Southern Nevada Health District

MINUTES

EMERGENCY MEDICAL SERVICES & TRAUMA SYSTEM

REGIONAL TRAUMA ADVISORY BOARD

FEBRUARY 24, 2016 - 2:30 P.M.

MEMBERS PRESENT

Sean Dort, MD, St. Rose Siena Hospital, Chair
Kim Dokken, RN, St. Rose Siena Hospital
Abby Hudema, RN, University Medical Center
Alma Angeles, RN, Sunrise Hospital
Sajit Pullarkat, Centennial Hills Hospital
Eric Dievendorf, Paramedic, AMR
Erin Breen, Transportation Research Center, UNLV
Dineen McSwain, RN, University Medical Center
Dale Carrison, DO, University Medical Center
John Fildes, MD, University Medical Center
Chris Fisher, MD, Sunrise Hospital
Senator Shirley Breeden, Public Representative
Margaret Russitano, RN, Sunrise Hospital
Frank Simone, Paramedic North Las Vegas Fire ept.
Danita Cohen, RN, University Medical Center

SNHD STAFF PRESENT

John Hammond, EMSTS Manager
Christian Young, MD, EMSTS Medical Director
Laura Palmer, EMSTS Supervisor
Lei Zhang, Public Health Informatics Scientist
Joseph P. Iser, MD, Chief Health Officer (via teleconference)
Annette Bradley, Esquire
Heather Anderson-Fintak, Esquire
Mike Bernstein, SNHD - OCDPHP
Rae Pettie, Recording Secretary

PUBLIC ATTENDANCE

Stacy Johnson, RN, MountainView Hospital
Maya Holmes, Culinary Union
Pam Udall, UNLV School of Medicine
Dan Musgrove, Valley Health System
Bibi Martin, University Medical Center
Kimberly Cerasoti, University Medical Center
Bill Bullard, Abaris Group
Daniel Llamas, HCA Healthcare
Chris Stachyra, Mercy Air
Catherine Jones, Valley Health System
Alex Ortiz, MD, University Medical Center
Alistair Chapman, MD, University Medical Center
Marc Jeser, DO, Centennial Hills Hospital
George Ross, HCA Healthcare
James Lovett, MD, Centennial Hills Hospital
Todd Sklamberg, CEO, Sunrise Hospital
Steve Burton, Paramedic, Las Vegas Fire & Rescue
Vick Gill, University Medical Center
Ellin Mardirosian
Doug Dobyne
Mason Van Houweling, CEO, University Medical Center
Josh Hedden, MountainView Hospital
James Sullivan, Culinary Union
Chris Mowan, COO, MountainView Hospital
Julia Sbragia, University Medical Center
Calesha Johnson, University Medical Center
Jennifer Renner, RN, HCA Healthcare
Amy Leong, Culinary Union
Nancy Nowell, RN, Centennial Hills Hospital
Elizabeth Snavely, University Medical Center
Debra Fox, University Medical Center
Carissa Rey, University Medical Center
Erica Nansen, University Medical Center
Kelly Stout, Esquire, Bailey Kennedy
Adam Rudd, CEO, Southern Hills Hospital
Melody Talbott, University Medical Center
William Osby, HCA Healthcare
Joshua Dickey, Esq., Bailey Kennedy
Andrew Chung, University Medical Center
Todd Lightower, Sunrise Hospital
Dan Hart

CALL TO ORDER – NOTICE OF POSTING

The Regional Trauma Advisory Board (RTAB) convened in the Red Rock Trail Conference Room at the Southern Nevada Health District, located at 280 S. Decatur Boulevard, on February 24, 2016. Chairman Dort called the meeting to order at 2:30 p.m. and the Affidavit of Posting was noted in accordance with the Nevada Open Meeting Law. Chairman Dort noted that a quorum was present.

I. PUBLIC COMMENT

Members of the public are allowed to speak on Action items after the Board's discussion and prior to their vote. Each speaker will be given five (5) minutes to address the Board on the pending topic. No person may yield his or her time to another person. In those situations where large groups of people desire to address the Board on the same matter, the Chair may request that those groups select only one or two speakers from the group to address the Board on behalf of the group. Once the action item is closed, no additional public comment will be accepted.

Maya Holmes addressed the Board on behalf of the Culinary Workers Union (CWU), Local 226, related to the three applications submitted for initial designation as a Level III center for the treatment of trauma. She stated that the Culinary Health Fund sponsored by their union and Las Vegas area employers provides health insurance coverage for over 143,000 Nevadans, which consists of the members and their dependents. She noted that through the health fund they are one of the largest healthcare consumers in the state. They are deeply committed to upholding the principles laid out in the 2015 Southern Nevada Trauma System Plan that rightly prioritizes the welfare of the injured patients, quality outcomes, cost effectiveness, and the economic viability of the Clark County trauma system. Their members, their families and the entire community rely on it.

Ms. Holmes stated the CWU is extremely concerned about the impact on the existing system if we expand the number of Level III trauma centers. The CWU does not believe there is any need for expansion at this time. She added, the trauma facilities at University Medical Center (UMC) are a tremendous and vital resource in our community, unlike other hospitals in the Las Vegas valley. All of UMC's resources remain here to provide residents with affordable and accessible healthcare. Additionally, damaging UMC's financial health will place a fiscal burden on the county and its taxpayers.

Ms. Holmes noted she had a letter to enter into public record that details the CWU's concerns (Attachment L). In the letter, the CWU states that expansion of the trauma system should be based on actual need, and should not destabilize or degrade the existing system, duplicate services, or unnecessarily increase medical costs. They note that none of the applications for Level III designation demonstrate that the current system is actually at, or over, capacity. Rather, their proposals focus on population and trauma volume growth. She stated that two of the proposals expect trauma patients will be redirected from existing centers, primarily UMC, who has the capacity, volume, skills and expertise to treat those patients. Two applications project a 7% population growth based on just three years of data; an 11.9% growth rate from 2012 to 2013; and a 2.1% growth rate from 2013 to 2014, for an average of growth rate of 7%. However, the compound annual growth rate of total trauma transports from 2010 to 2015 is actually down 4.86% at the system's only Level III trauma center. A 2.15% and 2.24% growth rate in 2014 and 2015 leads the CWU to question a 7% growth rate in the future.

The CWU is also concerned that splitting the trauma patient pool could worsen outcomes for patients because it reduces the experience any one center has. It is critical to ensure there is sufficient volume at trauma centers to develop and maintain the skills of trauma teams and delivery quality outcomes. Ms. Holmes noted that a recent study found that for every 500 additional trauma cases seen at a trauma center, the mortality rate drops by 7%. We are also extremely concerned that the designation of new trauma centers will lead to dramatically higher medical costs for patients and their families. Level III trauma centers typically treat patients with injuries that could likely be handled by well equipped and well staffed hospital emergency rooms;

however, they can also charge a high trauma activation fee, which dramatically drives up the cost of care for patients. There has been a rapid growth of trauma centers, especially Level III trauma centers in places like Florida. In a 2014 investigation, the Tampa Bay Times found thousands of cases in which patients with minor injuries were charged a trauma response fee. The fee was often more than all of their other medical charges combined. Many spent less than a day in the hospital. She added that one large system that operates in Nevada charged trauma patients over $124,000 on average, roughly $40,000 more than patients were charged at other trauma centers in the state. In 2014, Florida Blue, its largest private insurance company, paid an average of $117,150 per trauma patient in that system; nearly double the amount that Florida Blue paid to other state trauma centers.

Ms. Holmes concluded by reiterating that the CWU believes an unnecessary expansion of the trauma system will undermine the existing trauma resources and result in higher costs to patients.

Pam Udall addressed the Board on behalf of the UNLV School of Medicine (UNSOM). She stated she also had a letter to enter into public record (Attachment M). Ms. Udall also stated UNSOM is concerned about expanding the trauma system beyond the UMC region. Right now UNSOM is really dedicated to improving the physician shortage in Nevada. Their goal is to grow medical students, residents, ER physicians, orthopedic physicians and fellowships. UNSOM feels that by expanding the trauma system they will dilute and duplicate the resources that are already being done at UMC, which could ultimately jeopardize their residency programs. UNSOM's goal is to grow residency and fellowship programs so they can produce more physicians in this area, not jeopardize the current residency program so they can't train physicians here. It's very important that our residents have experience. The orthopedic residents have a wide range of experience from Level I, II and III trauma patients. It's important to have a huge caseload because in order to get certified to teach residents you need to show that you have a certain number of patients coming in. We need a wide mix of patients to have a wide array of training experiences. UNSOM's goal is to train very highly skilled physicians for the future.

Ms. Udall concluded by stating the Board must ensure its decision for expansion will not impact what UMC, a Level I trauma center, is currently offering in its mission to improve the shortage so we can produce more physicians, not less.

II. CONSENT AGENDA

Chairman Dort stated the Consent Agenda consisted of matters to be considered by the RTAB that can be enacted by one motion. Any item may be discussed separately per Board member request. Any exceptions to the Consent Agenda must be stated prior to approval.

Approve Minutes/Regional Trauma Advisory Board Meeting: 10/21/15

Chairman Dort asked for approval of the minutes from the October 21, 2015 meeting. *A motion was made by Dr. Fildes, seconded by Erin Breen, and passed unanimously to approve the minutes as written.*

III. REPORT/DISCUSSION/POSSIBLE ACTION

A. Trauma System Authorization Procedure Presentation

John Hammond provided the Board with a presentation (Attachment A) on the trauma center authorization process. He explained that the RTAB holds quarterly meetings to review data and assess the status of the trauma system on an ongoing basis. Data is obtained from the trauma field triage criteria, the Trauma Medical Audit Committee (TMAC), and the trauma registry, as available. If, during that time, a need for additional trauma centers, or changes to existing trauma centers is identified, the District Board of Health shall publish a Request for Proposal (RFP) for the addition of a center for the treatment of trauma or pediatric center for the treatment of trauma, or for a change in level of authorization for an existing center for the treatment of trauma or pediatric center for the treatment of trauma. Alternatively, a hospital

may submit an application for the same. Staff reviews all applications based upon criteria outlined in the Trauma Regulations. A recommendation to either support or deny the application is then made to the District Board of Health. If the application is approved and authorization is granted, the recommendation is forwarded to the Nevada Division of Public and Behavioral Health (DPBH where they will conduct a designation process as outlined in the Nevada Administrative Code (NAC). During that time the American College of Surgeons (ACS) will initiate the verification process and let the DPBH know that the verification processes have been completed. Upon successful completion of ACS verification, the DPBH will issue written notification of that designation, including supplemental licensure for the facility to engage in trauma care services.

B. Trauma System Data Collection Report Presentation

Mr. Hammond provided the Board with a detailed presentation (Attachment B) on the trauma system data collection process. He began with an overview of the legislative authority, NRS 450B.764, which mandates the Health Division to develop a standardized system for the collection of information concerning the treatment of trauma and carry out a system for the management of that information. The system must provide for the recording of information concerning treatment received before and after admission to a hospital. Per state law the data must be submitted by both trauma and non-trauma centers. Mr. Hammond reported that in the absence of a functioning trauma registry, a subset of trauma registry data is provided to the Office of EMS & Trauma System (OEMSTS) by all trauma centers in Southern Nevada. All data validation is done manually, which means that the dataset submitted to the OEMSTS has to be matched to the EMS call data, an extremely time consuming process. The trauma centers submit data for trauma patients electronically on a monthly basis via a HIPAA compliant server. The OEMSTS then filters through monthly Transfer of Care (TOC) data for the exact number of incidents in the 9-1-1 system involving a traumatic patient. The TOC data is compared with data from each trauma center in order to verify both the initial location of the emergency, as well as the trauma center designation. The current process for data collection and analysis is intended to provide an overview of local trauma activities. Once the trauma registry is operational the data will provide information about all trauma patients as defined by the ACS. This includes patients who have sustained a traumatic injury but were not seen or treated at a trauma center.

Abby Hudema inquired whether there is any recourse for applicants who are denied designation by the Board of Health. Mr. Hammond replied that per Section 300 of the Trauma Regulations, the hospital can seek remedy through the District Court.

C. Trauma System Questions Presentation

Mr. Hammond provided a PowerPoint presentation (Attachment C) that included questions emailed to him about the status of the trauma system. John explained the ACS's Needs Based Assessment of Trauma Systems (NBATS) Tool grades the median transport time in the trauma service area. He reported that according to the 2015 data, the median transport time to the trauma center in the trauma service area for all steps was 16 minutes, 42 seconds. Rush hour and other factors related to road conditions are taken into consideration by EMS crews and applied along with protocol guidelines in determining trauma destination. Step 3 and 4 patients do not generally require expedited transportation to a hospital.

In response to the question related to trauma declination, Mr. Hammond stated that trauma centers may use trauma bypass as needed; however, UMC does not decline transfers. He sent emails out to Sunrise and St. Rose Siena to ask if they decline transfers, and if so, they should send a declination report to the OEMSTS so a determination can be made as to whether there is an excess trauma bed capacity. Ms. Dokken stated that St. Rose Siena does not decline transfers as long as they can meet the level of care. Mr. Hammond concluded the presentation by stating that the payer mix data is irregularly presented at the TMAC. The TMAC is a

closed meeting so those data are not publically available from the OEMSTS. Ms. Breen asked if there was any indication that patients are not reaching a current trauma center in time to be adequately treated. Mr. Hammond responded that he could find no evidence of that in his research.

Dr. Fisher asked what measures are used to arrive at what is considered an unacceptable transport time. What is considered the tipping point to where we realize we need another Level III trauma center? Mr. Hammond responded that it's multifactorial; we have to look at outcomes from the hospital itself, such as if there's an increase in mortality, or in business to the OR, or an increase in admissions for mechanism only patients. Additionally, the ACS specifies median transport time in the trauma service area, which in this regard is Clark County, Nevada. Rural areas can have very low volume, but high transport times. If you couple that with the applicants entering the system as a Level III trauma center, transport time is not clinically significant for those stable patients as they travel roadway speeds, obeying all traffic laws to get to the trauma center. He used the example of Indian Springs, which is 30 miles away, or Cactus Springs, which is 45 miles away. He stated you can't safely make that transport time in 30 minutes. But those individuals are stable, mechanism only, or Step 4 patients. So you have to weigh the clinical factors along with the distance.

Dr. Fildes noted that the ACS has developed, in a multiple stakeholder manner, a needs based assessment tool. It allows you to look at the nuances through a series of techniques developed through their advisory committee. He pointed out that not every system can be viewed the same; some are heavily urban, some are mixed urban/rural, and the needs of the people have to be considered first. It has to be done by looking at the local data to find out where need exists and to see if you can match the resources to the patient need. He added that most of the regulations set the floor, but not the ceiling for that activity.

D. Trauma System Presentation

Dr. Fildes provided the Board with a presentation (Attachment D) that included both historic and current information to begin the discussion. He began by stating that the Southern Nevada Trauma System is working well. There are no incidents or reports where patients or EMS couldn't access trauma center care in a timely manner. When the local, regional and national benchmarks are examined by the TMAC and RTAB we fall well within the high performing range. He expressed concern that doubling the number of trauma centers at one time is unwise, unsafe, and dangerous--especially to the new applicants, because they are most likely to fail. He stated that it's not wise to grow a trauma system by dismantling parts and pieces of the Level I trauma center to create an over-supply of Level III trauma centers. A Level I trauma center is an essential asset; it trains and produces nurses, paramedics, technicians, doctors, and provides research, outreach and other critical features. A needs-based assessment and population studies must identify a need for new Level III trauma centers based on new growth, not by cannibalizing currently operating systems that are operating well. The same applies to all existing centers--the Level II and Level III trauma centers also should not be cannibalized to create new centers.

Dr. Fildes showed a manuscript from the CDC that was published in the January 2012 MMWR (Morbidity and Mortality Weekly Report). It came from an expert field triage criteria committee. It operationalizes the injury pyramid put out by the World Health Organization (WHO). He explained there are four types of trauma patients.

Step 1 patients are patients who have physiologic derangements, i.e. altered mental status, low blood pressure, tachycardia, hypoxia--physiologic evidence that the injury is endangering their life.

Step 2 patients are patients with anatomic problems such as open pelvic fractures or open skull fractures--anatomic evidence that this patient is in fact, at risk of life or limb.

Step 3 patients are patients who are awake, alert and stable, who don't qualify for Step 1 or Step 2, but who have suffered a significant mechanism like a fall, or perhaps a moderate speed car crash.

