and effective management of incidents and emergencies requires a wide range of activities, programs, resources, tools, and systems to be developed and implemented prior to the event.

Emergency Medical Services – Advanced ACN (automated collision notification) systems can notify emergency personnel and provide them with valuable information on the crash, including location, crash characteristics, and possible relevant medical information regarding the vehicle occupants. MsTraffic information will facilitate response to the crash. The various real-time communications systems provide a

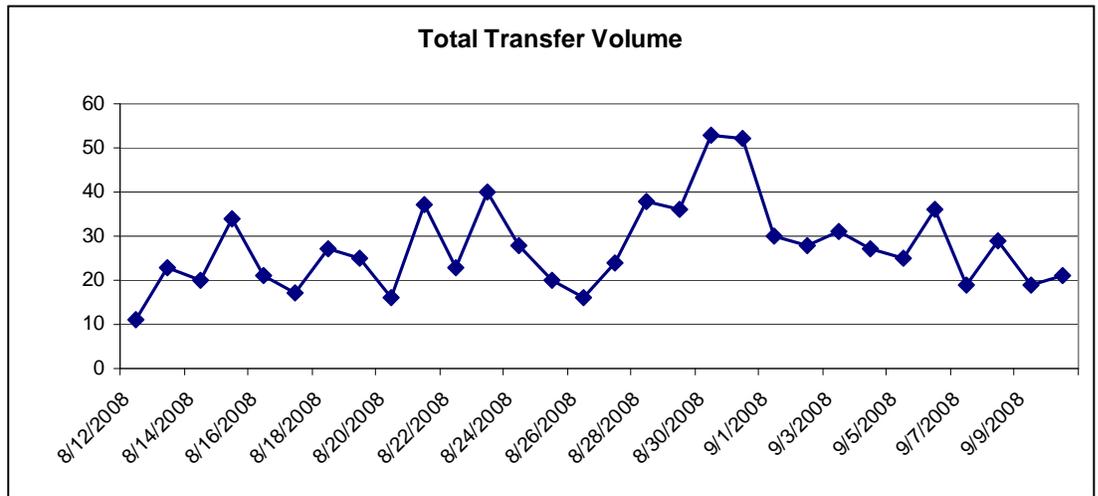
link between responding ambulances and emergency medical facilities, enabling doctors to advise emergency medical personnel regarding treatment of patients en route to the hospital.

2. Project Results: Using a “before and after” comparison, please describe the project’s results—the specific and measurable outcomes—and explain how you measure performance.

a) Prior to the start of the project, what were the conditions, results, or situations that serve as “the baseline” against which you compare the project’s outcomes?

Before this project was completed there was no travel and traffic condition information available to the medical dispatchers beyond what was available to the public through normal news channels. This project now provides the MED-COM Center interactive access to all the travel information available through the msTraffic system. The medical emergency activity that now benefits from this information includes:

- The number of transfer calls from outside hospitals requesting a transfer through MED-COM (October 1, 2008- Feb 7, 2009): 3100+ transfer requests. The following graph illustrates the number of calls during the weeks before Gustav, which was only two weeks after the MED-COM center began operations.
- Mississippi MED-COM has had a call volume since that same time more than 40,000 calls.



- Mississippi MED-COM coordinates and communicates with an average of 43 ambulance transports into the University of Mississippi Hospitals and Clinics on a daily basis.

b) What are the results of the project?

While the project has not been in operation for an extended period of time, it has already proven to be useful in many emergency response situations. MED-COM operators recently responded to a notification of an overturned bus crash and were able to use msTraffic cameras to validate conditions in order to notify the appropriate number/type of responders and to notify emergency medical facilities of probable patient transfers.

c) What is “the new dimension of performance?” How are the results in 2b superior to those in 2a?

As stated previously, the project has not been in service long enough to develop before and after statistics but early indications are that the available msTraffic travel

information will be a very useful tool in a great number of emergency responses and situations.

d) Did the project produce any unanticipated results?

None, other than added incentive to continue to expand the msTraffic travel information and camera surveillance system to cover more emergency access routes throughout the state.

3. Project Impact: How does it make a difference in the lives of people?

“Katrina really brought home the need for gathering and disseminating information concerning what medical resources are available during an emergency,” said Pamela Hemphill, emergency management coordinator. “It was the overall intention of the Medical Center to create an atmosphere conducive for preparing, training and responding to any event that requires medical attention in the state.”

Out of that mission sprang the Mississippi MED-COM Center, closely followed by this project to integrate



The MED-COM Center located in Jackson, MS & the University of Mississippi Medical Center

the msTraffic travel information system which further enhances the ability to provide safe and efficient emergency services.

