Joint Report to the
Health and Welfare Committee Of the Senate
and
Health Committee of the House of Representatives

Report On the Status of Emergency Medical Services for Children

A Report to the 108th Tennessee General Assembly

Tennessee Department of Health
July 2014

TENNESSEE DEPARTMENT OF HEALTH
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BOARD FOR LICENSING HEALTH CARE FACILITIES
EMERGENCY MEDICAL SERVICES BOARD

July 1, 2014

The Honorable Rusty Crowe, Chair
Health and Welfare Committee Of the Senate
Legislative Plaza, Suite 8
Nashville, Tennessee 37243

Dear Senator Crowe:

As required by Tennessee Code Ann. §68-11-251 and §68-140-521, we are pleased to submit the annual report on the Emergency Medical Services for Children (EMSC) program; the Board for Licensing Health Care Facilities and the Emergency Medical Services Board collaborated with the Committee on Pediatric Emergency Care (CoPEC) in preparation of the report. The TN EMSC program focuses primarily enhancing the access to quality pediatric pre-hospital and hospital care, with consideration for injury prevention, disaster preparedness, and patient safety. This report reflects activities and accomplishments of the Board for Licensing Health Care Facilities and the Emergency Medical Services Board in meeting national EMSC objectives.

Improving the availability and quality of children's health and health care is an important objective for the State of Tennessee and the Department of Health. Our boards help coordinate the role of Tennessee's medical facilities and emergency medical services in providing appropriate pediatric emergency care.

Respectfully submitted,

Larry Arnold, M.D., Chair
Board for Licensing Health Care Facilities

Sullivan K. Smith, MD, Chair
Emergency Medical Services Board

C: John J. Dreyzehner, MD, MPH, Commissioner
Tennessee Department of Health

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BOARD FOR LICENSING HEALTH CARE FACILITIES
EMERGENCY MEDICAL SERVICES BOARD

July 1, 2014

The Honorable Bob Ramsey, Chairman
Health Committee of the House of Representatives
War Memorial Building, Suite 212
Nashville, Tennessee 37243

Dear Representative Ramsey:

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Joint Annual Report of
The Board for Licensing Health Care Facilities
And the
Emergency Medical Services Board
To the
Tennessee General Assembly
Health & Welfare Committee of the Senate and
Health Committee of the House of Representatives
On the Status of
Emergency Medical Services for Children

July 1, 2014

I. Requirement of the Report

Tennessee Code Annotated 68-11-251 requires that the Board for Licensing Health Care Facilities and the Emergency Medical Services Board in collaboration with the Committee on Pediatric Emergency Care (CoPEC) shall jointly prepare an annual report on the current status of emergency medical services for children (EMSC) and on continuing efforts to improve such services beginning July 1, 1999.

The mission is "To ensure that every child in Tennessee receives the best pediatric emergency care in order to eliminate the effects of severe illness and injury."

The vision statement is: "To be the foremost advocate for children throughout the continuum of care in Tennessee and the nation."

II. Executive Summary

The Committee on Pediatric Emergency Care (CoPEC) in partnership with the Tennessee Department of Health created access to quality pediatric emergency care through establishing regional networks of care to ill and injured children 24 hours a day, 365 days a year. Emergency medical and trauma care services are defined as the immediate health care services needed as a result of an injury or sudden illness, particularly when there is a threat to life or long-term functional abilities.

Approximately, 3 out of 4 children are seen at a non-children's emergency departments in Tennessee. In 2012, a total of 686,806 children less than 18 years of age were seen in Tennessee's emergency departments with only 23% (149,022) being seen at one of the four comprehensive regional pediatric centers (Le Bonheur Children's Hospital, Monroe Carell Jr. Children's Hospital at Vanderbilt, Children's at Erlanger, and East Tennessee Children's Hospital).

