



# CLARK COUNTY TRAUMA SYSTEM

Office of  
Emergency Medical  
Services & Trauma  
System

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# SNHD Office of Emergency Medical Services & Trauma System

- September 2019-
  - 2018 Clark County Trauma Needs Assessment Review v2
  - Unanimously approved by RTAB
- October 2019-
  - RTAB Advisory Position
  - Unanimously approved by RTAB with minority opinions submitted to OEMSTS



## 2018 Clark County Trauma Needs Assessment Review v2

- HIGHLIGHTS:
  - Population Growth (absolute) & maps
  - 4-6 years of Trauma Incident data collected by SNHD (type, time, agency, and location)
  - Median transport times for trauma steps 1-4, transport times of 15, 20, 25 minutes for each step, percentage of transport  $\leq 15$  minutes, heat maps
  - Trauma regional map (5 Regions: NW, NE, SW, SE, Metro) with incidents by region
  - State Trauma Registry for number of incidents at non-trauma hospitals and transfers to trauma centers
  - TMAC and SNIPP subcommittee reports
  - Appendix of previous applicants 5-mile radius

## RTAB Advisory Position

Over the past three years, the RTAB has developed a needs assessment tool to determine if, when, and where, new level 3 trauma centers might be needed. This data-driven approach has produced a body of information that is published in the 2018 Clark County Trauma Needs Assessment Review, Version 2.0. The RTAB offers the following Advisory Position and Recommendations to the public and the decision-makers.



# RTAB Advisory Position Recommendation 1

The deliberations of RTAB and the evaluations of the Trauma Medical Audit Committee (TMAC) show that the Southern Nevada trauma system, in its current configuration, is meeting the trauma needs of Southern Nevada and surrounding areas.

Rationale: There have been no negative outcomes reported, no unmet needs, and no barriers to access. The average transport times for all levels of injured patients meeting Trauma Field Triage Criteria (TFTC) have increased 72 seconds in the past five years from 14 minutes 48 seconds to 16 minutes.



# RTAB Advisory Position Recommendation 2

There is no urgency to add additional new Level III Trauma Centers at this time.

Rationale: Patients transported to Level III trauma centers must satisfy Trauma Field Triage Criteria (TFTC) Steps 3 and 4. These patients experience less severe mechanisms of injury. They are awake, alert, and have normal vital signs. While they appear less injured, some patients have significant injuries that require expedited care. Others are discharged home after evaluation. There are no barriers to accessing care at the existing trauma centers. The transport times for these patients are good.



## RTAB Advisory Position Recommendation 3

The existing trauma centers at UMC, Sunrise, and Siena have met the increased trauma volume in the last five years.

Rationale: Overall trauma patients seen at trauma hospitals increased in the last five years. UMC, Sunrise, and Siena have stated they have unused capacity and shown the ability to increase trauma designated resources. Sunrise has shared plans for future growth in infrastructure for trauma services.





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## RTAB Advisory Position Recommendation 4

The population of Clark County is growing at an average rate of 2% per year and is forecasted to fall to 1% over the next five years.

Rationale: The Las Vegas valley is currently growing from the center outwards; the zip codes with the slowest growth are in the center; the zip codes with the fastest growth are located near the periphery. While increased population is not always associated with increased trauma volumes, there are increased numbers of trauma patients and transport times in some of these areas. The Nevada Department of Transportation is actively engaged in roadway infrastructure, maintenance, and development to provide increased access and safety while decreasing congestion.

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## RTAB Advisory Position Recommendation 5

Current American College of Surgeons (ACS), the Injury Pyramid of the World Health Organization (WHO), and Center for Disease Control (CDC) guidelines for Trauma Field Triage Criteria are being followed with adaptations implemented through the Medical Advisory board (MAB) in July 2018. EMS providers and self-delivery are the primary means patients arrive at hospitals. The role of trauma centers and emergency departments in Clark County is an inclusive trauma system that has met patient needs based on ACS guidelines.

Rationale: The goal of a trauma system is to get the right patient the right care in the right place at the right time. Not all injured patients are trauma patients. While all hospitals care for injured patients, not all hospitals are trauma centers. Hospital capability and patient needs must be matched. These are characteristics of an inclusive trauma system.



## RTAB Advisory Position Recommendation 6

The mandatory transport of patients who satisfy Step 4 of the TFTC protocol to existing trauma centers was adopted by the MAB on 7/2018 and implemented by 11/2018. The increase of trauma patients has been misinterpreted as a requirement for new trauma centers without an evaluation of the current system. Data shows that the existing system met the increased number of patients without a loss of access to care. An increase in trauma numbers warrants a discussion for controlled and appropriate growth of trauma centers, as well as the ACS guidelines for Trauma Centers to engage in trauma prevention.

