Southern Nevada Health District

2009 Trauma Performance Improvement Plan

March 18, 2009

Introduction

The purpose of the Southern Nevada Health District Trauma Performance Improvement Plan is to protect the public by assuring optimal trauma system operation and high quality trauma care resulting in the best possible patient outcomes. The plan provides a framework that establishes objective mechanisms to determine whether medical care rendered to patients requiring the resources of the trauma system is safe, appropriate and meets acceptable local and national standards. A continuous, comprehensive, multi-disciplinary, evidence-based, performance improvement process promotes monitoring and evaluation of the trauma system; identification of opportunities for improvement; and development of corrective strategies. It is an essential component of the trauma system.

While the Nevada State Health Division is designated by state statute as having primary authority over the establishment of a program for the treatment of trauma throughout the state, the authority to plan, implement, and monitor the Clark County trauma care system has been delegated to the Southern Nevada District Board of Health. This authority provides a unique opportunity to develop a trauma system that reflects local guidelines, protocols, and practices and that is responsive to the needs of Southern Nevada.

The Clark County Trauma System Plan directs that trauma system performance improvement is a high priority and should promote public safety and quality patient outcomes through accountable and objective performance improvement activities. The trauma system performance improvement process consists of three major elements: 1) the internal process within each trauma center; 2) the external process which includes periodic audits of each trauma center by the Nevada State Health Division and Southern Nevada Health District (SNHD); scheduled independent evaluations of trauma care and the trauma system by trauma care experts from the American College of Surgeons; and system review and analysis by the Trauma Medical Audit Committee (TMAC), including confidential evaluation of the quality and efficiency of actual medical services when the TMAC functions as a peer review committee; and 3) ongoing data collection, monitoring, and analysis of trauma data at the local, state and national level to identify trends, gaps, and needs.

The Southern Nevada Health District, as the lead regulatory agency in Clark County, plays a central role in the acquisition and analysis of trauma system data. In addition, the Regional Trauma Advisory Board (RTAB) and TMAC share responsibility for interpreting the data to evaluate the efficiency and effectiveness of the trauma system and for determining progress in meeting identified performance goals and benchmarks.

The intent of this document is to define the process of performance improvement utilized within the Clark County trauma system.

Trauma System Performance Improvement

Internal Performance Improvement

Each trauma center must have a formal, validated, and fully functional internal medical Performance Improvement and Patient Safety (PIPS) program for its trauma service. As such, each trauma center will have a written performance improvement plan which describes this program.

The Trauma Medical Director at each institution will be responsible for maintaining accepted standards of trauma care and for compliance with the Clark County Trauma System Plan.

As part of the internal performance improvement process, each trauma center will perform its own case reviews and focused audits to identify specific issues or trends and develop appropriate actions to address identified issues. It is then the responsibility of the respective Trauma Medical Directors and Trauma Program Managers to identify all trauma cases (including all trauma deaths) that meet the Clark County trauma system minimum medical audit criteria for external performance improvement review.

External Performance Improvement

The trauma system performance improvement process is designed to recognize the interdisciplinary nature of trauma care and includes the trauma center/trauma system review process and the trauma medical audit review process.

Trauma Center/Trauma System Review

- Designated Trauma Center Audits: Periodic reviews will be performed by the Nevada Department of Health & Human Services, Division of Health, Bureau of Health Care Quality & Compliance (HCQC) and SNHD to determine compliance with applicable state statutes, county regulations, and the Clark County Trauma System Plan. The audits may include random chart reviews, reviews of trauma registry data, policies, procedures, performance improvement plans and other records or documents.

  For designated Level I, II and III trauma centers, this process will be incorporated into the Trauma Center Verification process by the American College of Surgeons and has unanimous support of all designated trauma centers within the Clark County trauma system.

- Verification of Trauma Centers/Trauma System: On-site reviews will be conducted every three years by out-of-state trauma specialists from the American College of Surgeons to allow for independent evaluation to verify a institution's capabilities and performance as a trauma center based on the criteria contained in the most current "Resources for Optimal Care of the Injured Patient" document. The reviews are designed to evaluate the quality of care rendered by the trauma center and to assess the trauma center's participation in the overall effectiveness of the trauma system.

- Trauma Medical Audit Review Process: The cornerstone of the trauma medical audit review process is the TMAC. The TMAC is a multidisciplinary medical review committee of the district board of health that will meet regularly, including as a peer review committee, to review and evaluate trauma care in the system, monitor trends in system performance, and make recommendations for system improvements. The TMAC will assess each of the trauma centers and the trauma care system, including emergency medical services, to assure optimal care delivery. Functioning as a peer review committee, the TMAC will evaluate the quality and efficiency of actual trauma care globally and on a case by case basis. In addition, the TMAC will provide an educational forum for trauma care and opportunities for analysis of data and information of scientific value for research and strategic planning of the trauma system.

