Florida Trauma System Advisory Council

Development of the Florida Trauma System Assessment FTSAC

Recommendations Section 395.4025(2), F.S.

September 14, 2022

Overview

The Florida Department of Health in accordance with section 395.4025(2)(a), F.S. is required to conduct an analysis of Florida's trauma system by August 31, 2020, and every 3 years thereafter.

The Florida Trauma System Assessment is intended to fulfill the following statutory obligations of the Department:

- Identify Trauma Service Areas (TSA) where a hospital is eligible for designation as a trauma center or a trauma center is eligible for change is designation pursuant to 395.402(2), F.S.
- Determine if a hospital in a TSA meets the special trauma center application review requirements outlined 395.4025(3)(d), F.S, based on the existing trauma centers in the TSA exceeding patient volume requirements outlined in the statute. (Appendix A)

The Department is respectfully requesting that the Florida Trauma System Advisory Council (FTSAC) provide recommendations to the Department for the purpose developing and executing the Florida Trauma System Assessment.

Assessment Requirements

Section 395.4025(2)(a), F.S. requires the Florida Trauma System Assessment at minimum include the following components:

- Population growth for each TSA and for the state utilizing estimates from the U.S. Census Bureau.
- Number of high-risk patients[1] treated at each trauma center within each trauma service area, including pediatric trauma centers.
- Total number of high-risk patients treated at all acute care hospitals, including non-trauma centers, in each trauma service area.
- Percentage of each trauma center's sufficient volume of trauma patients, as described in 395.4025(3)(d)2. F.S. plus additional caseload volume requirements for those trauma centers with graduate medical education programs[2]. (Appendix A)

The statute's requirements do provide the general framework for performing the assessment, but it does not clearly outline a number of technical definitions and calculation methodologies which must be developed before the Department can complete the assessment. Specifically, the statute does not provide guidance or clarification of the following:

- Definition of "critical care and trauma surgical subspecialty medical resident or fellow" as described in section 395.4025, (3)(d)2, F.S.
- Methodology for determining the number of critical care and trauma surgical subspecialty medical residents or fellows at each trauma center.
- Definition of "acute care hospital" for purposes of conducting the assessment.
- Procedure for calculating International Classification Injury Severity Score (ICISS) from hospital discharge data available from the Agency for Health Care Administration.

[1] NOTE: Section 395.4011(4) defines "high risk patient" as a trauma patient with an International Classification Injury Severity Score of less than 0.85.

[2] NOTE: The trauma center's sufficient volume of trauma patients, as described in 395.4025(3)(d)2, varies based on the total population and number of critical care and trauma surgical subspecialty medical residents or fellows.

- Time period or version of International Classification of Diseases (ICD) codes for calculating Survival Risk Ratios. In addition, that statute does not address the unavoidable step of converting ICD-9 to ICD-10 or vice versa.

Solicitation of Subject Matter Expertise and Stakeholder Input

History: In order to develop a procedure to complete the assessment, the Department presented to the FTSAC an overview of the assessment's requirements and challenges during a Commons Hour conference call on February 12, 2019. The presentation included an initial set of definitions, procedures and recommendations developed by Department staff.

Per the FTSAC's recommendation, the Department invited all trauma centers and acute care hospitals to attend an informational webinar on March 1, 2019 for the purpose of soliciting feedback from stakeholders. The Department provided stakeholders the same presentation that was given to the FTSAC members on their Commons Hour conference call. The Department subsequently opened a 15-day comment period to allow stakeholders to provide feedback and recommendations.

For the 2022 update the FTSAC reviewed and revised the 2019 recommendations and allowed for public comment at the September 14, 2022 FTSAC meeting.

Recommendations

The Department took the following into consideration when developing the recommendations for consideration by the FTSAC.