Step 4 patients are special populations like children, the elderly or pregnant women who may be at extra risk when low energy injuries are sustained.

Dr. Fildes explained that the manuscript describes why the patients are stratified in this way, and how they are distributed to acute care facilities. He stated that he was serving as the National Chairman of Trauma as the medical director for trauma programs for the ACS, and he helped the CDC facilitate this expert panel, and was imminently involved in the trauma system planning documents.

The next slide was from the American Trauma Society, which demonstrates that patients should be seen within the Golden Hour. The first thirty minutes of the Golden Hour is prehospital; the second thirty minutes is in hospital. Injuries are stratified and reported to the EMS System, which then triages them in the field and determines whether they go to a regular emergency department where they're likely to be treated and discharged. If they're found with significant injuries they would be transferred up. Alternatively, if EMS finds that they have life-threatening injuries they'd be sent to a trauma center and would go through the spectrum of treatments that route them back through rehab and return to home, work and family. He noted that all hospitals treat injured patients, but not all hospitals are trauma centers in a modern trauma system.

Dr. Fildes stated that Step 1 (physiologic) and Step 2 (anatomic abnormalities) criteria drive patients to Level I or Level II trauma centers for their care. In our system, patients that are Step 3 or Step 4 could be seen either in a Level I, II or III trauma center. Step 4 patients can clearly be seen in any hospital emergency department. The work of a Level I or II trauma center is simply stated as: The care of seriously injured patients with physiologic or anatomic abnormalities, and any and all others. But the Level I is also tasked with performing research, prevention activities, teaching and training. And it requires a larger number of complex patients that are concentrated into a clinical environment where these tasks can take place. Level II trauma centers deliver the same clinical care and they do treat these seriously injured patients with physiologic and anatomic abnormalities, as well as all others.

But the work of a Level III trauma center is different. Level III trauma centers care for stable patients--they don't qualify for Step 1 or Step 2 patients. They don't have physiologic or anatomic abnormalities, but they've been involved in mechanisms of injury where they have special considerations that are concerning. These patients are fully awake, alert and oriented; they have normal blood pressure, pulse and saturation, and they're stable. When these patients are transported, they're transported without lights and sirens. They travel at the posted street speeds, and the transport time is not as critical because the patients are not critical. In many systems these are patients treated at emergency departments.

Dr. Fildes stated that St. Rose Siena has functioned very well as a peripheral Level III trauma center. They see roughly see about two patients a day, about 60 a month. They average between 50-70 patients a month. 85% of the patients they see are either treated and discharged, or transferred to a higher level of care. Less than four patients per year are admitted directly to an operating room or an ICU. And about 15%, or about 10 patients per month, are admitted. That's the published data. They now have three applications from hospitals who want to engage in this level of care.

Dr. Fildes gave the Board some history as to what is unique about the Level I trauma center at UMC. In 1986, UMC was the Southern Nevada Memorial Hospital and there was one bed in the emergency department that was dedicated to trauma. At that time, the population was beginning to surge and it was clear that the need for the community was not met. An effort was created to designate and create some trauma centers around 1987 or 1989. He believes at that time that Sunrise and Valley came in as Level III trauma centers, but because of the

difficulty of treating the patients and the poor payer mix, both dropped out. At that time, with the surge in population and the absence of partners in the trauma system, the Southern Nevada Memorial Hospital made a decision to build a large, high capacity, stand-alone trauma center to meet the community need. The trauma center was opened in 1992, and it became designated as a Level I, and ultimately as a pediatric Level II. The Level I trauma center was built by the demand of the community for the needs of the community. T was purposely built for high volume and high acuity. A stand-alone center means it stands alone on our property and is not part of the emergency department. It's not part of the main hospital, and within its four walls it is completely self-contained. It's about 20,000 plus square feet; a little bigger than four basketball courts. It is a purpose built facility that has 11 resuscitation beds, three dedicated operating rooms, 14-bed closed ICU, its own blood bank, pharmacy and lab. UMC has its own radiology assets, including CT-scanning and angiography. That's a 24-hour a day, on-site staff in surgery, emergency medicine, anesthesia, resident teams and nursing teams.

When UMC entered into a partnership with the University of Nevada School of Medicine (UNSOM) it became the only training site for residents in the state. This June they will graduate the 100th general surgeon trained in Nevada. They're currently graduating emergency medicine residents, plastic surgery residents, ENTs, and this year for the first time, they will start an orthopedic residency program. The orthopedic residency was approved by ACGME (Accreditation Council for Graduate Medical Education, a private, non-profit organization that reviews and accredits graduate medical education (residency and fellowship) programs, and the institutions that sponsor them in the United States) based on historic numbers of orthopedic cases flowing through the trauma center. By July 2017 UNLV will become UMC's primary affiliate. Dr. Fildes noted UNSOM is a worthwhile and worthy community asset that must be supported. He added that UMC currently has a resident rotating in trauma surgery that comes from an HCA hospital in Florida. He doesn't see why we couldn't do the same from across town.

UMC has also developed a partnership with the U.S. Air Force and Nellis Air Force Base. They are intending to embed more active duty personnel into pediatrics and obstetrics.

The SMART (Sustainment of Medical and Resuscitative Training) program is a program for sustaining battlefield readiness and battlefield medical skills in between active and duty deployments. UMC currently has surgeons here from three states that are rotating. Dr. Fildes stated the reason they chose UMC is because it's uniquely designed as a high volume, high acuity center where in a short number of weeks a surgeon or an emergency medicine physician, an anesthesiologist, a nursing team, or a respiratory therapy team could see the necessary number of complex cases for military sustainment.

UMC teaches an advanced trauma life support course and a disaster medical course to over 700 providers. They've published over 100 articles and book chapters. They brought over $11 million in research revenue to the valley, thereby creating jobs. And the faculty is often asked to lecture and participate in national and international level conferences.

Dr. Fildes presented statistics from 2000 through 2015 that represents UMC's trauma admissions. In August 2005, two new trauma centers were added in the valley. Referring to the graph, he stated that from that time on UMC began losing volume. The population estimates discussed in the public hearings cited a 7% growth. UMC was told everything was okay; everything would go back to normal in a year. The graph depicted that after ten years, UMC's trauma admissions are still not back to normal. He explained the increase in admissions in the last three years came as a result of liberalizing Step 4 and transporting minimally injured special population patients. The increase is not comprised of patients that are critically injured--the kind required for training and for research, which is UMC's mission. They are the kind of patients that can be treated in general hospitals. Dr. Fildes noted the system should actually look at these patients as a potential source of over-triage, leading to excessive spending of medical financial resources.

Dr. Fildes stated that the notion that we could double the number of trauma centers by taking patients away from UMC because the population estimate is that we'll regain them sometimes in the future is a ridiculous discussion. He contacted the county demographer to ask for accurate numbers with regard to population, and learned that the population isn't soaring. Dr. Fildes stated that UMC's mission to train residents is based upon them earning a specified number of indexed operative cases and clinical experiences. If they don't, then the residencies will be taken away from them. He expressed concern that there is not enough data to make an informed decision at this time.

Dr. Fildes pointed out an article from Modern Healthcare (September 2015) that outlines why the number of trauma centers is rising in the U.S. He pointed out it's a financial argument. There are more insured individuals, and providing trauma care allows charging higher facility fees and trauma activation fees, and provides a halo effect that stimulates other hospital services like blood bank, physical therapy, radiology, and the like. The President and CEO of The Abaris Group, a healthcare consulting firm, re-published in this month's newsletter that these hospitals are learning that there's not a lot of constraints as to whether they can go after trauma or not. The consulting group stated that at some point we're going to have too many trauma centers, and that doesn't help anybody.

Dr. Fildes stated that basing their analyses on zip codes is no more than an exercise in postal efficacy; we're not delivering mail, we're delivering patients. The trauma system should be designed around municipal boundaries; it should be designed around police and fire jurisdictions. Additionally, it should be looking at physical boundaries like railroad rights of way, highway crossings, and the like. It should look at the needs of the community and the people who live in the community. It should look at the number of cases generated in the community. It should look at balancing all the resources so that everyone is successful in caring for the community, and it should do so in a cost efficient manner than doesn't have over-triage as a financial burden to the payers.

Dr. Fildes referred the Board to Dr. Mark Faul's article from the MMWR that was written simultaneously with the creation of the trauma field triage criteria by the CDC. He stated Dr. Faul is a well-known researcher, and is listed as the third author on the article. He stated that when public policy is formed at the federal level they look at two things; lives and dollars. They want to save lives, and they want to spend dollars wisely. The last creation of the trauma field triage criteria were believed to get the right patient, the right care, the right place at the right time, and to save lives and sustain the life-saving effects that have been realized by organized trauma systems over the last three decades. At the same time, those trauma field triage criteria were believed to be tightened up enough to reduce over-triage and reduce healthcare spending for unnecessary trauma center visits.

Dr. Fildes concluded his presentation by reiterating that the Southern Nevada trauma system is working well. There are many reasons why doubling the number of trauma centers at one time is unwise and dangerous. Every trauma system has an academic Level I trauma center that is an essential asset that actually brings more than it takes. You cannot build a really effective trauma system by dismantling existing Level I, II and III trauma centers to create an oversupply of Level III trauma centers. And we've been directed by the CDC, the federal government, and the ACS to conduct needs based assessments and population based studies to identify needs and locations for new centers. He remarked that it's been adequately done to date.

Dr. Fildes stated the applicants have done a good job in bringing forth their desire to participate. In his opinion there needs to be a needs based assessment taskforce created, with oversight by the Health District. He believes the stakeholder group for that taskforce should be broad to include both current and future applicants. The metrics and measures have to be determined and agreed upon, and defined as to not if, but when, new trauma centers will be needed. Also, when they can enter and how we should carry this forward. He added there has been a lot of discussion about what the map looks like and where the people live. He stated

that they can talk all they want about Mt. Charleston or Indian Springs; however, looking at a picture of Clark County taken by NASA, 99% of the patients who are going to need transport and treatment are where the lights are.

Dr. Fildes referred the Board to the ACS' NBATS (Needs Based Assessment of Trauma Systems) tool and noted that it was created at a multiple stakeholder high level meeting. The tool looks at six discreet areas: population trends, median transport time, lead agency system and community support; the volume and distribution of seriously injured patients; the role of the Level 1 academic trauma center as an essential asset; and the number of severely injured patients seen in trauma centers that are already in the trauma system. The stakeholders consisted of the Vice President of Trauma Services for HCA, the Nevada State EMS Office, and the Florida Department of Health, as well as the ACS and a handful of federal agencies. He believes that the work they put forward should be exercised here and that we should look at their own data to try to determine if, where, and when new centers should come on board. He suggested SNHD create a needs based taskforce utilizing the NBATS tool and the ACS trauma system document for guidance. The tool must assess the applicant's preparedness as well as community factors, and also assess the impact of new centers one at a time so that the new applicants are successful, and the existing trauma centers who have already made their commitment are protected.

Dr. Fildes apprised the Board that he will make two motions as an administrative responsibility to deny approval of authorization for the three applicants, but simultaneously advocate for the creation of a needs based assessment taskforce to include all three applicants, in addition to wider community stakeholder participation.

Dr. Dort thanked Dr. Fildes for his presentation and asked for comments. Dr. Fisher asked if the assessment taskforce had certain metrics in mind such as transport times or trauma per population. Dr. Fildes replied that at the outset they would start with looking at it globally to determine the needs and measureable events. He noted that a common question asked is why Sunrise, a Level II trauma center, and UMC, a Level I trauma center are only three miles apart. He explained that in 2004 the Department of Homeland Security pointed out Western Pacific Railroad's right of way. The I-15 corridor and Las Vegas Blvd. creates a geographic boundary that sometimes prevents east/west movement of EMS personnel. So they need to exercise common sense and analyze the reasons behind their decision making.

Ms. Breen expressed concern about UMC, a Level I trauma center that supports so many areas of the community, will end up with patients who don't have the ability to pay their bill, thereby putting the community at risk of losing UMC. They need to include that in the discussion when assessing the need to expand the trauma system. Dr. Fildes stated that in order for UMC to discharge its duties it needs a fixed number of patients. He added there is a double-edged sword with regard to healthcare financed around trauma. There are the fixed and variable costs of operating a trauma center, which should really be referred to as the cost of preparedness. It's the reason we support and police and fire department. But it's important to pay for that preparedness, and to have that in the community as our public safety net. But if one fire house is good, how about 3,000 fire houses? He noted there is a tipping point in there somewhere. With regard to healthcare financing in trauma at the national level, the federal government is the biggest payer. It didn't want the CDC to bring out trauma field triage criteria that would produce an oversupply of over-triaged patients that would then have to be reimbursed by Medicare and Medicaid. They wanted to know that the number of lives saved is going to be sustained or improved; but also that the unneeded care in the system would be eliminated. He noted that that's not the way the pendulum is swinging right now. So one of the biggest risks in the community isn't really to the Level I trauma center or the patients; it's the payer groups.

E. Office of Emergency Medical Services & Trauma System Recommendation Regarding Trauma Center Applications

Mr. Hammond provided a presentation (Attachment E) on SNHD's recommendation to the Board. He stated the OEMSTS derives its authority from NRS 450B.231, wherein the District's Board of Health, in a county where the population is 700,000 or more, shall adopt regulations which establishes standards for the designation of hospitals in the county as centers for the treatment of trauma. The regulations are consistent with the regulations adopted by the State Board of Health pursuant to subsection 2 of that same law. With regard to the addition of centers for the treatment of trauma to the system, Nevada Administrative Code (NAC) 450B.828 states that for reasons including but without limitation, there must be a significant increase in the volume of patients with trauma served in the geographic distribution of the patients with access to existing centers for the treatment of trauma, or pediatric centers for the treatment of trauma. Section 300 of the Trauma System Regulations, the OEMSTS' authority, states that any hospital that desires designation as a center for the treatment of trauma, or a pediatric center for the treatment of trauma, shall first request authorization from the Board of Health. The Board of Health shall determine the needs of the Clark County trauma system based on evidence obtained through continuous evaluation, assessing volume acuity and geographic distribution of patients requiring trauma care, and the location, depth, and utilization of trauma resources within the system. Per the District Procedure for Authorization as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma, the applicant must demonstrate the need for additional trauma services at the level being requested in the proposed service area including the population we serve, geographic considerations such as distance to existing centers, and the projected impact to the trauma system.

Mr. Hammond explained that the RTAB and TMAC provide continuous oversight of the trauma system through review of the EMS & Trauma System data, the Trauma Center data, engaging the participation of both public and private EMS agencies, rehabilitation facilities, and long-term care facilities. He reported that since 2010 the data has not shown an increase in volume that could not be met by the existing system. Since 2010, EMS agencies have not indicated that out of service times linked to trauma center location or trauma care transfer was an issue; and the OEMSTS has not received a complaint from the public or any provider regarding the lack of access to trauma care.

Mr. Hammond referred the Board to a graph illustrating that the annual volume of trauma patients has increased through the years from 2010 to 2015. However, the increase between 2013 and 2015 is a total of 260 patients, which divided between the existing trauma centers is approximately seven per month. He referred the Board to another graph illustrating trauma patient volume by step and year. The next graph illustrated trauma patient volume by step and year. He noted there was no virtually no change in the number physiological and anatomical patients. With regard to patient acuity and disposition, the data show no significant percentile changes since 2010. Patients are being seen, discharged, or admitted to the operating room or ICU at the same rate for the last six years. The median transport time for all steps in Clark County from 2010 to 2015 is approximately 16 minutes across the board.

Mr. Hammond remarked that the applicants have suggested that trauma center designation would imply that patients would receive care in their communities. He noted that in the "Resources for Optimal Care of the Injured Patient 2014," page 49, the ACS states that rural hospitals should endeavor to treat trauma patients in their community as appropriate to the level of resources available. And that, in remote areas, the Level III trauma center may take on the responsibility for education and system leadership. He noted that there is no similar statement regarding community, suburban, or urban systems, and that the applicants are in suburban areas, not rural areas, of Las Vegas. The ACS resource document further states that Level III trauma centers are generally not appropriate in an urban or suburban area with adequate Level 1 and/or Level II resources. He noted that, as in previous examples, patients

are being treated and released at the appropriate center. The ACS paper reinforces the importance of focusing on system need when expanding a trauma system; cautions against passivity in lead agencies; and supports lead agency authority to designate trauma centers.