Prior to the establishment of CoPEC there were significant barriers to access quality emergency care for children. It is important to understand that the delivery of

healthcare to children is much different than adult care. "Children are not small adults," and these differences place children at a disproportionate risk of harm. Examples include:

- Rescuers and other health care providers may have little experience in treating pediatric patients and may have emotional difficulty dealing with severely ill or injured infants and children.
- Providers not familiar with many of the unique anatomic and physiologic aspects of pediatric trauma, such as unique patterns of breathing, head injury, cervical spine injury, and abdominal injuries, may make assessment and treatment errors.
- Medication dosing for children is based on weight and/or body surface area whereas with adults there is typically a standard dose for a medication regardless of age. Children are therefore more prone to medication dosing errors by inexperienced health care providers who do not take weight based dosing into account. Children also require equipment specifically designed to meet their anatomic and physiologic requirements
- Children can change rapidly from a stable to life-threatening condition because they have less blood and fluid reserves. Assessment of these patients can be challenging to inexperienced providers.
- Children have a smaller circulating blood volume than adults making them more vulnerable to irreversible shock or death. Children are particularly vulnerable to aerosolized biological or chemical agents because their more rapid respiratory rate may lead to increased uptake of an inhaled toxin. Also some agents (i.e.sarin and chlorine) are heavier than air and accumulate close to the ground – right in the breathing zone of smaller children.

A child's outcome depends on factors including:

- Access to appropriately trained health care providers including physicians, nurses and EMS professionals.
- Access to properly equipped ambulances and hospital facilities
- Location of comprehensive regional pediatric centers and other specialized health care facilities capable of treating critically ill and injured children

CoPEC has spent two decades ensuring access to quality emergency care for all size and age children in our state. This has been achieved through institutionalization of pediatric specific rules and regulations that govern hospital facilities and EMS services. These rules and regulations now require different size equipment specific for children and personnel training. The rules and regulations for hospitals can be found at http://www.tn.gov/sos/rules/1200/1200-08/1200-08-30.pdf and EMS services at http://www.state.tn.us/sos/rules/1200/1200-12/1200-12-01.20110208.pdf.

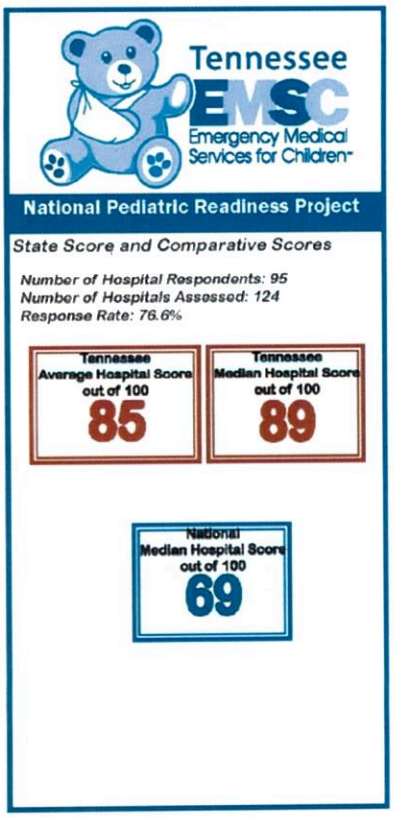
One of the most significant strengths of CoPEC is the involvement and participation of various stakeholders from across the state that advises the Tennessee Department of Health. These volunteers are EMS providers, doctors, nurses, parents of children with special needs, and professional organizations. (See Appendix 1).

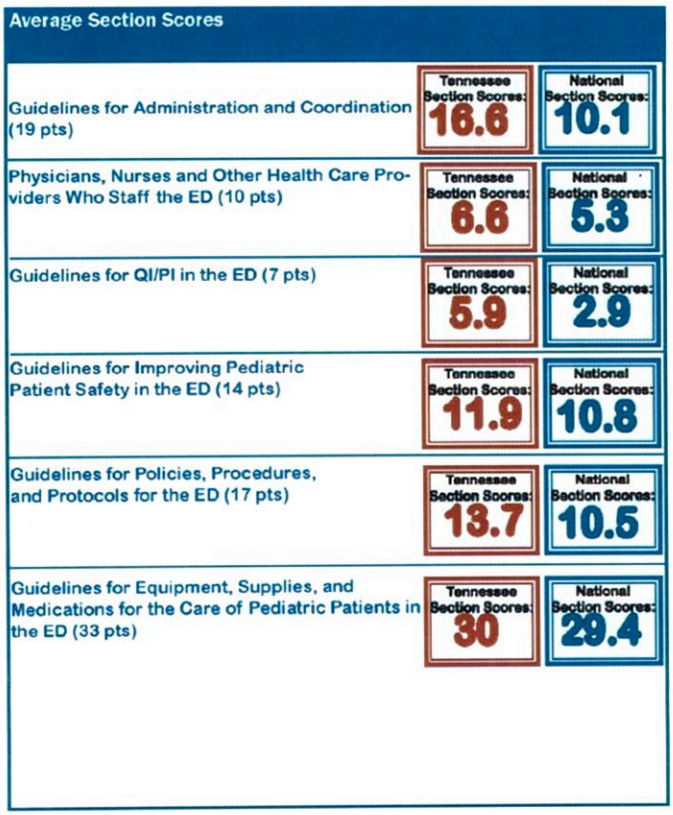
Key Accomplishments in Fiscal Year (July 1, 2013 to June 30, 2014)

