LOUISIANA

STATEWIDE TRAUMA SYSTEM PLAN

LOUISIANA EMERGENCY RESPONSE NETWORK

2017

ABOUT THIS PLAN

The Louisiana Emergency Response Network (LERN) is an agency of state government created by the Louisiana Legislature in 2004 and charged with the responsibility of developing and maintaining a statewide system of care coordination for patients suddenly stricken by serious traumatic injury or time-sensitive illness (such as heart attack and stroke). It is a system also designated to serve as a vital healthcare resource in the face of large scale emergencies and natural disasters. Getting to the right place at the right time to receive the right care is a matter of life or death for these patients.

LERN's statewide system of trauma care coordination is being developed and continuously refined in accordance with nationally recognized trauma system principles and guidance created by the American College of Surgeons Committee on Trauma (ACS-COT). LERN's charge is to build and maintain a comprehensive system that addresses the daily demands of traumatic injury in Louisiana – a system that is also ever ready to serve as a vital healthcare component of Louisiana's all disasters response infrastructure.

> The care of injured patients requires a system approach to ensure optimal care.
>
> *Resources for Optimal Care of the Injured Patient 2014*
> **Committee on Trauma**
> **American College of Surgeons**

This *Statewide Trauma System Plan* was created as a master guide for understanding LERN's organizational infrastructure and operational components. This guide is organized into nine major sections:

1. Authority and Leadership
2. Trauma System Development
3. Pre-hospital Trauma Care
4. Definitive Care Facilities
5. Statewide Trauma Registry
6. Performance Improvement
7. Injury Research and Prevention
8. All Disasters and Mass Casualty Interface
9. Financial

This plan document describes in detail LERN's current organization and operations. The plan also provides summary descriptions of LERN's work-in-progress and planned next steps in the development of a comprehensive statewide trauma system for Louisiana.

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SECTION ONE: AUTHORITY AND LEADERSHIP

This section defines the basic elements of the Louisiana Emergency Response Network's (LERN) authority and leadership – including enabling legislation, vision and mission, governing board, regional commissions, and staff.

Enabling Legislation

The Louisiana Legislature enacted legislation in 2004 (LA RS 40:2841-2846) to create a "comprehensive, coordinated statewide system for the access to regional trauma and time-sensitive illness emergency care throughout the state." This legislation created LERN – prescribing the development of a volunteer state board to plan, govern, and implement the statewide system. This original LERN legislation also prescribed the development of nine regional commissions populated with volunteers that live and work within the region they represent.

This legislation created LERN – prescribing the development of a volunteer state board to plan, govern, and implement the statewide system.

The LERN legislation was amended in 2006 to add four additional seats to the LERN Board and adjust the Board's quorum rules. The LERN legislation was amended a second time in 2007 to establish liability limitations for provider participation in LERN and designate LERN as a separate budget unit within the Louisiana Department of Health (LDH). Most recently, the LERN legislation was amended in 2010 to:

- Update requirements for Louisiana hospitals to achieve the status of a Level I, Level II, or Level III trauma center – based upon national guidelines, including *Resources for Optimal Care of the Injured Patient* by the American College of Surgeons Committee on Trauma;
- Establish a statewide trauma registry;
- Create the Louisiana Emergency Response Network Fund;
- Provide for a public records exception to support LERN's performance management and improvement efforts;
- Expand the size of the LERN governing board; and
- Initiate a process for development of LERN infrastructure to address time-sensitive illness.

A copy of the current LERN state law is provided in **Appendix A**.

Vision and Mission

LERN's vision and mission statements reflect the intent of our enabling legislation and the Board's commitment to building a comprehensive statewide care coordination systems that meet nationally recognized standards and requirements.

Our Vision

To build and maintain Louisiana's care coordination systems for trauma and time-sensitive illness (stroke & heart attack) and facilitate readiness of healthcare providers during all disaster response.

Our Mission

The mission of the Louisiana Emergency Response Network (LERN) is to defend the public health, safety, and welfare by protecting the people of the state of Louisiana from unnecessary deaths and morbidity due to trauma and time-sensitive illness.

Governing Board

LERN is governed by a 28-member board that represents a diverse set of stakeholders. LERN's enabling legislation specifies a stakeholder organization to nominate qualified candidates for each LERN board seat. Nominees are submitted to the Governor for consideration and appointment to serve a three-year term. The following stakeholder organizations nominate qualified board candidates.

- American College of Surgeons Committee on Trauma
- American Stroke Association
- Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)
- Louisiana Alliance of Information and Referral Systems (211)
- Louisiana American College of Emergency Physicians
- Louisiana Association of EMS Physicians
- Louisiana Chapter of the American College of Cardiology
- Louisiana Department of Health (LDH)
- Louisiana Medical Association
- Louisiana State Board of Nursing
- Louisiana State Medical Society
- Louisiana Hospital Association
- Louisiana Hospital Association Rehabilitation Constituency Group
- Louisiana House of Representatives
- Louisiana Rural Ambulance Alliance
- Louisiana Senate
- Louisiana State Coroners Association

- Louisiana State University Health Science Center – New Orleans
- Louisiana State University Health Science Center – Shreveport
- Metropolitan Hospital Council of New Orleans
- National Emergency Number Association (911)
- Optometry Association of Louisiana
- Rural Hospital Coalition
- Tulane University Health Sciences Center

A current list of LERN board members is provided on the LERN website – www.lern.la.gov.

Regional Commissions

LERN is organized into nine geographic regions, and our efforts in each region are guided by a Regional Commission – an advisory board of key trauma and time-sensitive illness stakeholders, including (but not limited to) the following organizations.

- American Academy of Pediatric Physicians
- American College of Cardiology
- American College of Emergency Physicians
- American College of Surgeons
- American Stroke Association
- Burn Center
- LDH-OPH Regional Medical Director
- Emergency Medical Response
- GOHSEP
- Hospital < 60 Beds
- Hospitals > 100 Beds
- HHS Designated Regional Coordinator
- Local Ambulance Services
- Louisiana State Medical Society
- Military Hospital
- National Emergency Number Association (911)
- Registered Nurse Practicing in Emergency or Critical Care
- Rural Ambulance Representative
- Service District Hospital
- Trauma Center Representative

A current listing of Regional Commission members for all nine regions can be found on the LERN website – www.lern.la.gov.

The nine LERN geographic regions correspond with the nine administrative regions of the LDH.

Region 1

Jefferson Parish
Orleans Parish
Plaquemines Parish
St. Bernard Parish

Region 2

Ascension Parish
East Baton Rouge Parish
East Feliciana Parish
Iberville Parish
Point Coupee Parish
West Baton Rouge Parish
West Feliciana Parish

Region 3

Assumption Parish
Lafourche Parish
St. Charles Parish
St. James Parish
St. John the Baptist Parish
St. Mary Parish
Terrebonne Parish

Region 4

Acadia Parish
Evangeline Parish
Iberia Parish
Lafayette Parish
St. Landry Parish
St. Martin Parish
Vermillion Parish

Region 5

Allen Parish
Beauregard Parish
Calcasieu Parish
Cameron Parish
Jefferson Davis Parish

Region 6

Avoyelles Parish
Catahoula Parish
Concordia Parish
Grant Parish
LaSalle Parish
Rapides Parish
Vernon Parish
Winn Parish

Region 7

Bossier Parish
Caddo Parish
Claiborne Parish
DeSoto Parish
Natchitoches Parish
Red River Parish
Sabine Parish
Webster Parish

Region 8

Caldwell Parish
East Carroll Parish
Franklin Parish
Jackson Parish
Lincoln Parish
Madison Parish
Morehouse Parish
Ouachita Parish
Richland Parish
Tensas Parish
Union Parish
West Carroll Parish

