

# Trauma System Report -- February 1999 "Timely Access to Trauma Care"

A Report Directed by the 1998 Legislature's Appropriation Bill, Section 3-Human Services

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## EXECUTIVE SUMMARY

The 1998 Florida Legislature charged the Department of Health in proviso language with developing a report and proposals on how best to ensure that patients requiring trauma care have timely access to a trauma center. The parameters for the study were to focus on four areas, as follows:

- Strategic geographical location of trauma centers;
- Mandatory hospital trauma transfer criteria;
- Emergency medical ground and air transport needs; and
- Medicaid reimbursement for trauma care.

A committee was established to assist the department with the study. Dr. Laurie Romig and Dr. Larry Lottenberg served as co-chairs of this committee and members were selected to represent expertise in the various areas of the trauma community. A series of monthly committee meetings began in early September 1998, with a final meeting on January 6, 1999.

There were recent events in the state that contributed to the need for the study of access to trauma care. In 1997, there were two cases in which seriously injured trauma victims were not transported or transferred to trauma centers. In these cases, there were no trauma centers in the counties where the patients were injured, but there were such centers in nearby counties. The legislature responded to the public concerns regarding these cases by directing the department to evaluate the current trauma system and make recommendations on ensuring timely access to trauma centers.

### **Summary Recommendations of the Committee**

In responding to the legislative charge regarding access to care, the committee analyzed why certain problems have occurred in Florida's trauma system. The committee found that Florida's trauma system is fragmented, preventing patients who require trauma care from timely access to trauma centers. The committee identified lack of funding and lack of enforcement authority over all aspects of the trauma system as two contributing factors to the current status of Florida's trauma system. The committee has recommended actions addressing both these areas. In

addition, the recommendations are placed within the expanded framework of an inclusive trauma system, while strengthening the role of regionalized trauma systems. This concept facilitates local authority and flexibility to address unique system needs in different parts of the state. At the same time, it incorporates additional trauma care providers into the state trauma system. The committee recommendations can be summarized as follows:

- ❖ The committee recognized the importance of having a regional substructure for the state trauma system. The regional substructure would be the focal point for system planning, coordination, evaluation, and quality management activities. All participants in the delivery of trauma care would be expected to participate in regional quality management activities, with leadership provided by state-approved trauma agencies.
- ❖ The committee proposed that the long-term goal for timely access to trauma centers should be to assure that every trauma victim can have access to a trauma center, either by emergency medical ground or air transport, within 30 minutes of beginning transport. Realizing that the cost to implement such a system is very high, the committee has proposed strategies to stage, prioritize, and fund growth in the number and location of trauma centers. These strategies are designed to improve timely access to trauma centers.
- ❖ The committee recommended the development and enforcement of mandatory transfer criteria. The operation of the criteria would take place within the regional structure and with pre-established formal agreements between every acute-care facility and a trauma center. Essential to this concept would be the consultation between the physician performing the patient assessment at an acute care hospital and the trauma surgeon at the partnering trauma center. This joint consultation should occur within 30 minutes of the arrival and identification of the trauma victim at the acute care hospital.
- ❖ The committee recommended strengthening the state and regional system evaluation through development of comprehensive quality management programs. Evaluating system performance, resolving problems, and instituting system improvements will allow Florida's trauma system to meet the needs of trauma victims.

- ❖ Because of the limited timeframe for the study, the committee was unable to develop specific cost information about unfunded trauma care for EMS prehospital service providers, interfacility transport providers or hospitals. The committee proposed the development of a uniform cost accounting methodology for each aspect of trauma care. The implementation of the methodology would provide the information necessary to support future requests for funding.

## **Conclusions**

Florida, because of the fragmented nature of its trauma system, has a problem with timely access to trauma care. There are isolated pockets of excellence, where timely access is a reality, but not a statewide trauma system. Timely access to trauma care occurs in a few locations because of the operation of a regionalized trauma system, including trauma care delivered by EMS prehospital and trauma centers and coordinated by a trauma agency. Only the prehospital component of emergency medical transportation in Florida's trauma system can begin to be considered statewide in nature.

The Department of Health is dedicated to developing a statewide trauma system which ensures that patients requiring trauma care have timely access to trauma centers. It is the intent of the department to take the following actions, based on the recommendations of the committee. These are actions to address the problem of timely access to trauma care and move the state trauma system into the next century.

- ❖ Undertake those committee recommendations for which no additional authority is required:
  - Prepare a state trauma system plan based on the concept of an inclusive trauma system.
  - Develop an evaluation methodology for the state trauma system which incorporates the concept of an inclusive trauma system and which will identify potential problems, especially with regard to timely access to care.
  - Develop an interagency agreement with the Agency for Health Care Administration to jointly address common issues of implementing an inclusive trauma system, especially those regarding all acute care hospitals, Medicaid and managed care.

- Revise the standards for pediatric trauma referral centers.
- Conduct a study to establish an improved methodology for determining the volume of trauma patients and their relative severity of injury.
- Complete the development of criteria which would be the future basis for mandatory consultation and transfer of trauma victims to trauma centers.
- Develop a scope of work for the study to develop a uniform cost-accounting methodology for the cost of trauma care.
- Support the increased level of personal injury protection insurance coverage from \$10,000 to \$20,000.
- Support the addition of motorcycles to the categories of motor vehicles required to have personal injury protection insurance coverage.
- Assess the statewide training needs of first responders.

❖ Request from the Florida Legislature:

- Expanded and clarified language of intent regarding establishment of an inclusive trauma system.
- Revised language for the definition of a trauma victim.
- Expanded role of trauma agencies and revised time frame for regional trauma system plans.
- Additional authority for the department to perform functions of a trauma agency in the temporary absence of an operational trauma agency.
- Additional authority for the department for the assignment of counties to trauma service areas.
- New responsibility for the medical director of an EMS provider to have full medical accountability for the trauma victim during transfer.
- Additional authority for the department for oversight and performance monitoring of medical directors of EMS providers for compliance with trauma system performance standards.
- Authorization for seeking recommended waivers and exemptions from federal requirements for Medicaid.
- Funding for the development and operation of trauma agencies, including completion of regional trauma system plans for each trauma service area.

- Immunity from liability for trauma surgeons for the newly proposed responsibility of consultation on certain trauma victims assessed at acute care hospitals other than trauma centers.
  
- ❖ Prepare legislative budget requests for the 2000 legislative session for funding:
  - A study of the cost of trauma care and the development of a uniform cost accounting methodology for trauma care, for both prehospital and hospital.
  - Development of a regional transportation system to facilitate timely access to trauma centers.

The Trauma System Report, submitted by the Department of Health to the Florida Legislature in February 1999, presents a strategy to achieve the goal of timely access to trauma care.

## INTRODUCTION

### PURPOSE

The 1998 Florida Legislature charged the Department of Health in proviso language with developing a report and proposals on how best to ensure that patients requiring trauma care have timely access to a trauma center. The department, as directed by the Legislature, asked the Emergency Medical Services Advisory Council to appoint a committee to assist the department in developing the report and proposals. Individuals representing trauma constituencies were appointed to the committee by the chairman of the EMS Advisory Council. Appendix A is the proviso language and Appendix B lists committee members and other individuals who contributed to this report.

The parameters for the study were to focus on four areas in addressing the primary charge of access to trauma centers. These four areas are as follows:

- Strategic geographical location of trauma centers;
- Mandatory trauma transfer criteria;
- Emergency medical ground and air transport needs; and
- Medicaid reimbursement for trauma care.

The committee, during their deliberations, determined that there were two other specific topics critical to ensuring timely access to trauma centers. These additional topics are (1) funding the development and operation of the trauma system and (2) trauma system evaluation.

There are recent events which contributed to the need for the study of access to trauma care. In 1997, there were two cases in which seriously injured trauma victims were not transported or transferred to trauma centers. In these cases, there were no trauma centers in the counties where the patients were injured, but there were such centers in nearby counties. The legislature responded to the public concerns regarding these cases by directing the department to evaluate the current trauma system and make recommendations on ensuring timely access to trauma centers.

## **THE ROLE OF THE TRAUMA SYSTEM STUDY COMMITTEE**

The Trauma System Study Committee was appointed in July 1998. Two physicians were appointed as co-chair: Dr. Laurie Romig and Dr. Larry Lottenberg. A steering committee was established to work with the co-chairs to establish the agenda for the committee and to serve as a sounding board for discussion during the study. Several conference calls were held prior to the initial meeting of the Trauma System Study Committee and additional conference calls were held between subsequent committee meetings in order to minimize project costs and time away from the office for the volunteer participants.

The committee met monthly between September 1998 and January 1999. At the first committee meeting, the members were given an overview of the legislative charge to the department and committee and the current status of Florida's trauma system. Two subcommittees were established at that meeting, one to address mandatory trauma transfer criteria and emergency medical ground and air transport needs, and one to address Medicaid reimbursement of trauma care and other funding needs of the trauma system. A third subcommittee was established later to address two related topics, trauma data and system evaluation. The fourth subcommittee was established to begin the task of developing transfer criteria. This group was comprised of trauma surgeons, emergency physicians, and medical directors for emergency medical services providers. There were some participants in these subcommittees who were not members of the committee. Their participation, at the invitation of the committee and with the support of the department, broadened the knowledge and experience base of committee.

The work schedule maintained by the committee was very intense. They addressed many diverse issues in an effort to provide comprehensive recommendations to the department. The committee found that further study, system planning, and evaluation will need to occur as part of the development of an inclusive trauma system for Florida. A summary of committee recommendations can be found in Appendix C.

## **BACKGROUND**

Trauma was defined, for the purposes of this study, as a single or multisystem injury due to blunt or penetrating means or burns that requires immediate medical intervention or treatment. Trauma centers are hospitals that have been verified by the department as meeting state-established standards for care of the trauma victim. The complete continuum of care of a trauma victim begins at the time of injury, includes care in both prehospital and hospital settings, and continues at least through rehabilitative care. Trauma agencies are county-based administrative organizations, approved by the department, that provide leadership to regional trauma systems. As with many areas of health care, the evolving field of trauma care has generated unique terminology. A general explanation of terms used in this report will be provided in the narrative and more complete definitions can be found in Appendix D.

Historically, the Legislature passed trauma care legislation in the early 1980's. There was not a system approach to trauma care at that time. During the first five or six years after passage of such law, a number of trauma centers were established through a process which combined self-designation and an application approval process by the state. In the mid-1980's, there were 33 trauma centers recognized in Florida. The number of trauma centers dropped to 12 by 1988, due primarily to the cost of providing trauma care and competition for scarce resources.

The Health Care Cost Containment Board, which was later merged into the Agency for Health Care Administration, conducted a study on the cost of trauma care in Florida from September 1987 to February 1989. They issued a report in February 1989, *Trauma Care Costs in Florida*. In 1989, a study was conducted by the Department of Health and Rehabilitative Services at the direction of the 1989 Florida Legislature. It resulted in the February 1990 document, *A Report And Proposal For Funding State-Sponsored Trauma Centers*.

As documented in these two reports, Florida reflected a problematic national trend of hospitals dropping their status as trauma centers in a state trauma system. This trend was reported numerous places, including *An American Crisis in Trauma Care Reimbursement* by Howard R. Champion, M.D. and Marcia S. Mabee, Ph.D., 1990, and a report from the United States General Accounting Office, *Trauma Care: Lifesaving System Threatened by Unreimbursed Costs and Other Factors*, May 1991.

The 1990 Florida study resulted in a report and proposal for funding trauma centers in a manner that would maximize the effectiveness of funding dollars and ensure adequate trauma care throughout the state. The 1990 Florida Legislature received the report and passed major trauma legislation and appropriated more than \$20 million to be used for funding statewide trauma initiatives. Unfortunately, due to severe budget shortfalls experienced by Florida that year, these funds were never made available. Neither were they reappropriated in any future year up to, and including, 1998.

Chapter 90-284, Laws of Florida, established multiple components for a more systematic approach to the provision of trauma care. The intent was to have a statewide network of trauma agencies and trauma centers, with patients being delivered from the scene to trauma centers by EMS providers. Trauma agencies were to serve as the lead agency for regional systems of care. Trauma centers were designed to provide specialized and comprehensive care to trauma victims, and EMS providers were to identify trauma victims at the scene of the injury and transport them to trauma centers in accordance with trauma transport protocols.