In response to statements made by the applicants that they are already seeing trauma patients in their facilities, Mr. Hammond remarked that that is a function of an inclusive trauma system. All receiving facilities are capable of assessing trauma patients and transferring to a higher level of care as appropriate. He noted that the following handouts are available: 1) ACS Releases Position Statement Stressing Importance of Trauma Center Designation Based upon Population-Based System Need (Attachment F); 2) A National Evaluation of the Effect of Trauma-Center Care on Mortality, published in The New England Journal of Medicine (Attachment G); 3) Abaris Group's Clark County Trauma System Assessment (Attachment H); 4) Centennial Hills Hospital Medical Center Application for Level III Trauma (Attachment I); MountainView Hospital Level III Trauma Center Application (Attachment J); Southern Hills Hospital & Medical System Level III Trauma Center Application (Attachment K). Mr. Hammond stated that all three applicants have submitted letters of support from individuals and elected officials, but there were no letters submitted from governing bodies or that meet the NBATS standard.

At the conclusion of the presentation, Mr. Hammond stated that in 2011 the ACS visited Clark County to assess the trauma system and their recommendation was that at the time of the visit there was general agreement by both stakeholders and the trauma system consultation that the current configuration of the trauma system should remain in place. Mr. Hammond stated that based on NRS 450B, NAC 450B, Trauma System Regulations, the "District Procedure for Authorization as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma," and the ACS' collected references, and available EMS & Trauma system data, the current system continues to meet the trauma needs of the trauma service area. It is the recommendation of the OEMSTS that the three applicants have not demonstrated unmet need for additional trauma services, and therefore cannot recommend authorization to seek designation as a center for the treatment of trauma.

Dr. Fildes remarked that what is unique about our system is the way that it evolved in that we have trauma centers of widely varying capability. To say you need one or two trauma centers per mission is an ordinary trauma system, with rather ordinary sized trauma centers in it. For example, the University of Maryland serves the entire state of Baltimore, as well as adjacent states. The same for Ryder Trauma Center in Miami and Presley in Memphis; they all have unusually high capacity by design. He cautioned them against that particular type of measurement.

F. Centennial Hills Hospital Application for Initial Authorization as a Center for the Treatment of Trauma

Member John Fildes made a two-part motion: 1) to not support Centennial Hills Hospital's application; and 2) to create a needs based assessment taskforce with oversight by SNHD and invite Centennial Hills to be a part of that group. Member Breen seconded the motion, and the motion carried.

Dr. Iser was on the conference call line. He asked for the motion to be repeated as it was inaudible on his end due to a rainstorm. After hearing the motion, he asked whether the RTAB was uncomfortable with staff bringing forward their recommendations at that time. He asked whether the Board felt the taskforce would arrive at a different recommendation. Dr. Fildes replied that his hope is that the taskforce could define metrics and measures that would further indicate when, and if, new centers should be brought into the system. Dr. Iser noted that over the past several months the assessment of the applications took hours of staff time. He asked if they could recommend that in the future the hospitals respond in a RFP (Request for Proposal) as indicated in NAC as opposed to applying on their own.

Dr. Fildes asked if he could withdraw his first motion and make another motion. *Member Fildes made a motion that SNHD investigate an RFP process for the addition of future trauma centers.* Mr. Hammond reminded Dr. Fildes that a motion was made, seconded and voted on. Dr. Dort asked whether Dr. Fildes needed to withdraw his entire initial motion. Mr. Hammond replied that the first motion could stand, but he could make an additional motion.

Member Fisher amended the motion to include a specific time period to review and reassess the data, such as every 18 months or two years. Member Fildes accepted the amended motion, and it was seconded by Member Breen.

Dr. Iser noted that the Nevada State Division of Public & Behavioral Health may have a functional trauma registry within a year or less. Ms. Dokken stated that the review process is currently done by the TMAC on a quarterly basis. She asked whether they are going to drop that process in lieu of the new process. Dr. Fisher replied that the taskforce would be comprised of interested parties who may want to create a broader spectrum of the review process. Ms. Dokken asked for clarification of the amendment because she was under the impression that the purpose of creating a taskforce was to come up with criteria, not vote every two years. Dr. Fisher clarified that he is not suggesting they vote every two years, but he would like to ensure they assess for need on a continuous basis.

Annette Bradley, general counsel for SNHD, remarked that the agenda item they are voting on is specific to the application for the addition of a Level III trauma center. Therefore, they cannot vote for an additional taskforce. Dr. Iser suggested they put it on the agenda for their next meeting. Ms. Bradley noted the new motion is voided and Dr. Fildes' first motion will stand.

G. MountainView Hospital Application for Initial Authorization as a Center for the Treatment of Trauma

Member John Fildes made a two-part motion: 1) to not support MountainView Hospital's application; and 2) to create a needs based assessment taskforce with oversight by SNHD and invite MountainView Hospital to be a part of that group. Member Cohen seconded the motion, and the motion carried.

H. Southern Hills Hospital Application for Initial Authorization as a Center for the Treatment of Trauma

Member John Fildes made a two-part motion: 1) to not support Southern Hills Hospital's application; and 2) to create a needs based assessment taskforce with oversight by SNHD and invite Southern Hills Hospital to be a part of that group. Member McSwain seconded the motion, and the motion carried.

I. Nominations for Non-Standing RTAB Member Seats for Terms Expiring June 30, 2016

Mr. Hammond stated the OEMSTS will be mailing out nomination forms for the next fiscal year for the following non-standing RTAB member seats:

1. General Public Representative
2. Legislative/Advocacy Representative
3. Public Relations/Media Representative
4. Health Education & Prevention Services Representative
5. Payers of Medical Benefits for the Victims of Trauma

J. Committee Report: Trauma System Advocacy Committee (TSAC) 02/23/16

1. Discussion of Outreach Efforts to Increase Awareness about Southern Nevada EMS & Trauma System

Ms. Breen stated that one of the suggestions made at the last TSAC meeting was for

members to inform one another when conduct outreach activities so they can participate by hanging the trauma system banner, as well as their own literature. She encouraged the RTAB to do the same.

2. Discussion of Future Legislative Efforts Related to EMS & Trauma System Development and Funding in Nevada

Ms. Breen remarked that the 2017 legislative session is right around the corner. The TSAC plans to meet on at least a monthly basis until such time. She shared that their next agenda item will be to create a wish list of what they want included in the 2017 bill. She noted there is a lot of conflict on getting support for the bill if it includes the trauma registry, but the need is still great. Their goal is to have funding for trauma services, especially the rural areas that have such an unmet need. She stated Senator Joyce Woodhouse has again agreed to carry the bill. They plan to meet with the insurance companies ahead of time because they still feel that pursuing a $1 fee on insurance policies is the way to fund the trauma system. The plan is to educate the insurance companies as well as other legislators.

She commented that Dennis Nolan has accepted the EMS Chief position in Northern Nevada, but he will remain on the TSAC.

K. Discussion of 2014 Annual Trauma Report

Mr. Hammond reported the State trauma registry received funding in the last legislative session, and that the administrator of the state trauma registry is Dr. Jeanne Freeman. She has been working at upgrading the system to Version 5, and she is assuring we will have some trauma data moving forward. He noted that Dr. Freeman was able to obtain a small subset of data from the non-trauma hospitals, which she included in the 2014 report. He perused the report and felt it looks more like an executive summary. The report has quite a few limitations and the data can't be used to manage the system.

L. Discussion of Status of State Trauma Registry

Mr. Hammond reiterated that Version 5 updates are in progress. Moving forward they were work on issues related to getting the data to the State trauma registry. He asked if the trauma centers were having any issues. Ms. Hudema stated she has increased all of the trauma center's reports. She has also increased compliance in over 80% of the non-trauma hospitals as of the last couple months. Mr. Hammond mentioned that Mr. Whitley, at the State, is interested in allowing us to host and use the trauma registry, which would be fantastic. Dr. Fildes noticed the report didn't identify critical access hospitals as a special category. He feels that moving forward it would be important for rural health. John agreed to discuss it with the State office.

M. Trauma Field Triage Criteria Data Report

Mr. Hammond referred the Board to view the various TFTC reports for the third quarter of 2015 that were available in their member packets. He reported there was a total of 1,682 transports; 1,593 adult; and 89 pediatric. For the special considerations population there were 240 adult and 3 pediatric transports. For mechanism there were 993 adult and 82 pediatric transports. For Anatomical there were 190 adult and 2 pediatric transports. For physiological there were 170 adult and 2 pediatric transports. He stated the patients discharged, admitted, OR, ICU or who died are all in line with previous data. The total out of area transports is hovering around 3%, which is adequate according to the standards of the RTAB.

N. St. Rose Siena Trauma Bypass Report

Mr. Hammond stated that in November 2015 St. Rose Siena's medical director called the office and indicated they would be having a planned electrical outage on November 23rd. Ms. Dokken gave a summary, stating they did so because of the construction that was taking place at the Siena campus. About a week prior to the outage they contacted the trauma centers, EMS agencies and SNHD to report they would be on bypass from 2300 to 0500 on November 23rd. She noted everything went well. Mr. Hammond added that the OEMSTS followed procedure by reviewing the incident before both an ad hoc committee and the TMAC.

IV. INFORMATIONAL ITEMS/DISCUSSION ONLY

A. Report from Emergency Medical Services Representative

Dr. Dale Carrison reported that Clark County residents are increasingly failing to pull over for EMS emergency vehicles exhibiting lights and sirens. In a recent meeting with the Metropolitan Police Department's (Metro) traffic division, they discussed the need to develop a public campaign to address this major issue. Dr. Carrison remarked that when people fail to pull over it's dangerous for all involved; it also delays transport times. Ms. Breen commented that Metro's video team does a great job of putting videos together. She suggested they include Zero Fatalities in their endeavors. Dr. Carrison stressed the importance of having a unified force with community partners. He plans to also address the issue at the next MAB meeting.

B. Report from General Public Representative

Senator Shirley Breeden stated there were no items to report.

C. Report from Non-Trauma Center Hospital Representative

Sajit Pullarkat stated there were no items to report.

D. Report from Rehabilitation Representative

Margaret Russitano stated there were no items to report.

E. Report from Health Education & Prevention Services Representative

Dineen McSwain reported that the following events are planned for the upcoming months:

February 23 and March 5 – UMC Kohls Cares for U (car seat event)

March 20 – Bike Safety Helmet Giveaway at Piero's

March 9 – Pedestrian/Bike event at Doral Academy Preparatory School

March 16 – Nevada Moves Day

March 17 – Leprechaun in the Crosswalk

March 19 – Sunrise Hospital Easter Egg Hunt

March 31 – April Pools Day at the Henderson Multigenerational Center

April 1 – Don't be a Fool; Light Yourself Up at Night will be held at 5810 Boulder Hwy, in the Walmart parking lot across from Sam's Town.

April 8 – Prevent Child Abuse Nevada is asking every agency to join them and Go Blue for the day. She stated that the logo, a pinwheel, is the national symbol for child abuse.

April 9 – Another prevent child abuse event will be held at Town Square from 10:00-2:00

April 29 – 51's Game. A $10 ticket will go towards preventing child abuse

April 30 – Another prevent child event will be held at the Container Park downtown.

May – Sunrise Safe Kids Heat Stroke kickoff begins

F. Report from Legislative/Advocacy Representative

Erin Breen stated there were no items to report.

G. Report from Public Relations/Media Representative

Danita Cohen stated there were no items to report.

V. PUBLIC COMMENT

Jennifer Renner stated that a letter was sent to the OEMSTS earlier that week from MountainView Hospital and Southern Hills Hospital that raised concerns about the potential for bias and conflicts of interest among the RTAB members. In the letter, a request was made to retain an independent third party to evaluate the applications and conduct a needs assessment. She reported that both hospitals have submitted a formal objection to the RTAB's role in the authorization process. She asked that the letter be placed into public record (Attachment N).

VI. ADJOURNMENT

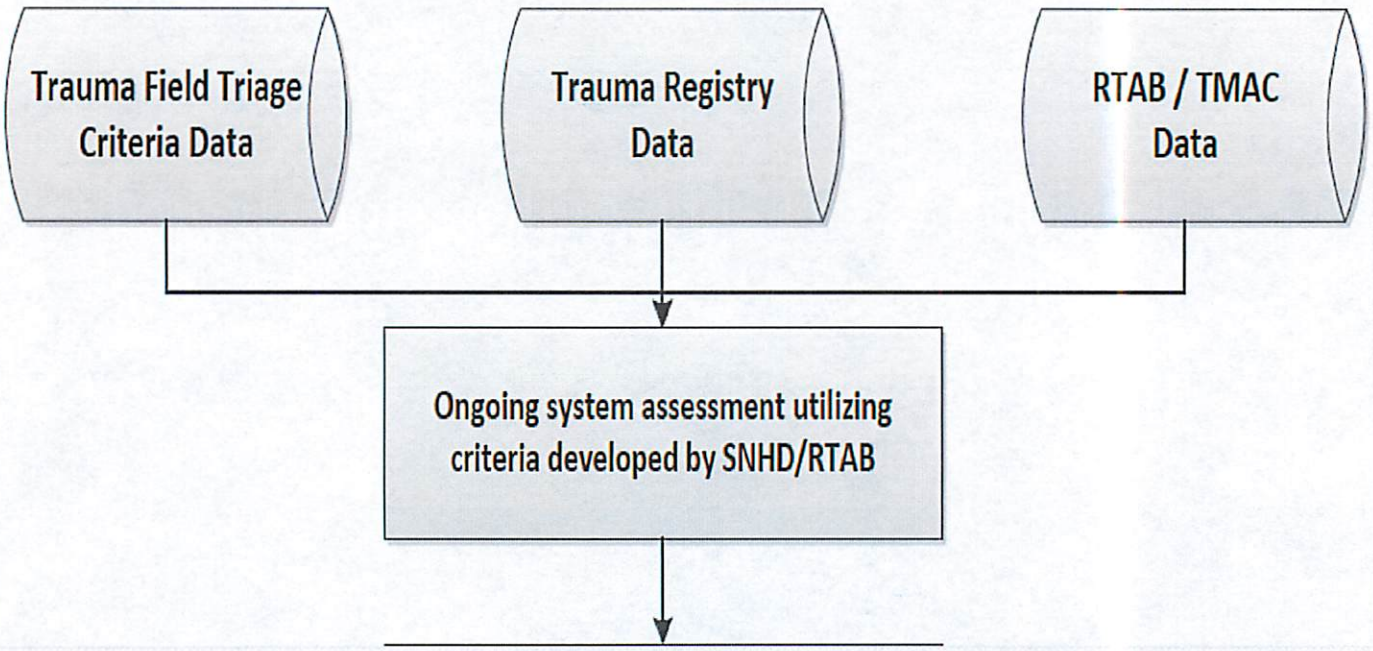
As there was no further business on the agenda, Chairman Dort adjourned the meeting at 4:25 p.m.