Region 9

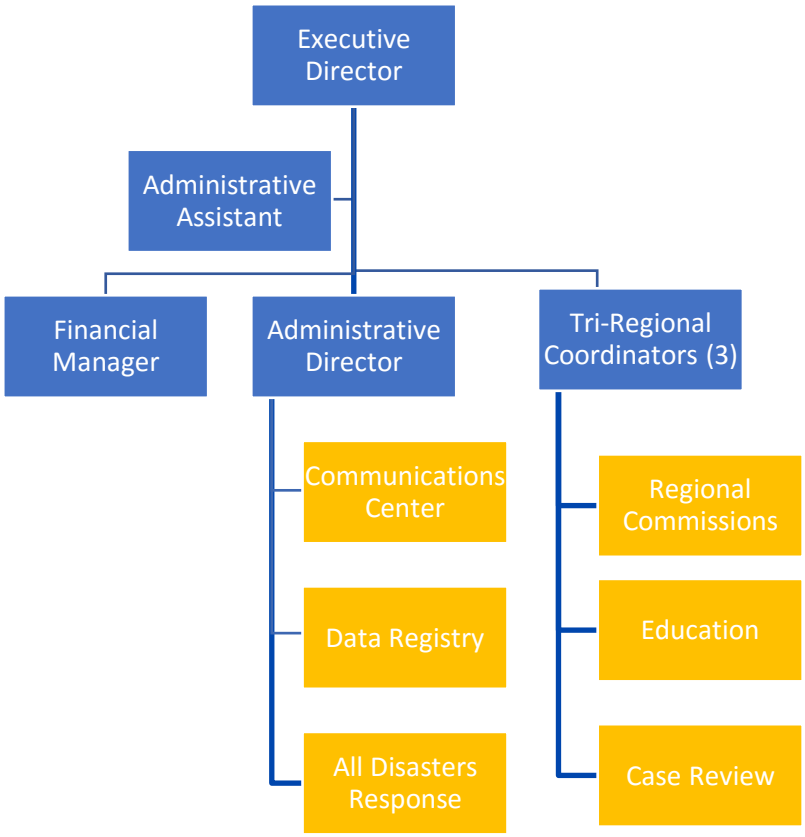
Bienville Parish
Livingston Parish
St. Helena Parish
St. Tammany Parish
Tangipahoa Parish
Washington Parish

Medical Directors

LERN has three medical directors serving as subject matter experts for the three statewide systems of care coordination developed and maintained through LERN's legislative mandate, including trauma, stroke, and STEMI. The medical directors, working collaboratively with LERN's board and executive director, provide valuable professional expertise that guides and facilitates LERN's management and continuous refinement of trauma, stroke, and STEMI systems of care. The medical directors are crucial leaders of LERN's ongoing efforts to expand and strengthen statewide provider networks for trauma, stroke, and STEMI. A current list of LERN medical directors is provided on the LERN website – www.lern.la.gov.

Staff

LERN utilizes a small staff of experienced healthcare professionals to administer state-level operations, manage LERN's Communications Center (including case review) and data registry, offer educational services and outreach, promote expansion of care networks, and support LERN's nine Regional Commissions.



A current list of LERN staff members is provided on the LERN website – www.lern.la.gov.

SECTION TWO: TRAUMA SYSTEM DEVELOPMENT

Louisiana's statewide trauma system is being developed and continuously refined in accord with the nationally recognized trauma system model developed through the work of the federal Health Resources and Services Administration (HRSA) and the American College of Surgeons Committee on Trauma (ACS COT).

The Need for Organized Trauma Care Systems

The argument for developing and maintaining organized trauma care systems is perhaps best made through a presentation of trauma statistics.

The economic burden of trauma is estimated at an astounding **$671 billion** a year, including healthcare costs and lost productivity.

National Trauma Institute, Trauma Statistics

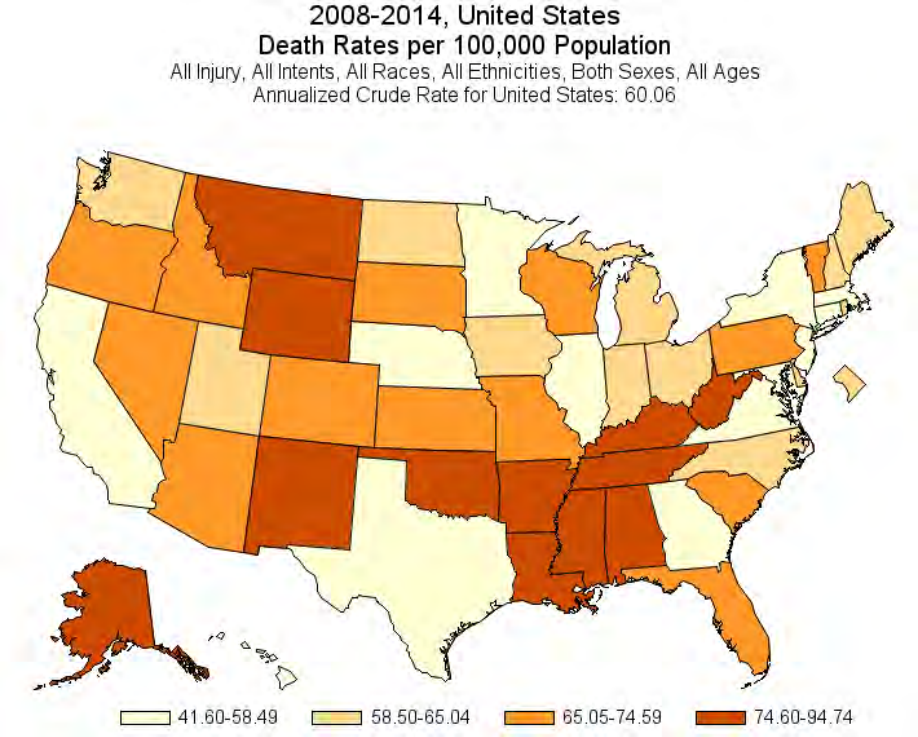
Each year in the US, **trauma** accounts for **41 million** emergency department visits and **2.3 million** hospital admissions.

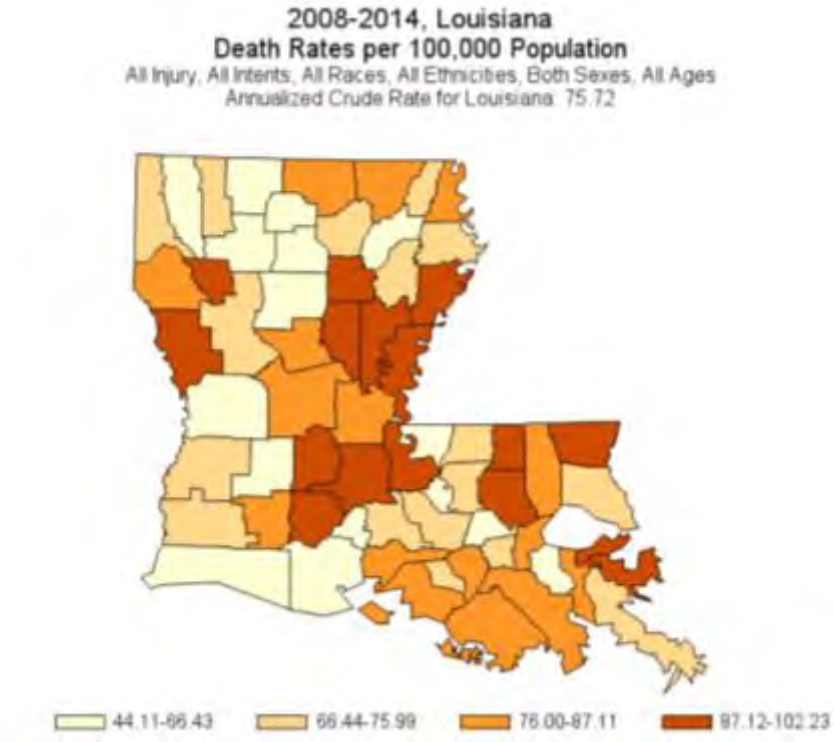
Traumatic injury is the **leading cause of death for children** in the US. In fact, trauma is the **#1 cause of death** for the 1 to 46 years old age group – accounting for 47% of all deaths in this age range. Trauma is the third leading cause of death for the whole US population.