A. Pediatric Readiness Assessment

The National Pediatric Readiness Assessment administered jointly with support provided by the national EMS for Children Program and Maternal Child Health Bureau / HRSA. The assessment is based on the Joint Policy Statement: Guidelines for the Care of Children in the Emergency Department (published in ***Pediatrics***, October 2009 and ***Annals of Emergency Medicine***, October 2009):

Seventy-seven percent of the state's emergency departments voluntarily responded to the assessment (in line with the national response rate) resulting in Tennessee scoring a national readiness score of 89, which ranks Tennessee first among US states and territories (Appendix 2). The overall national readiness score was 69. This means that the emergency departments in the state of Tennessee rank the highest overall in their ability to take care of children presenting with emergency conditions. (Appendix 3)





What are the Benefits of the Pediatric Readiness Assessment?

- Inform individual hospital emergency departments if they have the identified essential resources needed to effectively care for children of all ages. Provide a snapshot of the nation's as well as Tennessee's emergency departments' readiness to care for children based on current recommended guidelines.
- Emergency departments can use the assessment results to identify their strengths and weaknesses and have access to quality improvement resources to address areas needing reinforcement. The assessment will allow bench marking between hospital groups based on pediatric patient volume, regions, and systems.

B. Exceeding the National Performance Measures

In addition to the Pediatric Readiness project that demonstrated compliance with HRSA/MCHB Performance Measures; Tennessee was the first state in the nation to meet all benchmarks for the national program. These included:

- Having greater than 90 percent of pre-hospital provider agencies in the State/Territory that have on-line pediatric medical direction available from dispatch through patient transport to a definitive care facility.
- Having greater than 90 percent of pre-hospital provider agencies in the State/Territory that have off-line pediatric medical direction available from dispatch through patient transport to a definitive care facility.
- Having greater than 90 percent of patient care units in the State / Territory that have the essential pediatric equipment and supplies as outlined in national guidelines.
- The adoption of requirements by the State/Territory for pediatric emergency education for the license/certification renewal of basic life support (BLS) and advanced life support (ALS) providers.
- The degree to which Tennessee has established permanence of EMSC in the State EMS System
- The degree to which the State/ Territory has established permanence of EMSC in the State/ Territorial EMS system by integrating EMSC priorities into statutes/ regulations.

C. To expand membership orientation and leadership capacity to address the various components to TN EMSC including CoPEC.

- Continued presence of website which contains content to enhance access to quality pediatric emergency care
- Creation of video to tell the EMSC story through the life of child
- Creation of video to tell what is EMSC
- Establishment of Facebook www.facebook.com/TNEMSC and twitter accounts @TNEMSC

D. To develop and integrate a statewide disaster plan for children.

Currently, children are not included in the disaster plans for Tennessee. TN Department of Health, Office of Hospital Preparedness and the Division of EMS are collaborating to overcome this oversight. A draft of a pediatric disaster plan that will eventually be woven into the state plan is being circulated for review.

E. Use education (including publications and data collection) to support, develop, and disseminate current best practice for emergency medical services for children.

1. Education

- *Annual State Update in Acute and Emergency Care of Pediatrics Conference* hosted by East Tennessee Children's Hospital held March 28 & 29, 2014 in Knoxville.

    - The conference focused on Patient Safety and the plenary speaker Ridley Barron, delivered a spectacular message, "Every ½ Second Counts: A Victims Perspective on Healthcare." He discussed the personal tragedy of the death of his 17 month old son, Josh, due to medication error just five days after losing his wife in a tragic family automobile crash to an audience of over 200 healthcare providers.