Rationale: The CDC's Guidelines for Field Triage of Injured Patients recommends that patients who are injured and satisfy TFTC Step 4 are to be considered for transport to a trauma center or a hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. CDC additionally states that these guidelines should be adapted to fit specific circumstances of each EMS system. Traditionally, these patients were triaged to capable Emergency Departments near their homes or trauma centers at the paramedic's discretion. Recently, this was changed so that all TFTC Step 4 patients are transported to trauma centers. The EMS field providers requested this change, which was supported by the MAB and RTAB. This change in TFTC Step 4 is felt to be in the best interest of the patient and may improve certain patient outcomes. This has had several unintended consequences that are driving the discussion to add more trauma centers. These include but are not limited to:

1. Concerns that patients can no longer receive care near their homes or communities.
2. Increased cost of care for these patients.
3. Increased transport times



## RTAB Advisory Position Recommendation 7

Geo-referenced injury locations for patients who satisfied TFTC Step 3 criteria demonstrate that their overall transport times have increased by 72 seconds over the past five years. Heat maps show areas in the Northeast (NE), Northwest (NW), and Southwest (SW) quadrants of Las Vegas Valley where these transport times are longer.

Rationale: Adding new Level III trauma centers near the populated edges of the Las Vegas valley and close to the areas identified on the heat maps should shorten transport times and address concerns about proximity to trauma centers for patients. While many of these patients get to a trauma center in very reasonable times, others experience times in excess of 20 to 25 minutes. Recall that these are stable patients and that no adverse events were identified in these transports. ACS recommendation for trauma center response readiness for Level I and II (who treat TFTC Step 1-4 trauma patients) is 15 minutes for highest level of activation, tracked from patient arrival, while trauma center response readiness for Level III (who treat Step 1-4) is 30 minutes, tracked from patient arrival. When urgent care is needed, Non-Trauma Center emergency departments stabilize trauma patients before transferring to trauma centers or admitting as part of an inclusive system. An increase in transport times of Step 3 and 4 patients that are under 30 minutes does not establish a lack of access to care for Step 3 and 4 trauma patients.



# RTAB Advisory Position Recommendation 8

The current data suggest that future projected trauma center needs are located peripherally of the populated portions of the Las Vegas valley.

Rationale: The Metro area and tourist industry in the center of the Las Vegas Valley are adequately covered by UMC and Sunrise. The data suggests that there is a growing population of injured patients being transported from the periphery and edges of the valley. Careful monitoring of unmet needs and transport time by TFTC level will result in creating new capacity when and where needed.



# RTAB Advisory Position Recommendation 9

The current data suggests that the projected needs may require only one new Level III trauma center in certain quadrants of the Las Vegas Valley. The following quadrants should be considered: NE, NW, and SW. The addition of new trauma centers should be a deliberate and data-driven process that is based on patient needs and access.

Rationale: On page 41, the number of TFTC incidents is increasing in all four quadrants. Siena is a Level III Trauma Center serving the South East quadrant in conjunction with Sunrise Level II. Working through catchment zoning and TFTC protocols, Siena reduces overtriage of Steps 3 and 4 at Sunrise. It is estimated that there are between 1000 and 2000 TFTC Step 3 and 4 patients being transported from each quadrant. Appropriately adding trauma centers to these quadrants as needed, will help to balance hospital resources, costs, and patient transport time within Southern Nevada's trauma system.



## RTAB Advisory Position Recommendation 10

If new Level III Trauma Centers are needed, they should be selected using a deliberate and data-driven process that includes but is not limited to:

- a. Proximity to a significant number of patients satisfying TFTC Step 3 and 4.
- b. Proximity to areas where there are prolonged transport times that infringe upon patient access to timely medical attention.
- c. Provide capacity that stabilizes overtriage and undertriage within the inclusive trauma system.

- Rationale: The 2018 Clark County Trauma Needs Assessment Review v2.0 shows the current state of function in our inclusive trauma system. This data must be used in the decision-making process.
  - a. Proximity to a significant number of patients satisfying TFTC Step 3 and 4 can be demonstrated using techniques like the 5-mile radius sampling.
  - b. Proximity to areas where there are prolonged transport times can be demonstrated using techniques like Heat Maps.
  - c. The capacity to treat trauma patients is defined by the American College of Surgeons.



## RTAB Advisory Position Recommendation 11

If new Level III trauma centers are needed, they should be located where their catchment and service areas have minimal duplication of services with existing trauma centers. Their patient volumes must be adequate to prevent a negative impact on existing Trauma Centers. The process of proportional redistribution is currently the best option to be used to redefine catchment areas to meet the needs of the existing trauma system.

Rationale: The current 5-mile radius map is a sampling technique that demonstrates two things. It identifies the number of trauma patients within five miles of a hospital, which will establish the impact of adding a trauma center to the existing trauma system. It also identifies the percentage of overlap between adjacent hospitals, avoiding a configuration of stacked coins versus Olympic rings. The optimal trauma system configuration for Clark County is to meet the data-driven needs of trauma patients. Proportional redistribution is a process that is used to re-allocate patients fairly and to stabilize the trauma system to enhance trauma resources and capacity.



# RTAB Advisory Position Recommendation 12

If new Level III trauma centers are needed, they should be added:

- a. Ideally, adding one at a time, but not more than one in each of the three quadrants (NE, NW, SW).
- b. Each must be followed by a period of prospective study to assess the impact on the existing trauma centers.
- c. The period of prospective study must consider the overall verification process by the American College of Surgeons and the State of Nevada. This can take up to 3 years or more.

**Rationale:** The goal of any Trauma System is to have smart growth based on solid data from comprehensive community-wide assessments of trauma needs that ensures a high-quality system that is financially stable, cost-efficient, and meets the community's and patient's needs.





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# THANK YOU

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