ATTACHMENT A

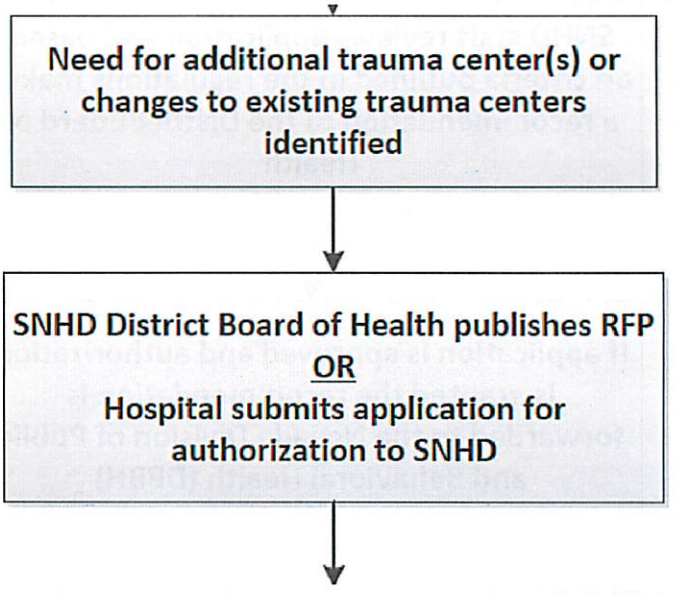
Southern Nevada Trauma System

Overview of Trauma Center Authorization Procedure

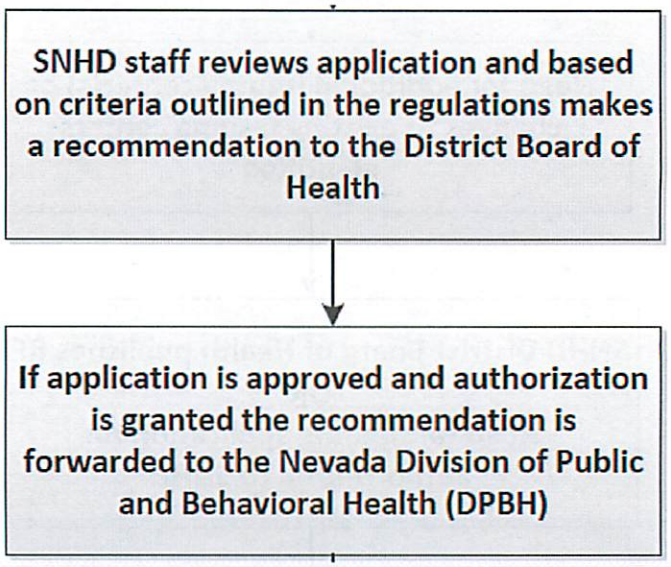
Southern Nevada Health District
Trauma Center Authorization Process



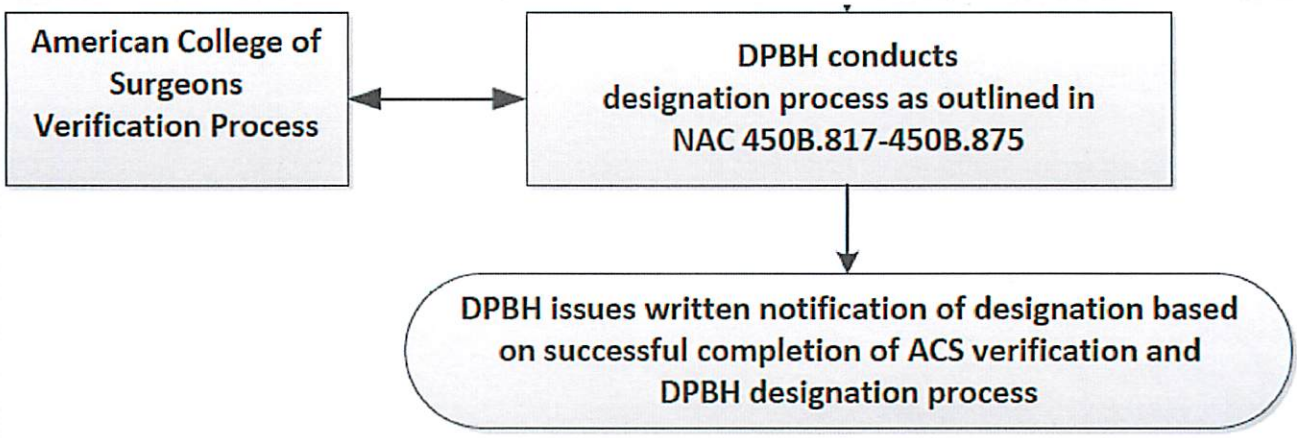
Southern Nevada Health District
Trauma Center Authorization Process



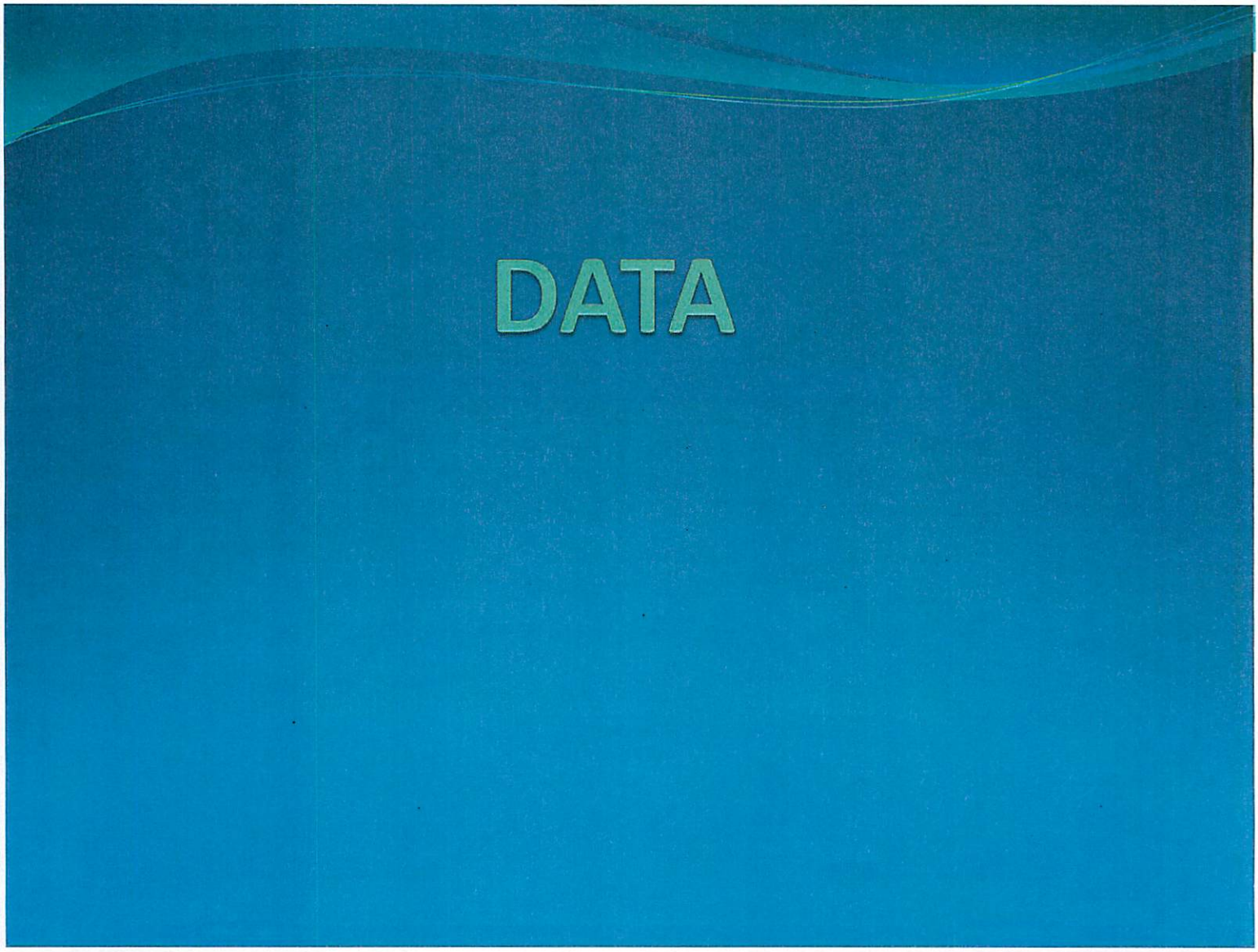
Southern Nevada Health District Trauma Center Authorization Process



Southern Nevada Health District Trauma Center Authorization Process



ATTACHMENT B



Southern Nevada Trauma System Legislative Authority

NRS 450B.764 Development of system for collection of information concerning treatment of trauma.

The Health Division shall develop a standardized system for the collection of information concerning the treatment of trauma and carry out a system for the management of that information. The system must provide for the recording of information concerning treatment received before and after admission to a hospital.

The 5 W's of Data

- Why?
- Who?
- What?
- Where?
- When?
- And H...How?

Why Do We Need Data?

" The ideal trauma care system has an information system which provides for the timely collection of data from all providers in the form of consistent data sets with minimum standards. The information system should be designed to provide system-wide data that allow and facilitate evaluation of the structure, process, and outcome of the entire system, all phases of care, and their interactions. An important use of this information is to develop, implement, and influence public policy."

- The American College of Surgeons, Clark County Trauma System Consultation, August, 2004

Who Does the Data Represent?

Data collected by the Office of Emergency Medical Services and Trauma System (OEMSTS) examines the age groups affected by trauma in the Southern Nevada area.

Payer mix information has been evaluated on a yearly basis after the end of the fiscal year for most trauma centers. 2015 data should be available in July 2016.

What is The Data?

OEMSTS trauma data is a subset of NTDB data. The data measures number, severity and distribution of TFTC patients in Clark County. This data is used by SNHD and community stakeholders to target education, outreach and prevention measures in the community.

Where is The Data?

Where does trauma occur in Southern Nevada? OEMSTS studies trauma by several methods, including GPS coordinates, zip code, and physical address. All of this information is verified by OEMSTS for accuracy.

Catchment area compliance by EMS is also measured using trauma data. Currently, the RTAB accepts a 5% out of area transport rate.

When is The Data?

Data is submitted on a monthly basis and analyzed quarterly. Aggregate data regarding the function of the trauma system are presented during TMAC and RTAB.

How...The Outcome of the Trauma Patient

OEMSTS evaluates the disposition of the patient from the trauma center. This includes patient admission, treatment in the Operating Room, patient discharge, or patient death.

All trauma center deaths are evaluated by in house performance improvement programs. Any mortality with the possibility for improvement is further reviewed by OEMSTS and the Trauma Medical Audit Committee (TMAC).

History of OEMSTS Trauma Data Collection

Trauma data is not currently available from the State trauma registry . This data would provide information about all trauma patients as defined by the American College of Surgeons – Committee on Trauma (ACS-COT). This includes patients who have sustained a traumatic injury but were not seen or treated at a trauma center.

Instead, a subset of trauma registry data is provided to OEMSTS by all trauma centers in Southern Nevada.

Our current data collection and analysis is intended to provide an overview of local trauma activities.

History of Data (cont.)

With the use of analytical software, OEMSTS has reviewed, updated, and stored trauma data from 2010 to the most recent quarter.

The analytic software program has been in use since 2014. It provides a user-friendly interface for reporting without time consuming manual analysis. However, all data validation is still manual at this time.

OEMSTS Data Processing

Data processing and validation consists of several steps.

1. All trauma centers submit data for trauma patients on a monthly basis. This data is submitted electronically, via a HIPAA compliant server to the OEMSTS.
2. OEMSTS filters through monthly Transfer of Care (TOC) data for the exact number of incidents in the 911 system involving a traumatic patient.

OEMSTS Data Processing (cont)

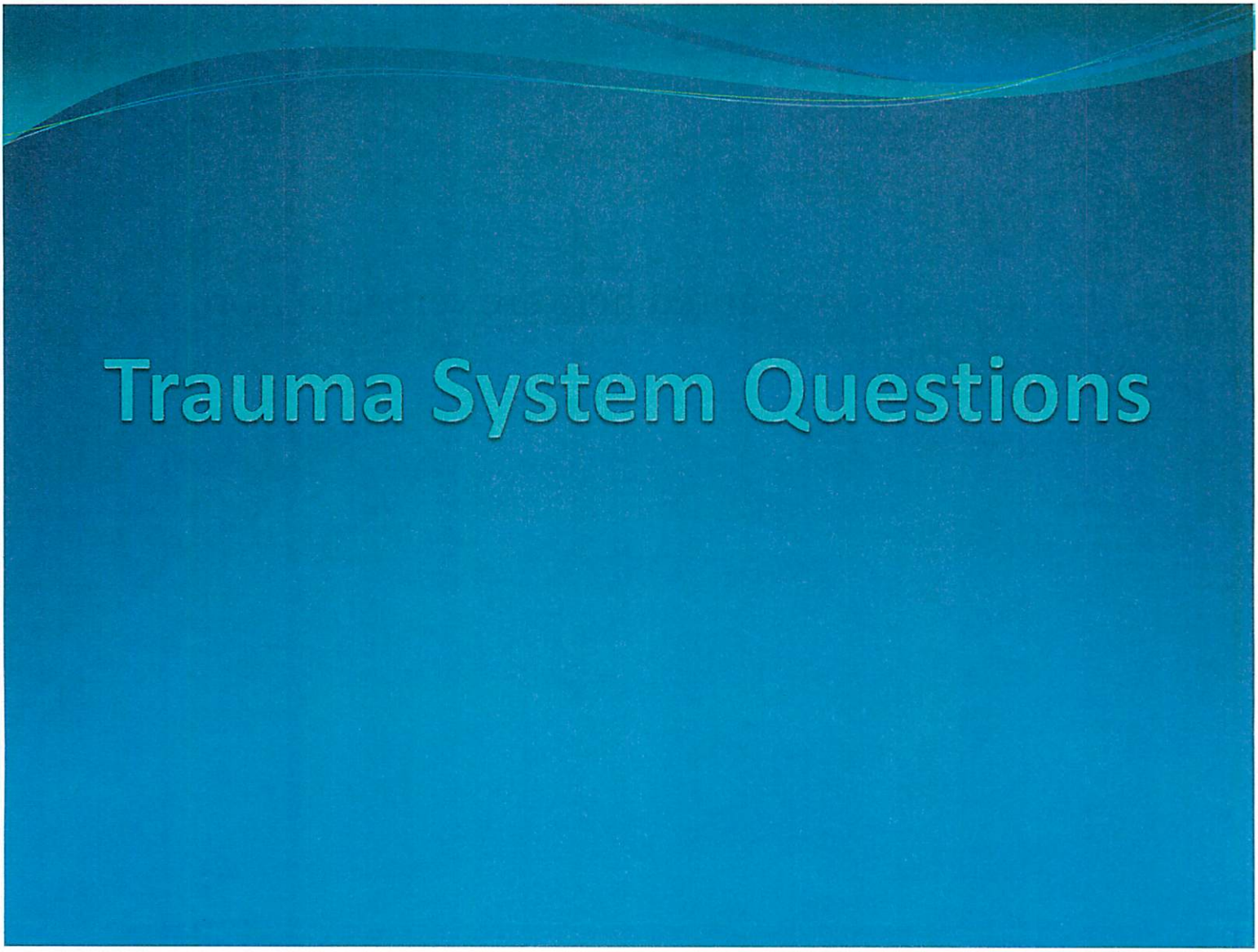
3. The TOC data is compared with the data from each trauma center in order to verify both the initial location of the emergency as well as the trauma center destination. GPS information is validated for each physical address including zip code.
4. EMS response times reported by hospitals are compared to TOC data and validated.

OEMSTS Data Processing (cont)

5. After all data has been examined and evaluated for accuracy, it is combined with trauma field triage criteria information and patient age demographics from the trauma centers to form a view of the Southern Nevada Trauma System that is as complete as currently possible. Reports are then generated using analytic software.

QUESTIONS?

ATTACHMENT C



Format

- The questions presented here are verbatim from the original email.

Need Question

- My understanding is that our decision whether to recommend approval for one or more of the three applicants as centers for the treatment of trauma is to be based on "Need"; that is, whether the population in each of the areas where the specific hospitals are located is sufficient to warrant an additional trauma center. Other than "Need," are there any other criteria we (the RTAB) should be considering? If the answer is "Yes," please identity them for us. Also, are we required to give greater weight to one factor versus another?

Need Answer

- Need is not based solely on population in a specific area. Need is whether or not those populations are not being served by the current system.
- The RTAB should consider, based on data that has been presented quarterly and assessment tools promulgated by the ACS, if the current system is meeting the current need.

St. Rose Question

- In 2004, it was determined that the southeastern section of Clark County (the Henderson/Green Valley area) needed additional trauma services due to population and trauma cases; and thus designated St. Rose Siena as a Level 3 trauma center. Is the population and/or trauma volume in the northwestern and southwestern sections of Clark County at or near the population and/or trauma volume as 2004?

St Rose Answer

- Henderson population per the US Census in 2004 was 224,191
- Centennial Hills zip code list represents 170,391
- Mountain View zip code list represents 533,875
- Southern Hills zip code list represents 311,026
- To reiterate, need is based on if the population is being served by the current system.

St. Rose Answer (continued)

- St Rose Siena entered the trauma system prior to the current method of authorizing facilities was developed.
- The OEMSTS holds trauma data starting in 2005. An assessment of trauma volume for 2004 is unavailable from the OEMSTS.
- Centennial Hill's application references zip codes where 277 step III and IV patients originated in 2014.
- Mountain View's application references zip codes where 641 step III and IV patients originated in 2014.
- Southern Hill's references zip codes where 541 step III and IV patients originated in 2014.
- In 2014 St. Rose saw 368 trauma patients.
- Note that the catchment areas have not been finalized and may not be the same as stated in the respective applications.

Patient Volume and Other Factors Question

- Assuming UMC and Sunrise receive the minimum number of trauma cases designated by the ACS for a Level 1 and Level 2 Trauma Center, respectively, should we be considering any other factors related to UMC and Sunrise? If so, what factors and how much weight do we give each factor? (I understand that it is in everyone's best interest that UMC and Sunrise's trauma programs are fully supported and successful.)