TMAC Peer Review Process

The first step in the TMAC peer review process is the identification of cases for Pre-TMAC/TMAC review. Based upon the guidelines for trauma case selection, approved by the RTAB, the Trauma Medical Directors and Trauma Program Managers at each trauma center will submit cases to the Pre-TMAC review team. (Appendix E) The Trauma Medical Director or Trauma Program Manager will complete a Pre-TMAC case summary following a uniform format. (Appendix F)

The Pre-TMAC case summaries should be submitted to the Regional Trauma Coordinator at the Pre-TMAC meeting. All cases submitted will be reviewed at the Pre-TMAC meeting which will be scheduled at least quarterly.

Pre-TMAC Screening Process

The Pre-TMAC will perform the initial screening of trauma center cases to be submitted to the TMAC that meet the minimum medical audit criteria for case review or have special educational or scientific value. Other cases may be selected for review by the Trauma Medical Directors, Trauma Program Managers or the SNHD Office of Emergency Medical Services & Trauma System (OEMSTS). When the cases are selected, specific questions about identified issues are developed and the information is provided to the respective Trauma Medical Directors and Trauma Program Managers so they can prepare the case(s) for formal review at the TMAC meeting. The selected cases are then forwarded to the multidisciplinary TMAC to be presented and evaluated.

The screening conducted through the Pre-TMAC process includes not only the medical care provided at the trauma centers, but may also include review of prehospital care, deaths of trauma patients in non-trauma center hospitals and those who die at the scene.

Appendix E outlines the RTAB approved screening guidelines for assessing cases to be forwarded to the TMAC. Typically, the members of the Pre-TMAC review team, as well as the trauma centers, establish more rigorous screening processes. The role of the Pre-TMAC cannot be overstated, since this is a critical phase of the comprehensive audit process.

Membership of the Pre-TMAC Review Team

The Pre-TMAC review team is a multidisciplinary subcommittee of the TMAC.

The standing members include:

- At least one Trauma Medical Director (rotating)
- Trauma Program Managers
- Regional Trauma Coordinator

The ad hoc members that may participate include:

- Chairperson of the TMAC
- Vice chairperson of the TMAC
- EMS Agency Medical Director (rotating)
- Pre-hospital QI Directors Committee representative
- Non-trauma center hospital representative (ED Medical Director or General Surgery Physician)
- County Medical Examiner or his/her designee

Review of Deaths – Medical Examiner's Participation

The participation of the Clark County Coroner's Office is an important component of the trauma system's performance improvement activities. Upon request of the Regional Trauma Coordinator, the Coroner or his/her designee should provide the OEMSTS with Medical Examiner's reports on deaths due to traumatic injury within the county. The requested autopsy reports should be provided prior to the TMAC meeting to allow review for completeness or obvious system care issues. The documents provided by the Coroner's Office are confidential and are only to be used by the medical review committee of the district board of health when functioning as a peer review committee.

Deaths that occur at a non-trauma center hospital will be reviewed at the Pre-TMAC meeting. If further investigation of any case is required, the Trauma Medical Director, or his/her designee, whose catchment area covers the particular non-trauma center hospital, will be the person primarily responsible for providing information related to the case. Specific cases will be presented at the TMAC meeting by the reviewing Trauma Medical Director.

The Pre-TMAC screening process may identify any trauma-related death needing review and comment by the TMAC. Examples include:

- Deaths having been judged "preventable" or "possibly preventable" by individual trauma center PIPS programs
- Other potential areas for TMAC review include:
  - Deaths which occur in trauma centers and non-trauma center hospitals at a late post injury phase
  - Any young (e.g., under 55 years of age) victim
  - Victims dying greater than one hour, but less than six hours, after hospital arrival (excluding those with injuries to the heart or great vessels)
  - Victims dying of exsanguinations, especially if an operative procedure to control hemorrhage was performed
  - Victims having been in the hospital for an extended period prior to death

During the Pre-TMAC meeting, all cases will be reviewed, and cases requiring further discussion will be selected and referred to the TMAC.

The TMAC may select cases where questions are unresolved or information is insufficient to make a mortality category determination for review. All deaths must have a Trauma Medical Director's assessment of the management of the case and mortality category which best describes the case (i.e., non-preventable, potentially preventable, preventable). In any instance where a trauma-related death has occurred in a trauma center, the Probability of Survival (P_s) is to be calculated as part of the case review.