- Statutory Alignment - The Department is prohibited from deviating or expanding the scope of the statute.
- Transparency - Department is advocating use of publicly available prepopulated data sources. Methods for gathering, synthesizing and presenting information should be completed using clearly documented processes and procedures.
- Consensus - Definitions and calculations should be created in partnership with all stakeholder groups.

Recommendation #1

The Florida Trauma System Assessment shall contain three parts. The first part shall contain the information required for the Department to fulfill its statutory functions. Part two, shall contain trauma system analysis and/or recommendations made by the FTSAC. The third part shall contain any public comment, analysis or recommendations received by the Department from trauma system stakeholders.

The Department recognizes that the statutorily prescribed assessment requirements are not the only means for evaluating Florida's trauma system. In an effort to create a system evaluation tool that comprehensively addresses all system needs, the Department recommends the three-part assessment described above for the following reasons:

- Part one ensures that the Department can complete its statutory responsibilities.

- Part two provides a means of assessing Florida's trauma system utilizing contemporary measures, subject matter expertise and Department resources.
- Part three ensures that all stakeholder groups have the opportunity to provide recommendations, comments, or include analysis that will be captured in the assessment.
- Creates a comprehensive assessment that can be referenced by policy makers when evaluating future changes to Florida's trauma system.

Recommendation #2

Population and population growth rates shall be calculated using the most recent 5 years of population data available from the American Community Survey (ACS) 5-Year Estimates by the U.S Census Bureau as directed by the statute. To disseminate the ACS population data, the Department shall use American Fact Finder prepopulated Florida county population tables to calculating TSA population and growth rate. The Department shall calculate growth rate in the TSA based on the percentage increase or decrease of the total population of all counties in the TSA from year 1 to year 5.

The use of the most recent 5 years of population data available from the American Community Survey (ACS) 5-Year Estimates by the U.S. Census Bureau is prescribed by statute. The Census Bureau ACS website outlines several tools that can be used to disseminate data. In order to ensure accuracy, transparency and efficiency, the Department recommends the use of the prepopulated Florida county population charts available through the American Fact Finder tool. The use of prepopulated data products ensure that all interested parties can replicate the data without the use of statistical software.

Recommendation #3

For purposes of the assessment, an acute care hospital shall be defined as a facility licensed under Chapter 395, Florida Statutes that has the presence of a dedicated Emergency Room Department on the Hospital Emergency Services Inventory which is published by the Agency for Health Care Administration in accordance with 395.1041(2), F.S.

The term "acute care hospital" is not defined by Florida Statutes. For simplicity, the Department initially recommended the definition of acute care hospital include all healthcare facilities licensed as a "hospital" and be disseminated using AHCA's Florida Health Finder facility locater tool. This definition would have included specialty hospitals, long-term care, psychiatric facilities, state prison facilities and, hospitals without emergency rooms that do not routinely care for injured patients. The initial recommendation was based on the anticipation that hospitals that did not routinely care for injured patients would likely have a minimal impact on the number of "high risk" patients in each TSA. However, feedback received during the comment period clearly demonstrated that stakeholders felt that the definition of an acute care hospital should include facilities with an emergency department. In response the Department has amended its initial definition.

The Department also sought an alternative data source that more clearly identified hospitals with emergency departments. Section 395.1041(2), F.S., requires that AHCA maintain an inventory of all hospitals with emergency department capabilities (Appendix D). The Hospital Emergency Services Inventory is publicly available on AHCA's website and hospitals with 24-hour emergency department can be easily identified without manipulating the data. The use of the Hospital Emergency Services Inventory data source is recommended over Florida Health Finder, because it requires less data manipulation to identify facilities that meet the recommended definition.

Recommendation #4

Section 395.4011(4) defines "high risk patient" as a trauma patient with an International Classification Injury Severity Score of less than 0.85.

