



**Hillsborough
County Florida**

5-YEAR STRATEGIC PLAN FOR AN INCLUSIVE TRAUMA SYSTEM

2022 – 2026

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EXECUTIVE SUMMARY

Injury is prevalent and costly, nationally and locally, personally and to society. The Centers for Disease Control and Prevention (CDC) reported that for 2018 and 2019, unintentional injury remained the third (#3) leading cause of adult death. From 1980 to 2017, adult death by unintentional injury rose 61%, while death by stroke decreased 14%. The National Safety Council estimated the 2019 total cost of all injuries to be just under \$1.1 trillion; including \$463 billion from motor-vehicle crashes, \$171 billion from work injuries, and \$337 billion from home injuries. The Florida Department of Health (FDOH) reported that for 2019 there were 8,672 persons (of all ages) hospitalized within Hillsborough County for treatment of non-fatal injuries; 2,189 were severely injured and at high risk of dying from their injuries. It has also been estimated (in 2014) that 20% of injury and injury-related deaths are preventable.

Trauma systems were deemed essential in the United States with passage of the Emergency Medical Services Systems Act of 1973. Since then, trauma systems have been built throughout the United States with a focus on quickly moving severely injured patients to hospitals (“trauma centers”) with specialized capabilities to care for such persons and return them to a productive life. Contemporary thought recognizes that trauma care is a larger matter of public health. Under the public health model, inclusive trauma systems are built to incorporate every health care provider or facility with resources to care for the injured in a tiered system of evidence-based practice; ensuring the best care and outcomes for all that suffer injury, containing long-term injury costs to individuals and society, and working to prevent injury and injury-related death from occurring.

Florida legislation first provided for trauma centers in 1982, created a statewide trauma system in 1987, and in 1999, directed the FDOH to plan, coordinate, and establish an inclusive trauma system *designed to meet the needs of all injured trauma victims who require care in an acute-care setting and into which every health care provider or facility with resources to care for the injured trauma victim is incorporated ... Among other considerations, the department is required to ... Promote the development of a trauma agency for each trauma region* [Section 395.40, F.S.].

The Hillsborough County Trauma System and Trauma Agency were established in 1990 when the FDOH approved the initial regional trauma system plan for Hillsborough County. Now in its 32nd year of continuous operation, the Trauma Agency continues its responsibility of administering an inclusive trauma system for Hillsborough County and is an integral part of the trauma, Emergency Medical Services (EMS), and healthcare systems of the greater Tampa Bay region.

This **5-Year Strategic Plan for an Inclusive Trauma System 2022-2026** is the sixth edition of the trauma system plan for Hillsborough County. It describes the long-established, high-quality, inclusive trauma system that exists within Hillsborough County today, and outlines goals and challenges to be addressed over the next five years to ensure trauma patients within Hillsborough County continue to receive the

highest quality care, have the best outcomes, and can return to a productive life; ultimately reducing the societal cost of injury to Hillsborough County.

This plan outlines a trauma system based on twelve (12) components toward a common mission:

1. An organized system of trauma centers, acute care hospitals, EMS providers, and any other with resources to positively impact trauma care.
2. A Uniform Trauma Transport Protocol (UTTP) providing guidelines for triage and transportation of severely injured to trauma centers or other appropriate care.
3. A transportation system of ambulances and helicopters that ensures severely injured, regardless of where located in the county, have timely access to trauma centers.
4. An adequate number of trauma centers based on need, population, and location and distribution of resources.
5. Data collection regarding system operation and patient outcome.
6. Periodic performance evaluations of the trauma system and its components.
7. The integrated use of air transport (helicopter) services.
8. Public information and education about the trauma system.
9. A coordinated and unified system of EMS communications and dispatch.
10. Coordination and integration between trauma centers and acute care hospitals.
11. Medical control and accountability.
12. Quality controls and system evaluations.

MISSION STATEMENT

The mission of the Hillsborough County Trauma System is to reduce the incidence of injury and injury-related disability and death through the planning, establishment, coordination, and evaluation of an inclusive, public health modeled, system of trauma care – including injury prevention, Emergency Medical Services (EMS), acute care hospital and trauma center care, and rehabilitation services – toward lessening the human and societal costs of injury.

ACKNOWLEDGEMENT

This plan is a collaborative product developed with support of the stakeholders and partners of the Hillsborough County Trauma System. The Hillsborough County Trauma Agency would like to thank all the trauma system stakeholders, partners, and professionals for their unwavering devotion of time, resources, and expertise to care for the injured and address injury prevention within Hillsborough County. It is because of their involvement, partnership, and dedication that the Hillsborough County Trauma System exists, and under their sage advice that this plan will guide the Trauma System and Trauma Agency going forward.

Tampa General Hospital	Hillsborough County Fire-Rescue
Tampa General Children's Hospital	Tampa Fire-Rescue
St. Joseph's Hospital	Temple Terrace Fire Department
St. Joseph's Children's Hospital	Plant City Fire-Rescue
St. Joseph's Hospital – North	The Crisis Center of Tampa Bay / TransCare
St. Joseph's Hospital – South	AmeriCare Ambulance
South Florida Baptist Hospital	AMR (American Medical Response)
HCA Florida Brandon Hospital	Sun City Center Emergency Squad
HCA Florida South Shore Hospital	AdventHealth EMS
HCA Florida South Tampa Hospital	St. Joseph's Hospital Transport Team
AdventHealth Carrollwood	St. Joseph's Children's Hospital Transport Team
AdventHealth Tampa	Tampa General – Aeromed
BayCare Health System	Air Methods – Bayflite
HCA Florida Healthcare System	Med-Trans Florida
AdventHealth System	
James A. Haley Veterans' Hospital	

Hillsborough County Emergency Medical Planning Council
Hillsborough County Medical Examiner Department
Hillsborough Community College – Emergency Medical Services (EMS) Program
Tampa Bay Health & Medical Preparedness Coalition – Hillsborough County Healthcare Coalition
Florida Department of Health (FDOH) Hillsborough County – Health Preparedness Program
Florida Department of Transportation (FDOT) – District 7
- Community Traffic Safety Team (CTST) and Traffic Incident Management (TIM) Team

All the trauma centers, EMS providers, stakeholders, partners, and professionals outside Hillsborough County that voluntarily participate with the Hillsborough County Trauma System and Trauma Agency in the spirit of an inclusive trauma system for the Tampa Bay region.

LEGAL REFERENCES

Florida Statutes (F.S.)

Chapter 395 – Part II: Trauma

http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0395/0395PartIIContentsIndex.html&StatuteYear=2020&Title=%2D%3E2020%2D%3EChapter%20395%2D%3EPart%20II

Chapter 401 – Part III: Medical Transportation Services

http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0400-0499/0401/0401PARTIIIContentsIndex.html

Chapter 408 – Part I: Health Facility and Services Planning

http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0400-0499/0408/0408PARTIContentsIndex.html

Florida Administrative Code (F.A.C.)

Chapter 59A-3: Hospital Licensure

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=59A-3>

Chapter 64J-1: Emergency Medical Services

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=64J-1>

Chapter 64J-2: Trauma

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=64J-2>

Florida Department of Health (FDOH)

Trauma Center Standards, Department of Health Pamphlet 150-9, January 2010¹

<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-center-standards-pamphlet.pdf>

¹ Note: At the time of writing this plan, the trauma center standards were under revision. A newer version may exist.

GLOSSARY of TERMS

Although some terms are legally defined in Chapter 395, F.S., they are presented here as-is for clarity and ease of use in this document.

ACS _____	<i>American College of Surgeons</i> – The long-recognized national standards-setting organization for surgical and trauma care. https://www.facs.org
Acute Care Hospital ² _____	A facility licensed under Chapter 395, F.S., that has the presence of a dedicated Emergency Room Department on the Hospital Emergency Services Inventory list, which is published by the Agency for Health Care Administration (AHCA) in accordance with Section 395.1041(2), F.S.
AHCA _____	<i>Florida Agency for Health Care Administration.</i>
BOCC _____	<i>Hillsborough County Board of County Commissioners.</i>
FDOH _____	<i>Florida Department of Health.</i>
FDOT _____	<i>Florida Department of Transportation.</i>
EMPC _____	<i>Emergency Medical Planning Council</i> of the BOCC.
EMS _____ (EMS Provider)	<i>Emergency Medical Services</i> – Ground ambulance or air medical (helicopter) services authorized to treat and transport injured persons.
F.S and F.A.C. _____	Legal abbreviations for <i>Florida Statutes</i> and <i>Florida Administrative Code</i> .
Inclusive Trauma System _____	A system designed to meet the needs of all injured trauma victims who require care in an acute-care setting and into which every health care provider or facility with resources to care for the injured trauma victim is incorporated.

² The term *acute care hospital* is not defined in Florida Statute or Code; however, it was defined by the FDOH in its *Trauma System Assessment*. Hence, that definition is used here.

Florida Department of Health. (2021, January). *Trauma System Assessment*.

<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>

Trauma Agency _____ The Hillsborough County Trauma Agency – The BOCC and FDOH approved agency established³ for the purpose of administering an inclusive regional trauma system.

Trauma Agency Coalition _____ Established⁴ as an integral part of the Trauma Agency, the TAC is a coalition of trauma system stakeholders, partners, professionals, and interested public and healthcare community members, assembled to assist the Trauma Agency in performing its tasks authorized under this plan, and provide a forum for collaboration and support in an inclusive trauma system.

Trauma Alert Patient _____ A trauma victim whose injuries meet criteria outlined in the Florida Adult and Pediatric Trauma Scorecard Methodologies, Hillsborough County Uniform Trauma Transport Protocol (UTTP), or Centers for Disease Control and Prevention (CDC) Guidelines for Field Triage of Injured Patients; who may require immediate treatment by a team of trauma care specialists to mitigate life threats, worsening injuries, and deteriorating patient condition.⁵

Trauma Center _____ An acute care hospital verified as compliant with established trauma center standards and designated by the FDOH to preferentially receive and care for trauma alert patients.

Trauma Service Area _____ A single county or region of counties so designated⁶ for purposes of organizing a trauma system.⁷

- TSA 9 consists of Pasco and Pinellas Counties.
- TSA 10 consists of Hillsborough County.
- TSA 11 consists of Hardee, Highlands, and Polk Counties.
- TSA 13 consists of DeSoto, Manatee, and Sarasota Counties.

Trauma Victim _____ Any person who has incurred a single or multisystem injury due to blunt (Trauma Patient) or penetrating means or burns and who requires immediate medical (Patient) intervention or treatment.

³ Pursuant to Section 64J-2.007, F.A.C.

⁴ Pursuant to Section 395.50(3), F.S.

⁵ See: *Uniform Trauma Transport Protocol (UTTP)*, outlined under Component 2 of this plan.

⁶ Pursuant to Section 395.402(1)(a), F.S.

⁷ See: *Appendix A: TSA Map of the FDOH Trauma System Assessment*.

Florida Department of Health. (2021, January). *Trauma System Assessment*.

<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>

INTRODUCTION

For more than a decade, much has been reported on the prevalence and cost of injury in the United States.