Preparing Case Materials for the TMAC

The Regional Trauma Coordinator will notify the trauma center if any additional documentation, such as diagnostic films or treatment protocols, need to be available at the TMAC meeting. The Pre-TMAC case summaries will be utilized by the Regional Trauma Coordinator to prepare the agenda for the TMAC meeting.

SNHD TMAC

The TMAC is a multidisciplinary medical review committee of the district board of health, comprised of representatives as outlined in the Clark County Trauma System Regulations, Section 500, Trauma Medical Audit Committee. (Appendix A)

The TMAC is designed to evaluate and improve trauma care by conducting detailed mortality and morbidity review of cases that meet one or more of the medical audit criteria, that have exceptional educational or scientific benefit, or that involve medical issues which require discussion or resolution. The TMAC, when functioning as a peer review committee, will discuss the quality and efficiency of medical care rendered and will make recommendations either to the provider organization or EMS agency, as appropriate, for improved trauma care or system improvements. The TMAC may appoint subcommittees, either standing or ad hoc, as needed to fulfill its functions.

The details of the TMAC process, including the scope of the committee, membership, attendance, voting rights and documentation are outlined in the Clark County Trauma System Regulations, Section 500, Trauma Medical Audit Committee. (Appendix A)

Committee Meetings

The TMAC shall meet no less than quarterly, on the third Wednesday of the month, at times arranged by the members of the TMAC and the SNHD OEMSTS. The meetings will follow a structured format and an agenda prepared by the Regional Trauma Coordinator. (Appendix C)

Case Presentation

The TMAC Chairperson will facilitate the meeting, including the case reviews, discussions, recommendations or judgments. SNHD OEMSTS staff will formally document the proceedings and are responsible for storage of the information.

The Trauma Medical Directors or his/her designees will present each case and respond to questions and comments related to the case. Case presentations should include all pertinent clinical data and other essential information and materials necessary. Comments will be solicited from the expert members of the TMAC in fields such as emergency medicine, pathology, neurosurgery, anesthesia, radiology, internal medicine, orthopedic surgery, trauma nursing, etc.

The comments and recommendations of the experts will be included in the TMAC summary of the presented case with the same requirement for action, follow-up or subsequent further review by the TMAC as any other case.

Staff from the trauma center whose case is being reviewed will not participate in the decisions for case determination for their hospital.

Categorization of Select Non-Death Cases

All non-death cases referred to TMAC for review will be discussed and a resolution or determination should be agreed upon. In cases where the issue is resultant patient morbidity, the Guideline for Judgment Concerning Morbidity (Appendix I) should be utilized in determining the morbidity categorization. A quorum of TMAC members must be present for morbidity categories to be determined.

Categorization of Trauma-Related Deaths

All trauma-related deaths should be included in the Pre-TMAC screening process and may be forwarded to the TMAC. TMAC may require detailed presentation of any death identified from the review summaries from all trauma-related deaths. A death case where the autopsy is unavailable will be held over for review until the autopsy report becomes available.

Following presentation, in-hospital deaths reviewed will be considered for outcome determination by the TMAC. Any discrepancies in trauma center death categorization will be discussed and finalized by the committee. Category guidelines are contained in the Guideline for Judgment Concerning Mortality. (Appendix H)

Non-Trauma Center Hospital Case Review

Feedback to the non-trauma center hospitals is critical to the performance improvement process for the trauma system. The Trauma Medical Director or his/her designee of the trauma center, whose catchment area covers the particular non-trauma center hospital, will be appointed as the person primarily responsible for providing this feedback.

The appointed physician or his/her designee should report the case findings to the TMAC, if needed.

The SNHD Trauma Field Triage Criteria protocol allows EMS agencies to transport patients who are outside a 50-mile radius from a designated trauma center to the nearest receiving facility, which may be a non-trauma center hospital. Such cases may be reviewed within the Pre-TMAC/TMAC process. (Appendix G)

Finalization of Case Review

All cases presented by the trauma centers to TMAC, in which patient care was administered, will include discussion of findings and action plans that were created in their PIPS program.

At the conclusion of each case review, the TMAC members will discuss the case and provide comments and/or recommendations to the trauma center.

Case Summaries – OEMSTS

Copies of the case summaries for cases reviewed from each trauma center, together with the recommendations for action and the comments of the TMAC, will be documented, reviewed and monitored for significant trending by the Regional Trauma Coordinator.

Additionally, the SNHD OEMSTS will monitor the activities of the TMAC for necessary further action in the form of SNHD regulation, procedure or protocol changes or referral of issues to the RTAB or other appropriate advisory boards or committees.