- *Emergency Guidelines for Schools 2nd.ed* manual. The intent of this manual serves as a basic "what to do in an emergency" guide for school staff without medical/nursing training when the school nurse is unavailable. (Click to view)

- Completed Baptist Healing Trust grant to provide training on recognizing a child that needed immediate vascular assess, how to use EZ IO drills that enable the fast delivery of medications to pediatric patients.

    - Outcomes
        - 70% of the EMS providers obtained less than 80% on the pretest and greater than or equal to 93% on the final post test
        - 99% of children requiring EZ/IO access had vascular access in less than 5 minutes which enabled the child to receive life saving medications by month seven in the grant cycle.

          The one child that did not receive an IV in less than 5 minutes was involved in a multiple vehicle crash with multiple patients. Child received IO when LifeFlight arrived. Child was subsequently discharged from the hospital without neurological deficits.

    - The middle Tennessee counties included:
        1. Coffee County EMS

2. Fentress County EMS
3. Hickman County EMS
4. Marshall County EMS
5. Marshall County Hospital
6. Maury Regional EMS
7. Metro Moore EMS
8. Trousdale County EMS

2. Publications

Dettmer, J., Ettel, D., Glang, A., McAvoy, K., "Building Statewide Infrastructure for Effective Educational Services for Students with TBI: Promising Practices and Recommendations." *Journal of Head Trauma Rehabilitation* (JHTR), 2014; May/June 29(3), pp.224-232.

Unni P, Morrow SE, Shultz BL, Tian TT. "A Pilot Hospital-School Educational Program to Address Teen Motor Vehicle Safety. *J Trauma Acute Care Surg*. 2013 Oct; 75(4 Suppl 3):S285-9.

Wallace, M., Meredith, M., 'Potentially Fatal Errors, Why Pediatric Dosing Errors Happen and How to Avoid Them" JEMS August 2013.

Michael Warren, MD, Angela Miller, PhD, Julie Traylor, MPH, Robert Sidonio, MD, Anna Morad, MD, Alyson Goodman, MD, Deborah Christensen, PhD, Althea Grant, PhD, Erika Odom, PhD, Ekwutosi Okoroh, MD, Joshua Clayton, PhD, Matthew Maenner, PhD, Lauren Marcewicz, MD. Notes from the Field: Late Vitamin K Deficiency Bleeding in Infants Whose Parents Declined Vitamin K Prophylaxis — Tennessee, 2013. Morbidity and Mortality Weekly Report. November 15, 2013; 62(45): 901-902.

Book Chapter

Armstrong KA, **Unni P**, Pietsch, J. Pediatric Trauma. Hazinski, M. (ed). *Nursing care of the critically ill child*, Third Edition, (2013) pp. 895-918, Elsevier Mosby, St. Louis.

Bowen, A., Children in Disaster. American Academy of Pediatrics (ed). *Pediatric Education for Prehospital Professionals (PEPP).* Third Edition, (2014),pp.2-26, Jones & Bartlett, Elk Grove Village, IL.

Bowen, A., Pediatric Assessment. American Academy of Pediatrics (ed). *Pediatric Education for Prehospital Professionals (PEPP).* Third Edition, (2014), pp. 176-192, Jones & Bartlett, Elk Grove Village, IL.

3. Presentations

Heitmann R and **Warren MD**. "Reducing Sleep-Related Infant Deaths: The Tennessee Experience." Workshop presentation at the Association of Maternal and Child Health Programs (AMCHP) Annual Conference. Washington, DC. January 2014.

Edgerton MD, Manish MD, and **Phillippi, R.** "EMSC Making a Difference Today." Plenary presentation at the National Association of State EMS Officials Conference. Nashville, TN. Sept. 2013.

Unni P, Chung D, Shultz B, Tian T. "Suburban and Rural Teen Driver Attitudes Towards Texting While Driving" Oral Presentation to *Injury Free Coalition for Kids Conference*. Oral Presentation. Florida. November 9, 2013

Warren MD and Albers, K. "Neonatal Abstinence Syndrome (NAS): Two State Approaches to a Public Health Epidemic." Workshop presentation at the Association of Maternal and Child Health Programs (AMCHP) Annual Conference. Washington, DC. January 2014.

Poster Presentations at Conferences

Pekala K, Kelly K, Leathers J, Caldwell R, **Greeno A, Unni P**, Wellons JC, Tullipan N, Shannon CN. "Glucose levels are predictive of prolonged seizure activity." Poster Presentation at the *American Association of Neurological Surgeons*. December 2013.