2010 The Centers for Disease Control and Prevention (CDC) estimated the combined medical and work-loss costs from burn injuries topped \$6.3 billion.ⁱ

2013 The CDC reported *more than 3 million people are hospitalized, 27 million ... treated in emergency departments ... and over 192,000 die as a result of violence and unintentional injuries each year.*ⁱⁱ The total cost associated with all fatal and Emergency Department-treated injuries in the United States was approximately \$671 billion.ⁱⁱⁱ

2014 The CDC reported that *TBIs [traumatic brain injuries] contribute to about 30% of all injury deaths ... there were approximately 2.5 million TBI-related emergency department visits ... 288,000 hospitalizations, and nearly 57,000 deaths.*^{iv}

2015 The Children's Safety Network reported that nationally the total medical costs of child and adolescent injury-related hospitalizations was \$6.6 billion, with almost half (44%) of that cost attributable to falls, motor vehicle crashes, and assaults.^v

2016 Researchers from the University of Michigan found that nationally over 60% of all child and adolescent deaths were injury-related; the leading causes being motor vehicle crashes (#1, 20%) and firearm-related (#2, 15%).^{vi}

The American Burn Association (ABA) reported there were over 486,000 burn injuries, more than 3,200 fire/smoke inhalation deaths, and approximately 40,000 burn-related hospitalizations.^{vii}

The CDC reported over 800,000 seniors are hospitalized annually due to fall injury, with falls being the most common cause of traumatic brain injury in seniors.^{viii} For just the State of Florida, the total medical cost for falls totaled nearly \$4 billion in 2014; with Medicare and Medicaid paying over 88% of these costs.^{ix}

2017 The U.S. Department of Health and Human Services reported the leading cause of adult non-fatal injury-related emergency department visits was falls, followed by striking (or being struck by) something.^x

2019 The CDC reported that unintentional injury remained the third (#3) leading cause of adult death in 2018 and 2019; falling between heart disease (#1) and cancer (#2), and respiratory disease (#4) and stroke (#5).^{xi} In contrast – in 1980, unintentional injuries ranked #4 while stroke ranked #3. From 1980 to 2017, adult death by unintentional injury rose 61%, while death by stroke decreased 14%.^{xii}

The CDC reported that fall death rates among seniors increased 30% from 2009 to 2018.^{xiii}

The National Safety Council estimated the total cost of all injuries to be just under \$1.1 trillion, including \$463 billion from motor-vehicle crashes, \$171 billion from work injuries, and \$337 billion from home injuries.^{xiv}

The Florida Department of Transportation (FDOT) reported that teen drivers were involved in 85,441 roadway crashes resulting in 2,200 serious injuries and 279 fatalities,^{xv} with 133 serious and 16 fatal within Hillsborough County.^{xvi} Aging drivers represented 37% of all roadway crashes,^{xvii} with 244 serious injury and 35 fatal crashes within Hillsborough County.^{xviii}

Hillsborough County Volumes

The Florida Department of Health (FDOH) Bureau of Community Health Assessment reported that for 2019 there were 8,672 persons (of all ages) hospitalized within Hillsborough County for treatment of non-fatal injuries.^{xix} In comparison, the same Bureau reported 2019 Hillsborough County hospitalizations for stroke and coronary heart disease to each be approximately half that of hospitalizations for non-fatal injuries (4,015 stroke and 4,653 coronary heart disease).^{xx}

For that same year 2019, the FDOH Bureau of Emergency Medical Oversight reported that the trauma centers and acute care hospitals within Hillsborough County treated 2,189 high-risk patients – having less than an 85% chance of surviving their injuries (Table 1).⁸

⁸ See: Florida Department of Health. (2021, January). *Trauma System Assessment*.
<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>

Table 1

Trauma Center	Level	Number of High-Risk Patients
Tampa General Hospital	I	961
St. Joseph's Hospital	II/Peds	718
Acute Care Hospital		Number of High-Risk Patients
Advent Health Carrollwood		12
Advent Health Tampa		140
Brandon Regional Hospital		126
Memorial Hospital of Tampa		23
South Bay Hospital		42
South Florida Baptist Hospital		38
St. Joseph's Hospital North		67
St. Joseph's Hospital South		62
Tampa Community Hospital-A Campus of Memorial Hospital of Tampa		0

Source: Florida Department of Health. (2021, January). *Trauma System Assessment*.
http://www.floridahealth.gov/licensing-and-regulation/trauma-system/_documents/trauma-system-assessment.pdf

Trauma Systems and Public Health

Injury is prevalent and costly, nationally and locally, personally and to society. Injury and injury-related death are also preventable. A 2014 study titled Pooled Preventable Death Rates in Trauma Patients looked at published data on preventable deaths over the 23-year period 1990 through 2013. This research estimated a preventable death rate of 20% per year.^{xxi} Applying this to the CDC reported total number of unintentional injury deaths for 2019 (173,040), there were over 34,000 preventable deaths in the United States that year.^{xxii}

Although injury deaths have traditionally been viewed as “accidents,” injury-prevention science that evolved during the latter half of the 20th century increasingly shows that such deaths are preventable with evidence-based approaches.

Trauma systems were deemed essential in the United States with passage of the Emergency Medical Services Systems Act of 1973.^{xxiv} Since then, trauma systems have been built throughout the United States with a focus on quickly moving severely injured patients to hospitals (“trauma centers”) with specialized capabilities to care for such persons and return them to a productive life. This model has proven effective. In a 2006 report titled National Study on the Costs and Outcomes of Trauma (NSCOT), researchers from the Johns Hopkins Bloomberg School of Public Health and the University of Washington School of

Medicine found *the overall risk of death was 25 percent lower when care was provided at a trauma center than when it was provided at a non-trauma center.*^{xxv}

Contemporary thought recognizes that trauma care is a larger matter of public health. Under the public health model, inclusive trauma systems are built to incorporate every health care provider or facility with resources to care for the injured in a tiered system of evidence-based practice; ensuring the best care and outcomes for all that suffer injury, containing long-term injury costs to individuals and society, and working to prevent injury and injury-related death from occurring.^{xxvi}

A trauma system is a partnership between public and private entities to address injury as a community health problem. These entities have common interests (e.g., right patient, right hospital, and right time) and interdependent goals (e.g., injury prevention strategies for the community, and quality care in all settings—prehospital, hospital, and rehabilitation).

The goals of a trauma care system are:

- *To decrease the incidence and severity of trauma.*
- *To ensure optimal, equitable, and accessible care for all persons sustaining trauma.*
- *To prevent unnecessary deaths and disabilities from trauma.*
- *To contain costs while enhancing efficiency.*
- *To implement quality and performance improvement of trauma care throughout the system.*
- *To ensure certain designated facilities have appropriate resources to meet the needs of the injured.*^{xxvii}

The U.S. Department of Transportation (DOT) and U.S. Department of Health and Human Services (HHS), in 2004 and 2006, respectively, created the framework for model trauma systems.

[DOT] *Trauma systems ... will enhance community health through an organized system of injury prevention, acute care and rehabilitation that is fully integrated with the public health system ... Trauma systems will possess the distinct ability to identify risk factors and related interventions to prevent injuries ... and will maximize the integrated delivery of optimal resources for patients who ultimately need acute trauma care ... The resources required for ... a trauma system will be clearly identified, deployed and studied to ensure that all injured patients gain access to the appropriate level of care in a timely, coordinated and cost-effective manner.*^{xxviii}

[HHS] *A trauma care delivery system consists of an organized approach to facilitate and coordinate a multidisciplinary system response to provide care for those who experience severe injury. The system encompasses a continuum of care that provides injured persons with the greatest likelihood of returning to their prior level of function and interaction within society. This continuum of care includes intentional and unintentional injury prevention, EMS 9-1-1/dispatch and medical oversight of prehospital care, appropriate triage and transport, emergency*

department trauma care, trauma center team activation, surgical intervention, intensive and general in-hospital care, rehabilitative services, mental and behavioral health, social services, community reintegration plans, and medical care followup.^{xxix}

The Florida Trauma System

In 1982, Florida enacted its first trauma legislation creating trauma centers; and in 1987, this law was expanded to develop a statewide trauma system. In 1999, further legislation directed the Florida Department of Health (FDOH) to plan, coordinate, and establish an inclusive trauma system.^{xxx} Built as a “system of systems”, Florida is currently divided and subdivided into seven (7) trauma regions and 18 Trauma Service Areas (TSAs) – with Hillsborough County designated “TSA 10.”⁹

The Legislature finds that it is necessary to plan for and to establish an inclusive trauma system ... An “inclusive trauma system” means a system designed to meet the needs of all injured trauma victims who require care in an acute-care setting and into which every health care provider or facility with resources to care for the injured trauma victim is incorporated ... It is the intent of the Legislature to place primary responsibility for the planning and establishment of a statewide inclusive trauma system with the department [FDOH] ... Furthermore, the Legislature encourages the department to actively foster the provision of trauma care and serve as a catalyst for improvements in the process and outcome of the provision of trauma care in an inclusive trauma system. Among other considerations, the department is required to ... Promote the development of a trauma agency for each trauma region. [Section 395.40, F.S.]

⁹ See: *Appendix A: TSA Map of the FDOH Trauma System Assessment.*

Florida Department of Health. (2021, January). *Trauma System Assessment.*

<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>



The HILLSBOROUGH COUNTY INCLUSIVE TRAUMA SYSTEM

Chapter 395 of the Florida Statutes

- 395.40(2) *An “inclusive trauma system” means a system designed to meet the needs of all injured trauma victims who require care in an acute-care setting and into which every health care provider or facility with resources to care for the injured trauma victim is incorporated.*
- 395.4001(12) *“Trauma agency” means a department-approved agency established and operated by one or more counties ... for the purpose of administering an inclusive regional trauma system.*
- 395.401(1)(c) *The ... [Florida Department of Health] shall receive plans for the implementation of inclusive trauma systems from trauma agencies. The department may approve or not approve trauma agency plans based on the conformance of the plan with ... [applicable laws and regulations].*
- (1)(m) *The ... trauma agency shall, consistent with the regional trauma system plan, coordinate and otherwise facilitate arrangements necessary to develop a trauma services system.*
- (1)(n) *After the submission of the initial trauma system plan, each trauma agency shall, every 5th year, submit to the department for approval an updated plan that identifies the changes, if any, to be made in the regional trauma system.*
- 395.402(1)(a) *The following trauma service areas [TSA] are established: ...*
9. *Trauma service area 9 shall consist of Pasco and Pinellas Counties.*
 10. *Trauma service area 10 shall consist of Hillsborough County.*
 11. *Trauma service area 11 shall consist of Hardee, Highlands, and Polk Counties. ...*
 13. *Trauma service area 13 shall consist of DeSoto, Manatee, and Sarasota Counties.*
-

The Hillsborough County Trauma System and Trauma Agency were established¹⁰ in 1990 when the Florida Department of Health (FDOH) approved the initial trauma system plan for Hillsborough County (TSA 10). Now in its 32nd year of continuous operation, the Trauma Agency continues its responsibility of administering an inclusive trauma system for Hillsborough County and is an integral part of the trauma, Emergency Medical Services (EMS), and healthcare systems of the greater Tampa Bay region.

¹⁰ Pursuant to Chapter 395, F.S.

This **5-Year Strategic Plan for an Inclusive Trauma System 2022-2026** is the sixth edition of the trauma system plan for Hillsborough County¹¹ and the first since 2016 when revisions to Chapter 395 modified the plan requirements. As such, this plan is both formatted and contextually different from prior plans.

Further, this is the first **strategic plan** for the Hillsborough County Trauma System and Trauma Agency; not only describing the long-established, high-quality, inclusive trauma system that exists within Hillsborough County today, but outlining goals and challenges to be addressed over the next five years to ensure trauma patients within Hillsborough County continue to receive the highest quality care and have the best outcomes.

For more information, contact:

Hillsborough County Trauma Agency
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601 E. Kennedy Blvd., P.O. Box 1110
Tampa, FL 33601
(813) 276 – 2051
TraumaAgency@HillsboroughCounty.org

Scope of the Hillsborough County Trauma Agency

Although this plan describes a trauma system beyond the boundaries of Hillsborough County, officially, the scope of the Hillsborough County Trauma Agency is to administer an inclusive trauma system for only Hillsborough County (TSA 10). The surrounding areas (TSA 9, 11, and 13) are incorporated into this plan because of their impact on transferring trauma patients into Hillsborough County, and the resources they offer that are mutually beneficial to the Hillsborough County Trauma System.

The Trauma Agency invites those from TSA 9, 11, and 13 to participate in Hillsborough County Trauma System and Trauma Agency activities; however, interlocal agreements for a multi-county trauma system as outlined in Section 395.401(1)(h), F.S., have not been established as the Hillsborough County Trauma Agency provides no services outside Hillsborough County (TSA 10). TSA 9, 11, and 13 remain wholly responsible for administering their own trauma systems.

¹¹ Prior Hillsborough County Trauma System plans were 1990 (the initial plan), 1999, 2005, 2010, and 2015. All are available from the Trauma Agency.

MISSION STATEMENT

The mission of the Hillsborough County Trauma System is to reduce the incidence of injury and injury-related disability and death through the planning, establishment, coordination, and evaluation of an inclusive, public health modeled, system of trauma care – including injury prevention, Emergency Medical Services (EMS), acute care hospital and trauma center care, and rehabilitation services – toward lessening the human and societal costs of injury.

COMPONENTS of the PLAN

Florida Statute 395.401(1)(b)

The local and regional trauma agencies shall develop and submit to the department plans for local and regional trauma services systems. The plans must include, at a minimum, the following components:

- 1. The organizational structure of the trauma system.*
 - 2. Prehospital care management guidelines for triage and transportation of trauma cases.*
 - 3. Flow patterns of trauma cases and transportation system design and resources, including air transportation services, provision for interfacility trauma transfer, and the prehospital transportation of trauma victims. The trauma agency shall plan for the development of a system of transportation of trauma alert victims to trauma centers where the distance or time to a trauma center or transportation resources diminish access by trauma alert victims.*
 - 4. The number and location of needed trauma centers based on local needs, population, and location and distribution of resources.*
 - 5. Data collection regarding system operation and patient outcome.*
 - 6. Periodic performance evaluation of the trauma system and its components.*
 - 7. The use of air transport services within the jurisdiction of the local trauma agency.*
 - 8. Public information and education about the trauma system.*
 - 9. Emergency medical services communication system usage and dispatching.*
 - 10. The coordination and integration between the trauma center and other acute care hospitals.*
 - 11. Medical control and accountability.*
 - 12. Quality control and system evaluation.*
-

Component 1***The organizational structure of the trauma system.*****Florida Statute 395.40(2)**

An “inclusive trauma system” means a system designed to meet the needs of all injured trauma victims who require care in an acute-care setting and into which every health care provider or facility with resources to care for the injured trauma victim is incorporated.