The SNHD OEMSTS does maintain the right to utilize independent outside expert review when quality of care issues are noted, which are not resolved through the TMAC process. The SNHD OEMSTS will collaborate with the trauma center where the issue has been identified to attempt a resolution that is agreeable to both the SNHD OEMSTS and the trauma center. If the issue is not resolved in this manner the case may be forwarded to the State of Nevada, Department of Health & Human Services, Division of Health, Bureau of HCQC.

Confidentiality

When functioning as a peer review committee, the TMAC and its subcommittees, including the Pre-TMAC review team, are protected by the same confidentiality privilege provided to peer review committees of hospitals. Nevada Revised Statutes (NRS) 49.117 expands the peer review committee protection to a medical review committee of a district board of health that certifies, licenses or regulates EMS providers pursuant to NRS Chapter 450B, but only when functioning as a peer review committee. NRS 49.119 provides that a peer review committee has a privilege to refuse to disclose its peer review proceedings and to prevent any other person from disclosing that information. NRS 49.265 specifies that medical review committees of district boards of health functioning as a peer review committee are not subject to discovery proceedings. NRS 49.121 provides that any member of the committee, a person whose work is being reviewed, and a person who offered testimony, an opinion or documentary evidence to the committee may claim the confidentiality privilege. The confidentiality privilege is presumed to be claimed as to a particular matter unless a written waiver is signed by all persons entitled to claim the confidentiality privilege as to that matter.

The Nevada Supreme Court has stated in a 1997 case concerning the extent of the peer review committee privilege that the intent of the legislature in creating the privilege was to protect the internal operations of the peer review and the documents derived directly from the process of peer review. When the TMAC functions as a peer review committee, with statutory privilege protection, this means:

- No person attending the meeting can be required to testify outside of the committee proceedings, unless the person is a party to an action or a proceeding the subject of which is reviewed by the TMAC functioning as a peer review committee
- No document prepared or generated by the committee is discoverable
- The open meeting law is not applicable, and no public notice is required
- Minutes may be kept but should be marked as not for public review or reproduction, and are not available as such
- The proceedings are not subject to HIPAA

Members of the TMAC and its subcommittees, including the Pre-TMAC review team, and all approved guests, will be required to sign a confidentiality statement prior to commencement of the meeting. Guest attendance is allowed for purposes of education or professional expertise with advance permission of the chairperson and concurrence of the SNHD OEMSTS.

Trauma Data Collection, Analysis and Trending

The Clark County Trauma System Plan defines the need to develop an information system that facilitates timely collection of data, utilizing consistent data sets, from the participants in the trauma care system. Quantitative and qualitative analysis and trending of the available data, from mutually agreed upon data sources, will be done using performance indicators and national evidence-based benchmarks to enhance system evaluation, planning and improvement. Such data sources include: prehospital care records, Trauma Field Triage Criteria transport reports, trauma center reports, State Trauma Registry reports, medical examiner reports, and the most recent Universal Billing Code data.

Trauma Registry User Group (TRUG)

The TRUG will evaluate, plan, implement and monitor the trauma registry and other data sources to maintain consistency of the data collection process. The membership will be drawn from the Trauma Program Managers and the Trauma Registrars at the trauma centers and the Regional Trauma Coordinator.

EMS/Trauma Performance Improvement Committee

The EMS/Trauma Performance Improvement Committee will function as a subcommittee of the RTAB; its membership includes representatives from the permitted EMS agencies, designated trauma centers and other stakeholders. The mission of the committee is to ensure the coordination, integration, efficiency and effectiveness of the interface between the EMS and trauma system. The system components that should be regularly evaluated include: communication, medical oversight, prehospital triage and transportation, and measurement of patient outcomes. The committee will analyze current data and identify new data sources, information and research to promote system assessment and improvement.

APPENDIX A

SECTION 500

TRAUMA MEDICAL AUDIT COMMITTEE

500.000 TRAUMA MEDICAL AUDIT COMMITTEE.

I. The Trauma Medical Audit Committee (TMAC) shall meet no less than quarterly, including as a peer review committee, to review, monitor, and evaluate trauma system performance and make recommendations for system improvements. The TMAC, when functioning as a peer review committee, derives its authority and privilege from NRS 49.117 - 49.123; NRS 49.265; and NRS 450B.237.