Each year, over **9 million people** are treated in emergency departments for nonfatal **injuries related to falls**.

National Trauma Institute, Trauma Statistics

Louisiana has one of the highest trauma death rates in the nation.





Produced by the Statistics, Programming, and Economics Branch, National Center of Injury Prevention and Control
Data Sources: NCES National Vital Statistics System for Numbers of Deaths,
US Census Bureau for Population Estimates, 2008 – 2014

The highest rates of trauma (86.97 – 102.24 per 100,000) within the state of Louisiana are found in the following parishes.

- Orleans Parish (102.24)
- Caldwell Parish (100.78)
- St. Bernard Parish (99.46)
- Pointe Coupee Parish (99.37)
- LaSalle Parish (99.29)
- Washington Parish (98.19)
- Tensas Parish (97.92)
- Catahoula Parish (96.64)
- Sabine Parish (93.08)
- St. Helena Parish (92.23)
- Evangeline Parish (91.02)
- Red River Parish (90.46)
- Livingston Parish (88.10)
- Concordia Parish (88.09)
- Acadia Parish (87.83)
- St. Landry Parish (87.24)
- Morehouse Parish (86.98)
- Avoyelles Parish (86.97)

History of Trauma System Development in the US

The beginnings of modern trauma systems in the US can be traced to federal legislation, specifically the Highway Safety Act of 1966 and the Emergency Medical Services Systems Act of 1973. These acts represent initial efforts to apply the emergency medical and trauma care lessons learned by physicians serving in the US military during the Vietnam and Korean Wars. Those initial federal acts led to education and training programs for emergency medical technicians (EMTs) and initial model development of regional trauma and emergency medical services.

The early efforts were a huge step forward but the model of trauma care developed was limited, emphasizing hospital-based acute care. A second major step forward in trauma care policy was the development of the *Model Trauma Care Systems Plan* in 1992 by HRSA in collaboration with provider stakeholder groups. The new model that was created called for an *inclusive* trauma care system. This new *inclusive* trauma system model included not only trauma centers, but all healthcare facilities according to availability of trauma resources.

In 2002, HRSA conducted the *National Assessment of State Trauma System Development, Emergency Medical Services Resources, and Disaster Readiness for Mass Casualty Events*. This study demonstrated much progress but also revealed that few states could boast of trauma systems that included all the components of HRSA's *inclusive* trauma system model. Not surprisingly, this assessment also demonstrated that states with the most comprehensively developed trauma systems were better prepared to medically handle disasters of all types.

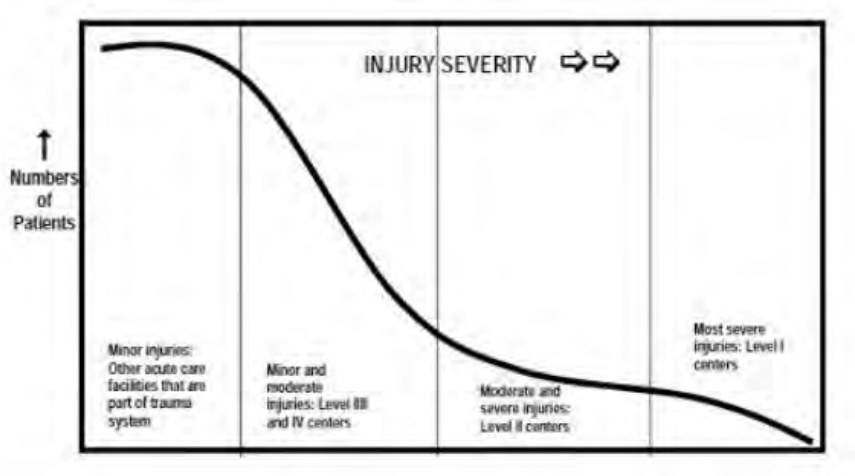
In 2006, HRSA updated its trauma system model with the publication of *Model Trauma Systems Planning and Evaluation*. This update to the model utilizes a public health framework that views traumatic injury as a *disease* that can be prevented or managed in a way that reduces severity and improves ultimate outcome.

Today, the nationally recognized resource for development of trauma centers and statewide trauma systems is *Resources for Optimal Care of the Injured Patient 2014* by the American College of Surgeons Committee on Trauma (ACS COT). This guidebook utilizes the HRSA model and provides detailed descriptions of the organization, staffing, facilities, and equipment needed to provide state-of-the-art treatment for the injured patient at every phase of trauma system participation. It also includes a *Criteria Quick Reference Guide* that identifies the criteria necessary to meet the requirements included in each chapter of the guidebook. A copy of this reference guide is provided on the LERN website at lern.la.gov/trauma/state-designated-trauma-centers/.

Trauma System Model

LERN is using the trauma system material developed by HRSA and ACS to help guide the building of an *inclusive* statewide trauma system in Louisiana. The *inclusive* trauma system model recognizes the full continuum of injury severity and utilizes all acute care facilities to get the injured patient to the **Right Place** at the **Right Time** to receive the **Right Care**.

Inclusive Trauma System Model



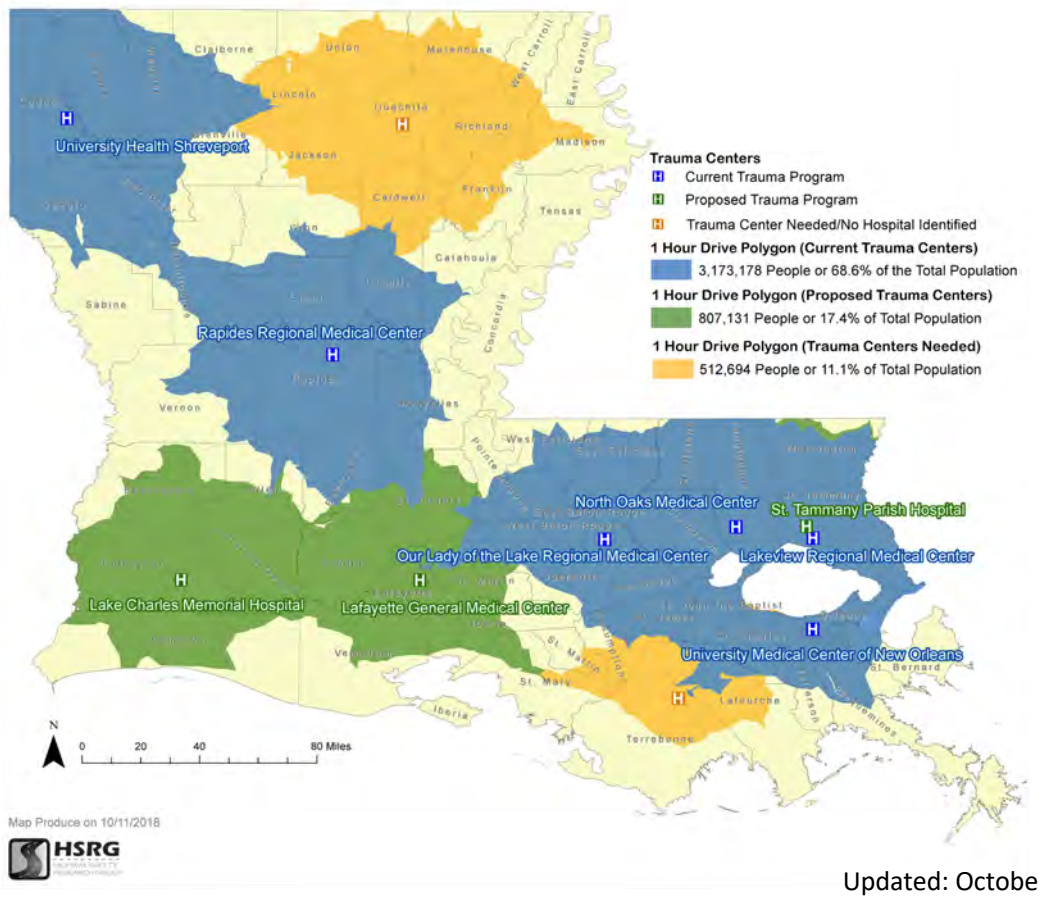
Resources for the Optimal Care of the Injured Patient 2014
American College of Surgeons
Committee on Trauma

A trauma system is a partnership between public and private entities to address injury as a community health problem. A fully-developed statewide trauma care system has many components – requiring a multidisciplinary team approach that allows all involved healthcare providers to function in pre-planned concert. Emergency care providers match patients, through protocols and medical supervision, with the medical facility equipped with the resources to best meet the patient's needs – sometimes bypassing the closest medical facility.