The Hillsborough County Trauma System is a partnership between public and private entities to address injury as a community health problem. Consisting of any entity with resources to positively impact the care of trauma patients within Hillsborough County, the partnership includes the:

- Trauma Agency Coalition (TAC) and Emergency Medical Planning Council (EMPC);
- trauma centers, burn care units, acute care hospitals, and healthcare systems;
- Fire-Rescue, ambulance, and air medical Emergency Medical Services (EMS) providers;
- emergency, surgical, orthopedic, neurological, radiological, pediatric, and other physician, nursing, EMS, and allied health care professionals involved in trauma care;
- Medical Examiner Department;
- 9-1-1 Public Safety Answering Points (PSAPs) and emergency communications/dispatch centers;
- EMS and allied health educational institutions;
- local Florida Department of Health (FDOH) and health care coalition organizations;
- local Florida Department of Transportation (FDOT) traffic incident and safety programs; and
- trauma centers, acute care hospitals, EMS providers, and stakeholders outside Hillsborough County that voluntarily participate with the Hillsborough County Trauma System and Trauma Agency in the spirit of an inclusive trauma system for the Tampa Bay region.

The American College of Surgeons (ACS) identifies 12 components of a trauma system:¹²

1. Victim with Severe Injury
2. EMS Dispatch and Pre-Arrival Instructions
3. EMS Field Triage and Transport
4. Trauma System Hospital
5. Interfacility Transfer
6. Trauma Center and Team Activation
7. Operating Room and Interventional Radiology
8. Intensive Care Unit
9. General Care Unit and Early Rehabilitation
10. Rehabilitation
11. Home and Follow-Up Care
12. Injury Epidemiology and Prevention

¹² See: *American College of Surgeons – Trauma Systems Components/Modules* website:
<https://www.facs.org/quality-programs/trauma/tqp/systems-programs/tscp/components>

Each stakeholder partner is responsible for managing its respective trauma system component(s) in accordance with established legal and accreditation standards. The Trauma Agency is the lead partner responsible for facilitating communication, cooperation, uniformity, and compliance among the stakeholder partners, performing system-level quality assurance activities, and ensuring all trauma system components are integrated into an effective system of trauma care.

Trauma Agency, TAC, and EMPC

Housed within the Hillsborough County Department of Health Care Services, the **Trauma Agency** is approved by the Board of County Commissioners (BOCC) and Florida Department of Health (FDOH) to administer an inclusive regional trauma system for Hillsborough County (Trauma Service Area 10). Trauma Agency staffing consists of one full-time registered nurse **Trauma Agency Coordinator** and one part-time contracted physician **Trauma Agency Medical Director**, with ancillary support provided by Health Care Services staff.

The **Trauma Agency Coalition** (TAC) is established¹³ as an integral part of the Trauma Agency, as a coalition of trauma system stakeholders, partners, professionals, and interested public or healthcare community members, assembled to assist the Trauma Agency in performing its tasks authorized under this plan, and provide a forum for collaboration and support in an inclusive trauma system.

The Trauma Agency, assisted by the TAC as a whole or any panel or committee assembled from the TAC, shall engage in:

- development and implementation of plans, protocols, and policies, as required;¹⁴
- data collection regarding system operation and patient outcome;¹⁵
- periodic performance evaluations of the trauma system and its components, and quality control efforts and system evaluations;¹⁶
- public information and education activities about the trauma system;¹⁷
- coordination and integration efforts between the trauma centers and other acute care hospitals;¹⁸
- performance of system-level quality assurance activities, including patient care quality assurance proceedings, evaluating EMS, trauma center, burn unit, acute care hospital, and rehabilitation trauma care, reviewing trauma-related deaths, and evaluating trauma system performance;
- fostering partnerships between stakeholders;

¹³ Pursuant to Section 395.50(3), F.S., *A local trauma agency or regional trauma agency may assemble a panel or committee to assist in performing the tasks authorized by an approved plan under s. 395.401.*

¹⁴ As outlined under all Components of this plan.

¹⁵ As outlined under Component 5 of this plan.

¹⁶ As outlined under Components 6 and 12 of this plan.

¹⁷ As outlined under Component 8 of this plan.

¹⁸ As outlined under Component 10 of this plan.

- facilitating collaboration on current practices and new developments;
- studies, reports, and professional research projects;
- injury prevention activities; and
- any task required in the administration of an inclusive trauma system for Hillsborough County.

The Hillsborough County ***Emergency Medical Planning Council*** (EMPC) is appointed by the BOCC to promote coordination of EMS within Hillsborough County. The Trauma Agency holds a seat on the EMPC, and the Trauma Agency and EMPC are sister entities working cooperatively to ensure a cohesive system for the treatment and transport of trauma patients. The EMPC and Trauma Agency partner to promote coordination, communication, and information sharing, collaborate on development of standards, support professional and public training and education, foster research and utilization of improved methods, and ensure the EMS and trauma systems are prepared to manage major emergencies and disasters.

Hillsborough County: TRAUMA CENTERS

Tampa General

Tampa General (consisting of Tampa General Hospital and Tampa General Hospital – Children’s Hospital) is an FDOH designated and American College of Surgeons (ACS) verified Adult and Pediatric Level I Trauma Center, and an American Burn Association (ABA) verified Burn Center. As a regional center, Tampa General cares for adult and pediatric trauma/burn patients from throughout the west-central Florida region, provides consultation/referral services to other trauma centers and acute care hospitals, and provides professional education and injury prevention outreach to the community. As an academic institution, Tampa General trains medical and allied health students, provides residency/fellowship programs in trauma surgical, emergency medicine, and other specialties, and conducts scholarly research in trauma, burn, and other care. Tampa General is actively involved as a core partner leading the Hillsborough County Trauma System and Trauma Agency.

St. Joseph’s

St. Joseph’s (consisting of St. Joseph’s Hospital and St. Joseph’s Children’s Hospital) is an FDOH designated Level II and Pediatric Trauma Center – caring for adult and pediatric trauma patients, and providing adult and pediatric consultation/referral services to acute care hospitals, from throughout the west-central Florida region. St. Joseph’s is active in providing professional education and injury prevention outreach to the community and is actively involved as a core partner leading the Hillsborough County Trauma System and Trauma Agency.

Hillsborough County: ACUTE CARE HOSPITALS (Non-Trauma Centers)

Although every effort is made to ensure trauma alert patients are treated at trauma centers, there are circumstances where initially treating a trauma alert patient at a non-trauma center may be best for the patient.¹⁹ Further, the demographics of Hillsborough County require planning for incidents in which the trauma system will be overwhelmed and will need the resources of all acute care hospitals to effectively manage the injured.

To that end, there are eight (8) non-trauma center acute care hospitals within Hillsborough County from which the Trauma Agency has received verification that the hospital meets the criteria outlined in Section 64J-2.002(3)(a), F.A.C.²⁰ They are incorporated into this plan and the *Uniform Trauma Transport Protocol* (UTTP),²¹ and each actively participates in the Trauma System and Trauma Agency as part of the inclusive Hillsborough County Trauma System.

HCA Florida Brandon Hospital
HCA Florida South Shore Hospital
HCA Florida South Tampa Hospital
South Florida Baptist Hospital
St. Joseph's Hospital – North
St. Joseph's Hospital – South
AdventHealth Carrollwood
AdventHealth Tampa

Hillsborough County: EMERGENCY MEDICAL SERVICES (EMS)

There are 11 ground ambulance and two (2) air medical (helicopter) EMS providers operating within Hillsborough County; providing a combination of 9-1-1 emergency response and interfacility transfer for trauma patients. All are active with, and EMS is considered one of the core groups leading, the Hillsborough County Trauma System and Trauma Agency.

¹⁹ Trauma destination requirements and “trauma alert” criteria are provided in the *Uniform Trauma Transport Protocol* (UTTP), outlined under Component 2 of this plan.

²⁰ Section 64J-2.002(3)(a), F.A.C.:

1. *Is staffed 24-hours-per-day with a physician and other personnel ... qualified in emergency airway management, ventilatory support, and control of life threatening ... problems ...*
2. *Has equipment and staff ... to conduct chest and cervical spine x-rays,*
3. *Has laboratory ... equipment and staff to analyze and report laboratory results,*
4. *Has equipment and staff ... to initiate definitive care ... within 30 minutes of the patient's arrival ... or ... initiate procedures ... to transfer the ... patient to a trauma center; and,*
5. *Has a written transfer agreement with at least one trauma center ...*

²¹ As outlined under Component 2 of this plan.

Hillsborough County (Fire-Rescue)	AdventHealth (Ambulance)
Tampa (Fire-Rescue)	St. Joseph’s Hospital (Ambulance)
Temple Terrace (Fire-Rescue)	St. Joseph’s Children’s Hospital (Ambulance)
Plant City (Fire-Rescue)	
Crisis Center / TransCare (Ambulance)	Tampa General – Aeromed (Helicopter)
AmeriCare (Ambulance)	Air Methods – Bayflite (Helicopter)
AMR (American Medical Response) (Ambulance)	
Sun City Center Emergency Squad (Ambulance)	

Other Trauma Centers, Burn Units, and EMS Providers in the Tampa Bay Region

In the greater Tampa Bay region outside Hillsborough County [Trauma Service Areas (TSA) 9, 11, and 13], there are five (5) FDOH designated Level II and one (1) FDOH designated Pediatric trauma centers, along with one (1) Florida Agency for Health Care Administration (AHCA) recognized burn unit.

Although outside Hillsborough County, these facilities impact the Hillsborough County Trauma System by their routine collaboration with and transfer of patients to both Tampa General and St. Joseph’s. Additionally, in some cases it may be quicker, safer, or more appropriate for EMS to transport trauma patients from incident scenes within Hillsborough County to these outside facilities.²² As no Trauma Agency exists in TSA 9, 11, or 13 and these facilities have resources mutually beneficial to Hillsborough County, all are invited to participate in Hillsborough County Trauma System, Trauma Agency, and TAC activities.

Thus, in the spirit of an inclusive trauma system, these trauma centers/burn units from outside Hillsborough County are incorporated into this plan.

Pasco County	HCA Florida Bayonet Point (Level II)
Polk County	Lakeland Regional Health Medical Center (Level II)
Pinellas County	Bayfront Health St. Petersburg (Level II) Johns Hopkins All Children’s Hospital (Pediatric)
Manatee County	HCA Florida Blake Hospital (Level II & Burn)
Sarasota County	Sarasota Memorial Hospital (Level II)

²² Trauma destination requirements are provided in the *Uniform Trauma Transport Protocol (UTTP)*, outlined under Component 2 of this plan.

In addition, there are multiple ground ambulance and air medical (helicopter) EMS providers operating in the regions outside Hillsborough County. These providers impact the Hillsborough County Trauma System in that they may be involved in the care and transport of trauma patients received at both Tampa General and St. Joseph's (either directly from an incident or transferred from another facility). As no other Trauma Agency exists in the Tampa Bay region, in the spirit of an inclusive trauma system, all EMS providers from the greater Tampa Bay region (TSA 9, 11, and 13) are invited to participate in Hillsborough County Trauma System, Trauma Agency, and TAC activities.

Goals for Component 1

The organizational structure of the trauma system.

- Increase stakeholder engagement in Trauma Agency activities.
- Facilitate discipline-specific meetings to foster sharing and partnerships.
- Identify missing stakeholders and invite them to participate with the Trauma Agency.

Component 2

Prehospital care management guidelines for triage and transportation of trauma cases.

Florida Statute 395.4045(2)

A trauma agency may develop a uniform trauma transport protocol that is applicable to the emergency medical services licensees providing services within the geographical boundaries of the trauma agency.

Development of a uniform trauma protocol by a trauma agency shall be through consultation with interested parties, including, but not limited to, each approved trauma center; physicians specializing in trauma care, emergency care, and surgery in the region; each trauma system administrator in the region; each emergency medical service provider in the region licensed under chapter 401, and such providers' respective medical directors.