II. The scope of the TMAC shall include, but not be limited to:

A. Participation in the development, implementation, and evaluation of medical audit criteria;

B. Review and evaluation of trauma care in the county;

C. Review of trauma deaths in the county;

D. Participation in the designing and monitoring of quality improvement strategies related to trauma care; and

E. Participation in research projects

III. The TMAC shall consist of the following members:

A. The Standing TMAC members shall be appointed by the Health Officer. They include:

1. Trauma Medical Director from each designated Trauma Center
2. Trauma Program Manager from each designated Trauma Center
3. County Medical Examiner or designee
4. Regional Trauma Coordinator
5. Neurosurgeon recommended by Southern Nevada Health District
6. Anesthesiologist recommended by Southern Nevada Health District
7. Orthopedic Surgeon recommended by Southern Nevada Health District
8. Emergency Physician not affiliated with a Trauma Center, recommended by Southern Nevada Health District

B. Ad Hoc Members that may participate include:

1. Medical Director Aeromedical Services
2. Designated Assistant Trauma Medical Directors or Trauma Surgeon staff of Trauma Centers
3. Approved physicians enrolled in trauma fellowships
4. Trauma Center Intensivists
5. Assistant Trauma Program Managers
6. Physicians from non-trauma center hospitals who are presenting cases
7. Southern Nevada Health District Emergency Medical Services & Trauma

System Manager and appropriate Health District staff

8. Permitted Emergency Medical Services Agency Medical Directors/Quality Improvement Coordinators

IV. Each standing member may designate an alternate member to serve in their place should they be temporarily unable to perform the required duties of this section. The Health Officer will designate or approve the alternates for the other members of the TMAC.

V. Appointed members of the TMAC shall serve one (1) year terms, from January 1 through December 31. The Health Officer may appoint persons to fill the unexpired portion of the terms of vacant positions on the TMAC in the manner prescribed in this section. The members shall elect their chairman from amongst the body.

VI. Members of the TMAC shall serve without pay.

VII. Attendance

A. Attendance at the meetings for the Trauma Medical Directors and Trauma Program Managers or their designees is mandatory. The Trauma Medical Directors and the Trauma Program Managers are expected to attend 90% of the scheduled TMAC meetings annually. After three (3) consecutive absences in a calendar year, an appointed member may be replaced on the TMAC.

B. Resignations from the TMAC shall be submitted, in writing, to the Health District OEMSTS.

C. Invitees may participate in the peer review of specified cases where their expertise is requested. All requests for invitees must be approved by the Health District OEMSTS in advance of the scheduled meeting.

D. Invitees not participating in the peer review of specified cases must be approved by the Health District OEMSTS and all Trauma Medical Directors.

VIII. Due to the advisory nature of the TMAC, many issues require consensus rather than a vote process. Vote process issues will be identified as such by the chairperson. Voting members shall be the standing committee members. When voting is required, a simple majority of the voting members of the standing committee need to be present. Members may not participate in voting when a conflict of interest exists.