A trauma system is organized to protect the people from unnecessary deaths and morbidity due to trauma. Mature trauma systems encompass a full continuum of service components – from injury research and prevention, pre-hospital care, and hospital care – to rehabilitative services and performance improvement activities.

Resources for the Optimal Care of the Injured Patient 2006

The LERN Board's vision for trauma includes the establishment of at least one ACS-verified, state-designated trauma center in each region of the state. Represented below is the 2018 version of LERN's "ideal" trauma center network map, which includes existing state-designated trauma centers and LERN's proposed geographic locations for additions to Louisiana's trauma center network.



Updated: October 2018

LERN's Strategic Priorities

LERN's governing board has established a list of strategic priorities to guide organizational planning and decision-making across all four major components of LERN activity – trauma, stroke, STEMI, and all disasters response. The Board reviews the strategic priorities annually and updates the list as necessary to accurately reflect the priority goals and tasks of the organization. LERN's current (2017) trauma system strategic priorities include the following items.

1. **Strengthen the sustainability of LERN's mission, including the effective administration of state office operations and the development of an ideal statewide network of designated trauma centers**

    - Lessen or eliminate LERN's reliance on state general fund dollars and maximize LERN funding from recurring, dedicated source(s).

    - Identify and investigate practical administrative and/or legislative changes that would offer LERN stable funding alternatives to the state general fund.

        Summary Action Plan:

        - Continue media campaign emphasizing LERN's mission linkages with trauma, mass casualty/disaster management/emergency preparation, stroke, and STEMI.

        - Continue to engage key stakeholders to create greater awareness of LERN's vision and potential to save the lives of Louisiana's citizens, and to build support for practical alternative sources of recurring funding for LERN.

        - Continue development and execution of legislative education and awareness strategies that demonstrate LERN's current value. Pursue, as opportunities arise, specific administrative and/or legislative changes that secure recurring, alternative funding for LERN State Office operations and provide incentives for the development of an ideal statewide trauma and time-sensitive illness networks.

2. **Build a consensus of support among key stakeholders for the development and maintenance of an ideal statewide network of designated trauma centers in Louisiana which includes at least one designated trauma center in every region of the state.**

    - Secure commitments from hospitals in Regions 3 (Houma/Thibodaux), and 8 (Monroe) to pursue designated trauma center status.*

        *LERN has commitments from Regions 4 and 5

- Meet quarterly with the Trauma Program Managers Group to facilitate information exchange relative to best practices and shared challenges.

- Continue to provide trauma training opportunities to all level providers and public statewide.

Summary Action Plan:

- Utilize LERN's website, newsletter, ideal trauma network white paper, and PowerPoint presentations to promote LERN's ideal trauma network concepts.

- Continue to engage trauma center priority prospects one-on-one to facilitate new commitments to pursue trauma center designation.

- Regularly convene and empower a Trauma Program Managers Group with established goals.

- Provide/facilitate RTTDC, PHTLS, TNCC, ENPC, TCAR, and PCAR for nurses and EMTs.

- Develop plan for implementation of the national Stop the Bleed Initiative.

3. Establish statewide trauma registries consistent with national standards for the purpose of facilitating: statewide and regional injury prevention efforts and LERN Trauma System performance improvement.

- Expand the LERN trauma registry data dictionary beyond the NTDB data set.

- Promote comprehensive EMS Registry to include all EMS pre-hospital providers.

- Develop State report for EMS Registry.

- Submit 2016 data to NEMSIS.

Summary Action Plan:

- Meet bi-annually with the LERN ad-hoc Trauma Registry Workgroup consisting of trauma center registrars and LERN's Tri-Regional Coordinators.

- Conduct research to identify common practices and standard reports utilized by other state trauma registries. Develop recommendations for the

LERN Board.

- Continue work with the ERHIT group and the LERN Data Assistant to expand the EMS registry by a minimum of five EMS agencies.

- Conduct research to identify common practices and standard reports utilized by other state EMS registries. Develop recommendations for LERN Board and EHRIT group.

4. **Continue to strengthen LERN's critical role as the "24/7/365 information coordinator" for unfolding disasters and mass casualty incidents (MCIs) in Louisiana by: participating in regional activities that integrate LERN's services with region-specific protocols for event management and support; serve as the primary coordinating entity for messaging and notifications regarding events and incidents as they occur, and maximize regional assets by coordinating patient flow/transport.**

- Continue implementation of established strategy to educate key stakeholders regarding LERN Communication Center notification capabilities related to mass casualty incident (MCI)/disaster preparedness.

- Continue to educate pre-hospital providers on triage/MCI management and how this integrates with the LERN Communication Center.

- Develop targeted education on MCI procedures: notifications/ESF-8 portal, triage and resources for routing during MCI, and patient movement after initial incident.

Summary Action Plan:

- Engage Designated Regional Coordinators (DRC) Network and promote regional MCI protocols.

- Utilize the regional commission structure and regional partners to ensure involvement in one MCI/disaster drill annually in each region of the state.

- Utilize current LERN hosted EMS education days to teach MCI management and LERNs role in triage and patient direction during a MCI.

- Continue to provide education for pre-hospital providers regarding the multiple modes of communication utilized by LERN during an MCI (phone, radio, ESF-8 messaging, HRSA channels).

- Engage with hospitals to encourage participation in regional MCI drills and provide education at hospital staff meetings.

SECTION THREE: PRE-HOSPITAL TRAUMA CARE

Pre-hospital providers, protocols, and communication systems are critical to the effective delivery of pre-hospital care and transport services for trauma patients.

EMS Providers

Fifty-six percent of Louisiana EMS providers participate in LERN's trauma care provider network– utilizing LERN's pre-hospital protocols and collaborating with LERN's Communications Center (LCC) to efficiently deliver trauma patients to the most appropriate hospital-based resources that can best address their specific injuries. This amount of participation provides coverage to 85% of the state's population.

EMS participation in LERN's trauma care network is voluntary – the terms of EMS provider participation are captured in a written agreement. Through the participation agreement, EMS providers agree to utilize LERN entry criteria and destination protocols, coordinate with the LCC, provide relevant data, and participate in LERN's efforts to manage and improve the quality of the statewide trauma system.

A sample copy of LERN's EMS Provider Agreement form is provided in **Appendix B**.

Visit lern.la.gov/trauma for region-specific lists of LERN's participating EMS providers.

Protocols

LERN has adopted the tagline – ***Right Place. Right Time. Right Care.***

The tagline brings to mind two basic trauma facts – first, not all injuries are equal in severity, and second, not all hospitals have equal resources available to care for trauma patients. The tagline also alludes to one of the most basic trauma system goals – to evaluate and expeditiously deliver each trauma patient to a hospital facility capable of providing the level of care needed.