“The prevailing opinion was that one facility couldn’t take on such a large communication effort and be able to disseminate information in a timely fashion to so many hospitals and agencies,” Hemphill said. But she said UMMC leadership and emergency department staff, working closely with several state and county agencies and community hospitals throughout the state, developed the center in little more than 36 months.

Jonathan Wilson, clinical director of emergency services at the University of Mississippi Medical Center, said the center is the lifeblood of all emergency communication between health care facilities throughout the state.

In emergency medicine, the first sixty minutes after the occurrence of multi-system trauma is commonly known as the “golden hour”. A victim's chances of survival are considered to be greatest if they receive definitive care in the operating room within the first hour after a severe injury. Having the best and most current travel information as provided by msTraffic is an important contributor to this rapid response.

4. Potential as a Model: How can the project serve as a model that can be replicated or adapted by other organizations?

Emergency response and travel information systems and networks exist in every state and major metropolitan region. This project can be a model as it proves that the two systems can be successfully integrated to increase emergency transportation safety and mobility through new and dynamic partnerships linking the transportation and public safety communities.

5. Additional Background: Provide information about the origin and implementation of the project, such as: Who was responsible for starting it? Were any particular funding sources, resources, partnerships and alliances particularly helpful in implementing and sustaining it? What is its future?

We believe that this partnership is the *first of its kind* in the United States where the state-wide Intelligent Traffic Management System is integrated into a state-wide medical communications center in support of transporting patients and responding to emergency situations.

Although discussion started in 2002 about establishing a centralized medical communications center in Jackson, Hurricane Katrina brought the realization home. Evaluation of after-action reports from various medical emergencies and drills in the metro area revealed a marked deficiency in EMS (emergency management systems) and hospital emergency department communication. Funding for MED-



Mobile Field Hospital with Advanced Communications Center

COM was acquired in October 2007 from grant money secured through the Emergency Preparedness Program at UMMC via the Mississippi State Department of Health's Hospital Preparedness Program, which began development of what would be known as Mississippi MED-COM, and in 2008 the project became reality. The advanced technology communication center is staffed 24 hours a day/7 days a week by two full-time experienced EMT/ Paramedics, and is located in close proximity to the Adult Emergency Department the University of Mississippi Medical Center in Jackson, Mississippi.

The MED-COM system is being implemented in a phased manner as follows:

Phase I (2008)

- Emergency Transfer Center for UMMC
- Weather Monitoring
- Regional Radio Coordination
- AirCare Flight Following
- Regional Disaster Notification
- MDOT Travel Information/Camera Connection

Phase II (early 2009)

- EMS Web Tracker
- Increasing Radio Coordination
- Regional Diversion Communication

Phase III (2009-2010)

- Increase operations on MSWIN radio system
- EMS Data Transfer
- Increasing access to Med-Control

And over time the MED-COM center and the msTraffic system will support more time-critical areas of healthcare including:

- Trauma Destination support
- Regional/Statewide Cardiac transport program
- Support of the expanding Teleemergency program
- Support of the new and expanding Telestroke program
- Support of the new eICU program

6. Statement by the Project's Leadership: Regarding the processes of innovation, leadership, and building partnerships—have you gained any knowledge or insights that might be instructive or inspiring to others?

Innovative projects such as the msTraffic/MED-COM project don't happen by mistake. Born out of local traffic safety coordination meetings, this concept evolved and became reality only because of the shared creativity of the leadership existing in both programs. Our insight would be to proactively look for opportunities to partner, to share resources across as many public health, safety and

welfare activities as possible. The MED-COM Center allows for increased participation in the community efforts and outreach programs that are a vital part of the growth needed for institutional, community, and regional awareness.

Working closely with the Mississippi Department of Transportation has allowed the MED-COM Center the ability to expand the services throughout our state, be self-reliant in times of crisis, as well as provide and facilitate activity among various departments and agencies. The relationships with the Wireless Communications Commission (WCC) as well as being tied in with the Mississippi Wireless Integration Network (MSWIN) project has created a centralized transfer point using radio communications consoles that have access to local and statewide radio networks. Plus, the relationships built through the various agencies allow the MED-COM Center to assist emergency management personnel with coordination, follow-up and most importantly, giving medical providers an access point to the many available services in Mississippi. It also allows the safe and efficient coordination of scarce but valuable resources with county and state agencies during times of need. The immediate access to the center allows for the decrease in response time for needed medical assistance, therefore increasing the probability of saving lives. The interface between MDOT and Mississippi MED-COM is a true example of multi-agency collaboration for the betterment of the citizens of our great State.