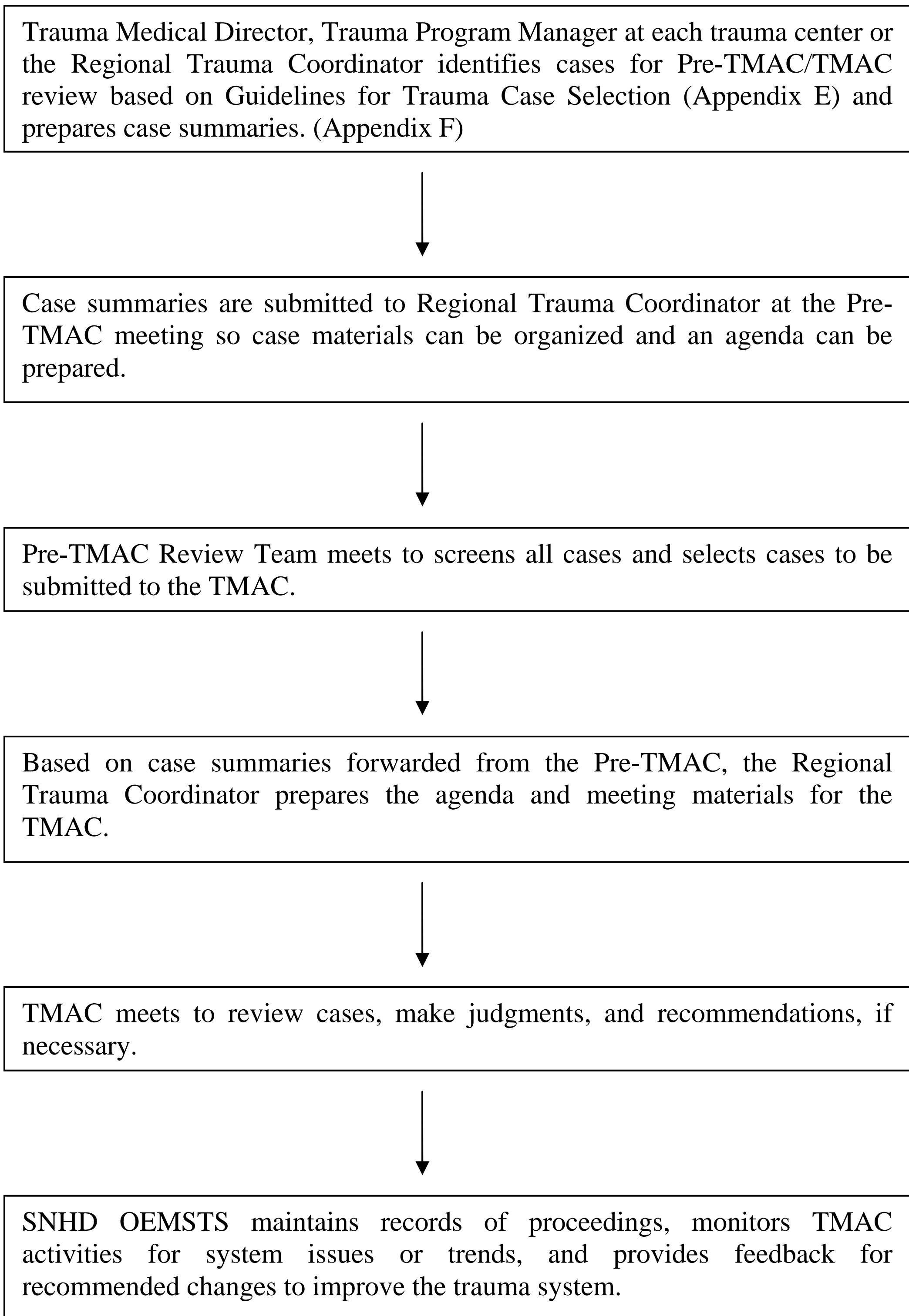
IX. Minutes will be kept by Health District staff and distributed to the members at each meeting. All official correspondence and communication generated by the TMAC will be approved by the TMAC members and released by Health District staff on Southern Nevada Health District letterhead.

X. All proceedings, documents and discussions of the TMAC, when functioning as a peer review committee, are confidential and are covered under NRS 49.117 - 49.123 and NRS 49.265. The privilege relating to discovery of testimony provided to the TMAC shall be applicable to all proceedings and records of the TMAC whose purpose is to review, monitor, evaluate, and report on trauma system performance.

All members and invitees shall sign a confidentiality agreement not to divulge or discuss information that would have been obtained solely through TMAC meetings. Prior to guest(s) participating in the meeting, the chairperson is responsible for explaining the signed confidentiality agreement to invitees. Invitees should only be present for the portions of meetings they have been requested to attend.

XI. Nothing contained herein shall be construed as making any action or recommendation of the TMAC binding upon the Health Officer or the Board.

APPENDIX B
TMAC PROCESS ALGORITHM



APPENDIX C

TMAC MEETING AGENDA FORMAT

I. Call to Order-Confidentiality Statement

II. Approval of Minutes

III. New Business

IV. Medical Peer Review

   A. Regional Trauma Coordinator Report
      1. Trauma Overload/Internal Disaster Declarations
      2. Trauma Center Quarterly Report

   B. Coroner's Report

   C. Review of Death Data Analysis
      1. St Rose
      2. Sunrise
      3. UMC

   D. Case Presentations
      1. St Rose
      2. Sunrise
      3. UMC
      4. Categorization
      5. Finalization of Case Review

   E. Institution-Specific Patient Care/Process Issues

V. Adjournment

APPENDIX D

TRAUMA CENTER QUARTERLY REPORT

HOSPITAL ____________________________ REPORT PERIOD ____________________

1. Number of patients in Trauma Registry (for _each_ month) ____________________

2. Injury Types:
   - Blunt (number) ____________________
   - Blunt (percent) ____________________
   - % of Blunt w/ISS > 15 ____________________
   - Penetrating (number) ____________________
   - Penetrating (percent) ____________________
   - % of Penetrating w/ISS > 15 ____________________

3. Mode of Arrival from Scene:
   - Total Patients ____________________
   - Ground ____________________
   - Air ____________________
   - Walk-In ____________________
   - Other ____________________

4. Mode of Arrival for Transfers In
   - Total Patients ____________________
   - Ground ____________________
   - Air ____________________
   - Other ____________________