The Department shall define International Classification Injury Severity Score as follows:

> *An International Classification of Diseases (ICD)-based multiplicative prediction model that calculates the likelihood of survival of an injured patient based on the assumption that all injuries contribute to the overall severity. The Department shall calculate the ICISS score for each injured patient in the most recent complete year of the Agency for Health Care Administration's Hospital Discharge Data Set based upon the multiplicative product all of the Survival Risk Ratios (SRR) associated with each ICD code listed in the patient's record.*
>
> *Example Expression:*
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> *ICISS= (SRR Injury 1) × (SRR Injury 2) × (SRR Injury 3) × (SRR Injury 4)…*

The proposed ICISS definition is based on the definition found in the *"Nakahsra S, Yoloka J, Revision of the International Classification of Diseases to include standardized descriptions of multiple injuries and injury severity, Bulletin of the World Health Organization, Volume 89, Number 3, March 2011, pg. 238-240."* The publication defines an ICD-based injury severity score or (ICISS) as:

> *"A multiplicative prediction model with an assumption that all injuries contribute to the overall severity. The SRR for each code is empirically derived from the patient data. To obtain ICISS, SRRs of all injuries are multiplied."*

The proposed Department definition is slightly modified to clarify that ICISS is the likelihood of survival of an injured person. In addition, that definition was modified to include the statutory requirement that the most recent complete year of AHCA hospital discharge data be used as the patient data set.

<u>Recommendation #5</u>

The Department shall define Survival Risk Ratio as follows:

> *An estimate of survival associated with each injury related International Classification of Diseases, Tenth Revision (ICD-10) code of injured patients treated at Florida trauma centers during the previous 5 years. The Department may utilize a conversion tool developed by the United States, Department of Health and Human Services, Centers for Medicare & Medicaid Services (CMS) to convert ICD-9 codes to ICD-10 for purposes of calculating SRRs where only ICD-9 codes where available in the AHCA. Hospital Discharge data.*

The Department is recommending the use of 5 years of ICD-10 based Survival Risk Ratios (SRR) for calculating ICISS. This is a procedural change from the Department previous use of SRRs based on 20 years of ICD-9 data. The Department acknowledges that for the 2020 assessment that it must perform conversions from ICD-9 to ICD-10 for a least one data year. The use of 5 years of ICD-10 based SRRs has the following advantages.

- Following the 2020 assessment, the Department would no longer be required to do any ICD conversions until AHCA mandated ICD-11 or other future revisions.
- The continued use of the 20-year based SRRs would require the Department to perform ICD conversions on all assessments through the year 2036.

<u>Recommendation #6</u>

The Department shall define "critical care and trauma surgical subspecialty medical resident or fellow" as follows:

An individual who is enrolled in an ACGME accredited or AAST approved program in General Surgery, Surgical Critical Care, Acute Care Surgery, Orthopedic Surgery or Neurosurgery that is "matched" or assigned to a hospital designated by the Florida Department of Health as a trauma center.

Trauma Centers are prohibited from declaring an induvial as a resident or fellow if the induvial takes rotations, provides clinical services or is otherwise employed but is "matched" or assigned to an ACGME or AAST program at another hospital.

Trauma Centers are permitted to declare an induvial as resident or fellow that is "matched" or assigned to a qualifying ACGME-accredited or AAST approved program at their hospital but takes rotations, provides clinical services or is otherwise employed at another hospital.

The phrase "critical care and trauma surgical subspecialty medical resident or fellow" is not specifically defined in the Florida Statutes. The Department sought input from stakeholders in developing this definition. The suggested definitions ranged widely from limiting the qualifying specialties to surgical critical or acute care surgery to expanding the definition to include physician specialties such as Emergency Medicine. Stakeholder groups also raised concerns about how residents would be counted if they took rotations at multiple hospitals.

In developing the recommended definition, the Department sought to include programs that best aligned with the key surgical specialties outlined in the American College of Surgeons, *Resources for the Optimal Care of Injured Patient, 2014* and the *Florida Trauma Center Standards* (DH Pamphlet 150-9).