The successful management of trauma patients requires the accurate identification of specific injuries or mechanisms likely to cause severe injury. Protocols are used to identify patients with injuries and mechanisms that warrant pre-hospital (EMS) coordination with the LCC to consistently deliver those patients to the *Right Place* at the *Right Time* to receive the *Right Care*.

The LERN Board has approved a protocol labeled the *LERN Destination Protocol: Trauma* to support the pre-hospital evaluation and expeditious delivery of trauma patients. This protocol is based on the CDC Field Triage Scheme developed by the Committee on Trauma, American College of Surgeons with input from an expert panel representing EMS, emergency medicine, trauma surgery, and public health. A copy of the *LERN Destination Protocol: Trauma* is provided in **Appendix C**.

The LERN Board has approved a protocol labeled the LERN Hospital Interregional Transfer Guidelines and LERN Hospital Interregional Transfer Protocol. The protocol aims to facilitate timely transfers to definitive care hospitals.

LERN Communications Center

The LERN Communications Center (LCC) is a key element of Louisiana's statewide trauma system. LERN's participating hospitals provide the LCC with real-time capacity and capability updates – producing all the information the LCC needs to maintain an accurate inventory of what hospital resources are available, and where, 24/7/365.

When a pre-hospital provider (EMS) or a hospital determines a patient meets trauma criteria, as indicated in the *LERN Destination Protocol: Trauma*, the LCC is engaged to match the patient to the appropriate level of care/hospital resources available. The LCC is staffed 24/7/365 by nationally registered paramedics with in-depth knowledge of the LERN network design, function, and protocols.

The LCC is equipped with an emergency resources information system that provides LERN with a continuous real-time functional status display of all LERN network hospitals. Each participating hospital has a real-time functional status display of their regional network hospitals resources. This system provides an information grid listing of:

- Individual hospitals;
- Each hospital's resource capability as it relates to General Surgery, Orthopedic Surgery, Neurosurgery, Pediatric Trauma, OB Trauma, MRI, CT, etc.; and
- The hospital's primary trauma resource components – indicating, in real time, the availability or non-availability of these individual components (i.e., the availability of surgery and surgical subspecialties).

The LCC also facilitates emergency department to emergency department (ED to ED) transfers through this information system.

It is important to note that the LCC **DOES NOT FUNCTION** as EMS Medical Control and it **IS NOT** a 911 Public Service Access Point (PSAP). **The LCC only handles patients who meet the Standard LERN Entry Trauma Criteria.**

The LCC communications infrastructure is designed to interface with the State's current communication technology systems – to support LERN's day-to-day network operations and the statewide interoperability mission in times of natural disasters and manmade emergencies.

Call volume handled by the LCC has steadily grown since the first call in 2008. More information on LCC call volume can be found on the website – www.lern.la.gov.

SECTION FOUR: DEFINITIVE CARE FACILITIES

The network of definitive care facilities that participate in LERN's trauma care system represents approximately 98% of all hospitals in Louisiana that possess an emergency department.

Trauma Centers

Louisiana law (LA RS 40:2171-2173) states that the "trauma center" label shall be reserved exclusively for hospitals with state-issued trauma center designation. The Health Standards Section of LDH is charged with the responsibility of designating a hospital as a Level I, Level II, or Level III trauma center. A copy of LA RS 40:2171-2173 is provided in **Appendix D**.

To receive LDH designation as a Level I, Level II, or Level III trauma center, Louisiana hospitals must successfully complete the trauma center verification process of the ACS COT. Level I is the highest level of trauma center – requiring the greatest commitment of hospital resources.

Hospitals that want to seriously explore the trauma center verification process should purchase *Resources for Optimal Care of the Injured Patient 2014* by the ACS COT. To order a copy of this text, visit www.facs.org/trauma/publications.html. To learn more about the ACS COT trauma center verification process, go to www.facs.org/trauma/verificationhosp.html.

Trauma centers in Louisiana are required to contribute data to the statewide trauma registry, participate in LERN's Regional Commissions, and participate in LERN regional and state level performance improvement and injury prevention activities.

Louisiana's designated trauma centers include:

- Region 1: Norman E. McSwain, Jr. MD Spirit of Charity Trauma Center – University Medical Center – New Orleans (Level I)
- Region 2: Our Lady of the Lake Regional Medical Center – Baton Rouge (Level II)
- Region 6: Rapides Regional Medical Center – Alexandria (Level II)
- Region 7: LSU Health Sciences Center/University Health – Shreveport (Level I)
- Region 9: North Oaks Medical Center – Hammond (Level II) and Lakeview Regional Medical Center – Covington (Level III)

State Trauma Center Designation Process

RS 40: 2173 provides for the rules, regulations, and standards for licensure as a trauma center. The Department of Health, specifically the Health Standards department, designates a healthcare facility as a trauma center upon verification from the American College of Surgeons that the facility has met its criteria for a Level I, II, or III Trauma Center. These are the three levels of trauma centers currently recognized in the Louisiana State Trauma System. The "trauma center" label shall be reserved exclusively for hospitals with state-issued trauma center certification.

The Health Standards Section of LDH issues standard forms for applications. Instructions and forms issued by Health Standards are designed to assist providers in submitting the required information to add a trauma center. These forms are:

- HSS-HO-34 Application & Checklist for Hospital Trauma Center Designation
- HSS-PR-02 Plan Review Attestation
- HSS-HO-09 Attestation

Designated Trauma Centers must be re-verified by the ACS COT every three years. Upon re-verification by the ACS COT, trauma centers must request a renewal of the state designation from the Health Standards Section at LDH. The required Health Standards forms are included in the Hospital Trauma Center Licensing Renewal Packet:

- HSS-HO-034b Application & Checklist for Hospital Trauma Center Renewals
- HSS-HO-09 Attestation

These forms are provided in **Appendix E**, and can be downloaded directly from the LDH website at http://dhh.louisiana.gov/index.cfm/page/1809. Questions related to these forms or the application process should be directed to Health Standards (225) 342-6194.

Trauma Programs

A goal of the LERN Board is to establish a statewide trauma system that includes at least one verified trauma center in each of the nine LDH regions of the state. The LERN Board recognized the opportunity to reduce the morbidity and mortality of trauma patients in Louisiana in areas without an existing Level I or Level II trauma center by adopting a Trauma Program process.

The Trauma Program process recognizes achievement of specific benchmarks by hospitals that are actively pursuing Level II or Level III Trauma Center verification through the ACS. Louisiana's Trauma Program criteria are drawn from the *Resource for the Optimal Care of Injured Patients 2014* published by the ACS. *Trauma Program recognition is distinct and different from the Trauma Center certification/designation by the state. To be certified as a trauma center in Louisiana, a hospital must fully satisfy the requirements of R.S. 40:2172 and 2173.*

Qualification for LERN Trauma Program recognition requires the hospital be in a LERN region that does not have an existing Level I or Level II ACS verified trauma center or a recognized Level II or Level III trauma program. If there is a LERN-recognized Level II or Level III trauma program already in the region, the hospital must complete the most current version of the ACS needs based assessment of trauma systems tool (ACS NBATS). If the number of trauma centers allocated by the tool is less than or equal to the number of existing trauma programs and trauma centers in the region, the hospital is not eligible for trauma program recognition.

LERN's Procedure for Trauma Program Recognition

A. A hospital must complete the LERN-approved form, "Application for Recognition of Trauma Program."

B. The hospital CEO must complete and sign the LERN-approved trauma program checklist/attestation for the applicable trauma program level.

    1) By this attestation, the hospital CEO ensures 24/7/365 availability of the resources listed.

    2) The attestation must be validated by a site visit by LERN staff.

    3) Upon CEO attestation and/or site visit, if it is determined by the LERN executive committee in conjunction with the LERN Trauma Medical Director, that the required benchmarks are not in place the hospital will not be eligible for trauma program verification.

C. After satisfying the requirements of A. and B. above, the hospital will be recognized as a trauma program and such recognition will be added to the LERN resource management screen for the purpose of routing trauma patients.