5. Mechanisms of Injury for Transfers In
   - MVC ____________________
   - Falls ____________________
   - Water Injury/Jet Ski ____________________
   - MCC ____________________
   - Assault ____________________
   - GSW ____________________
   - ATV ____________________
   - Stabbing ____________________
   - Pedestrian ____________________
   - Crush ____________________
   - Bicycle ____________________
   - Abuse ____________________
   - Burn ____________________
   - Healthcare Plan Repatriation ____________________
   - Unintentional Injury ____________________
   - Other ____________________

6. Sending Facility by Region for Transfers In:
   - Clark County ____________________
   - NV (other counties) ____________________
   - AZ ____________________

- UT ____________________
- CA ____________________
- Other ____________________

7. % of Transfers In w/ISS > 15: ____________________

8. Mode of Transport for Transfers Out:
   - Total Patients ____________________
   - Ground ____________________
   - Air ____________________
   - Other ____________________

9. Mechanisms of Injury for Transfers Out
   - MVC ____________________
   - Falls ____________________
   - Water Injury/Jet Ski ____________________
   - MCC ____________________
   - Assault ____________________
   - GSW ____________________
   - ATV ____________________
   - Stabbing ____________________
   - Pedestrian ____________________
   - Crush ____________________
   - Bicycle ____________________
   - Abuse ____________________
   - Burn ____________________
   - Healthcare Plan Repatriation ____________________
   - Unintentional Injury ____________________
   - Other ____________________

10. Receiving Facility by Region for Transfers Out:
    - Clark County ____________________
    - NV (other counties) ____________________
    - AZ ____________________
    - UT ____________________
    - CA ____________________
    - Other ____________________

11. % of Transfers Out w/ISS > 15: ____________________

12. Surgical – ED to OR: ____________________

13. Total Deaths: ____________________
    - ISS Grp 1 to 8 ____________________
    - 9 to 15 ____________________
    - 16 to 24 ____________________
    - >24 ____________________
    - Death in ER (unable to score ISS) ____________________
    - Gross Mortality Rate % ____________________
    - Trauma Service Mortality Rate % ____________________

- Adjusted Mortality Rate % ____________________

14. Autopsy:
    - Full ____________________
    - External or Head Only ____________________
    - None ____________________

15. PI Judgments:
    - DOA ____________________
    - Non-preventable ____________________
    - Potentially preventable ____________________
    - Preventable ____________________

16. Mechanism of Injury for Deaths:
    - MVC ____________________
    - Falls ____________________
    - Water craft/Jet ski ____________________
    - MCC ____________________
    - Assault ____________________
    - GSW ____________________
    - ATV ____________________
    - Stabbing ____________________
    - Pedestrian ____________________
    - Crush ____________________
    - Bicycle ____________________
    - Abuse ____________________
    - Burn ____________________
    - Unintentional Injury ____________________
    - Other ____________________

17. Discharge Disposition for Registry Patients Only:
    - Home from ED ____________________
    - Home from Hospital ____________________
    - Rehab from Hospital ____________________
    - SNF/LTC/NH ____________________
    - Other Acute Care Facility ____________________

18. Length of Stay Issues Related to Discharge Placement:
    - Rehabilitation Issues ____________________
    - Psychiatric Issues ____________________
    - Payor Issues ____________________
    - Social Issues ____________________

19. Inability to Transfer to Higher Level of Care Issues: ____________________

20. Clark County EMS Documentation
    - Number of complete reports ____________________
    - Number of incomplete reports ____________________
    - Number of missing reports ____________________

APPENDIX E

GUIDELINES FOR TRAUMA CASE SELECTION

These guidelines are used to assist in selecting trauma cases that involve treatment issues, system performance issues, or recommendations for system improvement.

The Trauma Medical Director and/or Trauma Program Manager at each trauma center or the Regional Trauma Coordinator will identify cases (by audit criteria, by action of hospital/trauma QI program and processes, etc.) that need to be reviewed by the trauma system TMAC process utilizing the following guidelines:

- Deaths having been judged “preventable” or “possibly preventable” by individual trauma center PIPS programs

- Other potential areas for TMAC review include:

  - All in-hospital deaths related to trauma (patients pronounced dead at hospital including DOA)

  - Cases identified by review of the Medical Examiners Reports

  - Patient outcomes impacted by trauma system

  - Cases with pre-hospital care issues
    - EMS documentation (complete vs incomplete)
    - Missing EMS run sheets

  - Unexpected Saves

  - All trauma patient transfers to the trauma center

  - All trauma transfers out of the trauma center

  - Cases identified as being treated at another trauma center prior to presenting to the current trauma center with care issues related to the first trauma center visit

  - Any case with educational value

  - All cases with system related issues

Cases which fall within these guidelines should have the case summary documentation (Appendix F) completed for the Pre-TMAC.