The Trauma Agency shall develop, implement, and maintain a *Uniform Trauma Transport Protocol (UTTP)*,²³ authorized by the Trauma Agency Medical Director²⁴ and approved by the Florida Department of Health (FDOH),²⁵ to provide prehospital care management guidelines for triage and transportation of trauma cases in the Hillsborough County Trauma System.

The UTTP shall incorporate the Florida Adult and Pediatric Trauma Scorecard Methodologies,²⁶ additional criteria specific to the Hillsborough County Trauma System, and the principles of the Centers for Disease Control and Prevention (CDC) *Guidelines for Field Triage of Injured Patients* (2011).^{27,28}

Although the ability to have a UTTP is authorized under this plan, the content of the UTTP is authorized by the Trauma Agency Medical Director and the FDOH, separate from this plan. As such, the UTTP will be

²³ Pursuant to Section 395.4045(2), F.S.

²⁴ As outlined under Components 1 and 11 of this plan, and pursuant to Section 64J-2.003, F.A.C.

²⁵ Pursuant to Section 64J-2.002(6), F.A.C.

²⁶ Pursuant to Sections 64J-2.004 and 64J-2.005, F.A.C., and as required by the *Department of Health Trauma Transport Protocols Manual, December 2004* authorized pursuant to Section 64J-2.002(6), F.A.C.

<https://www.floridahealth.gov/licensing-and-regulation/ems-service-provider-regulation-and-compliance/documents/ttp-manualdecember2004updated64j10-1-08.pdf>

²⁷ Centers for Disease Control and Prevention. (2012). Guidelines for field triage of injured patients: Recommendations of the national expert panel on field triage, 2011. *MMWR*, 61(1).
https://www.facs.org/-/media/files/quality-programs/trauma/vrc-resources/6_guidelines-field-triage-2011.ashx

²⁸ Note: At the time of writing this plan, the CDC guidelines were under revision. Newer versions may exist.

a stand-alone “fluid document,” able to be modified by the Trauma Agency Medical Director (with FDOH approval) as necessary to remain current with best practices and maintain quality trauma care.²⁹

Goals for Component 2

Prehospital care management guidelines for triage and transportation of trauma cases.

- Maintain a clinically current Uniform Trauma Transport Protocol (UTTP).
- Assist the EMS Medical Directors in providing ongoing UTTP training to EMS providers.

²⁹ The Uniform Trauma Transport Protocol (UTTP) is available from the Trauma Agency.

Component 3

Flow patterns of trauma cases and transportation system design and resources, including air transportation services, provision for interfacility trauma transfer, and the prehospital transportation of trauma victims. The trauma agency shall plan for the development of a system of transportation of trauma alert victims to trauma centers where the distance or time to a trauma center or transportation resources diminish access by trauma alert victims.

The Hillsborough County Trauma System is designed to ensure trauma alert patients, no matter where they are in the county, can quickly receive the resources needed to treat life-threatening injuries and provide rapid transport to a trauma center for definitive care.

Fire-Rescue “Governmental” EMS Resources

In Hillsborough County, 9-1-1 Emergency Medical Services (EMS) calls are the responsibility of the municipality having jurisdiction.³⁰ As such, the four (4) governmental EMS service providers within Hillsborough County – Hillsborough County Fire-Rescue, Tampa Fire-Rescue, Plant City Fire-Rescue, Temple Terrace Fire Department – operate daily approximately 60 paramedic rescue ambulances and various other EMS response vehicles out of some 70 stations strategically located to provide timely response throughout Hillsborough County.

Additional EMS Resources

In addition to the four (4) governmental EMS service providers, there are seven (7) non-governmental providers authorized to operate approximately 100 ground ambulances within Hillsborough County. Further, there are four (4) air medical providers capable of servicing Hillsborough County – operating two (2) helicopters based within and eight (8) helicopters based outside the county. These resources provide backup to the governmental providers, provide emergency interfacility trauma transfers, and help ensure a system in which access by trauma alert patients to trauma centers is not diminished by distance or time.

³⁰ Pursuant to Article IV of Chapter 22 of the Hillsborough County Code of Ordinances and Laws:

https://library.municode.com/fl/hillsborough_county/codes/code_of_ordinances_part_a?nodeId=HICOC_OORLA_CH22EMMAEMSE_ARTIVEMMETR

Air Medical Resources

Authority and procedures to request an air medical service are left to local EMS/hospital policy. It is understood, however, that for most of Hillsborough County air transport to a trauma center is more expeditious than ground transport, and air medical EMS providers are capable of more critical care services than ground providers. As such, it is expected that when a patient may benefit from the speed or care of an air medical service, such a resource will be deployed.

Uniform Trauma Transport Protocol (UTTP)³¹

Pursuant to Section 64J-2.002(2), F.A.C., and the Hillsborough County UTTP, trauma alert patients are directed to the nearest appropriate trauma center by EMS providers on-scene of an incident and by acute care facilities first receiving a trauma alert patient. The UTTP provides guidance in determining the closest trauma center and for special circumstances where not transporting a trauma alert patient to the nearest trauma center may be allowed (i.e., cardiac arrest, unmanageable airway, burn injury, hand amputation, unsafe travel conditions, Mass Casualty Incident (MCI), etc.).

Inter-Facility Transfer Agreements

The Trauma Agency has received verification that each of the non-trauma center acute care hospitals within Hillsborough County maintains a trauma transfer agreement with Tampa General and/or St. Joseph's; providing specific procedures to ensure the timely transfer of a trauma alert patient to a trauma center.³² It is also understood that trauma transfer agreements may exist between the acute care hospitals and trauma centers located outside the county.

Tampa General is the only Level I Trauma Center and one of only two burn units – while Tampa General and St. Joseph's are two of only three pediatric trauma centers – on the Florida west coast. Because of this, Tampa General and St. Joseph's maintain relationships with EMS providers, acute care hospitals, and trauma centers both within and outside Hillsborough County to receive trauma patients from throughout the west-central Florida region.³³

³¹ As outlined under Component 2 of this plan.

³² As outlined under Component 1 of this plan, and pursuant to Sections 64J-2.002(3)(c) and (d), F.A.C.

³³ Note: In 2019, 77% of high-risk trauma patients admitted to a hospital within Hillsborough County (those having less than an 85% of surviving their injuries) were admitted to either Tampa General or St. Joseph's.

See: Florida Department of Health. (2021, January). *Trauma System Assessment*.

<http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>

Goals for Component 3

Flow patterns of trauma cases and transportation system design and resources, including air transportation services, provision for interfacility trauma transfer, and the prehospital transportation of trauma victims. The trauma agency shall plan for the development of a system of transportation of trauma alert victims to trauma centers where the distance or time to a trauma center or transportation resources diminish access by trauma alert victims.

- Evaluate cases where severely injured are received at non-trauma centers and identify system improvements to help ensure patients are directed to trauma centers in a timely manner.
- Implement monitors for over/under triage to trauma centers.

Component 4

The number and location of needed trauma centers based on local needs, population, and location and distribution of resources.

Florida Statute 395.402

Trauma service areas; number and location of trauma centers.—

395.402(1)

(a) *The following trauma service areas are established:*

10. *Trauma service area 10 shall consist of Hillsborough County.*

(b) *Each trauma service area must have at least one Level I or Level II trauma center.*

(c) *Trauma centers, including Level I trauma centers, Level II trauma centers, Level II trauma centers with a pediatric trauma center, jointly certified pediatric trauma centers, and stand-alone pediatric trauma centers, shall be apportioned as follows:*

10. *Trauma service area 10 shall have two trauma centers.*

The Hillsborough County Trauma System (TSA 10) has one (1) Level I trauma center (Tampa General) and one (1) Level II trauma center with a pediatric trauma center (St. Joseph's). Pursuant to Section 395.402(1)(c)10., F.S., Hillsborough County (TSA 10) has its full allotment of trauma centers.

Goals for Component 4

The number and location of needed trauma centers based on local needs, population, and location and distribution of resources.

- Monitor legislative activity for changes impacting the number of trauma centers within Hillsborough County and be prepared to provide evidence-based input.

Component 5

Data collection regarding system operation and patient outcome.

In the Hillsborough County Trauma System, operational and outcome data are routinely collected as part of the normal activities of the system. The Trauma Agency works with system stakeholders to access the data as necessary to effect this plan.

- 9-1-1 Public Safety Answering Points and emergency communications/dispatch centers collect data on each request and response.
- Emergency Medical Services (EMS) providers report operational and patient care data to the Florida *Emergency Medical Services Tracking and Reporting System (EMSTARS)*.³⁴
- The Florida Agency for Health Care Administration (AHCA) collects patient discharge/outcome data from all hospitals.³⁵ AHCA and the Florida Department of Health (FDOH) have partnered to link AHCA and EMSTARS data, providing patient outcome information to EMS providers.
- Under state law³⁶ and policy guidance from the FDOH, trauma centers report patient care and outcome data to both the *Florida Trauma Registry* and a nationally recognized risk-adjusted benchmarking system such as the American College of Surgeons (ACS) *Trauma Quality Improvement Program (TQIP)*. Trauma Centers may also submit data to the *National Trauma Data Bank (NTDB)* and participate in the Florida TQIP Collaborative.
- *Signal Four Analytics*³⁷ is the software vendor/product contracted by the Florida Department of Transportation (FDOT) – Traffic Records Coordinating Committee³⁸ to provide analytics on roadway crash investigation reports submitted by law enforcement organizations.
- *Biospatial*³⁹ is the software vendor/product contracted by the FDOH to provide data repository, linkage, analytics, and quality performance measures involving EMSTARS, AHCA, Florida Trauma Registry, roadway crash, and other data.

³⁴ Pursuant to Section 64J-1.014, F.A.C.

³⁵ Pursuant to Sections 408.061(1)(a), F.S., and 59A-3.006(12)(a)2., F.A.C.

³⁶ Pursuant to Sections 395.404, F.S., and 64J-2.006, F.A.C.

³⁷ See: *Signal Four Analytics – FDOT Transportation Data Symposium – October 2014* presentation website: <https://www.fdot.gov/docs/default-source/statistics/symposium/2014/Signal4Analytics.pdf>

³⁸ See: *FDOT Traffic Records* website: <https://www.fdot.gov/safety/2A-Programs/Traffic-Crash-Data.shtm>

³⁹ See: *Biospatial* website: <https://www.biospatial.io/>

- The FDOH *Florida Injury Surveillance System*⁴⁰ is used to monitor the frequency and determine the risk factors of fatal and non-fatal injuries, and provide information for injury prevention program planning and evaluation.
- Pursuant to Sections 401.30(4)(g), 395.3025(4)(h), and 395.50(2), F.S., and any other applicable statute, rule, regulation, code, ordinance, or as otherwise legally permitted, the Trauma Agency shall collect records, reports, data, and other information regarding injury incidents and the care, treatment, and transport of any person injured within Hillsborough County regardless of where treated or treated within Hillsborough County regardless of where injured, from any hospital or EMS provider involved with the incident or patient, and from other information sources identified in this plan or as otherwise permitted and required to effect this plan.

Goals for Component 5

Data collection regarding system operation and patient outcome.

- Work with stakeholders to formalize data sharing and use agreements.
- Implement mechanisms for collecting and sharing data between stakeholders.
- Identify data elements to be collected and shared at the system level and determine how that data will be used to improve trauma care and outcomes.
- Establish a panel to review data and report relevant system operation and patient outcome findings.
- Promote and support use of available patient outcome feedback loops.

⁴⁰ See: *FDOH Florida Injury Surveillance System* website:
<http://www.floridahealth.gov/statistics-and-data/florida-injury-surveillance-system/index.html>

Component 6

Periodic performance evaluation of the trauma system and its components.

The American College of Surgeons (ACS) identifies 12 components of a trauma system:⁴¹

1. Victim with Severe Injury
2. EMS Dispatch and Pre-Arrival Instructions
3. EMS Field Triage and Transport
4. Trauma System Hospital
5. Interfacility Transfer
6. Trauma Center and Team Activation
7. Operating Room and Interventional Radiology
8. Intensive Care Unit
9. General Care Unit and Early Rehabilitation
10. Rehabilitation
11. Home and Follow-Up Care
12. Injury Epidemiology and Prevention

As the Hillsborough County Trauma System is a partnership between public and private entities including any entity with resources to positively impact the care of trauma patients within Hillsborough County, periodic performance evaluation of the trauma system and its components largely rests with individual partners evaluating the system components for which they are responsible. System performance is then evaluated through partners collaborating on individual activities, findings, and improvements toward having all partners implement best practices across the system. Collaboration is facilitated through the Trauma Agency Coalition (TAC) and Emergency Medical Planning Council (EMPC).⁴² Periodic performance evaluations that look at both the trauma system and its components include the following.