D. To maintain trauma program recognition, the hospital must schedule an ACS verification or consultation site visit for "the desired trauma level within 12 months of LERN acceptance of the trauma program checklist/attestation.

    1) If an ACS verification or consultation site visit is not scheduled within 12 months of the signed checklist/attestation, the "trauma program" indicator on the LERN resource management screen will be removed.

E. After a consultation visit for the desired trauma level, the hospital has one year to achieve verification by the ACS or the trauma program indicator will be removed on the LERN resource management screen.

    1) If the hospital fails the ACS verification visit and a focused review visit, the hospital will lose trauma program status. The trauma program indicator will be removed from the LERN resource management screen.

The documents referenced in this section can be found in the following appendices.

Appendix F: Attestation Requirements Level II Trauma Program
Appendix G: Attestation Requirements Level III Trauma Program
Appendix H: Trauma Program Application
Appendix I: Needs Based Assessment of Trauma Systems Tool (NBATS)
Appendix J: Rule: LAC 48:I, Chapter 197, §19701-§19707

Participating Hospitals

The clear majority of hospitals that participate in the LERN provider network are not designated as trauma centers. Hospital participation in LERN is voluntary – the terms of hospital participation are captured in a written agreement.

> Optimally, all acute care facilities with emergency departments should be formally prepared and designated to care for injured patients at a level commensurate with their resources, their capabilities, and community's needs..
>
> *Resources for Optimal Care of the Injured Patient 2014*
> American College of Surgeons Committee on Trauma

Through the participation agreement, hospitals define the level of trauma care resources typically available at their facility and agree to routinely notify LERN of changes in the availability of their trauma care resources using the Resource Management System. The agreement also requires hospitals to utilize LERN protocols, coordinate with the LERN Communications Center, provide relevant data, and participate in LERN's efforts to manage and improve the quality of the trauma system.

A sample copy of the LERN hospital agreement form (including LERN trauma, STEMI, stroke, and interregional transfer protocols) is provided in **Appendix K**.

See the Trauma page of the LERN website (www.lern.la.gov/trauma) for region-specific lists of LERN's participating hospitals.

Rehabilitation

Fully developed trauma center programs and trauma systems include resources and processes to support rehabilitation of the trauma patient.

Louisiana's state-designated trauma centers are required to offer rehabilitation services consistent with ACS-COT trauma center verification requirements, including, but not limited to:

- In Level I and II trauma centers, rehabilitation services must be available within the hospital's physical facilities or as a freestanding rehabilitation hospital, in which case the hospital must have transfer agreements.

- In Level I and II trauma centers, these services [physical therapy, social services, occupational therapy and speech therapy] must be available during the acute phase of care, including intensive care[1].

> The rehabilitation of injured patients should begin the first hospital day. Acute care should be consistent with the preservation of optimal functional recovery. The ultimate goal of trauma care is to restore the patient to preinjury status. Not only is this effort best for the patient; it also is less costly. When rehabilitation results in independent patient function, there is a 90% cost saving compared with costs for custodial care and repeated hospitalizations.
>
> *Resources for Optimal Care of the Injured Patient 2014*
> American College of Surgeons
> Committee on Trauma

[1] Criteria Quick Reference Guide, Resources for Optimal Care of the Injured Patient 2014

SECTION FIVE: STATEWIDE TRAUMA REGISTRY

A statewide trauma registry is a data collection system that includes a file of uniform data elements that describes the injury event, demographics, pre-hospital information, care, outcomes, and costs of treatment for injured patients. The purpose of such a registry is to mine the data for what it can tell us – registry data can be coded, compiled, analyzed, and reported. A trauma registry is an important management tool that is used for performance management and improvement, research, and injury prevention.

Individual trauma centers that are verified by the ACS COT must develop and maintain their own trauma registries and submit their data to the National Trauma Data Bank (NTDB). In Louisiana, hospitals must successfully complete the ACS COT verification process as a condition of state designation as a trauma center.

Louisiana's statewide trauma registry was authorized by the Louisiana Legislature in 2010. The legislation charges the LERN Board to "establish and maintain a statewide trauma registry to collect and analyze data on the incidence, severity, and causes of trauma, including traumatic brain injury. The registry shall be used to improve the availability and delivery of pre-hospital or out-of-hospital care and hospital trauma care services."

This legislative act also includes a requirement that all state-designated trauma centers contribute their relevant trauma data to the statewide trauma registry (when adequate funding is provided to cover the relevant trauma center administrative costs).

Technology

LERN has acquired the information technology needed to establish and maintain a statewide trauma registry. The technology vendor is Image Trend and the registry technologies utilized by LERN include EMS State Bridge and Patient Registry.

Data Dictionary

LERN has developed data dictionaries that include lists of specific data elements and outline reporting requirements for the hospital patient registry and the EMS patient registry. The data dictionaries include:

> *"Trauma systems are needed to implement an organized system of care that meets all needs of injured pateints. Such a system cannot exist without data collection and analysis."*
>
> *Resources for Optimal care of the injured Patient 2014*
> **American College of Surgeons**
> **Committee on Trauma**

- Hospital: Facility-Based Data Dictionary (For Image Trend Users – explains how to enter data into the web-based statewide trauma registry)

- Hospital: Non-Facility-Based Data Dictionary (For other vendors – technical requirements to upload to the Louisiana State Trauma Registry)

- EMS: Facility-Based EMS Users (For Image Trend Users – Explains how to enter data into the web-based statewide EMS registry)

- EMS: Non-Image Trend Users (For other vendors – technical requirements to upload to the Louisiana State Trauma Registry)

See the Trauma Registry page of the LERN website (lern.la.gov/trauma/trauma-registry) for access to LERN's trauma registry data dictionaries.

Trauma Registry Participation

Current hospital participation in the statewide trauma registry is limited to Louisiana's state-designated trauma centers, the trauma programs, and Children's Hospital New Orleans. EMS participation includes 30 providers across the state. A complete list of participating entities as of 6/20/2017 is included in **Appendix L**.

Louisiana's goal, which is the ideal stated by the ACS, is for all acute care facilities that treat injured patients to contribute to the state trauma registry. Receiving injury data from all facilities treating trauma patients would inform public health decision making based on comprehensive injury data regarding: incidence, care, cost, and outcome of injuries. Once stratified, population-based injury prevention programs could be targeted to specific regions.

Trauma Registry Submission Schedule

Calendar Year Quarter		Submission Deadline
January - March Admissions		June 1
April - June Admission		September 1
July - September Admission		December 1
October - December Admission		March 1

Trauma Registry Reports

LERN compiles annual state trauma registry reports that include standard dataset information established by the National Trauma Database (NTDB). These reports are used to compare Louisiana to national metrics published in the annual NTDB Report. Cause of injury reports help guide injury prevention efforts. Without a comprehensive registry it is difficult to make broad assumptions based on the data. LERN began publishing annual state trauma registry reports began in 2012 and current reports include:

- Patient Age Distribution
- Cause of Injury
- Cause of Injury by Survivability
- Received Pre-Hospital/Transfer
- Trauma Type by Gender
- Facility Traumatic Deaths by Trauma Type
- Blood Alcohol Testing
- Drug Screening
- Injury Severity Score (ISS) by Age
- ISS Range
- Fatalities by ISS
- Hospital Length of Stay
- Intensive Care Unit (ICU) Length of Stay
- Emergency Department/Acute Care Dispositions
- Hospital Discharge Disposition
- Top Dispositions (Hospital and Emergency Department)
- Hospital Admissions by Trauma Type
- Paid/Not Paid Annual Comparison

LERN's annual trauma registry reports are available on the Trauma Registry page of the LERN website (lern.la.gov/trauma/trauma-registry).