APPENDIX F

TRAUMA CENTER CASE SUMMARY REVIEW FOR PRE-TMAC

Trauma Registry No: ______ Med Rec No: ____________

Date of Admission: ___________________ Date of Discharge: ___________________

Age: _______ Sex: _______ ISS: _______ Ps: ________

Death: YES NO Judgment (if applicable): ____________

Reason for Review:

Type of Incident / Mechanism:

Discharge Diagnosis:

Pertinent Clinical Data (i.e., Lab, X-Ray, ABG, etc.):

Surgical Procedures (Date / Procedure):

Complications:

Comments (Including QA, Pre-Hospital, Hospital):

Autopsy Findings (if applicable):

Evaluation of Care Rendered:

APPENDIX G

NON-TRAUMA CENTER HOSPITAL CASE SUMMARY

Case Number: ______ Medical Record Number: _______________

Date of Admission: ____________________ Date of Discharge: ______________________

Age: ________ Sex: ________ ISS: ________ Ps: _________

Death: Yes No Judgment (if applicable): _________

Reason for Review:

Mechanism / Type of Incident:

Discharge Diagnosis:

Pertinent Clinical Data: (i.e. Prehospital vital signs, arrival vital signs, admission lab, ABG, etc.):

Procedures:

Complications:

Comments (Including QI/PI, Prehospital & Hospital):

Autopsy Findings:

Narrative Summary:

Evaluation of Care Rendered:

APPENDIX H

GUIDELINE FOR JUDGMENT CONCERNING MORTALITY

Judgment	Guideline	Documentation
Non-Preventable	1. Anatomic injury or combination of injuries considered to be non-survivable with optimum care	1. Findings at operation; post mortem examination ISS
	2. Physiologic state at time of arrival of first responder important but not critical to judgment of preventability	2. Field and admission RTS, vital signs
	3. Evaluation and management appropriate to ACLS and ATLS guidelines; no improvement(s) in diagnosis or management identified that would positively affect outcome	3. Prehospital and hospital record: admission labs, ABG, intraoperative anesthesia record
	4. Ps < 0.25	4. Age, RTS, ISS
Potentially Preventable	1. Anatomic injury or combination of injuries considered to be very severe but survivable under optimum conditions	1. Findings at operation; post mortem examination ISS
	2. Physiologic state at time of arrival of first responder critical to judgment potential survivability; patient generally considered unstable; responds minimally to treatment	2. Field and admission RTS, vital signs
	3. Evaluation and management generally appropriate to ACLS and ATLS guidelines; potential improvement(s) in diagnosis or treatment identified	3. Prehospital and hospital record: admission labs, ABG; intraoperative anesthesia record
	4. Ps >0.25 < 0.50	4. Age, RTS, ISS
Preventable	1. Anatomic injury or combination of injuries considered survivable	1. Findings at operation; post mortem examination ISS
	2. Physiologic state at time of arrival of first responders critical to judgment of preventability; patient generally stable; if unstable, becomes stable with treatment	2. Field and admission RTS, vital signs
	3. Definite improvement(s) in diagnosis or management identified	3. Prehospital and hospital record: admission labs, ABG; intraoperative anesthesia record
	4. Ps >0.50	4. Age, RTS, ISS

APPENDIX I

GUIDELINE FOR JUDGMENT CONCERNING MORBIDITY

Judgment	Guideline	Example
Delay in Diagnosis	Injury related diagnosis made greater than 24 hours after admission, resulting in minimum morbidity	Unsuspected C-spine fracture with no neurologic sequellae
Error in Diagnosis	Injury missed because of misinterpretation of inadequacy of physical examination or diagnostic procedure(s)	False negative CT scan of abdomen
Error in Judgment	Therapeutic or diagnostic decision made contrary to available data	Delay in treating severe injuries to perform a negative laparotomy in a stable patient with a history of hypotension who has a benign abdomen and a negative DPL
Error in Technique	Technical error occurring during the performance of a diagnostic or therapeutic procedure	Pneumothorax associated with placement of a subclavian venous catheter

APPENDIX J

TRAUMA MEDICAL AUDIT COMMITTEE

Mortality/Morbidity Case Review **TMAC Meeting Date:**
Reviewer: **Chart Review Month:**
Trauma Center: **Trauma Center Deaths:**

CASE NUMBER	REASON FOR REVIEW	COMMENTS	DISCUSSION

This document and any attachments and correspondence surrounding it are part of the process to monitor, evaluate, review and report on the necessity, quality and level of patient care management provided a trauma patient and, as such, are confidential and privileged by law pursuant to NRS 49.117 - 49.123 and 49.265 and any and all other confidentiality laws and applicable privileges