Recommendation #7

Trauma centers, at the request of the Department, shall submit an attestation along with supporting documentation from the ACGME or AAST declaring the number of qualifying critical care and trauma surgical subspecialty medical residents or fellows currently assigned to ACGME-accredited or AAST approved program at their hospital.

An attestation is the only viable way to ensure that the Department can obtain the necessary information to conduct the assessment. The Department does not currently collect this information in any form. Further, the Department does not have regulatory authority over organizations like ACGME and therefore cannot require those organizations to produce information needed to complete its statutory responsibilities.

Appendix A: Florida Statute 395.4025(3)(d), F.S.

(d) Except as otherwise provided in this part, the department may not approve an application for a Level I trauma center, Level II trauma center, Level II trauma center with a pediatric trauma center, jointly certified pediatric trauma center, or stand-alone pediatric trauma center if approval of the application would exceed the limits on the numbers of Level I trauma centers, Level II trauma centers, Level II trauma centers with a pediatric trauma center, jointly certified pediatric trauma centers, or stand-alone pediatric trauma centers set forth in s. 395.402(1). However, the department shall review and may approve an application for a trauma center when approval of the application would result in a total number of trauma centers which exceeds the limit on the number of trauma centers in a trauma service area as set forth in s. 395.402(1), if the applicant demonstrates and the department determines that:

1. The existing trauma center's actual caseload volume of high-risk patients exceeds the minimum caseload volume capabilities, including the additional caseload volume for graduate medical education critical care and trauma surgical subspecialty residents or fellows, by more than two times the statutory minimums listed in sub-subparagraphs 2.a.-d. or three times the statutory minimum listed in sub-subparagraph 2.e., and the population growth for the trauma service area exceeds the statewide population growth by more than 15 percent based on the American Community Survey 5-Year Estimates by the United States Census Bureau for the 5-year period before the date the applicant files its letter of intent; and

2. A sufficient caseload volume of potential trauma patients exists within the trauma service area to ensure that existing trauma centers caseload volumes are at the following levels:

a. For Level I trauma centers in trauma service areas with a population of greater than 1.5 million, a minimum caseload volume of the greater of 1,200 high-risk patients admitted per year or, for a trauma center with a trauma or critical care residency or fellowship program, 1,200 high-risk patients admitted plus 40 cases per year for each accredited critical care and trauma surgical subspecialty medical resident or fellow.

b. For Level I trauma centers in trauma service areas with a population of less than 1.5 million, a minimum caseload volume of the greater of 1,000 high-risk patients admitted per year or, for a trauma center with a critical care or trauma residency or fellowship program, 1,000 high-risk patients admitted plus 40 cases per year for each accredited critical care and trauma surgical subspecialty medical resident or fellow.

c. For Level II trauma centers and Level II trauma centers with a pediatric trauma center in trauma service areas with a population of greater than 1.25 million, a minimum caseload volume of the greater of 1,000 high-risk patients admitted or, for a trauma center with a critical care or trauma residency or fellowship program, 1,000 high-risk patients admitted plus 40 cases per year for each accredited critical care and trauma surgical subspecialty medical resident or fellow.

d. For Level II trauma centers and Level II trauma centers with a pediatric trauma center in trauma service areas with a population of less than 1.25 million, a minimum caseload volume of the greater of 500 high-risk patients admitted per year or, for a trauma center with a critical care or trauma residency or fellowship program, 500 high-risk patients admitted plus 40 cases per year for each accredited critical care and trauma surgical subspecialty medical resident or fellow.

e. For pediatric trauma centers, a minimum caseload volume of the greater of 500 high-risk patients admitted per year or, for a trauma center with a critical care or trauma residency or fellowship program, 500 high-risk patients admitted per year plus 40 cases per year for each accredited critical care and trauma surgical subspecialty medical resident or fellow.

Appendix B: Public Comment