Kelly K, Pekala K, Leathers JS, **Greeno A, Unni P**, Wellons JC, Tulipan N, Shannon CN. "Patient characteristics and clinical decision making in the pediatric traumatic brain injury patient population: an institutional review." Poster Presentation at the Pediatric Section of the *American Association of Neurological Surgeons*. December 2013.

4. Data collection

REDCap data tool is used to capture pediatric readiness of EMS and hospital facilities for quality improvement purposes and educational outreach.

F. Awards

The TN EMSC Advocate for Children Award is bestowed upon an individual who has made an outstanding contribution of major significance to the Tennessee Emergency Medical Services for Children program. This year's recipient was **Donna G. Tidwell, RN, EMT-P, MS** for her 20 years of unwavering service to TN Emergency Medical Services for Children and among many accomplishments, her leadership to raise EMS education standards and to provide essential pediatric equipment on all ambulances.

The TN EMS Joseph Weinberg, MD, Leadership Award is bestowed upon an individual who displays the attributes of a leader that can bring together diverse stakeholders and organizations to improve the care of critically ill and injured children. This year's award was presented to **Rita Westbrook, MD** for her service as past chair of both the Committee on Pediatric Emergency Care and the TN EMSC Foundation and for her demonstrating the leadership skills of Dr. Weinberg: pediatric expertise, advocacy, and civic duty.

G. Star of Life Awards Ceremony and Dinner

This year was the 6th annual awards ceremony held to honor the accomplishments of personnel from all regions of Tennessee who provide exemplary life-saving care to adult and pediatric patients. The ceremony includes the presentation of the actual adult or pediatric patient scenarios and reunites the EMS caregivers with the individuals they treated. Recipients are chosen from each of the eight EMS regions in the state. This is the premier event within the state to recognize and honor our excellent pre-hospital providers.

Overall State Winner: Region 6: Jefferson County Bus Accident, Interstate 40, Mile Marker 422

EMS Region 1: Eastman Chemical Company Emergency Services
EMS Region 2: Morristown Hamblen EMS & UT Lifestar
EMS Region 3: Bradley County EMS, Bradley County 911, Bradley County Fire and Rescue & Erlanger Lifeforce
EMS Region 4: Putnam County EMS & Cookeville Fire Department
EMS Region 5: Cheatham County EMS & Vanderbilt LifeFlight
EMS Region 6: Marshall County EMS
EMS Region 7: Medical Center EMS- Benton County & Benton County Rescue Squad
EMS Region 8: Memphis Fire Department & Elvis Presley Trauma Center

III. The Needs of the State Committee on Pediatric Emergency Care that were met by the Tennessee Department of Health since last year's annual report.

- Presentation by Michael Warren, MD, Director of the Division of Family Health and Wellness for the Tennessee Department of Health, on Tennessee Child Fatality Review Team and how CoPEC can support its efforts.

- Department of Health has provided a data expert, Ester K. Niles, PhD, Division of Family Health and Wellness, to provide analysis capabilities to assist in defining outcomes of emergency care for pediatrics.

IV. The Needs of the State Committee on Pediatric Emergency Care

- Ongoing statistical support to assist in defining outcomes of emergency care for pediatrics
- Requesting the Department of Health, Division of Health Care Facilities to publish the online inspection results for the health care facility survey - Pediatric Emergency Care Facilities by July 2015. Currently, to comply with federal requirements, the division has made available the health care facility survey inspection results for nursing homes with plans to expand this online reporting to include hospital and other types of facility surveys the division inspects.

- CoPEC is requesting the top 10 Pediatric Emergency Care Facility rules that facilities are not in compliance be reported annually to the Board for Licensing Health Care Facilities prior to October 1st of each year beginning in 2015. This report will then serve as a guide for CoPEC for strategic planning for facility education and support each year.

V. Conclusion

The mission of CoPEC is *to ensure that every child in Tennessee receives the best pediatric emergency care in order to eliminate the effects of severe illness and injury.* That mission draws people together, and has brought out the very best in our healthcare system.

The Board for Licensing Health Care Facilities and the Emergency Medical Services Board work cooperatively with other programs of the Department of Health to improve the quality of health care and medical services available to the citizens of Tennessee.