At the national level, Congress established the Health Resources and Services Administration, U.S. Department of Health and Human Services, as the focal point for trauma systems. In an effort to revitalize trauma system development efforts at the state level, Congress passed the Trauma Care Systems Planning and Development Act of 1990. Funding was provided to states under a competitive grant program through 1995. As part of this initiative, a model trauma care systems plan was developed to guide states in the process of developing inclusive trauma systems. Florida benefited from this federal program, receiving more than \$250,000. The federal program ended in 1995 but national organizations such as the American Trauma Society, the American College of Surgeons, and the American College of Emergency Physicians have continued to request that the program be re-established.

The department has traditionally looked to the national level, including federal agencies and national organizations, as well as to state level trauma constituency groups, for assistance in planning and developing Florida's trauma system. The recommendations in this report are generally consistent with policies and recommendations published by the U.S. Department of Health and Human Services in the *Model Trauma Care Systems Plan*, 1992; the American College of Surgeons Committee on Trauma in the *Resources for the Optimal Care of the Injured Patient*, 1999; and the Institute of Medicine Committee on Injury Prevention and Control in *Reducing the Burden of Injury*, 1999.

## **FLORIDA'S TRAUMA SYSTEM TODAY**

For the past seven years, Florida's trauma system has experienced slow growth. Pursuant to Chapter 395, Part II, Florida Statutes, the assignment of counties into 19 trauma service areas is still in effect. This information can be found in Appendix E. There are currently 19 trauma centers operating in eleven service areas. Map 1 in Appendix F shows the location of these verified trauma centers. During this time period, five trauma agencies were established; four were single-county agencies and one agency included eleven counties. However, in 1998, Dade County requested the department to withdraw its status as a trauma agency. The remaining trauma agencies and the counties they each cover are shown on Map 2, Appendix F. The 19 trauma service area boundaries can also be seen on both maps.

Since the passage of Chapter 90-284, Laws of Florida, there have been minor revisions. These changes have addressed the way the system operates rather than creating major structural revisions. The final analysis is that Florida has isolated pockets of excellence but not a statewide trauma system. Only the prehospital component of emergency medical transportation in Florida's trauma system can begin to be considered statewide in nature.

There have also been external forces acting on Florida's trauma system: advances in medical practices, both prehospital and hospital; a more mature emergency medical services prehospital system; and federal and state requirements such as managed care; COBRA, the federal consolidated omnibus budget reconciliation act; and other access to care regulation. Overall, these forces have apparently resulted in an improvement in the provision of trauma care through improved and more timely access to care. However, while national health care initiatives address emergency access to care, placing a burden on care providers, it has only addressed payment for these services in a limited fashion, through Medicare. Also, as recent experiences have shown, there are still serious needs for further advancement in Florida's trauma system.

Florida trauma system development and improvement activities since 1990 have included the following:

- Creation of a standing subcommittee on trauma within the Emergency Medical Services Advisory Council;
- Development and implementation of new pediatric trauma alert criteria;
- Development of new adult trauma alert criteria for use by EMS providers; and

- Revision of Trauma Center Standards to address issues within our state trauma system as well as to reflect new policies of the American College of Surgeons, Committee on Trauma.

The Department of Health receives approximately \$1.5 million annually to administer the state trauma system. The majority of these funds are used to pay for the survey process for trauma center verification and reverification. This is one of the few incentives the department has to offer a hospital considering becoming a trauma center. In many other states, each hospital has to pay for the survey process. In Florida, this process is handled in a highly professional manner, with experts in the trauma field from across the nation contracted to provide this service. These funds also support department staff who review and approve trauma agency plans and trauma center applications, work with prehospital and hospital data for system evaluation, staff the survey process and plan trauma system operation on a statewide level.

### **WHO NEEDS ACCESS: DEFINING THE TRAUMA POPULATION**

In order to know who needs access to trauma centers, the trauma population must be identified. The methodological tools to identify the population are less than exact. Nationally, certain methodologies have become accepted as retrospective measures of trauma, meaning that the information to make the determination is not available until after the patient is discharged from the hospital. They traditionally take advantage of hospital discharge databases that are maintained by each state. The prospective measure of identifying trauma victims who meet trauma alert criteria is conducted by EMS service personnel at the time of initial contact with the patient. While there are state established minimum criteria for identifying trauma alert patients, there is no uniform statewide source of data that contains this information.

The retrospective methodologies used by the committee are consistent with commonly accepted national methodologies and are described in this section of the report. Additional details of the methodology and related information documentation are found in Appendix G.

The committee used the 1996 hospital discharge database from the Agency for Health Care Administration to identify Florida's trauma population. This was the most recent year for which consistent data was available for the full 12-month period. This database includes only cases of trauma victims who survive to the point of admission to a hospital. This section includes a

general explanation of the information provided to the committee. More complete information documentation is found in Appendix G.

Analysis of this database was conducted by department staff, using standard software such as SPSS® and EXCEL®. A specialized program known as the MacKenzie Algorithm was used to generate additional information from the AHCA database, specifically the assignment of Injury Severity Scores.

Injury Severity Scores, commonly referred to as ISS, are one method for identifying the volume and injury severity of trauma victims. Using the methodology described above, and taking only those cases having at least one trauma diagnosis of ten possible diagnoses at discharge, 116,687 cases were identified as trauma victims in 1996.

The ISS methodology is currently referenced in Chapter 395, Part II, Florida Statutes, as the basis for determining the need for a given number and location of trauma centers. Trauma victims with an ISS of 9 or above are considered in statute to require access to a trauma center. The following numbers illustrate the volume of such trauma victims and whether or not they received care at a trauma center.

<u>ISS 9+</u>	<u>Trauma Center</u>	<u>Other Acute Care Hospital</u>
49,676	14,712	34,964
	29.6%	70.4%

These numbers are calculated using the 1996 hospital discharge database and counting all trauma centers operating in July 1998 as a trauma center. This manipulation was done to give the most current picture of the trauma population and the status of access to trauma centers. This is the topic addressed in Chapter 1 of this report.

## CHAPTER 1

### Access to Trauma Care: A System Approach

#### **Defining the Issue:**

***Florida's system of trauma care is fragmented, preventing timely access to trauma centers for injured persons needing trauma care.***

The primary charge to the committee and the department was to study “how best to ensure that patients requiring trauma care have timely access to a trauma center”. Trauma centers are just one component of a trauma system and, in order to fully address the charge, the committee found it appropriate to use the complete framework of a trauma system to evaluate the current status of trauma care in Florida and make the recommendations to the Florida Legislature. Trauma systems, especially regionalized systems, have been shown in national and Florida-based studies to reduce preventable death.

An inclusive trauma system is recommended by national organizations as the most appropriate approach for a state trauma system. The fragmented trauma system which exists in Florida today is not capable of providing timely access to trauma centers or the continuum of care that is needed by trauma victims.

#### **I. System Framework**

##### **Discussion:**

The committee has found that an inclusive systems approach would be the most productive for Florida. The committee reviewed the current status of trauma system development across the state and found a fragmented system with pockets of excellence.

The purpose of a system approach is to comprehensively assess need, evaluate performance, and improve the process and outcome of the care of the trauma victim. An inclusive trauma system is designed to meet the needs of all injured patients who require care in an acute care setting. It is a system in which every health care provider or facility with resources to care for the injured patient is incorporated. The committee has suggested that participants in the trauma system should include, but not be limited to: emergency medical prehospital providers, first responders, EMS training centers, units of general local government, insurance providers, managed care organizations, physicians, acute care hospitals, trauma centers, medical examiners, trauma agencies, other health planning organizations, and rehabilitation facilities.

The need to develop inclusive trauma systems has been promoted at the national level since passage of the Trauma Care Systems Planning and Development Act of 1990. This concept has the support of organizations such as the American Trauma Society, the Committee on Trauma of the American College of Surgeons, and the American College of Emergency Physicians. These organizations and others participated with the U.S. Department of Health and Human Services in the development of the 1992 *Model Trauma Systems Plan*.

The committee reviewed the definition of trauma victim provided in ch. 395, F.S., and found that certain revisions would make it more accurately reflect the trauma victim of today. Burns have been included for several years in the definition of a trauma alert victim. Trauma alert victims are the most seriously injured trauma patients, based on assessment in the field by trained emergency medical technicians and paramedics. The committee has proposed a modified definition for trauma victim.

System progress is made by setting goals, achieving them and striving to reach a higher level of performance. The committee has proposed that the goal for timely access to trauma centers should be thirty minutes. It is expected that this goal will be achieved over a period of time. Approximately 80 to 85% of Florida's residents are today within 30 minutes of a trauma center, based on county of residence. It will take system changes addressed in this report to make that access a reality. The issue of timely access is very important in trauma care. National studies have shown that survivability of the trauma victim is increased if definitive care is available as quickly as possible following the injury. Some literature has referred to the "golden hour" as the critical time from injury to definitive care. The committee recognized this overall

timeframe, but focused their recommendations on the time for transport. This is the time period over which there is the most control.

Committee Recommendations:

1. The trauma system for the State of Florida should be inclusive. It should meet the needs of all injured patients who require care in an acute care setting. It should provide for the participation of all health care providers or facilities with resources to provide care for the trauma victim.
2. The statutory definition of trauma victim should be any person who has incurred a single or multisystem injury due to blunt or penetrating means or burns and who requires immediate medical intervention or treatment.
3. The goal for timely access to trauma centers should be to assure that every trauma victim can be delivered to a trauma center, either by emergency medical ground or air transport, within 30 minutes of beginning transport.

**II. Regional Approach**

Discussion:

The state trauma system is designed using a regional structure. The intent of the committee and the department is to have one trauma agency providing leadership for each region. The department has the authority to establish trauma regions and has traditionally used the trauma service areas for this purpose, unless requested to do otherwise by a trauma agency. If this pattern continues, there would be 19 trauma regions and, preferably, 19 trauma agencies. It is not the department's desire to have 67 trauma agencies, one for each county. In fact, a trauma service area can combine with an adjacent area for formation and operation of a trauma agency.

Currently ch. 395.401, F.S., calls for the trauma agency to address the coordination and integration between “the verified trauma care facility and the non-verified health care facility”. Because of the potential volume of trauma victims and because of the differing severity of injury of trauma patients, it is critical for all acute care hospitals to be part of a regionally coordinated trauma system with a regional quality management program. The department should provide technical assistance to the trauma agencies in developing and implementing their quality management programs.

The committee recommended two additional functions for trauma agencies. The committee found a need to educate and coordinate trauma centers and EMS providers as to their role in prevention activities. As local leaders, the trauma agency is in the best position to assess needs and avoid duplication of effort by trauma system participants. The role of mediating between managed care providers and other trauma system participants will be a new but necessary responsibility. Given the recommendations of the committee for the inclusion of all acute care hospitals and the growth of managed care in the state, this may make significant demands on the resources of the trauma agencies.

The purposes of the quality management program should be to (i) identify problems and enforce standards through a retrospective performance review and (ii) achieve continuous quality improvement of the system through a problem solving approach. The goal of a mature system of trauma care is to evaluate the current status, identify any problems, and work toward system improvement. This is evidenced, for example, in the Palm Beach trauma system and has been identified as an appropriate goal for all trauma agencies. The trauma agency should refer compliance problems to the department for resolution unless specifically delegated to the trauma agency for enforcement.

Current requirements are for the regional trauma system plan to be updated and submitted to the department annually. The change to a five year planning cycle will be more productive and less burdensome for the trauma agency and the department. The trauma agency will continue to be established based on approval of a regional trauma system plan.

The intent of the committee and the department is to establish the necessary number of trauma agencies. The department should act in the place of an agency only on an emergency or short-term basis. The department's purpose would be to protect the public's health and

safety and to take those steps necessary to re-establish a trauma agency. In such cases, the bureau should work in coordination with the regional EMS Council, the Local Health Planning Council, or similar organizations, where possible and practical, as well as with any county in the regional trauma system.