FDOH Designations

Every seven (7) years a trauma center must apply to renew its trauma center designation with the Florida Department of Health (FDOH).⁴³ The renewal process evaluates both the ability of a trauma center to meet FDOH trauma center standards⁴⁴ and its performance in caring for trauma patients. When taken collectively, the findings and recommendations provided by the FDOH to the adult and pediatric trauma programs at both Tampa General and St. Joseph's provide insight into the overall performance of the Hillsborough County Trauma System.

⁴¹ See: *American College of Surgeons – Trauma Systems Components/Modules* website:

<https://www.facs.org/quality-programs/trauma/tqp/systems-programs/tscp/components>

⁴² As outlined under Component 1 of this plan.

⁴³ Pursuant to Section 395.4025(7), F.S.

⁴⁴ See: FDOH *Trauma Center Standards, Department of Health Pamphlet 150-9, January 2010*:

https://www.floridahealth.gov/licensing-and-regulation/trauma-system/_documents/trauma-center-standards-pamphlet.pdf

ACS & ABA Verifications

In addition to FDOH verification, a trauma center may voluntarily seek American College of Surgeons (ACS) verification of meeting national trauma center standards.⁴⁵ This verification is renewable every three (3) years and addresses all 12 ACS trauma system components. Currently, Tampa General maintains ACS verification as a Level I Adult and Pediatric Trauma Center.

Periodically, a burn unit must apply to renew its burn unit designation with the Florida Agency for Health Care Administration (AHCA).⁴⁶ Included in the AHCA rules is the requirement for the burn unit to obtain verification from the American Burn Association (ABA) that the burn unit meets national Burn Center standards.⁴⁷ Although specific to burn care, ABA verification largely involves the same 12 system components as ACS trauma center verification. Currently, the burn unit at Tampa General holds ABA verification as a Burn Center.

Whereas FDOH and AHCA evaluate trauma centers and burn units against regulatory standards, ACS and ABA evaluate against nationally recognized performance and best-practice industry standards. Although in many ways these State and national standards are the same, evaluating the performance of a local trauma center/burn unit against the performance of all other trauma centers/burn units nationally provides insight into the performance of the local trauma system in meeting industry (not just regulatory) expectations, and may provide insight for local improvement.

Florida Trauma System Assessments

Every three (3) years, the FDOH is required⁴⁸ to perform an assessment of the Florida Trauma System by trauma service area (TSA) – Hillsborough County being “TSA 10” – to determine if need exists for an additional trauma center in any TSA.⁴⁹ The assessment calculates the number of severely injured trauma patients definitively treated in each hospital (trauma center and non-trauma center) within a TSA, and indicates the percentage of severely injured not transported to trauma centers. Indirectly, this assessment provides an evaluation of the triage/transport, trauma hospital, and interfacility transfer components of the trauma system.

⁴⁵ See: *American College of Surgeons – Verification, Review, and Consultation (VRC) Program* website: <https://www.facs.org/quality-programs/trauma/tqp/center-programs/vrc>

⁴⁶ Pursuant to Section 59A-3.246(5), F.A.C.

⁴⁷ See: *American Burn Association – Verification* website: <http://ameriburn.org/quality-care/verification/>

⁴⁸ Pursuant to Section 395.4025(2)(a), F.S.

⁴⁹ See: Florida Department of Health. (2021, January). *Trauma System Assessment*. <http://www.floridahealth.gov/licensing-and-regulation/trauma-system/documents/trauma-system-assessment.pdf>

Mass Casualty Incident (MCI) Exercises

Annually, the Hillsborough County Office of Emergency Management, Health Preparedness Program of the FDOH – Hillsborough County, and the Hillsborough County Health Care Coalition coordinate a joint MCI full-scale exercise. Although primarily intended to assist hospitals in meeting Joint Commission⁵⁰ requirements and fulfill other disaster planning and preparedness purposes, this activity also serves to evaluate the dispatch, triage/transport, trauma hospital, interfacility transfer, trauma team activation, and hospital unit readiness components of the trauma system.

Goals for Component 6

Periodic performance evaluation of the trauma system and its components.

- Partner with trauma centers, burn units, and FDOH to address system issues identified by FDOH, ACS, and ABA verifications/assessments.
- Review FDOH, ACS, and ABA standards to identify and address gaps in their system evaluations – establishing additional metrics and evaluation tools, as needed.
- Facilitate partnerships towards improving Mass Casualty Incident (MCI) response coordination and training with governmental, non-governmental, and air medical EMS providers.

⁵⁰ See: *The Joint Commission* website: <https://www.jointcommission.org/>

Component 7
***The use of air transport services
 within the jurisdiction of the local trauma agency.***

In Hillsborough County, authority and procedures to request air medical services are left to local Emergency Medical Services (EMS) provider or hospital policy. It is understood, however, that for most of the county air transport to a trauma center is more expeditious than ground transport, and air medical EMS providers are capable of more critical care services than ground providers. As such, it is expected that when a patient may benefit from the speed or care of an air medical service, such resource will be deployed.

There are four (4) air medical services providing 10 EMS helicopters strategically based throughout the west-central Florida region. Each helicopter is staffed and equipped to perform both scene responses and interfacility transfers, and capable of servicing all or part of Hillsborough County (through either direct authority from the county or mutual aid).

Tampa General	Aeromed 1	Tampa
	Aeromed 2	Sebring
	Aeromed 4	Bartow
	Aeromed 5	Punta Gorda
Air Methods	Bayflite 2	North Port
	Bayflite 3	Tampa
	Bayflite 4	Inverness
	Air Care 5	Bartow
Med-Trans Florida	Med-Trans 1	Brooksville
Johns Hopkins All Children’s	Lifeline 1	St. Petersburg

As there is no clearinghouse for monitoring the status of all air medical services and determining which would be most appropriate to respond, it is left to the individual EMS/hospital provider to determine which air medical service to call first for assistance. The EMS/hospital provider should take into consideration things such as patient pickup location, trauma center to which the patient will be taken, and the need for any specialty care a particular air medical service provides.

Once an air medical service has been contacted, that service is expected to “own the call” – timely responding to or declining the request, and if declining, immediately contacting the other air medical

services to coordinate a response from them. It is not expected the requesting EMS/hospital provider will need to “call around” to find an available air medical service, but rather the air medical services will work together to expeditiously respond to the request, and all involved communications/dispatch centers will remain in contact with each other to coordinate the response.

Should no air medical service be available to respond, the air medical service receiving the initial request will immediately notify the EMS/hospital provider, and then assist the EMS/hospital provider in coordinating ground transport services, if necessary.

Goals for Component 7

The use of air transport services within the jurisdiction of the local trauma agency.

- Implement evaluation tools and metrics for response times and use of closest aircraft.
- Implement monitors for over/under air medical utilization.

Component 8***Public information and education about the trauma system.***

Informing and educating the general public and healthcare community about the Hillsborough County Trauma System is facilitated through outreach activities by the Trauma Agency and the trauma programs at Tampa General Hospital, Tampa General Hospital Children’s Hospital, St. Joseph’s Hospital, St. Joseph’s Children’s Hospital.

Tampa General (TGH) and St. Joseph’s (SJH) are involved in a wide variety of activities, including:

- (TGH, SJH) Providing STOP THE BLEED⁵¹ training to first responders, community organizations, and the general public (both adults and school-age children).
- (TGH, SJH) Providing full and “hands-only” CPR training to both adults and school-aged children.
- (TGH, SJH) Providing A Matter of Balance⁵² fall prevention education to seniors.
- (TGH, SJH) Through their Community Wellness and Outreach Departments, offering a variety of programs to help individuals and groups identify and manage injury health risks.
- (TGH, SJH) Through their Child Life Services programs, providing multiple offerings toward child injury prevention.
- (TGH, SJH) Sponsoring the Emergency Nursing Pediatric Course (ENPC), Trauma Nursing Course (TNCC), Neonatal Resuscitation Program (NRP), Advanced Cardiac Life Support (ACLS) course, and Pediatric Advanced Life Support (PALS) course.
- (TGH, SJH) Hosting adult and pediatric continuing education for hospital staff and EMS providers.
- (TGH, SJH) Providing organ donation information and registration.
- (TGH, SJH) Hosting car seat inspection events.
- (TGH, SJH) Providing water safety training.
- (TGH, SJH) Partnering with firearm retailers in gun safety programs.
- (TGH, SJH) Partnering with the Safe Sitter® Safe Kids Greater Tampa program.
- (TGH, SJH) Partnering with the Safe Routes to School, Walk and Roll Safety program.
- (TGH) Partnering with MORE HEALTH, inc.⁵³ for public education and injury prevention efforts directed toward school-age children and their families.
- (TGH) Holding membership in the Injury Free Coalition for Kids.
- (TGH) Partnering with Hillsborough County Sheriff’s Office on its annual “Battle of the Belts” high school teen-driver seatbelt campaign.

⁵¹ See: *STOP THE BLEED* website: <https://www.stopthebleed.org/>

⁵² See: *MaineHealth – A Matter of Balance* website:
<https://www.mainehealth.org/Healthy-Communities/Healthy-Aging/Matter-of-Balance>

⁵³ See: *MORE HEALTH, inc.* website: <https://www.morehealthinc.org/>

- (TGH) Partnering with the University of South Florida to sponsor Advanced Trauma Life Support (ATLS) and Advanced Trauma Care for Nurses (ATCN) courses.
- (TGH) Providing the Rural Trauma Team Development Course (RTTDC)⁵⁴ to acute care hospitals.
- (TGH) Through its Aeromed program, training EMS personnel in advanced airway management poly-system trauma care, and prehospital treatment goals for the trauma patient.

The Trauma Agency, Tampa General, and St. Joseph's participate with the Florida Department of Transportation (FDOT) sponsored Hillsborough Community Traffic Safety Team (CTST)⁵⁵ and Traffic Incident Management (TIM)⁵⁶ programs, providing information and education about the trauma system to a wide range of community partners including municipalities, law enforcement, school districts, health care advocacy groups, *madd*[®],⁵⁷ Tampa Alcohol Coalition, Center for Urban Transportation Research, and FDOT partners involved in traffic management and highway safety.

The Trauma Agency hosts a monthly gathering of the Trauma Agency Coalition (TAC)⁵⁸ to which anyone from the public or healthcare community with an interest in trauma care is invited. Participants engage in collaborative discussions regarding trauma system operations, quality management and system performance, current practices and new developments, research, public information and education, and injury prevention.

The Trauma Agency, Tampa General, and St. Joseph's all hold seats on the Hillsborough County Emergency Medical Planning Council (EMPC)⁵⁹ where they inform and educate the Emergency Medical Services (EMS) partners about the trauma system and work cooperatively to ensure a cohesive EMS/trauma system for the treatment and transport of trauma patients.

The Trauma Agency, Tampa General, and St. Joseph's are core members of the local Hillsborough County Healthcare Coalition⁶⁰ and regional Tampa Bay Health & Medical Preparedness Coalition.⁶¹ Through these partnerships, healthcare system leaders from throughout the region are educated about the role of the trauma system in public health and disaster preparedness/response.

⁵⁴ See: *American College of Surgeons – Rural Trauma Team Development Course* website: <https://www.facs.org/quality-programs/trauma/education/rttdc>

⁵⁵ See: *Tampa Bay Traffic Safety – Hillsborough CTST* website: http://tampabaytrafficsafety.com/education/ctst/hillsborough-ctst/?mc_cid=81a75a82f1&mc_eid=ef7d508e95

⁵⁶ See: *FDOT Traffic Incident Management* website: <http://www.floridatim.com/>

⁵⁷ *Mothers Against Drunk Driving*. See: <https://www.madd.org/west-central-florida/>

⁵⁸ As outlined under Component 1 of this plan.

⁵⁹ As outlined under Component 1 of this plan.

⁶⁰ See: *Tampa Bay Health & Medical Preparedness Coalition – Hillsborough County Health Care Coalition* website: <https://www.tampabayhmpc.org/hillsborough-county-demographics/>

⁶¹ See: *Tampa Bay Health & Medical Preparedness Coalition* website: <https://www.tampabayhmpc.org/>

Goals for Component 8***Public information and education about the trauma system.***

- Develop a public website and social media connecting the general public to the trauma system.
- Partner with EMS training programs to offer trauma continuing education for EMS providers.
- Partner with physician residency and allied health programs for mutual educational opportunities.
- Collaborate with stakeholders on Trauma Awareness Day events.
- Produce a periodic Trauma System Report for the Board of County Commissioners (BOCC) and public.
- Explore integration of trauma system data with FDOT traffic safety programs.
- Promote more involvement of EMS providers with FDOT programs.
- Partner with and help facilitate local, regional, and state injury prevention programs.
- Explore opportunities for Trauma Agency participation in publishable peer-reviewed research.
- Partner with the Health Care Coalitions and others in regional trauma and disaster planning.

