This is the Advisory Position and Recommendations of the Regional Trauma Advisory Board (RTAB) of the Southern Nevada Health District (SNHD) on the question of adding new Level III trauma centers to the existing Southern Nevada Trauma System (SNTS). October 16, 2019

The Regional Trauma Advisory Board, RTAB, was organized in January 2005 to ensure a high-quality system of care for patients who experience physical trauma within Clark County by providing recommendations and assisting in the ongoing design, operation, evaluation, and revision of the system. RTAB members include One Trauma Medical Director and Program Manager from each designated Trauma center, an administrator from a non-trauma hospital, and persons who represent public and private EMS providers; health education and prevention; payers of medical benefits; general public; rehabilitation; finance; public relations; and legislative issues. These stakeholders represent the key decision-makers across the spectrum of care for injured patients and comprised more than 200 years of combined experience in the care of injured patients. 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.

Recommendation	**Reference including the 2018 Clark County Trauma Needs Assessment Review, Version 2**	**Rationale**
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.	Section V. RTAB Sub-committee Reports, A. Trauma Medical Audit Committee, Page 48	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.
2. There is no urgency to add additional new Level III Trauma Centers at this time.	Histogram of Transport Time, 2015-2018, page 29	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.
3. The existing trauma centers at UMC, Sunrise, and Sienna have met the increased trauma volume in the last five years.	Trauma centers currently in the Las Vegas valley (2013-2018), Page 5. Total Number of TFTC Incidents (1-4), 2013-2018, Page 15. TFTC Incidents by Trauma Center, 2013-2018, Page 16. RTAB meetings minutes	Overall trauma patients seen at trauma hospitals increased in the last five years. UMC, Sunrise, and Sienna 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.
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.	The population and zip code data on pages 7-11 are depicted on the maps on pages 12-13.	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.
5. Current American College of Surgeons (ACS), the Injury Pyramid of the World Health Organization (WHO), and Center	https://www.who.int/violence_injury_prevention/key_facts/VIP_key_fact_5.pdf	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

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.	https://southernnevadahealthdistrict.org/ems/documents/ems/tftc-protocol.pdf	patients. While all hospitals care for injured patients, not all hospitals are trauma centers. Hospital capability and patient needs must be matched.
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.	Number of TFTC Incidents by Step, Page 14 UMC TFTC Transports by Step, 2015-2018, Page 18. Sunrise TFTC Transports by Step, Page 19. St Rose TFTC Transports by Step, Page 20. TMAC & SNIPP pg 48 https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6101a1.htm	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 providing timely resources. 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
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), Southwest (SW), and Northwest (NW) quadrants of Las Vegas Valley where these transport times are longer.	TFTC Incidents by transport time and step, 2015-2018, page 30 Percentage of TFTC incidents with transport time <=15 minutes, page 31 TFTC incident total by Las Vegas Region, 2015 – 2018, page 41	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. Within the Clark County trauma system, ACS recommendation for trauma center response readiness for Level I and II (who treat TFTC Step 1 and 2 trauma patients) is 15 minutes while trauma center response readiness for Level III (who treat Step 3 and 4) is 30 minutes. When urgent care is needed, Level III and Non-Trauma Center emergency departments stabilize trauma patients before transferring to a level I or II 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.

8. The current data suggest that future projected trauma center needs are located peripherally of the populated portions of the Las Vegas valley.	Page 12-13 Page 34-36 Page 37-39	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.
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, SW, and NW. The addition of new trauma centers should be a deliberate and data-driven process that is based on patient needs and access.	Page 40-43 ACS guidelines	On page 41, the number of TFTC incidents is increasing in all four quadrants. Sienna is a Level III Trauma Center serving the South East quadrant in conjunction with Sunrise Level II. Working through catchment zoning and TFTC protocols, Sienna 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. The trauma volumes in the NE, SW, and NW are similar. 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.
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.	Page 40-42 Page 34-39	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

b. Proximity to areas where there are prolonged transport times that infringe upon patient access to timely medical attention. c. An identified shortage to the access of care exists or is projected to exist within five to ten years. d. Provide capacity that stabilizes overtriage and undertriage within the trauma system.		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. Shortages can be identified through, but not limited to, ACS accreditation; Trauma Center Bypass; TMAC peer review; Mortality and Morbidity; MAB EMS providers. d. The capacity to treat trauma patients is defined by the American College of Surgeons.
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.	Page 49-56	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.

12. If new Level III trauma centers are needed, they should be added: a. 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.	ACS guidelines	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.