Committee Recommendations:

1. A trauma agency should be established for each trauma service area.
2. The functions of a trauma agency should be expanded from those currently listed in Chapter 395, Florida Statutes, and Chapter 64E-2, Florida Administrative Code, to include the following:
  - Plan for additional system components for the delivery of trauma services. The list of planning components should be expanded to include prevention initiatives. The regional trauma system plan should also include goals and implementation strategies for pairing all acute care hospitals in the service area with a trauma center to achieve the recommendations of the access to trauma care study.
  - Establish a program for quality management of the regional trauma system. This program should incorporate system evaluation and quality assurance functions of the trauma agency.
  - Educate and coordinate trauma centers and EMS providers as to their role in prevention activities.
  - Establish a process to facilitate mediation of disputes between managed care providers and other trauma system participants.
3. Chapter 395, Florida Statutes, should be amended to require that the regional trauma system plan be revised every five years and submitted for department review and approval. It should be required more frequently only when there are major changes in the regional trauma system or when revisions to statute or administrative rule necessitate a change.
4. Chapter 395, Florida Statutes, should be amended to provide the Department of Health authority to perform the functions of a trauma agency in the temporary absence of an operational trauma agency.

### **III. Statewide System Oversight**

#### **Discussion:**

The committee recommended an expanded level of authority for the department in order to develop an inclusive trauma system. They suggested this topic might appropriately be included in statutory language clarifying the intent to develop a statewide inclusive trauma system. The committee has also recommended establishing minimum requirements for all acute care hospitals regarding their role in the trauma system. This additional step would be critical to success for Florida's trauma system. The lack of such requirements has led to some of the problems with timely access to care that are being experienced today.

Minimum standards should be set at regional as well as state levels. The state goals should become a standard for trauma transport protocols and for transfer agreements. This would guide both the location and development of a sufficient number of trauma centers and the performance of emergency medical ground and air transport services.

The redesign of the trauma system should occur with an awareness of federal regulations for emergency care and patient transfer, particularly the Consolidated Omnibus Budget Reconciliation Act and the Emergency Medical Treatment and Labor Act, commonly referred to as COBRA and EMTALA. If system improvements are identified as needed to appropriately care for trauma victims and that are in conflict with federal standards, the state should seek waivers or revisions to federal requirements.

The role of acute care hospitals is described in Chapter 3, Mandatory Transfer Criteria. The role of regional transportation services and potential expansion of existing transportation services is described in Chapter 4, Emergency Medical Ground and Air Transport Needs.

Chapter 395, Part I, F.S., addresses access to emergency services and care and related responsibilities for all acute care hospitals. Chapter 641, F.S., addresses emergency health care services provided by managed care organizations. It is generally accepted that trauma victims are covered under these two statutes as having an emergency medical condition requiring emergency access to care. However, trauma victims are not listed specifically as an

included group. The committee, while recognizing that the issue is covered in statute, has identified this as a problem area needing enhanced education and enforcement.

The committee has recommended that the Department of Health and the Agency for Health Care Administration should share responsibility to enforce and investigate compliance with trauma system requirements. They envisioned additional roles for the department in relation to all acute care hospitals and managed care. At this time, the Department of Health is not seeking additional authority with regard to managed care. The department will establish an interagency working agreement with the Agency for Health Care Administration to address issues of common interest. The department would retain its current authority over the trauma system and will work with the Agency for Health Care Administration to develop a joint role which reflects the department's interest in trauma care delivered at all acute care hospitals, not just at trauma centers.

Committee Recommendations:

1. The Department of Health should have statutory authority to establish in administrative rule minimum standards for the planning, development, and operation of the state trauma system.
2. Minimum requirements for acute care hospitals regarding their role in the trauma system should be established and monitored on the state and regional levels.
3. The statute definitions in Chapters 395 and 641, Florida Statutes, should be revised to include the requirement that a trauma alert patient, or trauma patient meeting established transfer criteria, automatically meets the emergency access provisions of this section.
4. The trauma patient with a specifically identified emergency medical condition should be covered for stabilization and definitive treatment of that condition as well as for assessment of the condition.

## CHAPTER 2

### Strategic Geographical Location of Trauma Centers

#### Defining the Issue:

***Florida does not have an adequate number of trauma centers distributed statewide to ensure timely access to appropriate trauma care.***

The number and location of trauma centers is a significant factor for ensuring timely access to trauma centers for patients requiring trauma care. Timely access is important to patient outcome, with the most critical time period being from the time of injury to time that definitive care is provided to the trauma victim. Trauma surgeons have found that providing definitive care within an hour of injury greatly enhances survival rates and overall patient outcome.

There must be an adequate number of trauma centers distributed statewide in order to ensure timely access. As presented in Chapter 1, the ideal trauma system would assure that every trauma victim can be delivered to a trauma center within a 30-minute air or ground transport.

The geographical locations of the 19 trauma centers either verified or provisional as of July 1998 are shown on Map 1 in Appendix F. The circles around each trauma center location illustrate a fifty-mile flight radius, which translates into an average 30-minute transport time by helicopter for a trauma victim. Helicopter transport time is used for this illustration because air medical transport allows trauma victims to be transported further distances within the 30-minute timeframe. The unserved areas, those without trauma centers, are easily identified. Eight of 19 trauma service areas currently do not have a trauma center: 2, 3, 4, 6, 12, 13, 14, and 17.

National and international studies of the development of regionalized systems of trauma care continue to support their effectiveness in reducing preventable death. The Florida experience with several small trauma systems has mirrored this effectiveness. It is important that the development of trauma centers occur within the framework of regional trauma systems so that they are part of a coordinated system of care.

## **I. Number and Location of Trauma Centers**

### **Discussion:**

The committee reviewed the 1990 study, "A Report and Proposal For Funding State-Sponsored Trauma Centers" as the starting point for addressing how the strategic geographical location of trauma centers impacts timely access. The 1990 study addressed in detail the number and location of trauma patients in Florida and the resulting need for trauma centers. The recommendation from that study was for a trauma system comprised of 19 trauma service areas with at least one trauma center in every area and 44 to 60 trauma centers developed statewide. The Legislature limited the number of trauma centers to 44 and gave authority to the department to distribute these facilities between the 19 trauma service areas.

The committee conducted an assessment of the status of the trauma system in Florida today. They concluded that there are an inadequate number of trauma centers to meet the needs of trauma victims in the state. They also found that the locations of existing trauma centers are inadequate to meet the needs of trauma patients in the state. Time and distance between these existing centers is too great to allow timely access for all trauma victims.

The committee recommended that several aspects of Florida's trauma system remain unchanged until future data provides a basis to support change. The purpose of trauma service areas in relation to the allocation of trauma centers, and the role of the department and trauma agencies in approving trauma centers, were not found to be barriers to development and operation of a state trauma system. Retaining the limit on the number of trauma centers

was found by the committee to be essential in order to maintain a reasonable volume of patients who are trauma victims as well as to avoid conflicts between competing trauma centers for recruitment of key professional staff.

The committee did recommend that authority to assign counties to trauma service areas should be given to the department. Current authority resides with the Legislature. Shifting this authority to the department will allow flexibility in the system to more quickly respond to changing needs at the local level.

The committee discussed at length whether to request funding for development of new trauma centers as a method to improve access. Ultimately, the committee did not recommend any financial incentives targeted specifically to trauma center development as a short-term priority. Committee recommendations on priorities for trauma system funding are found in Chapter 5 and are focused on identifying and, eventually, requesting reimbursement for unfunded care. Reimbursement for unfunded care may ensure that existing trauma centers can continue to function, especially considering the increased trauma center patient load which would result from implementation of the committee's recommendations. This method of funding would also potentially benefit all hospitals, not just trauma centers. It should also encourage development of trauma centers as previous financial barriers decrease.

The committee found that establishment of trauma centers in the eight unserved trauma service areas should be a priority. This would create a system of minimal statewide coverage of trauma centers and provide access through physical proximity of trauma victims and trauma centers. Additional goals for trauma center development should be established in the state and regional plans for trauma system.

The committee made several recommendations to the department to guide the planning and development of additional trauma centers. Following lengthy review of information, the committee found it appropriate to continue the use of injury severity scores of 9 or greater to determine trauma patient volume. As also discussed in Chapter 6, there are new methodologies being developed; however, none have yet been proven more accurate. The committee developed two additional criteria for use by the department, the overall goal of 30-minute transport time to trauma centers and its equivalent, 50 miles, for helicopter flight times.

All criteria are developed with the intention of providing timely access to trauma centers, so that definitive care can be provided to trauma victims.

The committee discussed potential barriers to the development of trauma centers. They identified barriers ranging from cost of medical care to a shortage in availability of certain specialty areas of medical practice, such as neurosurgery, to meet practice expectations of trauma centers. Although a number of trauma centers dropped out of the Florida trauma program in the 1980's, no hospital has ceased operation as a trauma center since 1991, because of expressed reasons of prohibitive and unreimbursed costs.

Committee Recommendations:

1. At least one trauma center should be developed within each trauma service area.
2. The regional structure of 19 trauma service areas and the assignment of counties between these areas should remain as currently designated in statute and rule, pending further study.
3. The purpose of the trauma service area should be to serve as the geographical basis for allocating the 44 authorized trauma centers.
4. The cap of 44 trauma centers should be retained in Chapter 395, Part II, Florida Statutes.
5. The approval of trauma centers within each trauma service area should continue to reflect the recommendations in state approved trauma system plans of trauma agencies, with ultimate approval responsibility residing with the department.
6. The Department of Health should be given statutory authority to assign counties to trauma service areas.

7. The Department of Health should conduct a review of the regional structure of the 19 trauma service areas and the assignment of the counties between these areas and make changes, if found to be appropriate.
  
8. The following criteria should be considered by the Department of Health in developing administrative rules for the planning and development of additional trauma centers:
  - Thirty minutes should be the system goal for transporting a trauma patient from the scene of the injury to the trauma center by either emergency medical ground or air transport.
  - Fifty miles should be the service radius for rotary wing air-ambulances used for system planning to achieve the 30-minute goal.
  - An Injury Severity Score of 9 or greater should continue to be the criterion for identifying the volume of trauma patients in the state for planning purposes, pending further study.

## **II. Trauma Center Approval**

### Discussion:

The committee found that the current categories of Level I and Level II trauma centers met the needs of Florida's trauma system. Level I and II trauma centers meet standards established by the Department of Health which are based on national standards from the American College of Surgeons. In addition, Level I trauma centers have formal research and education requirements. The committee found that creation of a new category of trauma center, Level III, was unnecessary and inappropriate for Florida. Past experience as well as analysis of current need for trauma centers led to these conclusions.

Pediatric trauma referral centers are intended to meet special needs of a segment of the trauma population, those 15 years of age or younger. There are currently three hospitals that hold only this designation: Sacred Heart Hospital in Pensacola, Miami Children's Hospital in Miami, and All Children's Hospital in St. Petersburg. There are several Level II trauma centers

that also are approved as pediatric trauma referral centers, and all Level I trauma centers must meet the state requirements.

The committee recommended that pediatric trauma referral centers not be counted in the cap of 44 trauma centers. This position was taken to ensure that a Level I or Level II trauma center was developed in each trauma service area. If only one trauma center position was authorized, the department has no authority to deny that position to a pediatric trauma referral center.

There has been debate across the state on the appropriate standards for a pediatric trauma referral center. The department began holding rule workshops on this topic in January of 1999. The committee has recommended to the department that the revised standards include a requirement for each pediatric trauma referral center to have a formal agreement with a trauma center, just as all other acute care hospitals would be required under the recommendations in Chapter 3 of this report.

#### Committee Recommendations:

1. The recognition of two levels of trauma centers, Levels I and II, should be retained.
2. The category of state-approved pediatric trauma referral center should be retained as an additional, separate entity.
3. The Department of Health should revisit the standards for pediatric trauma referral centers.
4. Pediatric trauma referral centers should not be counted against the statewide cap of 44 trauma center positions.
5. The Department of Health should consider whether a cap is needed on the number of pediatric trauma referral centers either statewide or by trauma service area.

## CHAPTER 3

### **Mandatory Hospital Trauma Transfer Criteria:**

#### **Defining the Issue:**

***There is no requirement to transfer a trauma victim from an acute care hospital to a trauma center.***

The potential benefit of mandatory hospital trauma transfer criteria has been under consideration by Florida's trauma constituents for several years. The lack of mandatory hospital trauma transfer criteria, as well as the lack of organized statewide coverage of regional systems of trauma care, have resulted in several types of system problems. Different regions of the state have experienced these problems to varying degrees. The committee confirmed the need to develop mandatory transfer criteria and to provide the Department of Health with the enforcement authority it needs for compliance monitoring of the trauma system.