Patient Volume and Other Factors

Answer

- UMC is the only trauma center with admission requirements. They must admit at least 1,200 patients yearly or have 240 admissions with an ISS of more than 15. "This is the minimum volume believed to be adequate to support educational and research requirements". (Per ACS' *Resources for the Optimal Care of the Injured Patient*)
- The effect of the addition of a trauma center or centers to the system in regard to patient volume in the short or long term must be considered in order to maintain the system.

Transport Time Question

- How do we factor in the given geographical distances and travel constraints (especially during rush hours) between UMC and both the northwestern and southwestern sections of Clark County as they relate to providing rapid trauma care to patients in those areas?

Transport Time Answer

- ACS's Needs Based Assessment of Trauma Systems (NBATS) Tool grades the median transport time in the trauma service area. According to 2015 data the median transport time to a trauma center in the trauma service area for all steps was 16 minutes 42 seconds.
- Rush hours and other factors relating to road conditions are taken into consideration by EMS crews and applied along with protocol guidance in determining trauma destination.
- Step III and IV patients do not generally require expedited transportation.

Trauma Declination Question

- We know that Trauma Centers do not go on EMS divert; however, does UMC, Sunrise, or St. Rose Siena track trauma transfer declinations from local hospitals and outreach areas? If so, would you please provide us with a declination report. If this is not tracked, how is the determination made that there is an excess trauma bed capacity?

Trauma Declination Answer

- Trauma Centers may use trauma bypass as needed.
  - Declination may result from mismatch between patient needs and resources available.
- UMC does not decline transfers.
- Sunrise may have declined transfers and data is available through their transfer center.
- St Rose Siena has not indicated if they decline transfers.

Payer Mix Question

- What is the current payer mix at UMC and what is the payer mix for the trauma cases in the zip codes proposed by each applicant that are currently seen at UMC and appropriate for an adult Level III (i.e., ISS <15)? Please show payer mix by application.

Payer Mix Answer

- Level III Trauma Centers only receive step III or IV patients from EMS (unless one of the TFTC protocol exceptions are used).
- The payer mix data the OEMSTS holds is indicative of system payer mix and is not based on zip codes.
- Payer mix data is irregularly presented in TMAC. TMAC is a closed meeting so those data are not publically available from the OEMSTS .

ATTACHMENT D

UMC

Level 1 Trauma Center
Level 2 Pediatric Trauma Center
Burn Center

John Fildes, MD
Medical Director
February 24, 2016

Overview

SERIOUS INJURIES • SUPERIOR CARE
TRAUMA SYSTEMS MATTER
Southern Nevada Trauma System

- The SNTS is working well
  - There have been NO INCIDENTS where patients or EMS could not access a trauma center in a timely manner
  - All local, regional, and national benchmarks are met or exceeded
- Doubling the number of trauma centers at one time is unwise and dangerous

Overview

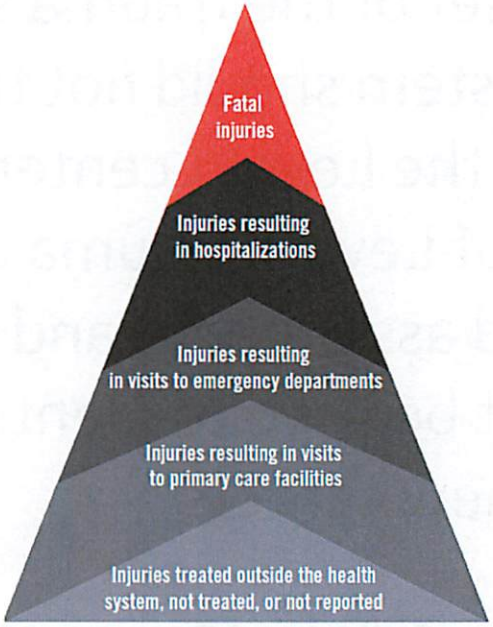
- The level 1 academic trauma center is an essential asset of the trauma system
- A trauma system should not try to grow by dismantling the Level 1 center to create an oversupply of Level 3 trauma centers.
- Needs based assessment and population studies must be used to identify the need and location of new centers

from the American College of Surgeons Position Statement

INJURIES and VIOLENCE
THE FACTS

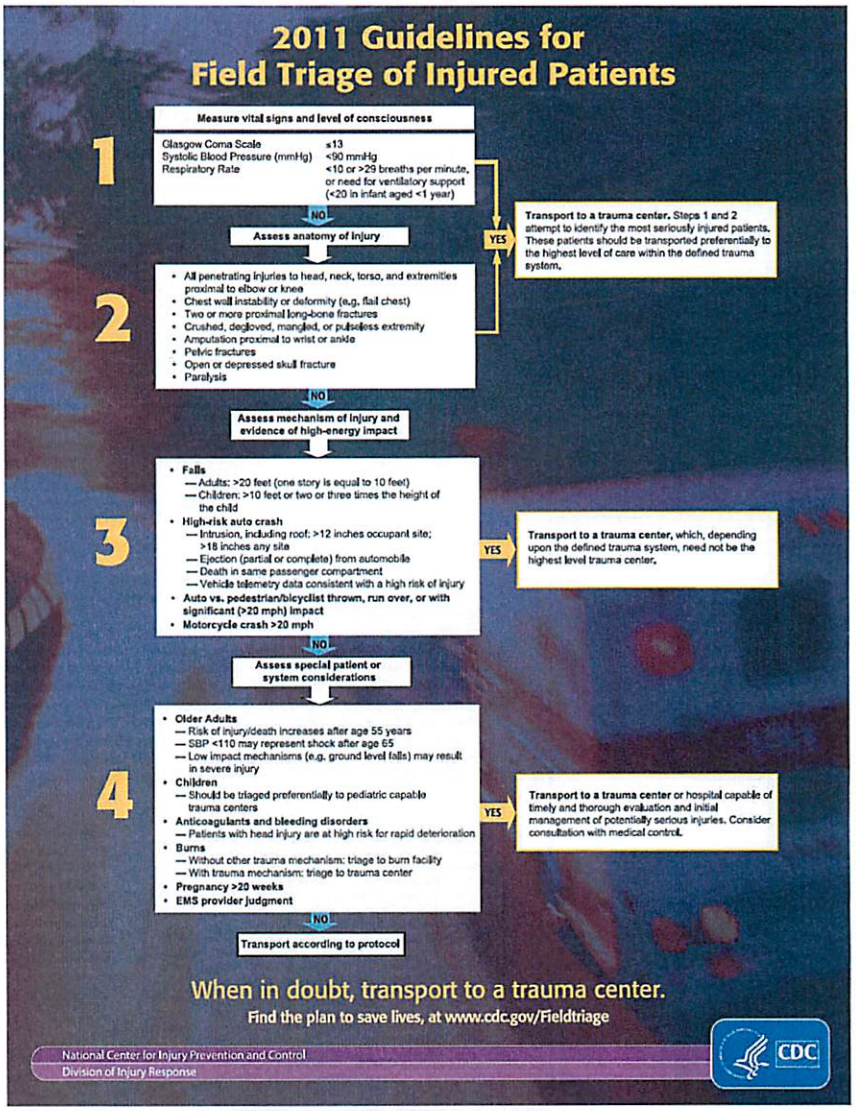
The injury pyramid

The millions of deaths that result from injuries represent only a small fraction of those injured. Tens of millions of people suffer injuries that lead to hospitalization, emergency department or general practitioner treatment, or treatment that does not involve formal medical care. The relative numbers of fatal and non-fatal injuries are often graphically depicted in the form of a pyramid. In addition to the severity of an injury, there are a number of factors that vary by country and that determine the "shape" of the pyramid, such as access to health care services, or the quality of the data available.



from WHO

These are described in NAC450B.770



Guidelines for Field Triage of Injured Patients

Recommendations of the National Expert Panel on Field Triage, 2011

Prepared by
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Summary

In the United States, injury is the leading cause of death for persons aged 1–44 years. In 2008, approximately 30 million injuries were serious enough to require the injured person to visit a hospital emergency department (ED); 5.4 million (18%) of these injured patients were transported by Emergency Medical Services (EMS). On arrival at the scene of an injury, the EMS provider must determine the severity of injury, initiate management of the patient's injuries, and decide the most appropriate destination hospital for the individual patient. These destination decisions are made through a process known as "field triage," which involves an assessment not only of the physiology and anatomy of injury but also of the mechanism of the injury and special patient and system considerations. Since 1986, the American College of Surgeons Committee on Trauma (ACS-COT) has provided guidance for the field triage process through its "Field Triage Decision Scheme." This guidance was updated with each version of the decision scheme (published in 1986, 1990, 1993, and 1999). In 2005, CDC, with financial support from the National Highway Traffic Safety Administration, collaborated with ACS-COT to convene the initial meetings of the National Expert Panel on Field Triage (the Panel) to revise the decision scheme; the revised version was published in 2006 by ACS-COT (American College of Surgeons. Resources for the optimal care of the injured patient: 2006. Chicago, IL: American College of Surgeons; 2006). In 2009, CDC published a detailed description of the scientific rationale for revising the field triage criteria (CDC. Guidelines for field triage of injured patients: recommendations of the National Expert Panel on Field Triage. MMWR 2009;58[No. RR-1]).

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Guidelines for Field Triage of Injured Patients

Recommendations of the National Expert Panel on Field Triage, 2011

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Summary

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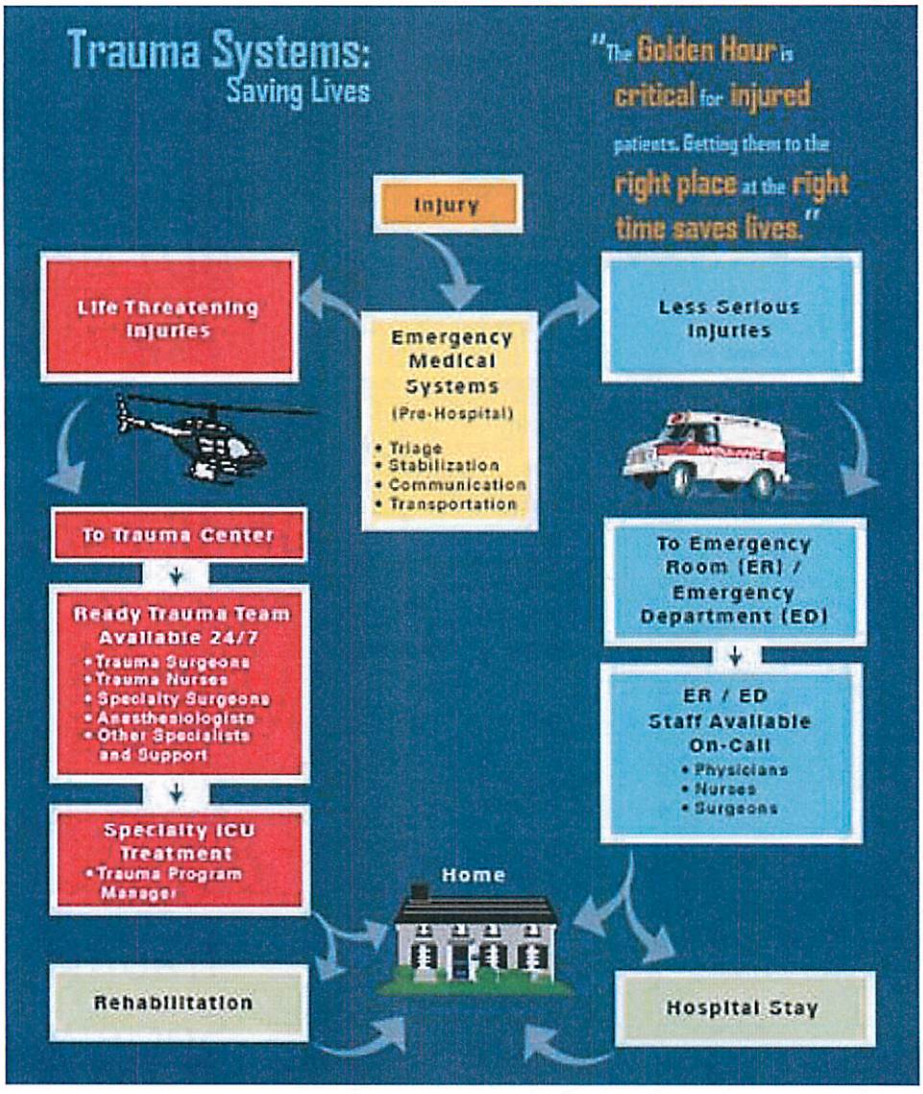
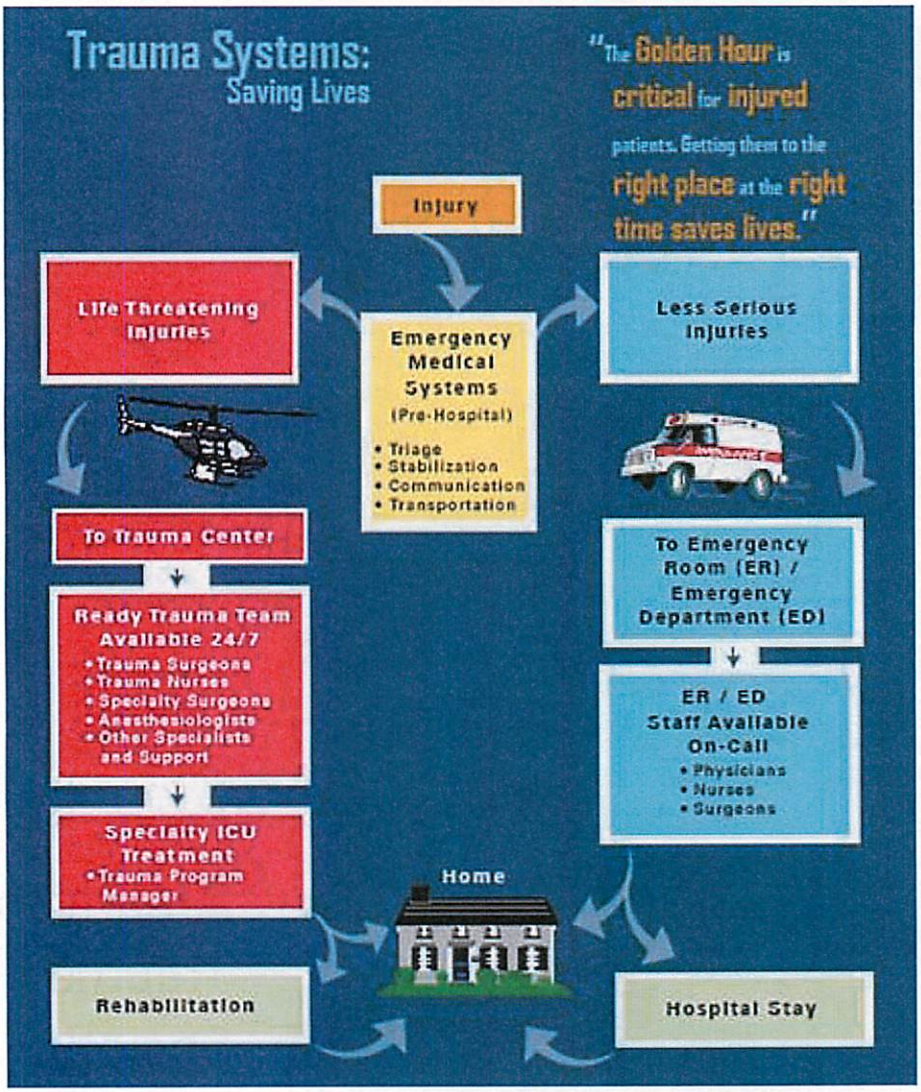