We will further describe the impact of the rules on pediatric emergency care by utilizing data collected in our next report on July 1, 2015.

This report was reviewed by the respective boards on _____ and _____ and approved for presentation to the designated committees of the Tennessee General Assembly.

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Appendix 1 Organizational Members in TN Emergency Medical Services for Children

Baptist Memorial Hospital for Women

Children's Hospital at Erlanger Health Systems

East Tennessee Children's Hospital

Hospital Corporation of America (HCA)

Jackson-Madison County General Hospital

Le Bonheur Children's Hospital

Monroe Carell, Jr. Children's Hospital at Vanderbilt

Project B.R.A.I.N.

Niswonger Children's Hospital

Rural Health Association of Tennessee

The Right Dose Foundation

TN Academy of Family Physicians

Tennessee Ambulance Service Association (TASA)

Tennessee Association of School Nurses

TN Chapter of the American Academy of Pediatrics (TNAAP)

TN Chapter of the American College of Emergency Physicians

TN Chapter of the American College of Surgeons

TN Congress of Parents and Teachers

Tennessee Department of Health

TN Disability Coalition

Tennessee Emergency Nurses Association (ENA)

Tennessee Emergency Services Education Association (TEMSEA)

TN Hospital Association

UT Medical Center

Williamson Medical Center

Appendix 2 TN EMSC Annual Report 2014

Hospitals that Voluntarily Participated in Pediatric Readiness Assessment

Athens Regional Medical Center
Baptist Hospital, Inc.
Baptist Memorial Hospital-Collierville
Baptist Memorial Hospital-Huntingdon
Baptist Memorial Hospital-Memphis
Baptist Memorial Hospital-Tipton
Baptist Memorial Hospital-Union City
Bolivar General Hospital
Children's Hospital at Erlanger
Cookeville Regional Medical Center
Copper Basin Medical Center
Crockett Hospital
Cumberland Medical Center
Cumberland River Hospital
Decatur County General Hospital
DeKalb Community Hospital
Delta Medical Center
Dyersburg Regional Medical Center
East Tennessee Children's Hospital
Emerald-Hodgson Hospital
Erlanger Bledsoe Hospital
Erlanger East Emergency Room
Erlanger North
Fort Loudoun Medical Center
Fort Sanders Regional Medical Center
Gateway Medical Center
Gibson General Hospital
Grandview Medical Center
Hardin Medical Center
Harton Regional Medical Center
Henderson County Community Hospital
Henry County Medical Center
Heritage Medical Center
Hickman Community Hospital
Highlands Medical Center
Hillside Hospital
Houston County Community Hospital
Humboldt General Hospital
Jackson-Madison County General Hospital
Jamestown Regional Medical Center
Jefferson Memorial Hospital
Jellico Community Hospital
Kindred Hospital
Lauderdale Community Hospital
Laughlin Memorial Hospital
Le Bonheur Children's Hospital
LeConte Medical Center
Lincoln County Health SystemMacon County General Hospital
Marshall Medical Center
Maury Regional Hospital
McKenzie Regional Hospital
McNairy Regional Hospital
Memorial Hospital North
Methodist Healthcare Memphis Hospitals
Methodist Healthcare-Fayette Hospital
Methodist Le Bonheur Germantown Hospital
Methodist Medical Center of Oak Ridge
Methodist North Hospital
Milan General Hospital
Monroe Carell Jr. Children's Hospital at Vanderbilt
Morristown-Hamblen Hospital
Niswonger Children's Hospital
North Knoxville Medical Center
Northcrest Medical Center
Parkridge East Hospital
Parkridge Medical Center
Parkwest Medical Center
Physicians Regional Medical Center
Regional Hospital of Jackson
Rhea Medical Center
Riverview Regional Medical Center North
Roane Medical Center
Skyridge Medical Center
Southern Tennessee Medical Center
Stones River Hospital
Takoma Regional Hospital
TriStar Centennial Medical Center
TriStar Centennial Medical Center at Ashland City
TriStar Hendersonville Medical Center
TriStar Horizon Medical Center
TriStar Skyline Medical Center
TriStar Southern Hills Medical Center
TriStar Stonecrest Medical Center
TriStar Summit Medical Center
Trousdale Medical Center
Turkey Creek Medical Center
University Medical Center
University of Tennessee Medical Center
Wayne Medical Center
Wellmont Hancock County Hospital
Wellmont Hawkins County Memorial Hospital
Wellmont Holston Valley Medical Center
Williamson Medical Center
Woods Memorial Hospital