A major benefit of an inclusive trauma system is the ability for all system participants to preplan to meet the needs of trauma patients in a coordinated, efficient, and cost-effective manner. Although the goal of an inclusive trauma system is to transport all trauma alert patients directly to trauma centers, there will continue to be circumstances in which these patients arrive at non-trauma center acute care hospitals. In these cases, the primary issue is when to transfer a trauma victim from an acute care hospital to a trauma center. The committee identified delays and failure to transfer certain trauma victims to trauma centers as serious trauma system problems.

#### **I. System Requirements**

##### **Discussion:**

The committee recommendations on system framework are made in direct response to observed system weaknesses in delivering trauma care. Two cases were brought to the

attention of the Department of Health in which seriously injured trauma victims, meeting state mandated trauma alert criteria, were transferred from one acute care hospital to a second acute care hospital, reportedly pursuant to state and federal access to emergency care requirements. In these cases, there was a trauma center closer to the initial hospital, but the trauma center was never contacted about the cases. Neither was there any requirement that the trauma center must be contacted or requested to accept trauma victims who cannot be appropriately cared for at the initial hospital.

The committee has recommended a strong framework for the care and movement of trauma victims through the trauma system to avoid future system weaknesses or failures and to provide appropriate trauma care and access to trauma centers. The department needs authority to establish and enforce, or have other appropriate state agencies enforce, system standards on transport and transfer of trauma victims or the problem will continue.

The committee undertook deliberations on the problems caused by the current lack of mandatory minimum statewide transfer criteria. A subcommittee was established which undertook preliminary work on developing such criteria, with assistance from additional physicians in the trauma community. The design of this research project as well as the status of the activity was reported to the committee. The committee also reviewed existing transfer policies in Palm Beach County. Mandatory transfer criteria have been used by the Palm Beach County Trauma Agency in their single-county local system for several years. The committee recognized the complexity of establishing mandatory minimum statewide transfer criteria and found it appropriate to advise that additional time is needed to study the issue. The work initiated by the subcommittee and committee should be the starting point of further action by the department.

The Department of Health proposes that for this task, as for others that involve acute care hospitals, an interagency workteam be established between the department and the Agency for Health Care Administration. This combination of expertise and authority is necessary in order to address the complexity of issues.

Trauma centers and trauma agencies already have limited requirements for working with all acute care hospitals to develop regionalized systems of care. Because these requirements were not also placed on acute care hospitals it has been a difficult task to accomplish. The

recommendations of the committee strengthen the expectations and requirements for both trauma centers and trauma agencies while recommending additional authority as well.

The recommendations also clearly address the need for specific requirements for all acute care hospitals to become active partners in the state trauma system. The use of written agreements appears to be an effective way to bring all acute care hospitals into the inclusive trauma system. The purposes of the formal relationship are to: (a) allow the trauma center to provide training to the staff at the acute care hospital; (b) provide consultation on the care of trauma victims; (c) provide for transfer, when appropriate; and, (d) require participation in regional quality assurance activities. By having the Department of Health take the lead in developing minimum statewide criteria, the trauma victims in Florida will have uniform and consistent access to care at trauma centers.

The committee deliberated on the issue of requirements for the initial transport of the trauma victim by an EMS provider. The Department of Health requires all EMS providers to develop and obtain department approval of trauma transport protocols, which guide their actions with the trauma victim from the scene of the injury to delivery at an acute care hospital. The department has authority to identify the topics to be covered in such protocols, but not to mandate that certain standards be met. The committee has recommended that giving the department authority to establish and enforce such standards would help prevent problems such as the two cases that led to this study.

It will take the combination of both the prehospital and in-hospital requirements proposed by the committee to fully address the needs of trauma victims for timely access to trauma centers.

Committee Recommendations:

1. Mandatory hospital trauma transport and transfer criteria should be adopted and enforced statewide.
2. The Department of Health should be given statutory authority to develop specific criteria to be used as mandatory minimum transfer criteria and to work with appropriate state agencies to enforce such criteria statewide.

3. Statutory authority should be given to the Department of Health to develop mandatory minimum standards for trauma transport protocols and to work with appropriate state agencies to enforce such protocols statewide.
4. All acute care hospitals should be required to be partners in the state trauma system.
5. Each acute care hospital that is not a trauma center should be required to establish a formal relationship with the nearest trauma center. This should be established through a written agreement.
6. The Department of Health should be given statutory authority to establish and monitor minimum statewide requirements for this formal relationship, including a written agreement between trauma centers and acute care hospitals that will establish the formal relationship. This should include developing guidelines which will avoid overburdening any one trauma center with additional responsibilities.
7. Trauma agencies should be given statutory authority to develop specific requirements for the written agreement at the regional level. These requirements should be based on the unique abilities of each acute care hospital and each trauma center as well as the applicable emergency medical transport and interfacility transfer providers.

## **II. Care of the Trauma Victim**

### Discussion:

The committee proposed a totally new approach to the care of the trauma victim in the hospital setting. For the first time, they have proposed a mandatory consultation for certain trauma victims whose emergency condition is first assessed at an acute care hospital other than a trauma center. The committee has recommended the development of mandatory minimum criteria to determine when such consultation would be required and when transfer to a trauma center would be required. The Department of Health would again propose that the full

responsibility be jointly shared with the Agency for Health Care Administration. The committee recommendations retain local flexibility while recognizing a need for statewide consistency in trauma care policies.

The committee made several additional suggestions for ongoing consultation on trauma victims. The initial consultation between trauma surgeon and the physician at the acute care hospital should occur within 30 minutes of the arrival and identification of the trauma victim. If there is not an immediate decision to transfer the patient to a trauma center, the patient should continue to receive further evaluation and treatment at the acute care hospital, as agreed upon during the consultation.

If further testing and diagnosis identifies a significant problem, the physician should again call the trauma surgeon to discuss the patient and whether transfer may be appropriate. If the patient's condition deteriorates prior to discharge, there should be additional telephone consultation. The result of these consultations may be transfer of the trauma victim to a trauma center. The acceptance of appropriate transfers will continue to be a responsibility of all trauma centers.

The committee suggested that the Department of Health offer technical assistance on new transfer patterns and responsibilities of EMS medical directors for prehospital and interfacility providers. This action should lead to consistent knowledge between medical directors and improved care for trauma victims. EMS medical directors are responsible for approving the trauma transport protocols of their service before they are submitted to the department for approval. The Department of Health proposes to work cooperatively with other appropriate state authorities, such as the Board of Medicine, on any enforcement issues arising from compliance monitoring of the performance of EMS medical directors.

#### Committee Recommendations:

1. When a trauma victim arrives at an acute care hospital other than a trauma center, there should be an immediate patient assessment. This assessment should include a determination of whether the trauma victim meets the state's trauma alert criteria, or the transfer criteria specified in their written agreement with a trauma center.

2. The physician at the receiving acute care hospital who assessed and identified the trauma victim as meeting these criteria should call the trauma center within 30 minutes.
3. There should be a consultation between the physician and the trauma surgeon at the trauma center, again in conformance with the written agreement between the two hospitals.
4. There should be ongoing consultation by the acute care hospital with the partnering trauma center. This process should be established in the written agreement between the two facilities and should apply to any trauma victim for which there was a consultation call within 30 minutes and who has remained at an acute care hospital other than a trauma center.
5. The EMS medical director for the interfacility transfer transportation provider should have full responsibility for the trauma victim during transfer.

The Department of Health should be given statutory authority for oversight and performance monitoring of EMS medical directors for compliance with trauma system performance standards.

## Chapter 4

### Emergency Medical Ground and Air Transport Needs

#### Defining the Issue:

***The lack of trauma centers strategically located throughout the state creates a need for additional transportation services in order to ensure timely access to trauma centers.***

Florida has a mature prehospital emergency medical services component in its trauma system. The EMS prehospital transport and interfacility transfer providers operate in a trauma system that has statewide trauma alert criteria for identification of the most seriously injured trauma victims. Every EMS provider must have a trauma transport protocol signed-off by their medical director and approved by the department as complying with minimum state requirements.

The committee discussed two issues of transport needs. First, the committee explored how to utilize the strengths of the current EMS system to ensure timely access to trauma centers for trauma victims. The committee also considered the needs of EMS ground and air providers if the recommendations of this report are implemented.

#### Discussion:

The committee debated the role that EMS providers could play in improving Florida's fragmented trauma system. The committee proposed that the development of regional transportation services could fill a need until a statewide network of trauma centers is developed. Recommended priorities are to first establish regional air medical transport services and then to develop regional ground services to serve as reinforcement when air medical transport is not

available. This situation can occur for reasons such as bad weather conditions or competing requests for resources.

The committee also found that there are situations of inadequate transportation resources in trauma service areas with trauma centers. These situations should be addressed following identification of specific needs through regional trauma system plans.

The committee recognized that existing emergency medical ground and air transport providers who also perform interfacility transfers might have additional demands on their resources, depending on the development and implementation of transfer criteria. Based upon preliminary discussions, the additional trauma victims requiring transfer to a trauma center could range between a few thousand and more than 30,000 per year. If the final transfer criteria indicate that a high volume of transfers would occur, the committee advises that extra caution should be used when implementing the criteria so that existing transport and transfer resources are not overwhelmed.

The committee also suggested that the department should periodically collect and evaluate information on how frequently air transport is not available when called for assistance. The purpose would be to provide information needed for system planning and future funding requests.

The department, when planning for regional ground and air transport, should consider the possibility that these providers may need to staff transport vehicles to provide a more advanced level of care to trauma victims. Trauma victims may need additional care because of the length of time for transport.

#### Committee Recommendations:

1. Transportation resources for trauma victims should be supplemented.
2. As mandatory transfer criteria for trauma victims are developed, consideration should be given to the demand placed upon emergency medical ground and air transport providers.

Consideration should be given as to whether additional resources may be required for an optimal trauma transport system.

3. The Department of Health should, through planning and technical assistance, assist in the development of a system of regional air transport to operate in trauma service areas without at least one trauma center.
4. The Department of Health should, through planning and technical assistance, assist in the development of the ground transportation component of a regional transportation system. This component of a regional transport system should include expanded backup coverage by ground transport for those times when air is unable to fly due to weather conditions or competing requests for resources.

## CHAPTER 5

### Medicaid Reimbursement for Trauma Care and Trauma System Funding

#### Part I.

#### Medicaid Reimbursement for Trauma Care

##### Defining the Issue:

***Improving and expanding the Medicaid program may enhance the accessibility of trauma care.***

The topic of Medicaid reimbursement for trauma care was defined by the committee through the following questions:

- Has the Medicaid program created barriers for trauma patients?
- What is the scope of Medicaid in funding trauma care in Florida?
- Are there ways to improve or expand the Medicaid program to enhance the delivery of trauma care in Florida and to ensure timely access to trauma centers?

Almost 6,000 trauma patients in the 1996 AHCA hospital discharge database had Medicaid as their primary anticipated payer and about 1,500 additional trauma patients had Medicaid HMOs as their primary payer.

Medicaid and Medicaid HMOs, as anticipated payers, represent approximately 6.2% of all trauma victims who were admitted to hospitals and 7% of hospital charges. The source of this information is the 1996 hospital discharge database from the Agency for Health Care Administration.

## Discussion:

The committee reviewed information on Medicaid and Medicaid HMOs that was available from the 1996 hospital discharge database maintained by the Agency for Health Care Administration. Several committee members were staff of the agency and were able to provide additional information in the committee's deliberations.

The average hospital charge of all trauma victims for Medicaid was \$21,418 and for Medicaid HMO patients was \$15,226. When the charges are examined for the more severely injured trauma victim, the charges are higher, reflecting the additional trauma care required for treatment. The average hospital charge for trauma victims with an Injury Severity Score of 9 - 14 was \$27,291 and for ISS 15 and greater was \$75,817. Total hospital charges for Medicaid were \$122,682,567 and for Medicaid HMO were \$23,280,722.

In contrast, the statewide average charge for all trauma victims was \$17,921 and the statewide total charges were more than \$2.09 billion. Physician, prehospital emergency service, and rehabilitation charges are not included in any of these figures.

Medicaid accounted for 5.9% or \$122,682,567 of all charges for care provided to trauma victims admitted to a hospital and included in the 1996 hospital discharge database maintained by the Agency for Health Care Administration. Medicaid HMOs accounted for an additional 1.1% or \$23,280,722. Because Medicaid charges represent only a small percentage of the total charges for trauma care, the significance of any Medicaid revisions will be limited. However, Medicaid revisions would have the advantage of meeting certain financial needs of all acute care hospitals, not just trauma centers.