SECTION SIX: PERFORMANCE IMPROVEMENT

Today, performance improvement efforts in hospitals (and other healthcare providers) include formal organizational structures and activities focused on a continuous process of recognition, assessment, and correction. A basic tenet of performance improvement is that the opportunities for improving the efficaciousness, safety, and cost-effectiveness of care are ongoing.

In other words, performance improvement is focused on improving the *value* of care. The value equation includes three variables – quality of process, quality of outcome, and cost.

$$\text{Value of Care} = \frac{\text{Quality Process + Quality of Outcome}}{\text{Cost}}$$

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In Louisiana, hospitals must successfully complete the ACS COT verification process as a condition of state designation as a trauma center. Individual trauma centers that are verified by the ACS COT must include a structured trauma program effort to demonstrate a continuous process for improving care for injured patients. The ACS COT does not dictate methodology for this performance improvement requirement, but its guidance is consistent with the Institute of Medicine's six quality aims for patient care: safe, effective, patient centered, timely, efficient, and equitable.

Statewide trauma systems also commonly pursue trauma care performance improvement at the regional (within a state) and statewide levels – utilizing the resources of the statewide trauma registry and the expertise of their regional trauma commissions. LERN is actively promoting and building hospital participation in Louisiana's statewide trauma registry to reach a critical mass of participation necessary to facilitate trauma care performance improvement efforts at the regional and statewide levels. The ACS COT requires verified trauma centers to use a risk-adjusted benchmarking program as part of the performance improvement requirement, and encourages all trauma centers (of all levels) to participate in regional and statewide performance improvement and patient safety (PIPS) programs.

LERN's current performance improvement efforts are limited to evaluating the operations of the LERN Communications Center. The evaluation process is two-fold: 1) provider-related issues pertaining to the LCC operations staff and 2) system-related issues between the communications center and LERN stakeholders. Sample audit filters include the following.

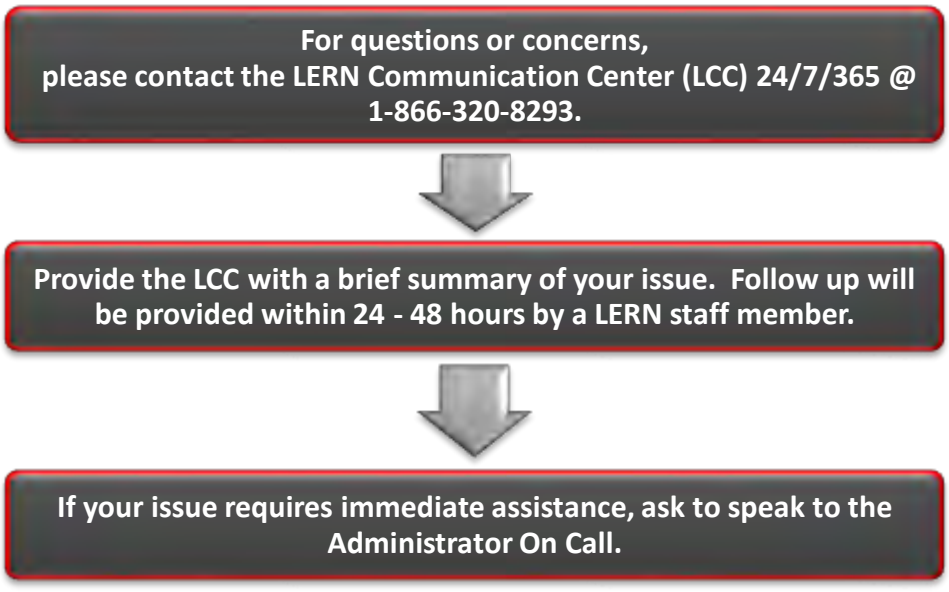
LCC Provider Audit Filters

- Length of call
- Timely answer
- Professional language
- Introduced self
- Triaged correctly
- Routed correctly
- Script followed
- Standard operating procedure (SOP) followed

LCC Operations and System Audit Filters

- Patient routing refused by hospital
- Hospital resources not updated by hospital
- EMS did not contact LERN
- Administrator on call contacted
- No resources in region (note lack of … i.e., ortho, neuro, etc.)
- Secondary transfers

In addition to directing patients and resource management tracking, the LERN Communications Center serves as a single point of entry to report all questions, concerns, and issues. This allows stakeholders the opportunity to report issues concurrently, 24/7/365. When a query is reported to the LCC, a case review is initiated and directed to the LERN operations staff for investigation and loop closure. The following schematic illustrates this process.



SECTION SEVEN: INJURY RESEARCH AND PREVENTION

The *2014 American College of Surgeons Resources for Optimal Care of the Injured Patient* manual requires Level I and Level II Trauma Centers to implement at least two programs that address one of the major causes of injury in the community. Given that the ongoing development of Louisiana's trauma system is aligned with the ACS guidelines and trauma center verification program, injury prevention efforts in the state are led and mostly funded by the designated trauma centers.

LERN collaborates with the state-designated trauma centers in injury prevention efforts and fosters replication of programs via the state Trauma Program Managers Group. LERN anticipates the day when hospital participation in the statewide trauma registry will reach a critical mass to support the design and implementation of regional and statewide injury research and prevention initiatives.

SECTION EIGHT: ALL DISASTER AND MASS CASUALTY INTERFACE

Louisiana's Department of Health, Center for Community Preparedness coordinates the State's response to public health threats of all types, including natural disasters (hurricanes, floods, and pandemics) and man-made emergencies (industrial spills and explosions, other large-scale accidents, and terrorist attacks).

LERN's Communications Center (LCC) supports the Center for Community Preparedness by serving as the "first call" helpdesk for the state's ESF-8 Portal, and 24/7/365 information coordinator for unfolding disaster/mass casualty events. In this role, LERN provides timely information that helps Louisiana's hospitals, other healthcare providers, and relevant stakeholder agencies prepare for and manage response to the emergency events they face.

Regional Coordinators

Louisiana's All Disasters Response effort utilizes regional coordinators including:

- Designated Regional Hospitals
- Hospital Designated Regional Coordinators
- EMS Designated Regional Coordinators

Designated Regional Hospitals (DRH) are larger acute care facilitates with emergency room

capabilities and many subspecialty services. They serve voluntarily and have agreed to provide additional capacity and resources in the initial emergency response of a mass casualty or event.

Designated Regional Coordinators (DRC) leadership for each region is provided through Hospital designated regional coordinators and EMS designated regional coordinators. Primary responsibilities for the DRCs include:

- To serve as the liaison with other health-related entities and on behalf of the industry they represent and to provide liaison with non-health related entities such as the Parish Office of Homeland Security and Emergency Preparedness.
- To support the patient transfer process during a declared state of emergency.
- To facilitate the identification of a medical evacuation queue during a declared state of emergency.
- To facilitate the development and implementation of regional and inter-organization/facility emergency preparedness plans for designated regions in the State of Louisiana.
- To lead the region's process for planning, training, exercises, development of, testing of, continuous improvement of, and management of regional hospital response to emergency situations.
- To be the leader for the region during a statewide emergency in which ESF-8 is tasked to respond.

LERN works collaboratively with the Designated Regional Hospitals and Coordinators – critical resources on the ground and across the state that are key to coordinating all disasters response.

Lists of current Designated Regional Hospitals and Coordinators are available on the LERN Disaster Response: Regional Coordinators page of the LERN website (www.lern.la.gov).

Mass Casualty Incident (MCI) Levels

A mass casualty incident (often shortened to MCI and sometimes called a multiple-casualty incident or multiple-casualty situation) is any incident in which emergency medical services resources, such as personnel and equipment, are overwhelmed by the number and severity of casualties. Depending on the geographic area and hospitals surrounding even small numbers of patients can tax the local emergency system. In an effort to streamline processes with ensuring appropriate routing of patients involved, LERN will follow the following guidelines for MCI patient distribution:

MCI Level 1 – Incident will require local resources and responding agencies. Incident may require additional resources within the region.