Appendix 2 TN EMSC Annual Report 2014

Hospitals that Voluntarily Participated in Pediatric Readiness Assessment

Guidelines for Administration and Coordination of the ED for the Care of Children

An analysis of a survey done in 2003 on the readiness of ED staff to care for pediatric patients found that those emergency departments that had people accountable for coordinating the care of pediatric patients (Care Coordinators) were more 'ready' than those EDs who did not have care coordinators identified. (subscript)

Physicians, Nurses, and Other Health Care Providers Who Staff the ED

Children can present to the emergency department at any time. In most emergency departments, however, children make up only about 20% (sometimes a little more, sometimes a little less) of the total number of patient visits annually. For that reason, ED staff may not always feel comfortable or confident that they can care for the unique needs of a child of any age, from infancy through the teen age years.

It is important that ED leadership consider the training and competency of ALL staff that may come into contact with a child during an ED encounter .

Guidelines for Administration and Coordination of the ED for the Care of Children

Scored out of a Total of 19 Points

Tennessee Section Scores:	National Section Scores:
16.6	10.1

	Tennessee	National
Does your ED have a Nurse Coordinator who is assigned the role of overseeing various administrative aspects of pediatric emergency care? Yes, it does.	94.7%	59.3%
Does your ED have a Physician Coordinator who is assigned the role of overseeing various administrative aspects of pediatric emergency care? Yes, it does.	80%	47.4%

Physicians, Nurses, and Other Health Care Providers Who Staff the ED

Scored out of a Total of 10 Points

Tennessee Section Scores:	National Section Scores:
6.6	5.3

	Tennessee	National
Does your hospital require specific pediatric competency evaluations of physicians staffing the ED? Yes, it does.	84.2%	66.6%
Does your hospital require specific pediatric competency evaluations of mid-level practitioners staffing the ED? Yes, it does.	48.4%	38.6%

Tennessee EMSC
Emergency Medical Services for Children℠

Guidelines for Quality Improvement in the ED

- Identifies preventable errors and system in efficiencies
- Provides information on how well our processes are working
- Allows for ongoing improvements in patient care
- Monitors performance
- Promotes a safer and better experience for patients, their families, and providers. (Children, 2013)

Guidelines for Quality Improvement in the ED

Scored out of a Total of 7 Points

Tennessee Section Scores:	National Section Scores:
5.9	2.9

	Tennessee	National
Does your ED have a pediatric patient care-review process?	88.4%	45.1%
Yes, it does.		

The following results are a breakdown of those that said "Yes" to having a pediatric patient care-review process...

Collection and analysis of pediatric emergency care data	100%	88.1%
Identification of quality indicators for children	61.9%	58.3%
Development of a plan for improvement in pediatric emergency care	84.5%	78.9%
Re-evaluation of performance using outcomes-based measures	81.0%	73.4%

Tennessee EMSC
Emergency Medical Services for Children™

Guidelines for Improving Pediatric Safety in the ED

Children are potentially at greater risk for medical error due to:

- Weight-based dosing requiring measurement and calculation errors in pediatric dosing. Pediatric dosing errors have:
  - i. 10 fold errors
  - ii. Decimal pointerrors
  - iii. More pronounced in smaller children when 10 fold dose fits in single
- Their needs and characteristics
- Deficiencies in pediatric readiness in the emergency department
- Healthcare professionals have limited pediatric experience (particularly with critically ill and injured children)
- Smaller proportion of visits, less system "readiness"
- Lack of pediatric competency requirements for healthcare professionals.
- Child's inability to communicate with providers

Guidelines for Improving Pediatric Safety in the ED

Scored out of a Total of 14 Points

Tennessee Section Scores:	National Section Scores:
11.9	10.8

	Tennessee	National
Weigh in Kilograms	80%	67.7%
If weighed in Kilograms, also record in Kilograms	80.3%	75.3%
Temperature, heart rate, and respiratory rate recorder	100%	98.6%
Blood pressure monitoring available based on severity of illness.	98.9%	99.7%
Pulse oximetry monitoring available based on severity of illness	100%	99.7%
Written procedure in place for notification of physicians when abnormal vital signs	84.2%	70.1%
Process in place for the use of pre-calculated drug dosing	82.1%	78.9%
Process in place that allows for 24/7 access to interpreter services in the ED	100%	95.4%

Tennessee EMSC
Emergency Medical Services for Children™

Guidelines for Policies, Procedures, and Protocols for the ED

Policies help to focus on the unique needs of children and the necessary resources and staff to ensure that hospital emergency departments are prepared to receive, accurately assess, and at a minimum, stabilize and safely transfer acutely ill or injured children.