The committee did not find any evidence that Medicaid funding created a barrier for trauma victims needing to access a trauma center. However, they did identify some changes to address potential delays in eligibility determinations. The committee found that these delays create hardships on trauma care providers because of lack of timely payment for services.

The committee found that the 45 day cap on payment of services by Medicaid also creates a reimbursement problem for trauma care providers. The committee has recommended that the state seek a waiver of this provision in an effort to help recover costs for trauma care providers.

Determination of eligibility for Medicaid is the responsibility of the Department of Children and Family Services. The Department of Health will work with the Department of Children and Family Services to determine what revisions could be made to the process of eligibility determinations for trauma victims. The intent of the committee's recommendation is to focus attention on the timeliness of the eligibility determination as it affects the timeliness of payment.

The issue of Medicaid transportation costs will be addressed by the department in conjunction with the committee's recommendation to study all costs of trauma care and develop uniform cost accounting methodologies. After such a study and the implementation of the methodology, the department would be able to document any funding inequities. This is discussed further in Part II of this chapter.

The other committee recommendations address how Medicaid could enhance the delivery of trauma care in Florida.

#### Committee Recommendations:

1. The State of Florida, through the Department of Health, the Agency for Health Care Administration, and the Department of Children and Family Services, should pursue a federal waiver to obtain for all trauma victims the status of presumptive eligibility under Medicaid fee for service and Medicaid managed care. For those trauma victims later confirmed as Medicaid eligible, payment should be retroactive for all trauma care.
2. The Department of Health and the Agency for Health Care Administration should seek an exemption from the 45-day cap on payment of services by Medicaid.
3. A study should be funded and conducted to evaluate the cost and cost effectiveness of emergency medical ground and air transportation for Medicaid eligible trauma victims before requesting additional funding for transportation services.

4. The Medicaid reimbursement rate for emergency medical ground and air transportation services should be increased if the study documents unfunded expenses for trauma care to Medicaid patients, both fee for service and managed care.

## **Part II. Trauma System Funding**

### **Defining the Issue:**

***Lack of funding has resulted in a fragmented state trauma system with isolated pockets of excellence.***

In order to develop and operate the inclusive trauma system proposed in this study, a regional administrative structure for planning, system coordination, and evaluation must be established. This structure, the creation of trauma agencies, has been authorized by statute for the past eight years, but has been slow to develop. Trauma agencies were conceptually based on county government. This structure was established to facilitate local leadership and to take advantage of the authorities already established for county government. The most successful trauma agencies have been those where the counties have established a taxing district for their single-county regional trauma systems. However, many counties do not have the resources to support even a minimal effort.

There are currently two state direct funding sources for trauma. The Department of Health receives approximately \$1.5 million for state office staffing, the state trauma registry, and trauma center site surveys. The Medicaid program provides funding, as identified above, for provision of trauma care. Other sources, such as insurance companies, provide direct payment to trauma care providers as well as other health care providers.

## **I. State Funding**

### Discussion:

The committee found that lack of funding for trauma system implementation has been a major factor in prohibiting development of a statewide trauma system. The conclusion of the committee is that state funding must be provided if the envisioned inclusive trauma system is to be a reality.

The committee discussed different sources of potential funding. The sources included increases in personal injury protection requirements, mandatory PIP insurance for motorcycles, increase in motor vehicle registration fees, establishing a fee on registration of personal watercraft and allocation from monies received by the state from the tobacco lawsuit. Currently, ch. 320, F.S., authorizes 10 cents per motor vehicle registration for trauma system administration. There are approximately 12.2 million registered vehicles according to the Department of Highway Safety and Motor Vehicles.

Information produced by the Florida Department of Environmental Protection in the *1996 Florida Recreational Boating and Accident Report* was reviewed to determine the impact of personal watercraft injuries on the trauma system. Personal watercraft are only 8% of all registered vessels but account for 36.8% of all boating accidents.

The committee recommended that trauma agencies should be the central coordinating entity for each region. This would provide an appropriate local focus to all activities. Trauma agencies should be responsible for planning systems of care. Trauma agencies should also be responsible for bringing all parties in the trauma system together to develop policies and protocols such as trauma transport protocols, and for system evaluation and quality improvement activities for all system participants.

The state will need to support planning, development and operation of trauma agencies if the agencies are to be effective in the expanded role proposed by the committee. The department is proposing the following funding for trauma agencies:

- ❖ One-time funding for regional trauma systems:
  - \$75,000 to prepare the required trauma system plan for each of 19 trauma service areas; total equals \$1,425,000.
  - \$30,000 for start-up costs for 15 trauma agencies. There are currently 4 state-approved trauma agencies; total equals \$450,000.
  
- ❖ Recurring funding for annual operation of regional trauma systems:
  - \$300,000 annually for each of 19 trauma service areas; total annual funding equals \$5,700,000.

The committee recommended that regional transportation systems be established to address the need to transport trauma victims from areas without a trauma center. These recommendations are discussed in Chapter 4, Emergency Medical Ground and Air Transport Needs. The committee undertook a preliminary investigation of the funding needed to establish the regional air transport systems. It takes approximately two million dollars annually to operate an air medical service covering a local area with an average 50-mile flight range. Additional study should be undertaken to identify any additional costs to operate a system with regional coverage, involving longer flight times.

The committee identified two possible models for establishing a regional air transport system. One possibility is for the department to consider the potential partnership of other state and local agencies that already have helicopter services, such as the Division of Forestry, the Highway Patrol or county-based Sheriff's Offices. Another possibility would be contracting for services with an existing EMS helicopter service, such as is used in the Regional Perinatal Intensive Care program. It is not the intent of the department to operate such a service directly. The department's role would be to meet the requirements for a funding conduit and for program oversight, to ensure that such a program was accomplishing its purpose, to ensure timely access to trauma centers. Additional study and the development of regional trauma system plans would also be required before specific requests for funding could be made for regional ground transport.

The committee was not able to confirm specific costs of unreimbursed trauma care but they did have anecdotal information on this topic. Information was available from the Agency for Health Care Administration on hospital charges. The average hospital charge for a trauma victim in

1996 was \$17,921 according to the hospital discharge database maintained by the Agency for Health Care Administration. This does not include physician and other expenses incurred during that stay, any prehospital expenses or any expenses at a facility that treated but did not admit the individual as a patient.

When examined by ISS groupings, the average hospital charge for ISS 1-8 was \$12,460; for ISS 9-14 was \$20,556; and for ISS 15+ was \$51,108. There was a total charge for hospital care provided to trauma patients of \$2,091,137,452. There is a charge category of “self pay/charity/underinsured”, meaning no third party coverage or less than 30% estimated coverage. Total charges in this category were \$210,691,897, which is 10% of total charges.

The committee found a need for real-time cost information based on a standardized accounting methodology. The committee has recommended that the Department of Health be authorized and funded to contract for professional services to develop a methodology for uniform mandatory cost accounting. This is a very complex issue and the expertise is not available within the department.

The committee provided direction as to what should be included in the study of the cost of trauma care. Consideration should be given to both unfunded and underfunded care in future studies to document the cost of care. As part of the project, the department should also consider whether it will be necessary to collect the cost data on an ongoing basis, or whether a valid cost to charge ratio can be established and a schedule of periodic revalidation used for ongoing review and tracking of trauma care costs. The project should address uncompensated trauma care provided by any participant in the trauma system, including prehospital providers, acute care hospitals, physicians, trauma centers, and rehabilitation services. The project would take several years to complete, as at least two years of prospective and uniform cost data would need to be collected following the development of a cost accounting methodology.

The committee identified two purposes for an ongoing analysis of the cost of trauma care. The analysis would be the basis for future requests for state reimbursement of trauma care. It would also provide information that could be used through the quality management programs of the state and regional trauma agencies to develop more cost-effective and cost-efficient methods for delivery of trauma care. The committee found that this approach would address the financial aspects of access to trauma care.

If the department were directed by the legislature to conduct a study, time would be needed to develop a detailed scope of work before the cost to undertake such a project could be projected. The detailed scope of work would also be necessary before the project could be placed for bids from qualified sources. The effort and expense of such a study would be repaid in the information it would provide on the trauma system. If the study should result in eventual funding of unreimbursed trauma care, it would be a major incentive for development of the additional trauma centers that are needed to complete the state trauma system. It would also help retain the trauma centers in Florida's trauma system today.

The committee has recommended that the Department of Health develop rules to govern the distribution of any state funds that are made available for support or operation of the state trauma system.

Committee Recommendations:

1. There should be adequate funding for development, operation, and evaluation of Florida's trauma system, as identified in the committee's recommendations and existing statute. The monies generated should be used for the following purposes.
  - Planning grants for regional trauma system plans;
  - Trauma agency development;
  - Trauma agency operation;
  - Regional air transport; and
  - Regional ground backup transport.
2. All participants in the trauma system should receive reimbursement of expenses for newly mandated actions.
3. There should be reimbursement of uncompensated trauma care provided by trauma centers, other acute care hospitals formally participating in the trauma system, physicians, rehabilitation providers, and transportation providers.

4. The Department of Health should be given statutory authority to develop a methodology for uniform mandatory cost accounting that could be used to support reimbursement of uncompensated trauma care.
5. A study should be conducted of the cost of trauma care and for the development of a uniform cost accounting methodology. Funding for this study should be provided to the Department of Health.
6. The Department of Health should be given statutory authority to develop rules for the distribution of any funds made available for the state trauma system.

## **II. Other Financial Incentives**

### Discussion:

In the 1980's, Florida experienced the loss of a number of trauma centers because of the cost of trauma care. The trauma centers that are still operating in the state trauma system shared with the committee their concerns about the increasing financial burden of providing trauma care. It was the committee's desire to avoid a repetition of the pattern of declining participation of trauma centers, which led to identification of financial incentives other than direct state funding.

An increase in PIP coverage would benefit the hospital providers of trauma care. It would not impact payment of physicians unless they were salaried by hospitals. Motorcycles are not currently required to have any PIP coverage. The motorcyclist fatality rate is approximately six times greater than that of all motor vehicle drivers.

The committee recommended that trauma care be a requirement for basic benefit packages offered by insurance companies operating in Florida. The committee considered that this was a key method for increasing access, not just to trauma centers, but to the complete continuum of care required by the trauma victim.

The committee identified potential methods for granting immunity to trauma surgeons. They include “good samaritan” coverage and sovereign immunity. This topic is included because the proposed role for trauma surgeons expands their area of responsibility and liability.

Committee Recommendations:

1. The minimum required level of PIP, “personal injury protection” coverage should be increased from \$10,000 to \$20,000.
2. PIP coverage should be required for motorcycles.
3. Managed care and other insurance providers governed by state policy should be required to include transportation, trauma center care, and rehabilitation services for all trauma victims in their basic benefit package.
4. Other insurance providers should be encouraged to provide these benefits.
5. Immunity should be provided to cover liability incurred by the trauma surgeon at a trauma center when consulting with a physician at an acute care hospital regarding a trauma victim meeting trauma alert criteria or established transfer criteria.

## CHAPTER 6

### Trauma System Evaluation

#### Defining the Issue:

***Lack of a quality management program, designed to continuously evaluate and improve Florida's trauma system, has prevented the trauma system from meeting the needs of trauma victims.***

It is critical to the success of Florida's trauma system that a quality management program be established. Evaluating system performance, resolving problems, and instituting system improvements will allow Florida's trauma system to effectively and efficiently meet the needs of trauma victims in the next century. It will also prevent the recurrence of problems.

Adequate evaluation of the performance of trauma systems has been described as "an elusive goal that is widely sought but less often attained". Richard Cales used this description in 1986 in the book *Trauma Care Systems*. Trauma systems are dynamic in nature, constantly changing in all ways, whether in population growth, new hospitals or changes in prehospital care systems. Florida is not alone in its efforts to establish the best possible quality management program to encompass the complexity of its trauma system.

Florida's trauma system evaluation should include structure, process, and outcome measures. This is the traditional triad of system evaluation. It should incorporate a review of system resources, patient needs, and patient outcome. With today's awareness of cost containment and managed care, there is an increasing emphasis on the cost of trauma care in all settings. Cost of trauma care and patient outcome need to both be a documented part of system evaluation. The system evaluation should not be an end in itself, but a method for identifying problems and opportunities for improvement.