- Size – 5 to 10 patients
- Hospitals – notification to local hospitals in area near location of incident
- Triage – patients identified as **RED**, **YELLOW**, **GREEN** following START Triage guidelines and primary injury/service needed ***(LERN may be able to direct patients to specific area emergency departments with appropriate resources in small scale event)***
- Communications – primary: phone; secondary: radio. LERN Communications Center will assign a LERN Regional Tactical channel for transport operations when necessary.

MCI Level 2 – Incident will require local resources and responding agencies. Incident may require additional resources within the region.

- Size – 10 to 20 patients
- Hospitals – notification to local hospitals in area near location of incident and/or adjacent city or parishes
- Triage – patients identified as **RED**, **YELLOW**, **GREEN** following START Triage guidelines and primary injury/service needed ***(LERN may be able to direct patients to specific area emergency departments with appropriate resources in small scale event)***
- Communications – primary: phone; secondary: radio. LERN Communications Center will assign a LERN Regional Tactical channel for transport operations when necessary.

MCI Level 3 – Incident will require multiple regional resources and responding agencies. Incident may require additional resources in adjacent regions.

- Size – 20 to 100 patients
- Hospitals – initial notification to all regional hospitals and/or adjacent regions
- Triage – patients identified as **RED**, **YELLOW**, **GREEN** following START Triage guidelines
- Communications – Phone and radio communications. Incident command, operational officers, and area hospitals should monitor HRSA __ during incident. LERN Communications Center will assign a LERN Regional Tactical channel for transport operations when necessary.

MCI Level 4 – Incident will require multiple regional resources and responding agencies. Incident may require additional resources in adjacent and/or multiple regions.

- Size – 100 to 1000 patients or casualties
- Hospitals – initial notification to all hospitals statewide
- Triage – patients identified as **RED**, **YELLOW**, **GREEN** following START Triage guidelines
- Communications – Phone and radio communications. Incident command, operational officers, and area hospitals should monitor HRSA __ during incident. LERN Communications Center will assign a LERN Regional Tactical channel for transport operations when necessary.

MCI Level 5 – Incident will require statewide resources.

- Size – greater than 1000 patients
- Hospitals – initial notification to all hospitals statewide
- Triage – patients identified as **RED**, **YELLOW**, **GREEN** following START Triage guidelines
- Communications – Phone and radio communications. Incident command, operational officers, and area hospitals should monitor HRSA __ during incident. LERN Communications Center will assign a LERN Regional Tactical channel for transport operations when necessary.

A copy of the current MCI procedure (process flowchart) for EMS is available on the LERN Disaster Response: Mass Casualty Incident Levels page of the LERN website (www.lern.la.gov).

Response Planning and Preparation

LERN participates in a wide variety of local, regional, and statewide All Disaster Response preparatory activities ranging from active shooter drills to emergency drills to system testing and planning. These practice efforts builds streamlined response capabilities that can operate under difficult circumstances and in the worst of times.

LERN has been tasked with the management and operations of the EMS Tactical Operations Center (EMS TOC) during disasters. The EMS TOC is responsible for the following Emergency Support Functions Health and Medical (ESF 8), Ambulance Surge Plan which is designed to support the following operations:

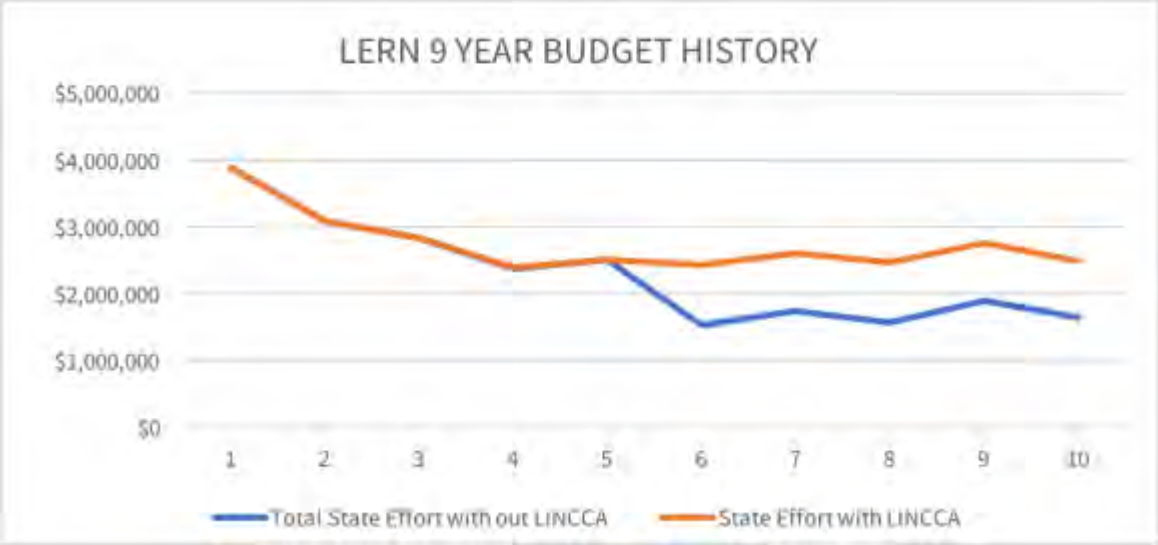
- Support the hospital evacuation process, referred to as the medical Institution Evacuation Plan (MIEP) with Emergency Medical Services (EMS) surge assets.
- Support the nursing home evacuation process with EMS surge assets, secondary to nursing home contracts and plans.
- Augment community 9-1-1 services with EMS surge assets.
- Support Medical Bus Triage Operations with EMS personnel and assets.
- Support staff augmentation and EMS assets at state operated Medical Special Needs Shelters (MSNS), Critical Transportation Need Shelters (CTNS), Federal Medical Stations (FMS), and other designation locations.
- Support repatriation of designated evacuees with transportation assets.

SECTION NINE: FINANCIAL

State funding for LERN's Communications Center, state-level administration, educational services, and regional trauma networks support began in 2006. During the initial years of operational funding, LERN existed as a program inside the Louisiana Department of Health (LDH). LERN became a separate budget unit under LDH effective Fiscal Year (FY) 08-09. Since that time, LERN has consistently demonstrated the ability to successfully manage an independent budget, partner with LDH, maximize the state's investment, and maintain steady growth and development.

LERN Funding: Sources and History

Funding for LERN comes from two relatively unstable sources – the state general fund (SGF) and federal LINCCA (Low-Income and Needy Care Collaboration Agreement) funds. Since fiscal year ending 2009, total LERN funding has decreased by 36% from approximately $3.9 million in FYE 09 to approximately $2.5 in FYE 17. During that same time, state general funds to LERN have decreased 59% from approximately $3.9 million to $1.6 million. The following chart illustrates these declines.



Current funding supports operations across LERN's four distinct areas of focus – trauma, stroke, STEMI (the deadliest form of a heart attack) and all disasters response.

Louisiana Emergency Response Network Fund

LERN's research of statewide trauma systems in other states indicates that many states have established one or more funding mechanisms to provide direct financial incentives for hospitals to establish and maintain a designated trauma center status.

In some states, a special statewide trauma system fund has been established to receive and distribute dedicated state funding to designated trauma centers. Consistent with this trend, the Louisiana Legislature established the Louisiana Emergency Response Fund in the 2010 Regular Session. This legislation states "the source of monies deposited into the fund may be any monies appropriated annually by the legislature, including federal funds, any public or private donations, gifts, or grants from individuals, corporations, nonprofit organizations, or other business entities which may be made to the fund, and any other monies which may be provided by law." The legislation also requires that any monies in the fund shall be used as directed by the LERN Board for grants, projects, and services which address the goals and objectives of the LERN Board.

LERN is continuously exploring opportunities to secure monies for this new trauma fund and is collaborating with LDH to explore potential opportunities to pursue dedicated trauma funding.