Component 9

Emergency medical services communication system usage and dispatching.

- For a more detailed description of the EMS System, see Component 1 of this plan.
- For a more detailed description of EMS System dispatch procedures, see:
Section 1 – Dispatch Procedures of the Uniform Trauma Transport Protocol (UTTP),
outlined under Component 2 of this plan.

System Description

There are nine (9) municipally operated communications centers collectively providing all primary and secondary 9-1-1 Public Safety Answering Point (PSAP) and emergency communications/dispatch operations for police, fire, and the four (4) governmental Emergency Medical Services (EMS) providers within Hillsborough County.

Hillsborough County Sheriff's Office
Hillsborough County Fire Rescue (EMS)
City of Tampa Police Department
City of Tampa Fire Rescue (EMS)
City of Temple Terrace Police Department (Temple Terrace Fire Department/EMS)
City of Plant City Police Department (Plant City Fire Rescue/EMS)
Tampa International Airport Police Department
University of South Florida Police Department
MacDill U. S. Air Force Base Alarm Center

In addition, there are nine (9) non-governmental ambulance and air medical (helicopter) EMS providers operating within Hillsborough County; each maintaining its own communications/dispatch system.

Crisis Center / TransCare	St. Joseph's Hospital Transport Team
AMR (American Medical Response)	St. Joseph's Children's Hospital Transport Team
Sun City Center Emergency Squad	Tampa General – Aeromed
AmeriCare Ambulance	Air Methods – Bayflite
AdventHealth EMS	

Both trauma centers (Tampa General and St. Joseph's) operate "Med-Com" communications centers through which all EMS communications with these hospitals is facilitated.

Collectively, these municipal and independent PSAPs, communications/dispatch centers, Med-Coms, and systems form the public/private interoperable communications network used for all EMS operations within Hillsborough County; and through which all EMS requests are received and managed for the general public, intra-agency operations, and inter-agency mutual aid. This network includes such features as Enhanced 9-1-1, Text-To-9-1-1, cell phone tracking, telecommunication devices for the deaf (TDD), language-line interpreter services,⁶² medical priority dispatch protocols, computer-aided dispatch (CAD), mobile data terminals, and 700-MHz P25 and 800-MHz EDACS radio systems.⁶³

Dispatch Procedures

A request for EMS or other resource is first received by a 9-1-1 PSAP or other communications/dispatch center, which is responsible for obtaining enough preliminary information (per local policy) to determine the appropriate communications/dispatch center to manage the request, and if necessary, transferring the request to that center. Once the appropriate center has received the request, it will be the responsibility of that center to manage the request and response (per local policy), including:

- Obtaining further information.
- Dispatching the first available, nearest, most appropriate, EMS unit or other appropriate resource.
- Remaining in contact with all responding units to provide further assistance, as required:
 - Relaying incident and patient information.
 - Providing route of travel information.
 - Dispatching additional resources.
 - Facilitating communications between responding agencies.
 - Notifying hospitals/trauma centers when a trauma alert is called.
 - Making Mass Casualty Incident (MCI) notifications.
 - Facilitating dispatching and coordination of air medical services.

Authority and procedures to request air medical services are left to local EMS provider or hospital policy. As there is no clearinghouse for monitoring the status of all air medical services and determining which would be most appropriate to respond, it is left to the individual EMS/hospital provider to determine which air medical service to call first for assistance. Once an air medical service has been contacted, that service is expected to “own the call” – timely responding to or declining the request, and if declining, immediately contacting the other air medical services to coordinate a response from them.

⁶² Language-line interpreter services are provided by AT&T®.

⁶³ The county-wide 700 & 800-MHz radio systems are maintained by the Hillsborough County Sheriff's Office; providing dedicated channeling for EMS-hospital communications and interoperability for all emergency services.

Field Communications

EMS field communications are facilitated in various ways, depending on the operations of the individual EMS provider.

- The county-wide 700-MHz and 800-MHz radio systems include a common “All Hospitals” channel through which ambulances and hospitals routinely communicate. Additionally, established interoperable channels and the ability for telecommunicators to “patch” channels are provided for EMS units and personnel to communicate intra- and inter-agency.
- “MED Channel” and other land mobile radio systems are maintained by hospitals and EMS providers in accordance with the Florida EMS Communications Plan,⁶⁴ and are used both in conjunction with the county radio systems and for out-of-county responses.
- Mobile data terminals are used to connect EMS units to their communications/dispatch centers.
- Cell phones are routinely used for communications between EMS providers, hospitals, medical control physicians, supervisors, and communications/dispatch centers.
- Communications amongst hospitals and communications/dispatch centers largely utilize landline/internet telephone systems.
- Hillsborough County Fire Rescue maintains a *Hillsborough County Hospital Status Dashboard*⁶⁵ through which all EMS providers and hospitals received on-going notifications regarding the status of each hospital within the county.

Goals for Component 9

Emergency medical services communication system usage and dispatching.

- Partner with the Emergency Medical Planning Council (EMPC) and others in work to enhance EMS communications systems; particularly in providing up-to-the-minute hospital status during a Mass Casualty Incident (MCI) and coordination of patient allocation.

⁶⁴ See: *DMS Communications – EMS Communications plan, Volume I and Volume II* website: <http://www.floridahealth.gov/licensing-and-regulation/ems-service-provider-regulation-and-compliance/dms-comm.html>

⁶⁵ See: *Hillsborough County Hospital Status Dashboard* website: <https://hcfcr.readyop.com/fe/vziyo>

Component 10

The coordination and integration between the trauma center and other acute care hospitals.

Coordination and integration between the Tampa General and St. Joseph's trauma centers and other acute care hospitals both within and outside Hillsborough County are facilitated in several ways.

Trauma Transfer Agreements

Each of the eight (8) non-trauma center acute care hospitals within Hillsborough County⁶⁶ has a written transfer agreement with at least one trauma center. The transfer agreement shall provide specific procedures to ensure the timely transfer of the trauma alert patient to the trauma center.⁶⁷ Trauma transfer agreements also exist between Tampa General, St. Joseph's, and other hospitals throughout the west-central Florida region, including other trauma centers. To assist the acute care hospitals in determining if a patient should be transferred to a trauma center, the Trauma Agency has published Trauma Transfer Guidelines.

Feedback Loops

Both Tampa General and St. Joseph's provide patient care feedback to any acute care hospital transferring a trauma patient to them, by both proactively reaching out to the sending hospital and responding to requests for feedback. The Trauma Agency maintains contacts for each hospital and facilitates introductions when needed.

Trauma Care Training for Acute Care Hospitals

The Tampa General trauma program hosts the *Rural Trauma Team Development Course* (RTTDC)⁶⁸ for acute care hospitals throughout the west-central Florida region. In addition, the Tampa General – Aeromed program provides professional education and training throughout the region to Emergency Medical Services (EMS) personnel in adult/pediatric advanced airway management, poly-system trauma care, and prehospital treatment goals for the trauma patient. Tampa General also offers emergency medicine and surgical residency programs that have trained many board-certified physicians and surgeons that are now working in the acute care hospitals throughout the region.

⁶⁶ As listed and outlined under Component 1 of this plan.

⁶⁷ Pursuant to Section 64J-2.002(3)(a)5., F.A.C.

⁶⁸ See: *American College of Surgeons – Rural Trauma Team Development Course* website:
<https://www.facs.org/quality-programs/trauma/education/rttdc>

Trauma Agency Coalition (TAC)⁶⁹

The Trauma Agency hosts a monthly meeting of the TAC where participants engage in collaborative discussions regarding such topics as trauma system operations, quality management and system performance, current practices and new developments, research, public information and education, and injury prevention. The TAC is well attended by the acute care hospitals from within Hillsborough County and the trauma centers from throughout the Tampa Bay region; providing a forum for coordination and integration between trauma system stakeholders.

Uniform Trauma Transport Protocol (UTTP)⁷⁰

The UTTP is a consensus document developed through the Trauma Agency for use by EMS providers; however, UTTP principles apply to anyone providing trauma care. The trauma centers and acute care hospitals actively participate in UTTP development, modification, and implementation, and may integrate the UTTP into patient transfer decisions and flow patterns between hospitals.

Emergency Medical Planning Council (EMPC)⁷¹

The role of the EMPC is to promote coordination of EMS within Hillsborough County. Membership includes representation from all emergency service sectors, including every acute care hospital. In partnership with other EMPC members, the trauma centers and acute care hospitals work cooperatively to ensure a cohesive system for the treatment and transport of trauma patients, including promoting coordination, communication, and information sharing, collaborating on development of standards, supporting professional and public training and education, fostering research and utilization of improved methods, and ensuring the EMS and trauma systems are prepared to manage major emergencies and disasters.

Hillsborough County Healthcare Coalition (HCHC)⁷²

The HCHC is a network of healthcare organizations – including every hospital within Hillsborough County – that serves as a multi-agency coordinating group to enhance healthcare system preparedness, response, recovery, and mitigation for large-scale emergencies and disasters. The HCHC provides a forum for operational coordination and integration between the trauma centers, acute care hospitals, and other healthcare system stakeholders.

⁶⁹ As outlined under Component 1 of this plan.

⁷⁰ As outlined under Component 2 of this plan.

⁷¹ As outlined under Component 1 of this plan.

⁷² See: *Tampa Bay Health & Medical Preparedness Coalition – Hillsborough County Health Care Coalition* website:
<https://www.tampabayhmpc.org/hillsborough-county-demographics/>

Goals for Component 10***The coordination and integration between the trauma center and other acute care hospitals.***

- Provide trauma care and transfer guidance outreach to hospital and free-standing emergency departments.
- Facilitate uniform/unified trauma care training between trauma centers and acute care hospitals.
- Facilitate work between acute care hospitals and trauma centers to analyze and strategize improvements to trauma patient transfer times.
- Develop an effective, HIPPA compliant, feedback process between EMS, transferring facilities, and trauma centers.

Component 11***Medical control and accountability.***

In the Hillsborough County Trauma System, medical control and accountability are physician driven. Each Emergency Medical Services (EMS) provider is required⁷³ to retain a physician medical director responsible for providing medical control and accountability for EMS patient care personnel through development of medical and trauma transport protocols,⁷⁴ training personnel in the trauma scorecard methodologies, ensuring patient transport to appropriate medical facilities, establishing a quality assurance program for auditing patient care performance, and establishing systems through which personnel in the field may (at all times) contact a physician for live consultation and “on-line” medical control.

The Trauma Agency retains a physician medical director responsible for overseeing development and approval of the *Uniform Trauma Transport Protocol (UTTP)*,⁷⁵ assisting in medical-based research, peer facilitation of discussions between physicians/surgeons, and leading system-level quality assurance activities, including patient care quality assurance proceedings, to evaluate EMS, trauma center, burn unit, acute care hospital, and rehabilitation trauma care, review trauma-related deaths, and evaluate trauma system performance.

Both the Trauma Agency Coalition (TAC) and Emergency Medical Planning Council (EMPC)⁷⁶ include multiple physicians/surgeons who actively participate in development of the UTTP, EMS/trauma system quality assurance activities, and patient care quality assurance proceedings. When requested, the Trauma Agency will assemble a panel of TAC, EMPC, and other physician experts to provide a confidential, third-party, patient care quality assurance review of any case presented by an EMS provider, trauma center, acute care hospital, or other trauma care provider.

Goals for Component 11***Medical control and accountability.***

- Establish a physician forum to enhance EMS Medical Director collaboration.

⁷³ Pursuant to Sections 401.265, F.S., and 64J-1.004, F.A.C.

⁷⁴ All EMS provider medical directors within Hillsborough County actively participate in development, revision, and implementation of the *Uniform Trauma Transport Protocol (UTTP)*, as outlined under Component 2 of this plan.

⁷⁵ As outlined under Component 2 of this plan.

⁷⁶ As outlined under Component 1 of this plan.

Component 12

Quality control and system evaluation.

As the Hillsborough County Trauma System is a partnership between public and private entities including any entity with resources to positively impact the care of trauma patients within Hillsborough County, quality control largely rests with individual partners affecting quality measures within their individual organizations. System evaluation is then facilitated through partners collaborating on individual quality control activities, findings, and improvements toward having all partners implement best practices across the system. Collaboration is facilitated through the Trauma Agency Coalition (TAC) and Emergency Medical Planning Council (EMPC).⁷⁷

9-1-1 PSAP & Emergency Communications/Dispatch Centers

Each 9-1-1 Public Safety Answering Point (PSAP) and emergency communications/dispatch center⁷⁸ monitors, tracks, and reports (per local policy) measures used in communications center quality control; measures that may also have applicability in trauma system quality control and evaluation. These measures may include standard metrics such as types of requests, call processing times, unit response types and times, and hospital bypass times, or may be customized as needed. The Trauma Agency maintains good working relations with the communications centers to report measures and share data as necessary.