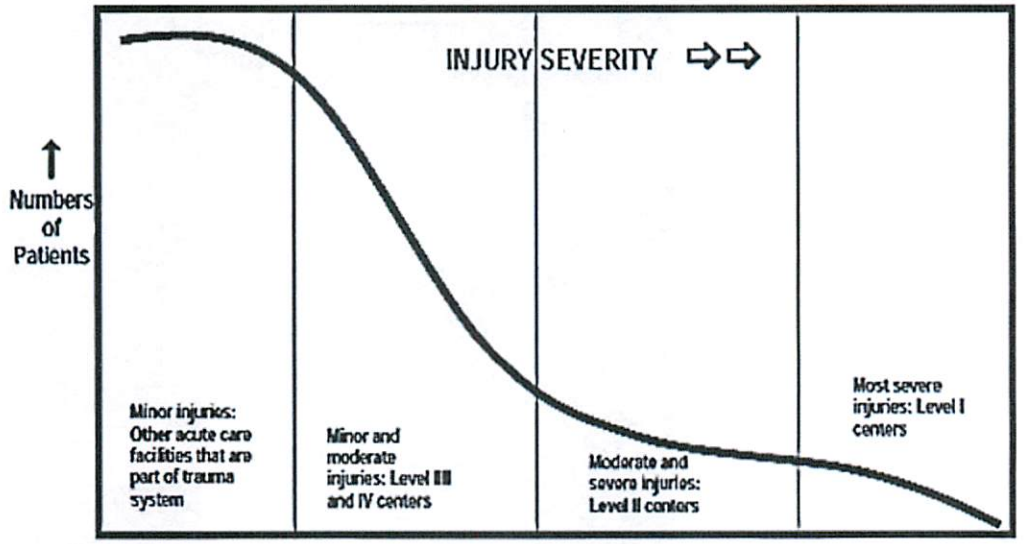
from the American Trauma Society



All hospitals treat injured patients *BUT NOT ALL* hospitals are trauma centers

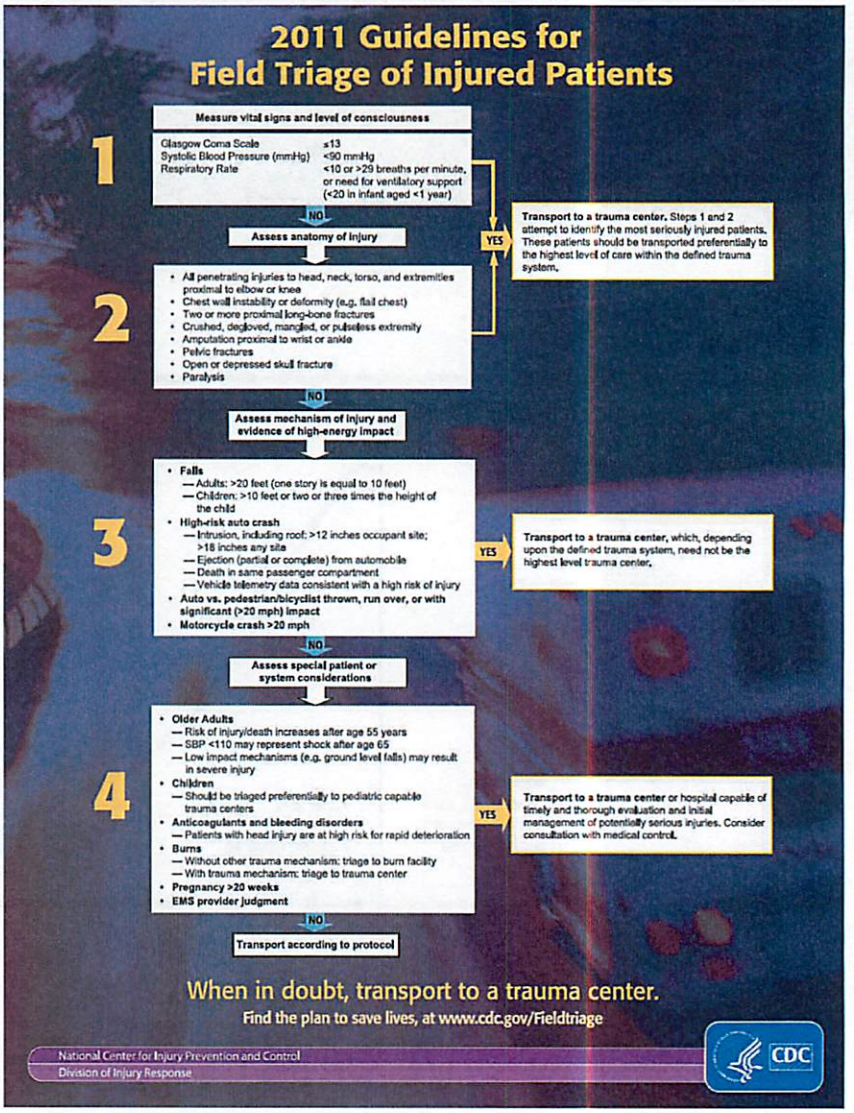
from the American Trauma Society

The inclusive trauma system



from the American College of Surgeons

These are described in NAC450B.770



The work of a Level 1 or 2 center

- Level 1
  - Care of seriously injured patients with physiologic or anatomic abnormalities and all others
  - Research, prevention, teaching & training
- Level 2
  - Care of seriously injured patients with physiologic or anatomic abnormalities and all others

The work of a Level 3 center

- Care of stable patients with serious mechanisms of injury or special considerations
- These patients are awake, alert and have stable vital signs
- These patients are transported without lights & sirens at travel at posted street speeds

The work at St Rose Level 3 center

- St Rose sees about 2 patients per day or 60 (50-70) per month
- 85% of patients are discharged or transferred
- Less than 4 patients per year are admitted directly to the OR or ICU
- Only 15% or about 10 patients per month are admitted

SNHD data

UMC is a unique Level 1

- Purpose built for high volume & acuity
- It is a stand alone center
- 20,025 sq feet = 4 ¼ basketball courts
- 11 resuscitation beds
- 3 dedicated ORs
- 14 bed closed ICU
- CT, angio, radiology, blood bank, pharmacy, and lab

UMC TRAUMA

UMC trains new doctors

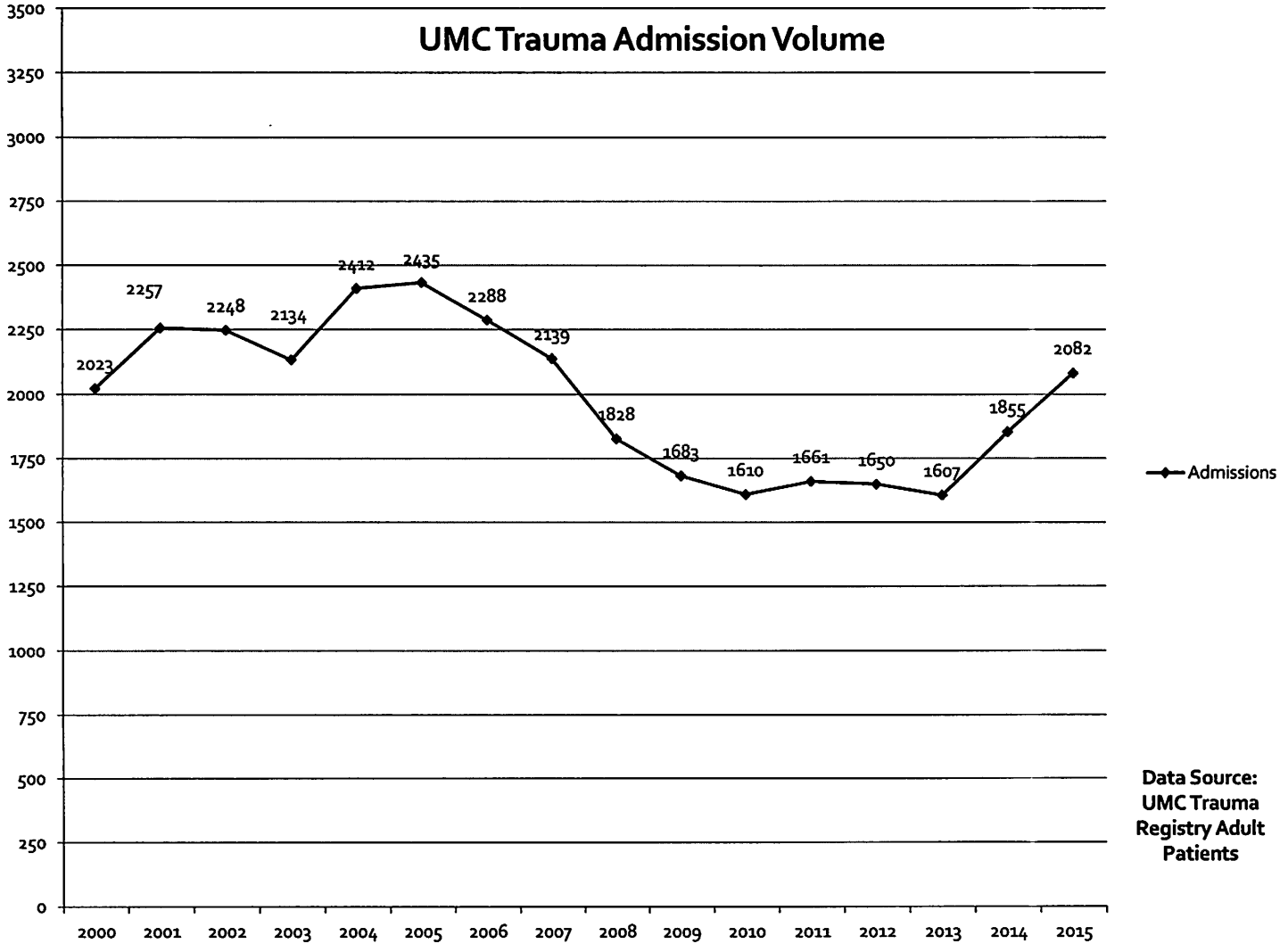
- 100th General Surgeon trained in NV
- Emergency medicine
- Plastic Surgery
- ENT
- Orthopedic Surgery is new and needs the historic volumes to be successful
- UNLV needs this training center to succeed
- ALL students and residents are welcome to rotate here

UMC trains the military

- There are active duty residents in surgery and emergency medicine
- The SMART program provides sustainment training between deployments

UMC provides injury prevention and research

- Areas like child abuse, pedestrian safety, drunk driving, seat belt use, interpersonal violence, suicide, and many more
- Taught ATLS and DMEP to more than 700
- Has published over 100 articles and book chapter
- Over $12 million in research grants
- Lectured at the national & international level


UMC Trauma Admission Volume
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
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2023
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2134
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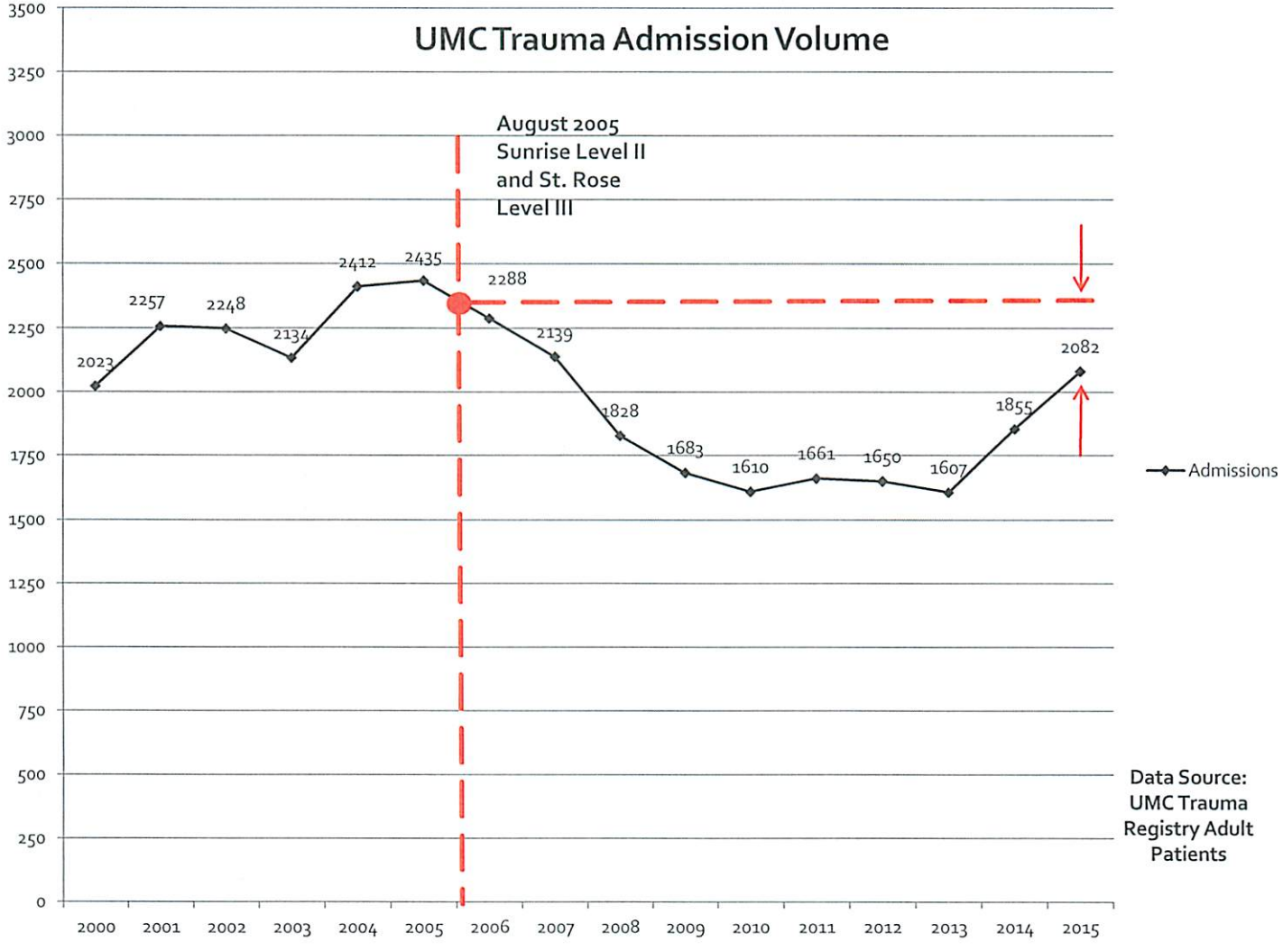
Admissions
Data Source: UMC Trauma Registry Adult Patients


UMC Trauma Admission Volume
August 2005
Sunrise Level II
and St. Rose
Level III
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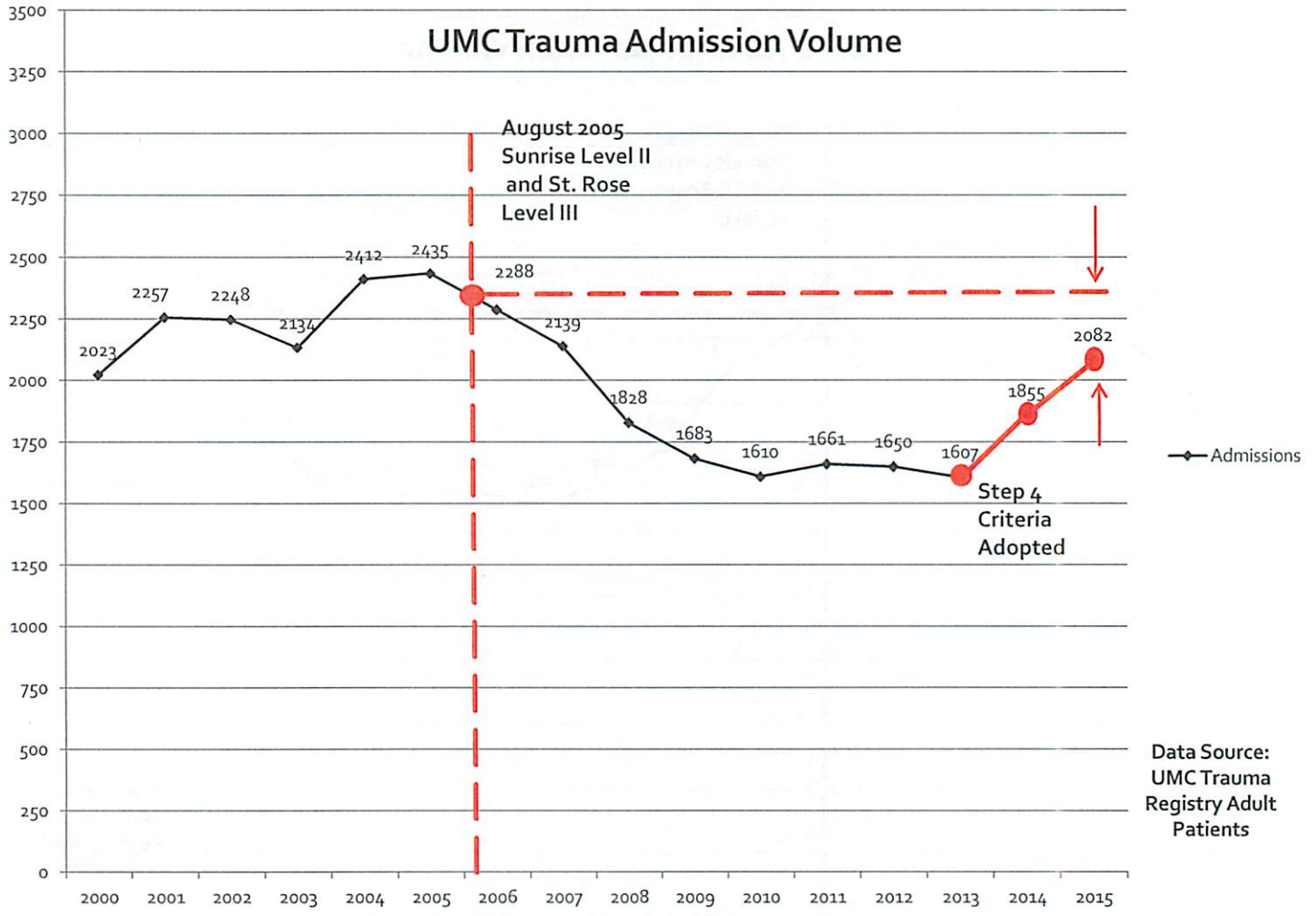
Data Source:
UMC Trauma
Registry Adult
Patients