## **I. Evaluation Role for the Department of Health**

### **Discussion:**

The evaluation of Florida's trauma system has been fragmented in nature, looking at performance of its components separately. This has included surveys of trauma centers, review of reports by trauma agencies, inspection of prehospital services, and review of focused data, such as mortality statistics and preventable death studies. It has not previously been approached in a comprehensive manner through a program of quality management.

The state-level evaluation process should include use of the annual system performance reports submitted by the regional trauma agency. Information needs to be kept at a regional level and then combined into statewide information. Information should be collected on an individual patient basis and should reflect the status of the patient and the care provided throughout the trauma system. Information collection should begin at the scene of the injury and continue through the completion of trauma care.

The committee found that the collection of information on trauma victims and trauma systems is critical to achieving the best patient care and the best patient outcome. Information is required in order to evaluate whether system requirements are being met and to use as the basis for enforcement when there are cases of non-compliance with trauma system requirements. Information is necessary to conduct on-going system evaluation to document accomplishment of goals, identify areas needing improvement, and serve as the basis for future goals of the trauma system. The department requires system performance information for reporting to the Legislature as part of their performance-based budgeting. Information is also necessary in order to perform the regional system evaluations envisioned by the committee and to conduct the system evaluation that is already a charge of the Department of Health.

Several issues were discussed by the committee, each of them resulting in the conclusion that current information systems do not provide all that is needed for ongoing decision making about trauma systems in Florida. The completion of this report was made more difficult by the lack of readily available information on trauma victims and trauma systems. There is useful information but it is not collected in a coordinated fashion for trauma system evaluation

purposes. There is also a lack of information collected in a uniform fashion about cost and payment for trauma care. Also, information is not always capable of being linked for comparison between collection sources, due to problems such as inconsistent data definitions and methods of reporting.

There needs to be an ongoing effort to identify what additional information would be beneficial and how it could be effectively and efficiently collected and used for system improvement. One example is that information is needed about deaths of trauma victims at all stages of the continuum of care: out-of-hospital, in the emergency department prior to hospital admission, as an admitted hospital patient, and in the year following discharge. The AHCA database provides information only about in-hospital deaths for admitted patients.

There is a need to link information contained in existing databases. The ability to link information in existing databases would expand the ability to describe and apply quality management principles to the statewide trauma system. Examples of data that may need to be linked for trauma system evaluation include: motor vehicle crash data, AHCA discharge database, hospital medical records, state trauma registries, medical examiner records, EMS prehospital data, and other injury databases.

The issues of patient severity of injury and the most effective scoring method are national issues. ISS, “injury severity score”, has been the standard used for trauma victims for nearly 20 years. However, there are a number of professional journal articles which point to weaknesses of the ISS methodology and researchers continue to develop new methodologies for documenting patient severity of injury.

The committee found that the use of the traditional ISS methodology is appropriate for studying volume and movement of patients within defined geographical areas. They also found that this methodology has weaknesses when used to study patient outcome in terms of probability of survival.

A more recent methodology for study of patient outcome is ICISS, an “International Classification of Disease-9 Based Injury Severity Score”. The department is currently testing the use of this methodology for both review of trauma center performance and for simplification of information gathering for system evaluation. The committee supported the efforts of the department to further explore its usefulness. ICISS can potentially be used to establish performance benchmarks by predicting patient survival rates, length of stay, and

hospital cost of care. At the same time it could be used to identify areas of system performance which need closer study.

As with ISS, ICISS does have some potential weaknesses. It may overestimate death and it does not provide any information on anticipated volume of trauma victims within a population. It has been in use for about 4 years and is still evolving.

Florida needs to consider which methodologies will be most informative for system evaluation. There does not appear to be a need to limit the evaluation process to one scoring methodology. The key factor appears to be knowing which methodology to use for which purpose and assuring that appropriate information is available to use with the methodology. The committee has recommended that the Department of Health conduct a study that would address these issues of methodology.

In keeping with Florida's national leadership role in trauma care and trauma systems, the committee encouraged the department to host a national conference to investigate and seek to build consensus on injury severity scoring methodologies for trauma victims.

#### Committee Recommendations:

1. The Department of Health should be given statutory authority to establish minimum statewide performance standards and to monitor the trauma system for compliance. Rules should be developed by the department for implementation.
2. Clear direction should be given to the Department of Health to establish and collect information for system evaluation. This should be part of a quality management program and should include information needed to evaluate cost as well as efficiency and effectiveness in the trauma system. Rules should be developed by the department for implementation.
3. The Department of Health should have the lead responsibility for (a) statewide system evaluation, quality management, and performance improvement and for (b) regional

system evaluation, quality management, and performance improvement in areas without a trauma agency.

4. The Department of Health should conduct a study to establish an improved methodology for determining the volume of trauma patients and their relative severity of injury.
5. Funding should be provided to the Department of Health to hold a national conference on trauma injury severity scoring.

## **II. Evaluation Role for Trauma Agencies**

### **Discussion:**

As with state-level system evaluation, regional system evaluation is still a developing field. Trauma agencies currently have the authority to conduct regional system evaluation. However, there have been no guidelines to assist them by setting minimal expectations or to support uniformity statewide. In addition, the committee has recommended a new function for trauma agencies, that their system evaluation become part of a regional quality management program. The committee recommendations in this section address how that new function should be implemented and how it should coordinate and complement a similar function at the state level. The department, in seeking resolution to problems reported by trauma agencies, will refer the problems to appropriate authorities for action. The department is not seeking authority over all regional trauma system participants.

The department will need to provide technical assistance to new and existing trauma agencies in the development and implementation of regional quality management programs. Because these programs will have a significant impact on the future evolution of trauma systems in Florida, it is important that they be implemented carefully and with consistent intent.

Committee Recommendations:

1. Trauma agencies should have the lead responsibility for trauma system evaluation, quality management, and performance improvement at a regional level.
2. All providers of trauma care in the regional trauma system should participate in the quality management program of the trauma agency.
3. Trauma agencies should report problems with participation in a regional quality management program to the Department of Health for resolution.
4. Trauma agencies should report any system performance problems that cannot be resolved in a quality management setting to the Department of Health for resolution.

## CHAPTER 7

### Additional Committee Recommendations

#### Defining the Issue:

*There were several topics that the committee wanted to address which were not directly related to the legislative charge for the study of timely access to trauma centers.*

#### Discussion:

The committee deliberated on a number of topics which were relevant to the overall operation of the state trauma system, but were not directly related to the legislative charge to the Department of Health for the study of timely access to trauma centers. The recommendations included in this chapter are ones which the committee felt were worthy of special attention in future years.

The committee reviewed the personnel needs of emergency medical ground and air transport providers. They found that improvement in the delivery of trauma care could be achieved by additional training of the first responder community. A first responder is defined in ch. 401, F.S., as any individual who receives training to render initial care to an ill or injured person, other than an individual trained and certified pursuant to ch. 943.1395(1), F.S., but who does not have the primary responsibility of treating and transporting ill or injured persons. The contact with a first responder can be the first access to trauma care for the trauma victim. It is important for the first responder to be knowledgeable about trauma care and the state and regional trauma system in order to provide the best care for the trauma victim. The committee suggested that the Department of Health support and assist in the development of a system in which the first responder would be able to demonstrate an auditable level and record of training.

The committee recognized the importance of finding common ground to work with the managed care industry. One common concern is the continuum of care for the trauma victim while they are hospitalized. Traditionally, hospital case managers address this aspect of care. With the development of case managers in managed care organizations and other insurance providers, the committee recommended that their work be coordinated for the benefit of the patient.

The committee proposed a new role for the chief of the trauma service at a trauma center. The chief of the trauma service would determine what service and treatment is necessary for each patient and where that service and treatment is to be provided. This would include determining if and when a patient could be transferred to an acute care hospital from the trauma center. The chief of the trauma service would only be responsible for care directly related to the traumatic injury, not for medical care needed by the individual for other reasons during that year.

Several recommendations regarding managed care were made by the committee. The recommendation on avoiding delays in providing care is currently addressed in statute but the committee identified it as a problem area. They have suggested that increased efforts be made for enforcement of the emergency access to care requirements.

The committee also suggested that managed care providers and other insurance companies operating in the State of Florida should be requested to provide trauma-related educational material to their subscribers. This material would describe the operation of Florida's trauma system and the subscriber's rights as a patient to emergency and trauma care. The Department of Health is willing to work cooperatively with the managed care providers and other insurance carriers to develop educational material for subscribers.

#### Committee Recommendations:

1. The training needs of prehospital first responders should be assessed and statewide training should be developed.
2. Statutory authority should be established for the Department of Health to assess training needs and develop rules to implement the necessary training for first responders.

3. The patient case manager at the trauma center should initiate dialogue with the patient case manager of any applicable insurance provider and acute care hospital. They should work together on the long-term care plan for the trauma victim, beginning as soon as the trauma surgeon confirms the need for transfer.
4. The care of the trauma victim should remain under the supervision of the chief of trauma services for a period of up to 1 year. The time period should be based on the professional judgement of the chief of trauma services.
5. Managed care and other insurance providers should cover the trauma victim for the one-year period of supervision of care by the chief of trauma services.
6. For any trauma victim receiving care at a trauma center and for any cases of a trauma victim meeting state and regional trauma alert criteria receiving assessment and/or care at an acute care hospital:
  - Delays in providing care to trauma victims should not occur because of a lack of preauthorization from a managed care provider.
  - The provision of such care should not relieve the managed care provider from payment for services otherwise authorized by their policy.
7. Licensed managed care organizations operating in Florida should be required to comply with the transport and transfer policies of the state's trauma system.
8. Other managed care organizations should be encouraged to comply with the transport and transfer policies of the state's trauma system.

## **PROVISO LANGUAGE**

From the funds in Specific Appropriation 467, the Department of Health is hereby directed to prepare and submit to the Legislature by February 1, 1999 a report and proposal(s) on how best to ensure that patients requiring trauma care have timely access to a trauma center. The Chairman of the Emergency Medical Advisory Council shall appoint a committee to assist the department in developing the report and proposals. The committee shall study, at a minimum, the strategic geographical location of trauma centers; mandatory hospital trauma transfer criteria; emergency medical ground and air transport needs; and Medicaid reimbursement for trauma care.

Source: 1998 Appropriation Bill, Section 3 – Human Services

## **ACKNOWLEDGMENTS**

The Department of Health wishes to acknowledge the members of the committee and other participants in the trauma system study of timely access to trauma care. These individuals contributed many hours of hard work and the study could not have been completed without their expert advice.

The individuals who participated were exceptional in their willingness to bring their diverse perspectives together to plan for a common goal, how to achieve the best possible outcome for trauma victims through an inclusive system of trauma care.

The following are lists of participants in the trauma system study.

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**SUMMARY OF COMMITTEE RECOMMENDATIONS**  
**“Timely Access To Trauma Care”**

**1: Access to Trauma Care: A System Approach**

**I. System Framework**

1. The trauma system for the State of Florida should be inclusive. It should meet the needs of all injured patients who require care in an acute care setting. It should provide for the participation of all health care providers or facilities with resources to provide care for the trauma victim.
2. The statutory definition of trauma victim should be any person who has incurred a single or multisystem injury due to blunt or penetrating means or burns and who requires immediate medical intervention or treatment.
3. The goal for timely access to trauma centers should be to assure that every trauma victim can be delivered to a trauma center, either by emergency medical ground or air transport, within 30 minutes of beginning transport.

**II. Regional Approach**

1. A trauma agency should be established for each trauma service area.
2. The functions of a trauma agency should be expanded from those currently listed in Chapter 395, Florida Statutes, and Chapter 64-E, Florida Administrative Code, to include the following:
  - Plan for additional system components for the delivery of trauma services. The list of planning components should be expanded to include prevention initiatives. The regional trauma system plan should also include goals and implementation strategies for pairing

all acute care hospitals in the service area with a trauma center to achieve the recommendations of timely access to trauma centers.

- Establish a program for quality management of the regional trauma system. This program should incorporate system evaluation and quality assurance functions of the trauma agency.
  - Educate and coordinate trauma centers and EMS providers as to their role in prevention activities.
  - Establish a process to facilitate mediation of disputes between managed care providers and other trauma system participants.
3. Chapter 395, Florida Statutes, should be amended to require that the regional trauma system plan be revised every five years and submitted for department review and approval. The plan should be required more frequently only when there are major changes in the regional trauma system or when revisions to statute or administrative rule necessitate a change.
  4. Chapter 395, Florida Statutes, should be amended to provide the Department of Health authority to perform the functions of a trauma agency in the temporary absence of an operational trauma agency.