Emergency Medical Services (EMS) Providers

Each EMS provider⁷⁹ is required⁸⁰ to have a physician medical director driven quality assurance (QA) program. Although each QA program is unique to an EMS provider, in general, all programs employ common quality controls and system evaluation tools, including:

- dedicated QA leadership, officers, and committees;
- established relationships with hospital liaisons and linkages into available feedback loops;
- mechanisms to monitor, track, assess, and report standard metrics such as response, on-scene, and transport times, appropriate destination decisions, and air medical utilization, and custom metrics such as quality of care measures;

⁷⁷ As outlined under Component 1 of this plan.

⁷⁸ As outlined under Component 9 of this plan.

⁷⁹ As outlined under Component 1 of this plan.

⁸⁰ Pursuant to Section 64J-1.004(3)(b), F.A.C.

- incorporation (when possible) of State and nationally recognized benchmarks and measures developed through sources such as F.A.I.R.,⁸¹ NEMSQA,⁸² NEMSIS,⁸³ and Biospatial;⁸⁴
- medical director and QA staff review of trauma cases, with intensive case review by a QA committee, when required;
- continuing education unit (CEU) opportunities, and remedial education and training (when required), developed from areas identified in the QA process as needing improvement, updating, or reinforcement;
- active participation with the trauma centers in their Trauma Quality Improvement Programs and Performance Improvement and Patient Safety (PIPS) programs (see *Trauma Centers* section below); and
- active participation with the Trauma Agency in regional quality control and system evaluation activities (see *Trauma Agency* section below).

Acute Care Hospitals

*Each hospital shall have a planned, systematic, hospital-wide approach to the assessment, and improvement of its performance to enhance and improve the quality of health care provided to the public.*⁸⁵

The acute care hospitals and trauma centers maintain open communication and collaborative relationships on the care and outcomes of trauma patients transferred between them and share with the Trauma Agency any identified opportunities for system improvement. This provides both a quality control feedback loop between the hospitals and an informal means of system evaluation.

The Trauma Agency maintains verification that each of the eight (8) non-trauma center acute care hospitals within Hillsborough County meet staffing, equipment, and readiness standards to initially manage a severely injured patient (when necessary) and rapidly initiate transfer to a trauma center.⁸⁶

⁸¹ See: FDOH *Fair, Actionable, Impactful, Relevant (F.A.I.R.) Rural EMS Measurements Project* website: <https://www.floridahealth.gov/licensing-and-regulation/ems-system/fair-project/index.html>

⁸² See: *National EMS Quality Alliance (NEMSQA)* website: www.nemsqa.org

⁸³ See: *National EMS Information System (NEMSIS)* website: www.nemsis.org

⁸⁴ See: *Biospatial* website: <https://www.biospatial.io/> and Component 5 of this plan.

⁸⁵ Section 59A-3.271, F.A.C.

⁸⁶ As outlined under Component 1 of this plan, and pursuant to Section 64J-2.002(3)(a), F.A.C.

Trauma Centers

Each trauma center is required⁸⁷ to have a **Trauma Quality Improvement (QI) Program**,⁸⁸ the goals of which *are to monitor the process and outcome of patient care, to ensure the quality and timely provision of such care, to improve the knowledge and skills of the trauma care providers, and to provide institutional structure and organization to promote quality improvement.*

The trauma QI programs at both Tampa General and St. Joseph's use risk-adjusted benchmarking to not only measure performance and outcomes for the hospital but provide quality controls and evaluation measures applicable to the overall Hillsborough County Trauma System. Benchmarks and trends identified by Tampa General and St. Joseph's that indicate opportunities for system improvements are shared with the Trauma Agency and trauma system stakeholders.

Quality control and evaluation measures used by trauma centers may include:

- Types of injuries occurring within the trauma system.
- Care prior to trauma center arrival (EMS and acute care hospital).
- Over/under utilization of air medical services.
- Accuracy of trauma alert notifications (EMS triage).
- Timeliness of trauma team response.
- Availability of surgery, radiology, intensive care, and specialty services.
- Length of stay in each hospital unit (emergency, intensive care, medical/surgical, rehabilitation).
- Readmission rates (surgery, intensive care, hospital).
- Trauma care protocol monitoring (EMS, emergency, surgery, radiology, intensive care, medical/surgical, rehabilitation).
- Injury Severity Score (ISS) \geq 15 survival rates.⁸⁹

Trauma Agency

The Trauma Agency, with assistance from the Trauma Agency Coalition (TAC),⁹⁰ develops, implements, and performs quality control and system evaluation activities to evaluate both trauma system component

⁸⁷ Pursuant to FDOH *Trauma Center Standards, Department of Health Pamphlet 150-9, January 2010*, authorized pursuant to Section 64J-2.011, F.A.C.

⁸⁸ Note: At the time of writing this plan, the trauma center standards were under revision. It was proposed that the *Trauma Quality Improvement Program* be replaced with a *Performance Improvement and Patient Safety (PIPS)* program, the goals of which are the same.

⁸⁹ The *Injury Severity Score (ISS)* is a widely accepted method of assessing the severity of an injured patient. An ISS of 15 or greater is classified as severe injury/major trauma.

See: Palmer, C. (2007). Major trauma and the injury severity score - Where should we set the bar? *Annual Proceedings Association for the Advancement of Automotive Medicine*, 51, 13–29.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3217501/>

⁹⁰ As outlined under Component 1 of this plan.

performance and quality of care provided by EMS, trauma centers, burn units, acute care hospitals, rehabilitation services, and any other health care provider or facility which may provide care for trauma patients in the inclusive Hillsborough County Trauma System.

These activities are designed based on need and are generally performed at the system level. They may, however, include conducting patient care quality assurance proceedings and reviews of trauma-related deaths and trauma-related incidents,⁹¹ in cooperation with those trauma system stakeholders who would be directly affected by such activities.

Data and information for these activities are obtained from the sources outlined in both this Component 12 and Component 5 – *Data collection regarding system operation and patient outcome* of this plan, and other information sources identified in this plan, or as otherwise permitted and required to effect this plan.

Goals for Component 12

Quality control and system evaluation.

- Work with stakeholder partners to integrate individual quality controls and evaluations between stakeholders and use those integrations in system quality control and evaluation efforts.
- Identify and implement system metrics in accordance with industry standards.
- Develop improved means of peer-driven case reviews and patient care quality assurance proceedings.
- Assist the trauma centers and EMS providers in partnering to meet current and future trauma center quality management program requirements.

⁹¹ As outlined under Components 1, 5, and 11 of this plan.

Compilation of HILLSBOROUGH COUNTY TRAUMA SYSTEM GOALS for 2022 – 2026

Component 1 – The organizational structure of the trauma system.

- Increase stakeholder engagement in Trauma Agency activities.
- Facilitate discipline-specific meetings to foster sharing and partnerships.
- Identify missing stakeholders and invite them to participate with the Trauma Agency.

Component 2 – Prehospital care management guidelines for triage and transportation of trauma cases.

- Maintain a clinically current Uniform Trauma Transport Protocol (UTTP).
- Assist the EMS Medical Directors in providing ongoing UTTP training to EMS providers.

Component 3 – Flow patterns of trauma cases and transportation system design and resources, including air transportation services, provision for interfacility trauma transfer, and the prehospital transportation of trauma victims. The trauma agency shall plan for the development of a system of transportation of trauma alert victims to trauma centers where the distance or time to a trauma center or transportation resources diminish access by trauma alert victims.

- Evaluate cases where severely injured are received at non-trauma centers and identify system improvements to help ensure patients are directed to trauma centers in a timely manner.
- Implement monitors for over/under triage to trauma centers.

Component 4 – The number and location of needed trauma centers based on local needs, population, and location and distribution of resources.

- Monitor legislative activity for changes impacting the number of trauma centers within Hillsborough County and be prepared to provide evidence-based input.

Component 5 – Data collection regarding system operation and patient outcome.

- Work with stakeholders to formalize data sharing and use agreements.
- Implement mechanisms for collecting and sharing data between stakeholders.
- Identify data elements to be collected and shared at the system level and determine how that data will be used to improve trauma care and outcomes.
- Establish a panel to review data and report relevant system operation and patient outcome findings.
- Promote and support use of available patient outcome feedback loops.

Component 6 – Periodic performance evaluation of the trauma system and its component.

- Partner with trauma centers, burn units, and FDOH to address system issues identified by FDOH, ACS, and ABA verifications/assessments.
- Review FDOH, ACS, and ABA standards to identify and address gaps in their system evaluations – establishing additional metrics and evaluation tools, as needed.
- Facilitate partnerships towards improving Mass Casualty Incident (MCI) response coordination and training with governmental, non-governmental, and air medical EMS providers.

Component 7 – The use of air transport services within the jurisdiction of the local trauma agency.

- Implement evaluation tools and metrics for response times and use of closest aircraft.
- Implement monitors for over/under air medical utilization.

Component 8 – Public information and education about the trauma system.

- Develop a public website and social media connecting the general public to the trauma system.
- Partner with EMS training programs to offer trauma continuing education for EMS providers.
- Partner with physician residency and allied health programs for mutual educational opportunities.
- Collaborate with stakeholders on Trauma Awareness Day events.
- Produce a periodic Trauma System Report for the Board of County Commissioners (BOCC) and public.
- Explore the integration of trauma system data with FDOT traffic safety programs.
- Promote more involvement of EMS providers with FDOT programs.
- Partner with and help facilitate local, regional, and state injury prevention programs.
- Explore opportunities for Trauma Agency participation in publishable peer-reviewed research.
- Partner with the Health Care Coalitions and others in regional trauma and disaster planning.

Component 9 – Emergency medical services communication system usage and dispatching.

- Partner with the Emergency Medical Planning Council (EMPC) and others in work to enhance the EMS communications systems; particularly in providing up-to-the-minute hospital status during a Mass Casualty Incident (MCI) and coordination of patient allocation.

Component 10 – The coordination and integration between the trauma center and other acute care hospitals.

- Provide trauma care and transfer guidance outreach to hospital and free-standing emergency departments.
- Facilitate uniform/unified trauma care training between trauma centers and acute care hospitals.
- Facilitate work between acute care hospitals and trauma centers to analyze and strategize improvements to trauma patient transfer times.
- Develop an effective, HIPPA compliant, feedback process between EMS, transferring facilities, and trauma centers.

Component 11 – *Medical control and accountability.*

- Establish a physician forum to enhance EMS Medical Director collaboration.

Component 12 – *Quality control and system evaluation.*

- Work with stakeholder partners to integrate individual quality controls and evaluations between stakeholders and use those integrations in system quality control and evaluation efforts.
- Identify and implement system metrics in accordance with industry standards.
- Develop improved means of peer-driven case reviews and patient care quality assurance proceedings.
- Assist the trauma centers and EMS providers in partnering to meet current and future trauma center quality management program requirements.

PUBLIC COMMENT

A public hearing was held March 14, 2022 to receive public comment regarding this plan. No comments were offered. A recording of the proceedings is available from the Trauma Agency.

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State of Florida
County of Hillsborough,
Before the undersigned authority personally appeared

Patrick Manteiga

who under oath says he is the Publisher of La Gaceta, a weekly newspaper published in Tampa, Hillsborough County, Florida, that the attached copy of advertisement, being a

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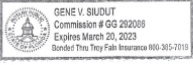
in the matter of INCLUSIVE TRAUMA SYSTEM 2022-2026

Legal Advertisement
Attached To
Reverse Side

In the Thirteenth Judicial Circuit Court, was published in said newspaper in the issues of 03/04/2022

Affiant further says that the said La Gaceta is a newspaper published in Tampa, in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each week and has been entered as second class mailing matter at the post office in Tampa, in said Hillsborough County, Florida, for a period of one year preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

_____ personally known sworn to and subscribed before me
on this 4TH day of MARCH, A.D. 2022



Public Notice


The Hillsborough County Trauma Agency will hold a public hearing at the Hillsborough County Public Safety Operations Complex located at 9450 E. Columbus Dr., Tampa, FL 33619 on Monday March 14, 2022, at 2:00 p.m. to receive public comments regarding the proposed Hillsborough County 5-Year Strategic Plan for an Inclusive Trauma System 2022-2026. Parties wishing to provide verbal comments must pre-register by contacting the Trauma Agency (as below) by 12:00 p.m. March 14, 2022. Registered parties will be given the option to provide verbal comments either in-person, via virtual link, or via telephone link. Written comments may also be submitted and must be received by the Trauma Agency (as below) by 12:00 p.m. March 14, 2022. In accordance with the Americans with Disabilities Act (ADA), persons needing special accommodations to participate in these proceedings should contact the Trauma Agency (as below) with a general description of their needs. For a copy of the Plan, contact the Trauma Agency (as below).