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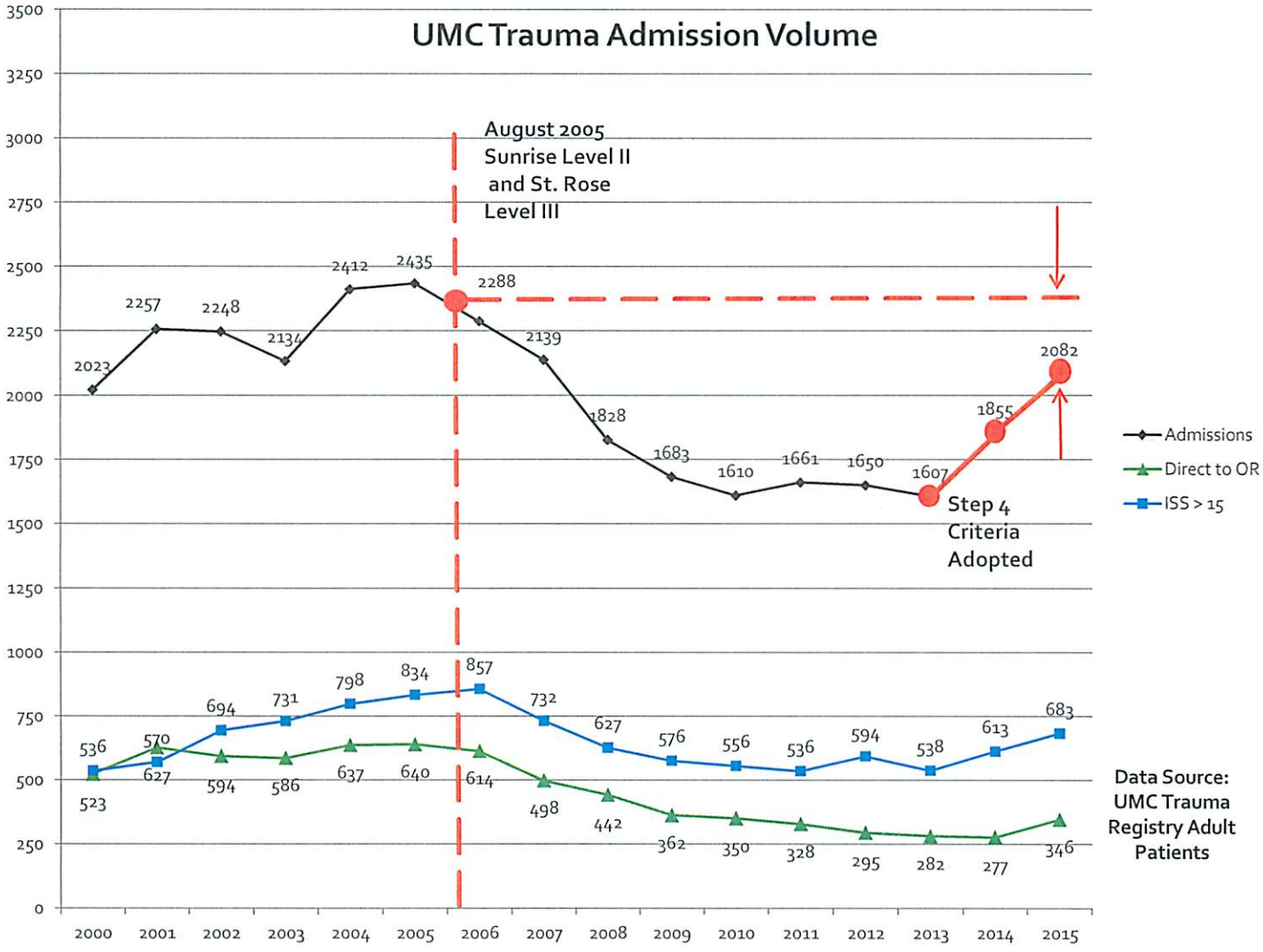
UMC Trauma Admission Volume
August 2005
Sunrise Level II
and St. Rose
Level III
Step 4
Criteria
Adopted
Admissions
Direct to OR
ISS > 15
Data Source:
UMC Trauma
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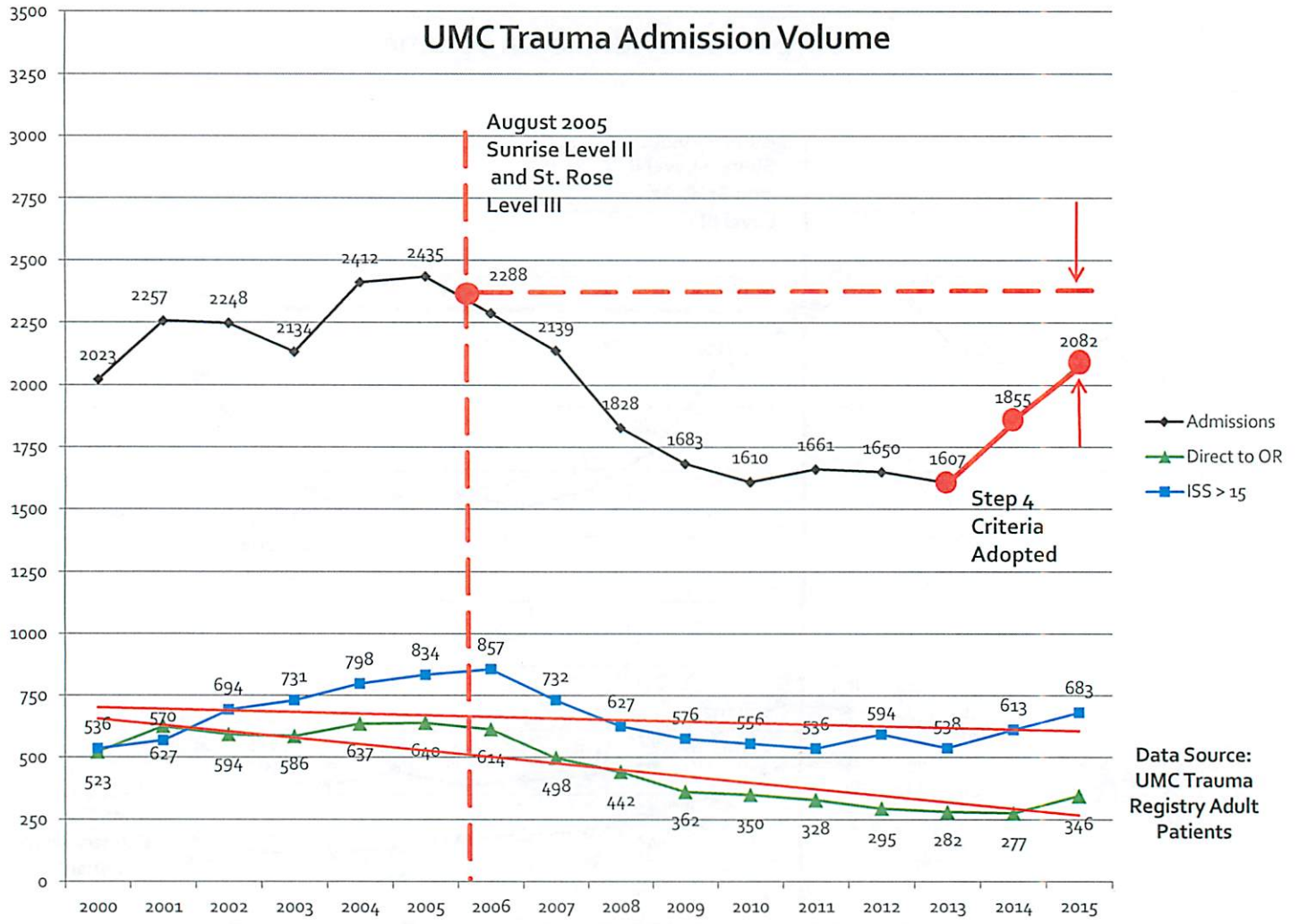
UMC Trauma Admission Volume
August 2005
Sunrise Level II
and St. Rose
Level III
Step 4
Criteria
Adopted
Admissions
Direct to OR
ISS > 15
Data Source:
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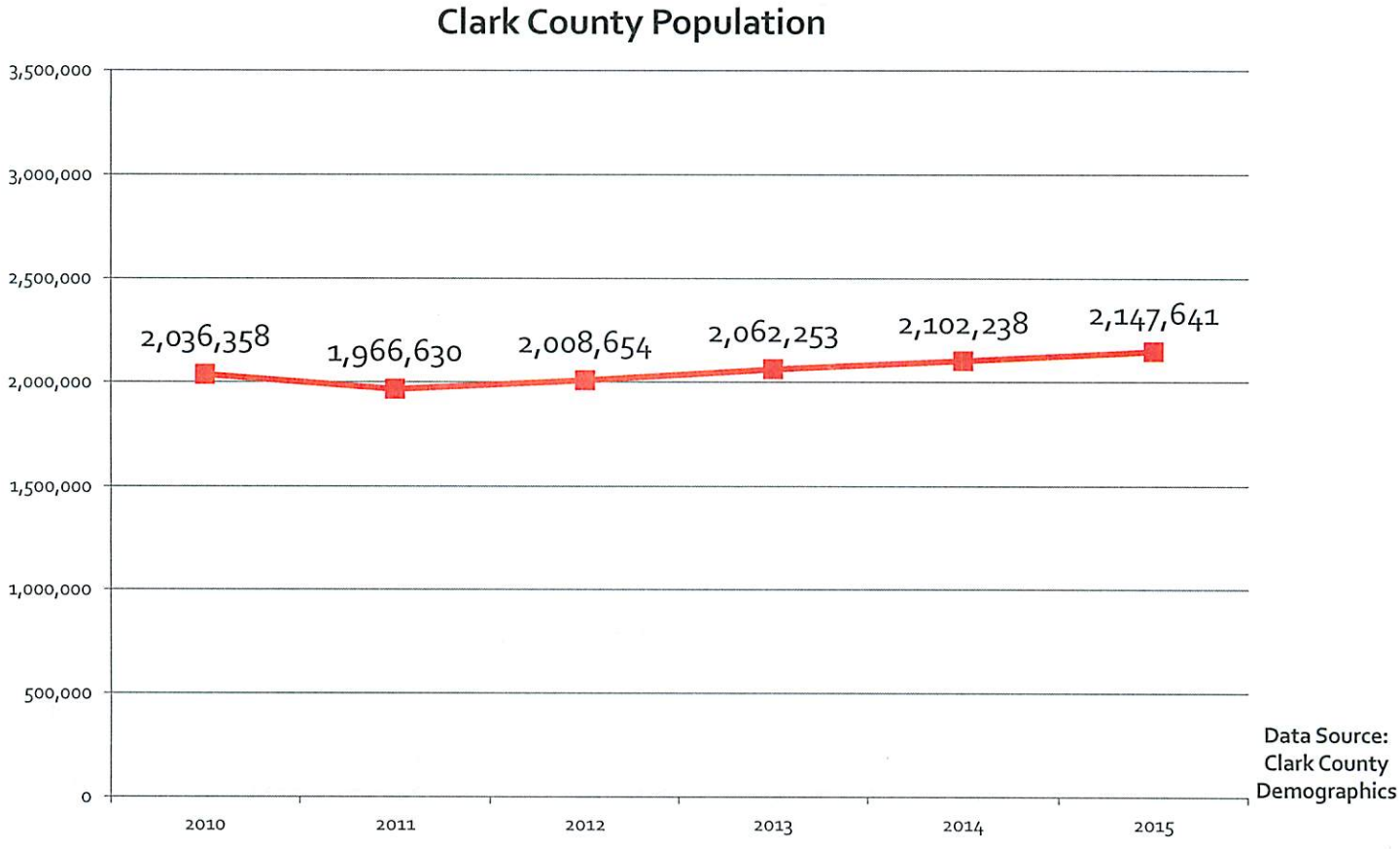
Clark County Population
3,500,000
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1,000,000
500,000
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2,036,358
1,966,630
2,008,654
2,062,253
2,102,238
2,147,641
2010
2011
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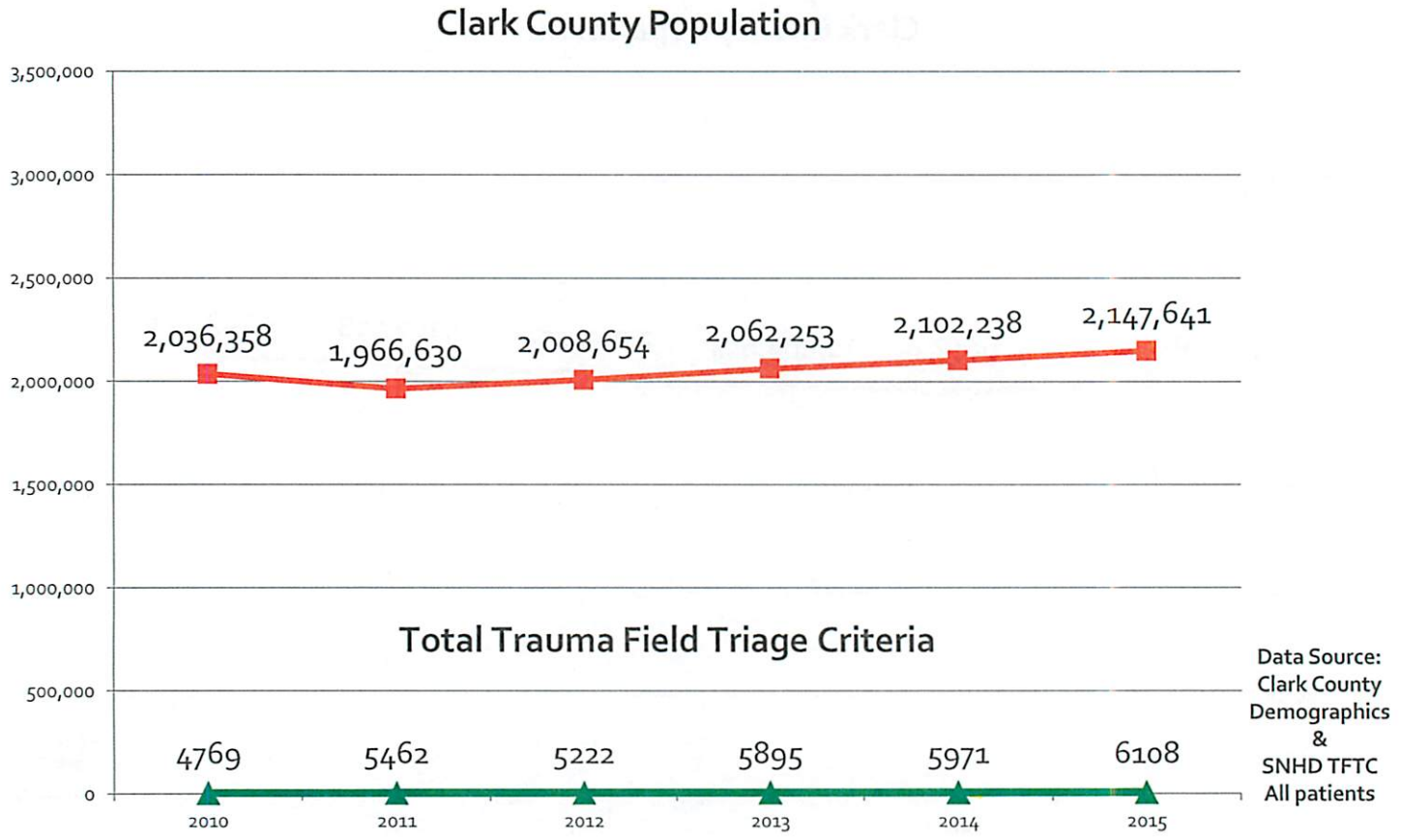
2015
Data Source:
Clark County
Demographics


Clark County Population
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2,000,000
1,500,000
1,000,000
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0
2,036,358
1,966,630
2,008,654
2,062,253
2,102,238
2,147,641
Total Trauma Field Triage Criteria
4769
5462
5222
5895
5971
6108
2010
2011
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2013
2014
2015
Data Source:
Clark County
Demographics
&
SNHD TFTC
All patients

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LIVE WEBCAST

Trauma Center Benefits + Challenges of Achieving Designation

Tuesday, March 1, 2016
10:30 - 12P Pacific Time (1:30P Eastern, 12:30P Central, 11:30A Mountain)
$350 per computer connection

Register Here

Watch a short video about the webinar here.