### **III. Statewide System Oversight**

1. The Department of Health should have clear legislative intent for the establishment of an inclusive trauma system and should have statutory authority to establish in administrative rule minimum standards for the planning, development, and operation of an inclusive state trauma system.
2. Minimum requirements for acute care hospitals regarding their role in the trauma system should be established and monitored on the state and regional levels.

3. The statute definitions in Chapters 395 and 641, Florida Statutes, should be revised to include the requirement that a trauma alert patient, or trauma patient meeting established transfer criteria, automatically meets the emergency access provisions of these sections.
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4. The cap of 44 trauma centers should be retained in Chapter 395, Part II, Florida Statutes.
5. The approval of trauma centers within each trauma service area should continue to reflect the recommendations in state-approved trauma system plans of trauma agencies, with ultimate approval responsibility residing with the department.
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  - Fifty miles should be the service radius for rotary wing air-ambulances used for system planning to achieve the 30-minute goal.
  - An Injury Severity Score of 9 or greater should continue to be the criterion for identifying the volume of trauma patients in the state for planning purposes, pending further study.

## **II. Trauma Center Approval**

1. The recognition of two levels of trauma centers, Levels I and II, should be retained.
2. The category of state-approved pediatric trauma referral center should be retained as an additional, separate entity.
3. The Department of Health should revisit the standards for pediatric trauma referral centers.
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5. The Department of Health should consider whether a cap is needed on the number of pediatric trauma referral centers either statewide or by trauma service area.

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#### **I. System Requirements**

1. Mandatory hospital trauma transport and transfer criteria should be adopted and enforced statewide.
2. The Department of Health should be given statutory authority to develop specific criteria to be used as mandatory minimum transfer criteria and to enforce such criteria statewide.
3. The Department of Health should be given statutory authority to develop mandatory minimum standards for trauma transport protocols and to work with appropriate state agencies to enforce such protocols statewide.
4. All acute care hospitals should be required to be partners in the state trauma system.
5. Each acute care hospital that is not a trauma center should be required to establish a formal relationship with the nearest trauma center. This should be established through a written agreement.
6. The Department of Health should be given statutory authority to establish and monitor minimum statewide requirements for this formal relationship, including the written agreement between trauma centers and acute care hospitals that will establish the formal relationship. This should include developing guidelines which will avoid overburdening any one trauma center with additional responsibilities.
7. Trauma agencies should be given statutory authority to develop specific requirements for the written agreement at the regional level. These requirements should be based on the unique abilities of each acute care hospital and each trauma center as well as the applicable emergency medical transport and interfacility transfer providers.

## **II. Care of the Trauma Victim**

1. When a trauma victim arrives at an acute care hospital other than a trauma center, there should be an immediate patient assessment. This assessment should include a determination of whether the trauma victim meets the state's trauma alert criteria, or the transfer criteria specified in their written agreement with a trauma center.
2. The physician at the receiving acute care hospital who assessed and identified the trauma victim as meeting these criteria should call the trauma center within 30 minutes.
3. There should be a consultation between the physician and the trauma surgeon at the trauma center, again in conformance with the written agreement between the two hospitals.
4. There should be ongoing consultation by the acute care hospital with the partnering trauma center. This process should be established in the written agreement between the two facilities and should apply to any trauma victim for which there was a consultation call within 30 minutes and who has remained at an acute care hospital other than a trauma center.
5. The EMS medical director for the interfacility transfer transportation provider should have full responsibility for the trauma victim during transfer.
6. The Department of Health should be given statutory authority for oversight and performance monitoring of EMS medical directors for compliance with trauma system performance standards.

### **4: Emergency Medical Ground and Air Transport Needs**

1. As mandatory transfer criteria for trauma victims are developed, consideration should be given to the demand placed upon emergency medical ground and air transport providers.

Consideration should be given as to whether additional resources may be required for an optimal trauma transport system.

2. The Department of Health should, through planning and technical assistance, assist in the development of a system of regional air transport to operate in trauma service areas without at least one trauma center.
3. The Department of Health should, through planning and technical assistance, assist in the development of the ground transportation component of a regional transportation system. This component of a regional transport system should include expanded backup coverage by ground transport for those times when air is unable to fly due to weather conditions or competing requests for resources.

#### **5, Part I: Medicaid Reimbursement for Trauma Care**

1. The State of Florida, through the Department of Health, the Agency for Health Care Administration, and the Department of Children and Family Services, should pursue a federal waiver to obtain for all trauma victims the status of presumptive eligibility under Medicaid fee for service and Medicaid managed care. For those trauma victims later confirmed as Medicaid eligible, payment should be retroactive for all trauma care.
2. The Department of Health and the Agency for Health Care Administration should seek an exemption from the 45-day cap on payment of services by Medicaid.
3. A study should be funded and conducted to evaluate the cost and cost effectiveness of emergency medical ground and air transportation for Medicaid eligible trauma victims before requesting additional funding for transportation services.

4. The Medicaid reimbursement rate for emergency medical ground and air transportation services should be increased if the study documents unfunded expenses for trauma care to Medicaid patients, both fee for service and managed care.

## **5, Part II: Trauma System Funding**

### **I. State Funding**

1. There should be adequate funding for development, operation and evaluation of Florida's trauma system, as identified in the committee's recommendations and existing statute. The monies generated should be used for the following purposes.
  - Planning grants for regional trauma system plans;
  - Trauma agency development;
  - Trauma agency operation;
  - Regional air transport; and
  - Regional ground backup transport.
2. All participants in the trauma system should receive reimbursement of expenses for newly mandated actions.
3. There should be reimbursement of uncompensated trauma care provided by trauma centers, other acute care hospitals formally participating in the trauma system, physicians, rehabilitation providers, and transportation providers.
4. The Department of Health should be given statutory authority to develop a methodology for uniform mandatory cost accounting that could be used to support reimbursement of uncompensated trauma care.
5. A study should be conducted of the cost of trauma care and for the development of a uniform cost accounting methodology. Funding for this study should be provided to the Department of Health.

Appendix C

6. The Department of Health should be given statutory authority to develop rules for the distribution of any funds made available for the state trauma system.

## **II. Other Financial Incentives**

1. The minimum required level of PIP, “personal injury protection” coverage, should be increased from \$10,000 to \$20,000.
2. PIP coverage should be required for motorcycles.
3. Managed care and other insurance providers governed by state policy should be required to include transportation, trauma center care, and rehabilitation services for all trauma victims in their basic benefit package.
4. Other insurance providers should be encouraged to provide these benefits.
5. Immunity should be provided to cover liability incurred by the trauma surgeon at a trauma center when consulting with a physician at an acute care hospital regarding a trauma victim meeting trauma alert criteria or established transfer criteria.

## **6. Trauma System Evaluation**

### **I. Evaluation Role for the Department of Health**

1. The Department of Health should be given statutory authority to establish minimum state-wide trauma system performance standards and to monitor the system for compliance. Rules for implementation should be developed by the department.

Appendix C

2. Clear direction should be given to the Department of Health to establish and collect infor-

mation for system evaluation. This should be part of a quality management program and should include information needed to evaluate cost as well as efficiency and effectiveness in the trauma system. Rules for implementation should be developed by the department.

3. The Department of Health should have the lead responsibility for (a) statewide system evaluation, quality management, and performance improvement and for (b) regional system evaluation, quality management, and performance improvement in areas without a trauma agency.
4. The Department of Health should conduct a study to establish an improved methodology for determining the volume of trauma patients and their relative severity of injury.
5. Funding should be provided to the Department of Health to hold a national conference on trauma injury severity scoring.

## **II. Evaluation Role for Trauma Agencies**

1. Trauma agencies should have the lead responsibility for trauma system evaluation, quality management, and performance improvement at a regional level.
2. All providers of trauma care in the regional trauma system should participate in the quality management program of the trauma agency.
3. Trauma agencies should report problems with participation in a regional quality management program to the Department of Health for resolution.
4. Trauma agencies should report any system performance problems that cannot be resolved in a quality management setting to the Department of Health for resolution.

**7: Additional Committee Recommendations**

1. The training needs of prehospital first responders should be assessed and statewide training should be developed.
2. Statutory authority should be established for the Department of Health to assess training needs and develop rules to implement the necessary training for first responders.
1. The patient case manager at the trauma center should initiate dialogue with the patient case manager of any applicable insurance provider and acute care hospital. They should work together on the long-term care plan for the trauma victim, beginning as soon as the trauma surgeon confirms the need for transfer.
2. The care of the trauma victim should remain under the supervision of the chief of trauma services for a period of up to one year. The time period should be based on the professional judgement of the chief of trauma services.
3. Managed care and other insurance providers should cover the trauma victim for the one-year period of supervision of care by the chief of trauma services.
4. For any trauma victim receiving care at a trauma center and for any cases of a trauma victim meeting state and regional trauma alert criteria receiving assessment and/or care at an acute care hospital:
  - Delays in providing care to trauma victims should not occur because of a lack of preauthorization from a managed care provider.
  - The provision of such care should not relieve the managed care provider from payment for services otherwise authorized by their policy.
5. Licensed managed care organizations operating in Florida should be required to comply with the transport and transfer policies of the state's trauma system.
6. Other managed care organizations should be encouraged to comply with the transport and transfer policies of the state's trauma system.

**SUMMARY OF COMMITTEE RECOMMENDATIONS**  
**“Timely Access To Trauma Care”**

**1: Access to Trauma Care: A System Approach**

**I. System Framework**

1. The trauma system for the State of Florida should be inclusive. It should meet the needs of all injured patients who require care in an acute care setting. It should provide for the participation of all health care providers or facilities with resources to provide care for the trauma victim.
2. The statutory definition of trauma victim should be any person who has incurred a single or multisystem injury due to blunt or penetrating means or burns and who requires immediate medical intervention or treatment.
3. The goal for timely access to trauma centers should be to assure that every trauma victim can be delivered to a trauma center, either by emergency medical ground or air transport, within 30 minutes of beginning transport.

**II. Regional Approach**

1. A trauma agency should be established for each trauma service area.
2. The functions of a trauma agency should be expanded from those currently listed in Chapter 395, Florida Statutes, and Chapter 64-E, Florida Administrative Code, to include the following:
  - Plan for additional system components for the delivery of trauma services. The list of planning components should be expanded to include prevention initiatives. The regional trauma system plan should also include goals and implementation strategies for pairing

all acute care hospitals in the service area with a trauma center to achieve the recommendations of timely access to trauma centers.

- Establish a program for quality management of the regional trauma system. This program should incorporate system evaluation and quality assurance functions of the trauma agency.
  - Educate and coordinate trauma centers and EMS providers as to their role in prevention activities.
  - Establish a process to facilitate mediation of disputes between managed care providers and other trauma system participants.
3. Chapter 395, Florida Statutes, should be amended to require that the regional trauma system plan be revised every five years and submitted for department review and approval. The plan should be required more frequently only when there are major changes in the regional trauma system or when revisions to statute or administrative rule necessitate a change.
  4. Chapter 395, Florida Statutes, should be amended to provide the Department of Health authority to perform the functions of a trauma agency in the temporary absence of an operational trauma agency.

### **III. Statewide System Oversight**

1. The Department of Health should have clear legislative intent for the establishment of an inclusive trauma system and should have statutory authority to establish in administrative rule minimum standards for the planning, development, and operation of an inclusive state trauma system.
2. Minimum requirements for acute care hospitals regarding their role in the trauma system should be established and monitored on the state and regional levels.