Guidelines for Policies, Procedures, and Protocols for the ED

Scored out of a Total of 17 Points

Tennessee Section Scores:	National Section Scores:
13.7	10.5

	Tennessee	National
Triage policy that specifically addresses ill and injured children	76.8%	56.7%
Policy for pediatric patient asessment and reassessment	90.5%	73.4%
Policy for immunization assessment and management of the under-immunized child	69.5%	51.7%
Policy for child maltreatment	95.8%	89.6%
Policy for death of the child in the ED	77.9%	58%
Policy for reduced-dose radiation for CT and x-ray imaging based on pediatric age or weight	72.6%	52.6%
Policy for promoting family-centered care	85.3%	59.6%
Hospital disaster plan addresses issues specific to the care of children	69.5%	46.8%
Inter-facility transfer guidelines	90.5%	70.5%

Guidelines for Equipment, Supplies, and Medication for the Care of Pediatric Patients in the ED

When it comes to children, "One Size Fits All" does not work. The pediatric population ranges in size from an infant through adolescents. Therefore, it is important to have the necessary pediatric equipment, supplies, and medications necessary to care for children of all ages and sizes.

Guidelines for Equipment, Supplies, and Medication for the Care of Pediatric Patients in the ED

Scored out of a Total of 33 points

Tennessee Section Scores:	National Section Scores:
30.0	29.4

The following are the Top 10 most common missing equiment from Tennessee's Emergency Department

	Tennessee	National
Laryngeal mask airways: size 1.5	57.9%	55.1%
Laryngeal mask airways: size 1	61.1	57.2%
Laryngeal mask airways: size 2.5	61.1%	57.2%
Laryngeal mask airways: size 2	66.3%	60.9%
Laryngeal maskairways: size 3	70.5%	66.3%
Central venous catheters (any two sizes in range, 4F-7F)	71.6%	62.5%
Tracheostomy tubes: size 3.0mm	72.6%	68%
Continuous end-tidal CO2 monitoring device	73.7%	81.7%
Laryngoscope blades: straight, size 00	73.7%	77.4%
Tracheostomy tubes: size 3.5mm	75.8%	67.8%

Tennessee EMSC
Emergency Medical Services for Children™

Inter-facility Transfer Guidelines:

To ensure that children have access to needed resources, the establishment of interfacility transfer agreements and guidelines is vital.

Recent evidence shows that the best outcomes for critically ill and injured children are achieved when treated at facilities most prepared to address their needs. Effective interfacility transfer agreements and guidelines will ensure the timely and appropriate transfer of patients to the appropriate level of emergency car. Without these agreements care might be delayed or might not even occur. Delays potentially result and/or contribute to negative patient outcomes.

Inter-facility Transfer Agreements:

Percent of hospitals that have inter-facility transfer agreements:

Tennessee Percentage:	National Percentage:
89.5%	66%

Inter-facility Transfer Guidelines:

Percent of hospitals that have inter-facility transfer guidelines with all of the eight EMSC components

Tennessee Percentage:	National Percentage:
73.3%	50%

	Tennessee	National
Does your hospital have inter-facility transfer guidelines? Yes	90.5%	69.3%
If yes, which EMSC components are included?		
Process for patient transfer (including obtaining informed consent)	98.8%	98.8%
Defined process for initiation of transfer, including the roles and responsibilities of the referring facility and referral center	96.5%	96.6%
Plan for transfer of patient medical record	98.8%	98.9%
Plan for transfer of copy of signed transport consent	97.7%	98.3%
Process for selecting the appropriately staffed transport service to match the patient's acuity level (level of care required by patient, equipment needed in transport, etc.)	94.2%	91%
Process for selecting the most appropriate care facility	93%	86.9%
Process for transfer of personal belongings to patient	91.9%	90.6%
Plan for provision of directions and referral institution information to family	86%	82.8%