For more information, to register for verbal comments, to provide written comments, to request special (ADA) accommodations, or to obtain a copy of the Plan, contact the Trauma Agency at (813) 276-2051, HCS-TraumaAgency@HillsboroughCounty.org, or Hillsborough County Trauma Agency, c/o Health Care Services 16th Floor, PO Box 1110, Tampa, FL 33601.

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BOARD of COUNTY COMMISSIONERS APPROVAL

The Hillsborough County Board of County Commissioners (BOCC) approved this plan on May 4, 2022.

	Agenda Item Cover Sheet	Agenda Item N ^o . <u>A-15</u>
		Meeting Date <u>5/4/2022</u>
<input checked="" type="checkbox"/> Consent Section <input type="checkbox"/> Regular Section <input type="checkbox"/> Public Hearing		
Subject: Hillsborough County 5-Year Strategic Plan for an Inclusive Trauma System 2022-2026		
Department Name: Health Care Services		
Contact Person: Gene Earley		Contact Phone: 813-301-7356
Sign-Off Approvals:		
Tracy Gogichaishvili 4/22/2022 <small>Assistant County Administrator Date</small>	Gene Earley 4/21/2022 <small>Department Director Date</small>	
Kevin Brickey 4/21/2022 <small>Management and Budget – Date</small> Approved as to Financial Impact Accuracy	Katherine Benson 4/21/2022 <small>County Attorney – Date</small> Approved as to Legal Sufficiency	
N/A N/A <small>Deputy or Chief County Administrator Date</small>		
Staff's Recommended Board Motion: Approve the Hillsborough County 5-Year Strategic Plan for an Inclusive Trauma System 2022-2026 and its submission to the Florida Department of Health ("FDOH") for approval. There is no financial impact.		
Financial Impact Statement: There is no financial impact.		
Background: The Hillsborough County Trauma Agency is an administrative office, organizationally positioned under the Health Care Services Department. It derives its authority to operate from Chapter 395, Part II of the Florida Statutes, and section 64J-2 of the Florida Administrative Code. Section 395.401, F.S., requires the Trauma Agency, every 5 years, to develop and submit to FDOH a plan for the regional trauma system. The prior plan was in effect through May 1, 2022. The new plan, developed in consultation with the EMS providers, trauma centers, hospitals, and other stakeholders, will take effect immediately upon approval by the FDOH and be in effect until 2026. Since 1990, the Board of County Commissioners has authorized and FDOH has approved a regional trauma system for the care of severely injured and promotion of injury prevention in Hillsborough County.		
The County Attorney's Office review of this 5-Year Strategic Plan for an Inclusive Trauma System 2022-2026 was limited to the Plan's compliance with the statutory requirements and did not include review or analysis of the duties, obligations, or compliance of the individual participants and stakeholders.		
List Attachments: Hillsborough County 5-Year Strategic Plan for an Inclusive Trauma System 2022-2026		

FLORIDA DEPARTMENT OF HEALTH APPROVAL**Mission:**

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



Ron DeSantis
Governor

Joseph A. Ladapo, MD, PhD
State Surgeon General

Vision: To be the Healthiest State in the Nation

June 7, 2022

Via Electronic Mail

Mr. Michael Tayler
Hillsborough County Trauma Agency
601 E. Kennedy Blvd
P.O. Box 1110
Tampa, FL 33601

Dear Mr. Tayler,

We have completed our review of the Hillsborough County Trauma Agency plan and are pleased to inform you that your plan update has been approved in accordance with section 395.4015(1), F.S. The updated plan and appendices that you submitted will be the documents that will be used should we have cause to discuss your plan in the future.

Please be advised that pursuant to section 395.401(1)(n) F.S., the trauma agency will be required to submit an updated trauma agency plan five years from the date of this letter. However, you may experience substantial changes in your trauma system prior to the next statutorily required update. With substantial changes to your trauma system, you may need to revise your plan and resubmit it to this office for approval.

Thank you for your longtime commitment to trauma care in Florida. We look forward to working with you in the future. Please feel free to contact me at (850) 245-4054.

Sincerely,



Kate Kocivar
Trauma Section Administrator

REFERENCES

- ⁱ National Center for Injury Prevention and Control. (2014). *Data & Statistics (WISQARS™): Cost of Injury Reports* [Website Application]. Centers for Disease Control and Prevention (CDC). https://wisqars.cdc.gov:8443/costT/cost_Part1_Intro.jsp
- ⁱⁱ National Center for Injury Prevention and Control. (n.d.). *Cost of Injury & Calculators | WISQARS | Injury Center | CDC*. Centers for Disease Control and Prevention (CDC). Retrieved February 10, 2021, from <https://www.cdc.gov/injury/wisqars/cost/>
- ⁱⁱⁱ Florence, C., Haegerich, T., Simon, T., Zhou, C., & Luo, F. (2015, October 2). *Estimated Lifetime Medical and Work-Loss Costs of Emergency Department–Treated Nonfatal Injuries — United States, 2013*. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6438a5.htm>
- ^{iv} National Center for Injury Prevention and Control. (n.d.-b). *Severe TBI | Concussion | Traumatic Brain Injury | CDC Injury Center*. Centers for Disease Control and Prevention (CDC). Retrieved February 10, 2021, from <https://www.cdc.gov/traumaticbraininjury/severe.html>
- ^v Education Development Center. (2017, November). *The Medical Costs of Childhood Injuries: Hospitalizations | Children’s Safety Network*. Children’s Safety Network (CSN). <https://www.childrensafetynetwork.org/infographics/cost-hospitalizations>
- ^{vi} Cunningham, R. M., Walton, M. A., & Carter, P. M. (2018). The Major Causes of Death in Children and Adolescents in the United States. *New England Journal of Medicine*, 379(25), 2468–2475. <https://www.nejm.org/doi/full/10.1056/NEJMSr1804754>
- ^{vii} American Burn Association. (2017, May 8). *Burn Incidence Fact Sheet – American Burn Association*. American Burn Association (ABA). <http://ameriburn.org/who-we-are/media/burn-incidence-fact-sheet/>
- ^{viii} National Center for Injury Prevention and Control. (2017, February 10). *Important Facts about Falls | Home and Recreational Safety | CDC Injury Center*. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>
- ^{ix} National Center for Injury Prevention and Control. (2020, July 9). *Cost of Older Adult Falls | Home and Recreational Safety | CDC Injury Center*. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/homeandrecreationalafety/falls/data/fallcost.html>
- ^x Weiss, A. J., Reid, L. D., & Barrett, M. L. (2020, November). *Overview of Emergency Department Visits Related to Injuries, by Cause of Injury, 2017 #266*. Agency for Healthcare Research and Quality (AHRQ) - Healthcare Cost and Utilization Project (H-CUP). <https://www.hcup-us.ahrq.gov/reports/statbriefs/sb266-Injuries-Causes-ED-Visits-2017.jsp#>
- ^{xi} Kochanek, K. D., Xu, J., & Arias, E. (2020, December 22). *Mortality in the United States, 2019*. Centers for Disease Control and Prevention (CDC) - National Center for Health Statistics. <https://www.cdc.gov/nchs/products/databriefs/db395.htm>

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- xii National Center for Health Statistics/Division of Analysis and Epidemiology. (2019, October 30). *Data Finder - Health, United States, 2018 (Table 006 - Leading causes of death and numbers of deaths, by sex, race, and Hispanic origin: United States, 1980 and 2017)*. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/nchs/hus/contents2018.htm>
- xiii National Center for Injury Prevention and Control. (2021, March 11). *Deaths from Older Adult Falls | Home and Recreational Safety | CDC Injury Center*. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/homeandrecreationsafety/falls/data/deaths-from-falls.html>
- xiv National Safety Council. (2021, February 12). *Societal Costs*. Injury Facts. <https://injuryfacts.nsc.org/all-injuries/costs/societal-costs/>
- xv Florida Department of Transportation. (2021, March). *Florida Strategic Highway Safety Plan*. FDOT Safety Office. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/safety/shsp-2021/shsp_mar21.pdf?sfvrsn=5452dad_0
- xvi Signal Four Analytics. (2020). *Florida Traffic Safety Dashboard (S4 nextgen version 1.0)* [Website Application]. Geoplan Center of University of Florida. <https://signal4analytics.com/>
- xvii Florida Department of Transportation. (2021, March). *Florida Strategic Highway Safety Plan*. FDOT Safety Office. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/safety/shsp-2021/shsp_mar21.pdf?sfvrsn=5452dad_0
- xviii Signal Four Analytics. (2020). *Florida Traffic Safety Dashboard (S4 nextgen version 1.0)* [Website Application]. Geoplan Center of University of Florida. <https://signal4analytics.com/>
- xix Bureau of Community Health Assessment - Division of Public Health Statistics and Performance Management. (2019). *Profile of Non-Fatal Injury Hospitalizations* [Website Application]. Florida Department of Health. <http://www.flhealthcharts.com/ChartsReports/rdPage.aspx?rdReport=ChartsProfiles.NonFatalInjuryHospitalizationsProfileDASHBOARD>
- xx Bureau of Community Health Assessment, Division of Public Health and Performance Management. (2019). *County health status summary profile - 2019*. Florida Department of Health. <http://www.flhealthcharts.com/ChartsReports/rdPage.aspx?rdReport=ChartsProfiles.CountyHealthSummary>
- xxi Kwon, A. M., Garbett, N. C., & Kloecker, G. H. (2014). Pooled preventable death rates in trauma patients (Abstract). *European Journal of Trauma and Emergency Surgery*, 40(3), 279–285. <https://pubmed.ncbi.nlm.nih.gov/26816061/>
- xxii *Underlying Cause of Death, 1999–2019*. (2019). [CDC Wide-ranging Online Data for Epidemiologic Research (CDC WONDER)]. Centers for Disease Control and Prevention (CDC). <https://wonder.cdc.gov/ucd-icd10.html>
- xxiii Cunningham, R. M., Walton, M. A., & Carter, P. M. (2018b). The Major Causes of Death in Children and Adolescents in the United States. *New England Journal of Medicine*, 379(25), 2468–2475. <https://www.nejm.org/doi/full/10.1056/NEJMSr1804754>

- ^{xxiv} 93rd U.S. Congress. (1973, November 16). *Public law 93–154: Emergency medical services systems act of 1973*. Congress.GOV. <https://www.congress.gov/bill/93rd-congress/senate-bill/2410/text>
- ^{xxv} MacKenzie, E. J., Rivara, F. P., Jurkovich, G. J., Nathens, A. B., Frey, K. P., Egleston, B. L., Salkever, D. S., & Scharfstein, D. O. (2006). A national evaluation of the effect of trauma-center care on mortality. *New England Journal of Medicine*, 354(4), 366–378. <https://www.nejm.org/doi/full/10.1056/NEJMsa052049?query=NC>
- ^{xxvi} Health Resources and Services Administration (HRSA). (2006, February). *Model Trauma System Planning and Evaluation*. U.S. Department of Health and Human Services (HHS). <https://www.hsdl.org/?abstract&did=463554>
- ^{xxvii} Health Resources and Services Administration (HRSA). (2006, February, Page 9). *Model Trauma System Planning and Evaluation*. U.S. Department of Health and Human Services (HHS). <https://www.hsdl.org/?abstract&did=463554>
- ^{xxviii} American Trauma Society. (2004, March. Page 4). *Trauma System Agenda for the Future* (DOT HS 809 675). U.S. Department of Transportation - National Highway Traffic Safety Administration (NHTSA). https://www.ems.gov/pdf/advancing-ems-systems/Provider-Resources/EMS_Trauma_Agenda.pdf
- ^{xxix} Health Resources and Services Administration (HRSA). (2006, February, Page 7). *Model Trauma System Planning and Evaluation*. U.S. Department of Health and Human Services (HHS). <https://www.hsdl.org/?abstract&did=463554>
- ^{xxx} University of South Florida & FDOH Division of Emergency Medical Operations - Office of Trauma. (2004). *A Comprehensive Assessment of the Florida Trauma System*. Florida Department of Health. <https://www.hillsboroughcounty.org/library/hillsborough/media-center/documents/trauma/2004-comprehensive-assessment.pdf?la=en>