3. The statute definitions in Chapters 395 and 641, Florida Statutes, should be revised to include the requirement that a trauma alert patient, or trauma patient meeting established transfer criteria, automatically meets the emergency access provisions of these sections.
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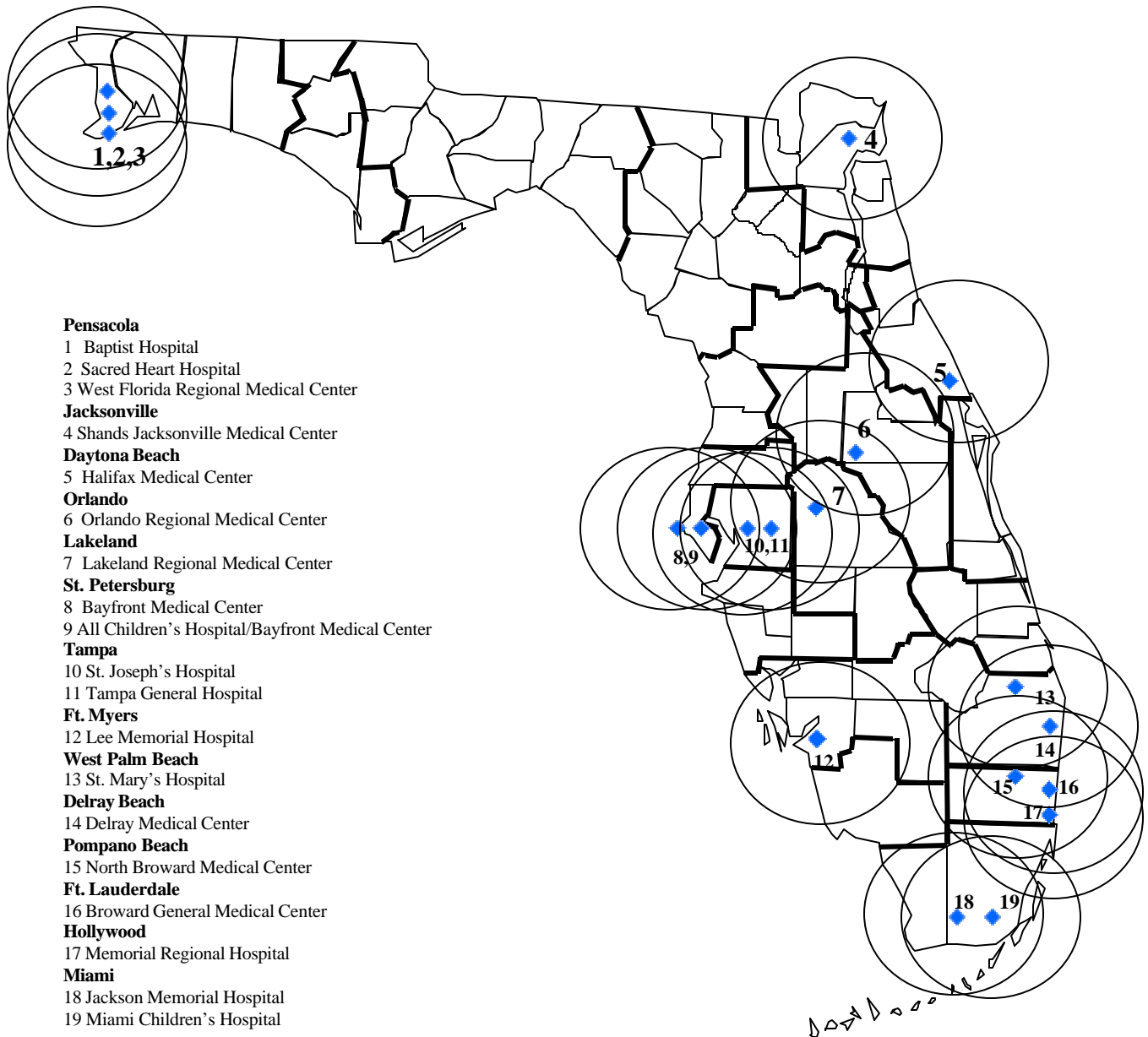
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## TRAUMA SERVICE AREAS

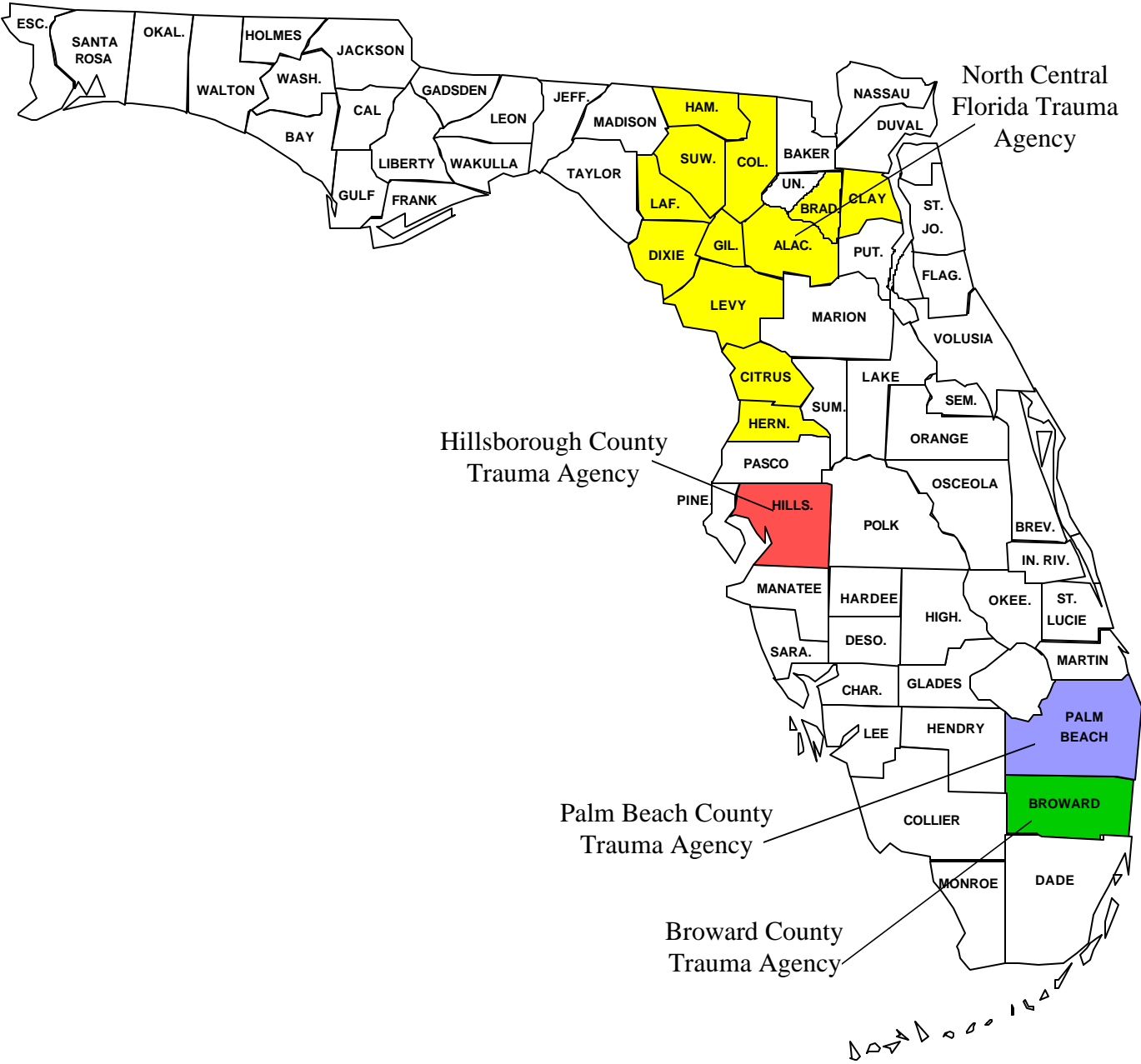
<b>TSA</b>	<b><u>Counties</u></b>
<b>1</b>	Escambia; Okaloosa; Santa Rosa; Walton
<b>2</b>	Bay, Gulf, Holmes, Washington
<b>3</b>	Calhoun; Franklin; Gadsden; Jackson; Jefferson; Leon; Liberty; Madison; Taylor; Wakulla
<b>4</b>	Alachua; Bradford; Columbia; Dixie; Gilchrist; Hamilton, Lafayette, Levy, Putnam, Suwannee, Union
<b>5</b>	Baker, Clay, Duval, Nassau, St. Johns
<b>6</b>	Citrus, Hernando, Marion
<b>7</b>	Flagler, Volusia
<b>8</b>	Lake, Orange, Osceola, Seminole, Sumter
<b>9</b>	Pasco, Pinellas
<b>10</b>	Hillsborough
<b>11</b>	Hardee, Highlands, Polk
<b>12</b>	Brevard, Indian River
<b>13</b>	DeSoto, Manatee, Sarasota
<b>14</b>	Martin, Okeechobee, St. Lucie
<b>15</b>	Charlotte, Glades, Hendry, Lee
<b>16</b>	Palm Beach
<b>17</b>	Collier
<b>18</b>	Broward
<b>19</b>	Dade, Monroe

# Florida Trauma Center Locations and 30- Minute Helicopter Service Radius



Map not to Scale

# Florida Trauma Agency Location Map



## **INFORMATION DOCUMENTATION**

### **Current Information**

#### **A. Establishing the Trauma Population:**

1. Hospital inpatient discharge data for calendar year 1996 was the primary source for the information provided to the committee. The data is maintained by the Agency for Health Care Administration (AHCA). Calendar year 1996 was the most current year for which complete data was available at the beginning of the study of timely access to trauma care.
2. The AHCA database was designed for a purpose other than the study of Florida's trauma system. This means that there was not always the precise data needed for the purposes of this study. The trauma population database created from AHCA patient discharge records has the following characteristics:
  - The information generated from this data source may contain duplicate patient counts in calculating rates of injury. This would occur if a patient has been discharged from more than one hospital for the same injury and continuum of treatment for that injury.
  - Because this database includes only patients admitted to a hospital, it will not include information on any of the following types of trauma patients: prehospital deaths, deaths in the Emergency Room, or patients discharged from the Emergency Room.
  - The database does include patients who receive procedures for suspected trauma. For some patients, the trauma is confirmed, for others it is ruled out. For the latter group, this could impact the grouping for severity of injury.
3. From the AHCA database of approximately 1.9 million hospital discharges, all cases with a principle or secondary diagnosis in the ICD-9 CM N (nature of injury) code range 800 to 959 were extracted. Cases whose only trauma related diagnosis fell into the following ranges were excluded from the data set: N958 (traumatic complications), N905-909 (late effects of injuries), and N930-939 (foreign bodies).
4. Ten ICD-9 codes were collected for each patient.

5. This population includes the following types of admissions:
  - elective
  - newborn
  - other (unknown or cannot be determined).
  
6. This population includes the following sources of admissions:
  - physician referral
  - clinic referral
  - HMO referral
  - hospital transfer
  - skilled nursing home
  - transfer from a facility other than an acute care hospital or skilled nursing facility
  - emergency room
  - court/law enforcement
  - other (information is not available or is unknown).
  
7. The run date for the AHCA data was May 29, 1998.
  
8. The results of the steps outlined above identify a trauma population of patients admitted to a hospital totaling 116,687 for calendar year 1996.

B. Evaluating the Trauma Population:

1. Using ICDMAP-90® software (developed by Ellen McKenzie and others), each injury diagnosis code is assigned an AIS (abbreviated injury score) score and a body region identified for that diagnosis using the embedded algorithm. An ISS (Injury Severity Scale) score is then calculated based upon the highest AIS score for each relevant body region.  
Notes: (1) An ISS is defined as the sum of squares of the highest AIS grade in each of the three most severely injured areas of the body. AIS scores are integers ranging from one to six, with one representing minor injury and six considered as incompatible with life. The ISS then takes on values from one to 75. Patients with one or more AIS grade six injuries are automatically assigned an ISS of 75.

(2) ISS scores are not assigned in all cases, for example, where patient diagnosis information was not specific enough to make assumptions as to severity, such as cases with closed head fracture.

2. Each case can then be classified into one of three ISS groupings: ISS = 1-8 (minor trauma), ISS = 9-14 (significant trauma), and ISS = 15 or greater (severe trauma). A small (1.6%) percentage of the cases originally extracted from the AHCA database cannot be classified retrospectively because of uncertainty as to injury severity or because the body region is indeterminate. (See 1.(2) above.)
3. Data analysis showed where trauma patients reside and where they are discharged following hospital admission. This information is the best available data for analyzing patient flow from a statewide level. The assumption is made that the difference between the two populations for each county (residence versus discharge) approximates transfer. This was the methodology used by the committee in determining to retain the system configuration of 19 trauma service areas.
4. Information on county of injury is not available at this time. Neither is information to show which patients in the identified trauma population moved between hospitals and in which order they moved.

### **Historical Information**

1. The document "A Report and Proposal for Funding Trauma Centers, February 1990" was prepared using 1988 hospital discharge data.
2. In 1988, five ICD-9 codes were collected for each patient. This could potentially have resulted in a lower volume of trauma patients than in more recent years.