Three reasons not to miss this important webinar.

1. If your hospital is considering becoming a financially successful trauma center or achieving a new designation level, you do not want to miss this webinar.

2. What are the advanced strategies for payer management that "fit" really well for trauma centers and will pay more for services?

3. What are some of the strategies that mitigate medical staff concerns regarding trauma center designation?

The webinar is 90-minutes and costs $350 per computer connection.

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MetroHealth handles more than 3,000 injuries a year, including gunshots, stabbings, falls and motor-vehicle accidents.

RELATED CONTENT

Protesters cite lack of trauma care on Chicago's South Side

Better funding means trauma center shortage may become a glut

By Steven Ross Johnson | November 28, 2015

For the past 20 years, MetroHealth Medical Center has been the sole provider of Level 1 adult trauma care for the metropolitan Cleveland area's 2 million residents.

Located on the city's west side, Cuyahoga County-owned MetroHealth operates one of the busiest trauma centers in the country. Its specialized facility and highly trained clinical staff handle more than 3,000 sudden and serious injuries a year, including gunshots, stabbings, falls and motor-vehicle accidents. "Emergencies come first here," said Dr. Jeffrey Claridge, director of the trauma division at MetroHealth.

But his center is about to face some stiff competition. Next month, Case

From TAG Line - Your Emergency Care News Source

by the ABARIS GROUP February 2016

Growth in Trauma Centers

Growth in Trauma Centers

Since 2012, 117 Level 1 and Level 2 trauma centers have opened in the U.S., and increased insurance and Medicaid coverage under the Affordable Care Act contributes to the recent expansion. It can be said that the growth in trauma centers is a direct reflection of an increase in trauma cases and population booms. But the expansion of trauma centers could have a lot to do with the greater share of patients now covered by public and private insurance.

Pay for Level 1 and Level 2 trauma care increasingly comes from Medicare and Medicaid. As outlined in this Modern Healthcare article, Medicare now accounts for 25.8% of all center payments, up from just 16.6% in 2005, and Medicaid is at 14%, up from 11.2%.

"If somebody opens the spigot, somebody should know how to turn the spigot off," said Mike Williams, former director of Emergency Medical Services for Orange County, Calif., and president of the Abaris Group. "These hospitals are learning that there are not a lot of constraints as to whether they can go after trauma or not. At some point, we'll have too many trauma centers and that doesn't help anybody."

FOCUS ON TRAUMA

LARGE COST SAVINGS REALIZED FROM THE 2006 FIELD TRIAGE GUIDELINE: REDUCTION IN OVERTRIAGE IN U.S. TRAUMA CENTERS

Mark Faul, PhD, MA, Marlena M. Wald, MLS, MPH, Ernest E. Sullivent, MD, MPH, Scott M. Sasser, MD, Vikas Kapil, DO, MPH, E. Brooke Lerner, PhD, Richard C. Hunt, MD

[University of Nevada - Reno] at 09:01 23 February 2016

ABSTRACT

Background. Ambulance transport of injured patients to the most appropriate medical care facility is an important decision. Trauma centers are designed and staffed to treat severely injured patients and are increasingly burdened by cases involving less-serious injury. Yet, a cost evaluation of the Field Triage national guideline has never been performed. **Objectives.** To examine the potential cost savings associated with overtriage for the 1999 and 2006 versions of the Field Triage Guideline. **Methods.** Data from the National Hospital Ambulatory Medical Care Survey and the National Trauma Databank (NTDB) produced estimates of injury-related ambulatory transports and exposure to the Field Triage guideline. Case costs were approximated using a cost distribution curve of all cases found in the NTDB. A two-way sensitivity analysis was also used to determine the impact of data uncertainty on medical costs and the reduction in trauma center visits (12%) after implementation of the 2006 Field Triage guideline compared with the 1999 Field Triage guideline. **Results.** At a 40% overtriage rate, the average case cost was $16,434. The cost average of 44.2% reduction in case costs if patients were treated in a non–trauma center compared with a trauma center was found in the literature. Implementation of the 2006 Field Triage guideline produced a $7,264 cost savings per case, or an estimated annual national savings of $568,000,000. **Conclusion.** Application of the 2006 Field Triage guideline helps emergency medical services personnel manage overtriage in trauma centers, which could result in a significant national cost savings. Key words: triage; cost; guideline; trauma center; field triage

PREHOSPITAL EMERGENCY CARE 2012;16:222–229

INTRODUCTION

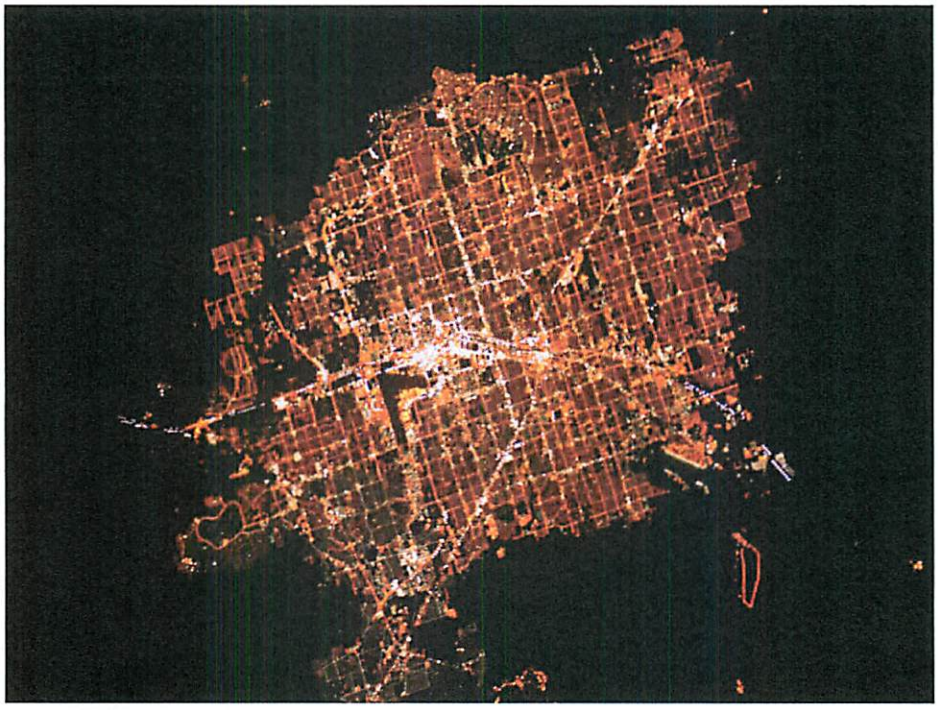
Summary

- The Southern Nevada Trauma System is working well
- Doubling the number of trauma centers at one time is unwise and dangerous
- The level 1 academic trauma center is an essential asset of the trauma system
- A trauma system should not try to grow by dismantling the Level 1 center to create an oversupply of Level 3 trauma centers.
- Needs based assessment and population studies must be used to identify the need and location of new centers

A way forward

- The applicants deserve an answer
- Needs Based Assessment Task Force
- Metrics and measures must be agreed upon that define the entry of new trauma centers into the Southern Nevada Trauma System

The trauma system must be defined



American College of Surgeons
Needs Based Assessment Tool (NBATs)

- Population trends
- Median transport times
- Lead Agency/System Stakeholder/Community Support
- Severely injured patients (ISS > 15) discharged from acute care facilities not designated as Level I, II, or III trauma centers.
- Level I Trauma Centers
- Numbers of severely injured patients (ISS > 15) seen in trauma centers (Level I and II) already in the TSA

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Michele Ziglar, RN, MSN	Vice President of Trauma Services	HCA Healthcare
Betty J Bartleson, MSN	Vice President of Nursing and Clinical Services	California Hospital Association
Robert Gfeller	Executive Director	Childress Institute for Pediatric Trauma
Robert Fojut	Editor	Trauma System News
Charles William Mains, MD, FACS	Surgeon	Surgical Specialists of Colorado
Dennis Maier, MD, FACS	Medical Director	Surgical Associates PC
Robert Todd Maxson, MD, FACS	Pediatric Surgeon	Arkansas Children's Hospital
Debra Perina, MD FACEP	Director	American College of Emergency Physicians (ACEP); NAEMSP
N. Clay Mann, PhD, MS	Professor of Surgery	NEMSIS TAC PI, University of Utah
Ellen Mackenzie, PhD	Fred and Julie Soper Professor and Chair	Johns Hopkins Bloomberg School of Public Health
Robert Mackersie, MD, FACS	Professor of Surgery and Director of Trauma Services	University of California San Francisco San Francisco General Hospital and Trauma Center
Eric Chaney, MBA	Representing the Deputy Director (Acting), Workforce Health and Medical Support Division	US Department of Homeland Security (DHS)
GREGG S MARGOLIS, PhD, NRP	Director of the Division of Health System Policy, Office of the Assistant Secretary for Preparedness and Response	US Department of Health and Human Services (HHS); ASPR
Brendan G Carr, MD MA, MS	Director of ECCC; Division of Health System Policy	US Department of Health and Human Services (HHS); ASPR
Elizabeth Edgerton, MD, MPH	Director of the Division of Child, Adolescent and Family Health (DCAFH)	Health Resources and Services Administration (HRSA)
CATHY GOTSCHALL, ScD	Senior Health Scientist	National Highway and Traffic Safety Administration (NHTSA)
Drew Dawson	Director, Office of EMS	National Highway and Traffic Safety Administration (NHTSA)
Fergus Laughridge, Captain, CPM	Professional Services and Compliance Officer	Humbolt General Hospital EMS and Rescue, State of Nevada
Eric Epley	Executive Director	Southwest Texas Regional Advisory Council (STRAC); Regional Structure
Robert Jex, RN	Specialty Care Program Manager	Utah Dept. of Health, Bureau of EMS; Utah Office of Rural Health
John Armstrong, MD, FACS	Surgeon General; Secretary of Health	Florida Department of Health
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Leonard J Weireter, MD, FACS	Vice Chair COT	ACS Trauma
Robert J Winchell, MD, FACS	Chair TSEPC, COT	ACS Trauma

Needs Based Assessment Task Force

- Will use the NBATs tool
- Will use the American College of Surgeons Trauma Systems document for guidance
- Must assess applicant preparedness
- Must assess the impact of new centers ONE AT A TIME

SERIOUS INJURIES • SUPERIOR CARE
TRAUMA SYSTEMS MATTER
Southern Nevada Trauma System

My motion will be…

- Deny the three applications for authorization
- Create a Needs Based Assessment Task Force
- Invite the three applicants and community stakeholders to participate

ATTACHMENT E

OEMSTS Authority

- **NRS 450B.237(3)** Each district board of health in a county whose population is 700,000 or more shall adopt regulations which establish the standards for the designation of hospitals in the county as centers for the treatment of trauma which are consistent with the regulations adopted by the State Board of Health pursuant to subsection 2. A district board of health shall not approve a proposal to designate a hospital as a center for the treatment of trauma unless the hospital meets the standards established pursuant to this subsection.

OEMSTS Authority

- **NAC 450B.828 Addition of centers to system for providing treatment for trauma.** A trauma center or pediatric trauma center *may be added to the system for providing treatment for trauma on the basis of a demonstrated change in need that cannot be met by existing centers for the treatment of trauma or pediatric centers for the treatment of trauma, including, without limitation, a significant increase in the volume of patients with trauma served and the geographic distribution of the patients without access to the existing centers for the treatment of trauma or pediatric centers for the treatment of trauma.*

OEMSTS Authority

- **Trauma System Regulations Section 300** (Any hospital that desires designation as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma in Clark County shall first request Authorization from the Board.) The Board shall determine the needs of the Clark County trauma system based on evidence obtained through continuous evaluation of the system assessing the volume, acuity and geographic distribution of Patients requiring trauma care; and the location, depth and utilization of trauma resources in the system.

OEMSTS Authority

- **District Procedure for Authorization as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma.** The application must demonstrate the need for additional trauma services at the level being requested in the proposed service area, including:
  - the population to be served;
  - geographic considerations, such as the distance from existing centers; and
  - the projected impact on the trauma system.

OEMSTS Oversight

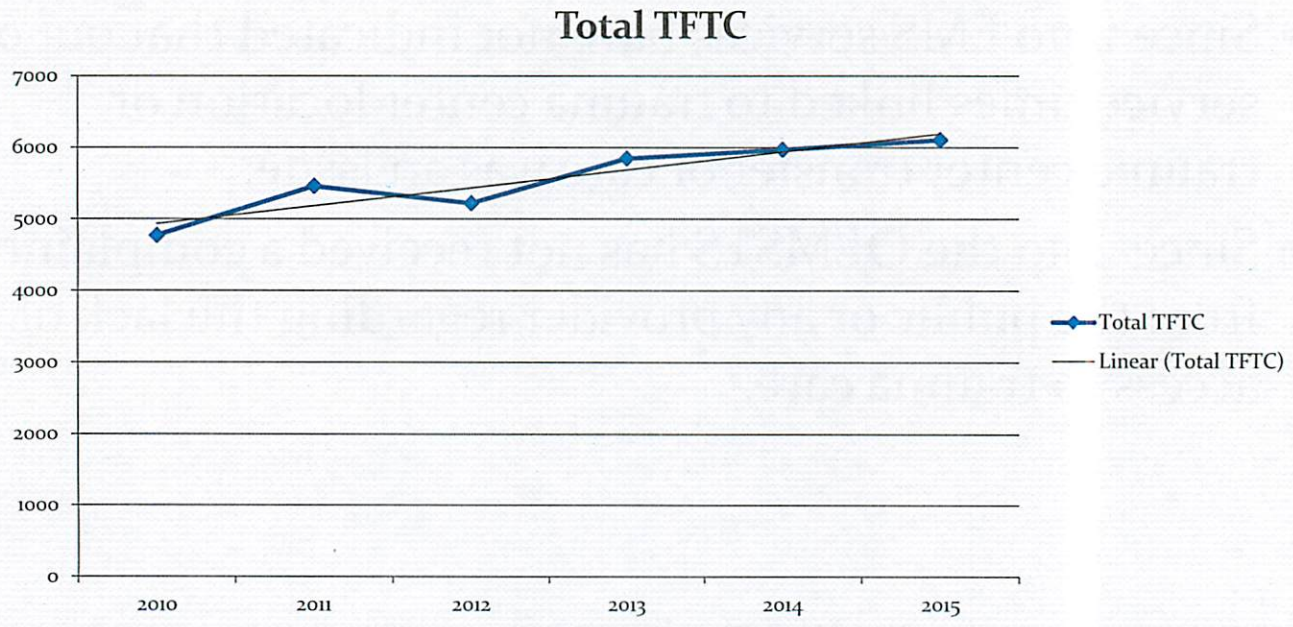
- The RTAB and TMAC provide continuous oversight of the trauma system through review of EMS & Trauma System data, Trauma Center data, engaging the participation of EMS agencies (public and private) and seeking input from acute, rehab and long term care facilities.

System Considerations

- Since 2010 the data has not shown an increase in volume that could not be met by the existing system.
- Since 2010 EMS services have not indicated that out of service times linked to trauma center location or trauma center transfer of care was an issue.
- Since 2010 the OEMSTS has not received a complaint from the public or any provider regarding the lack of access to trauma care.

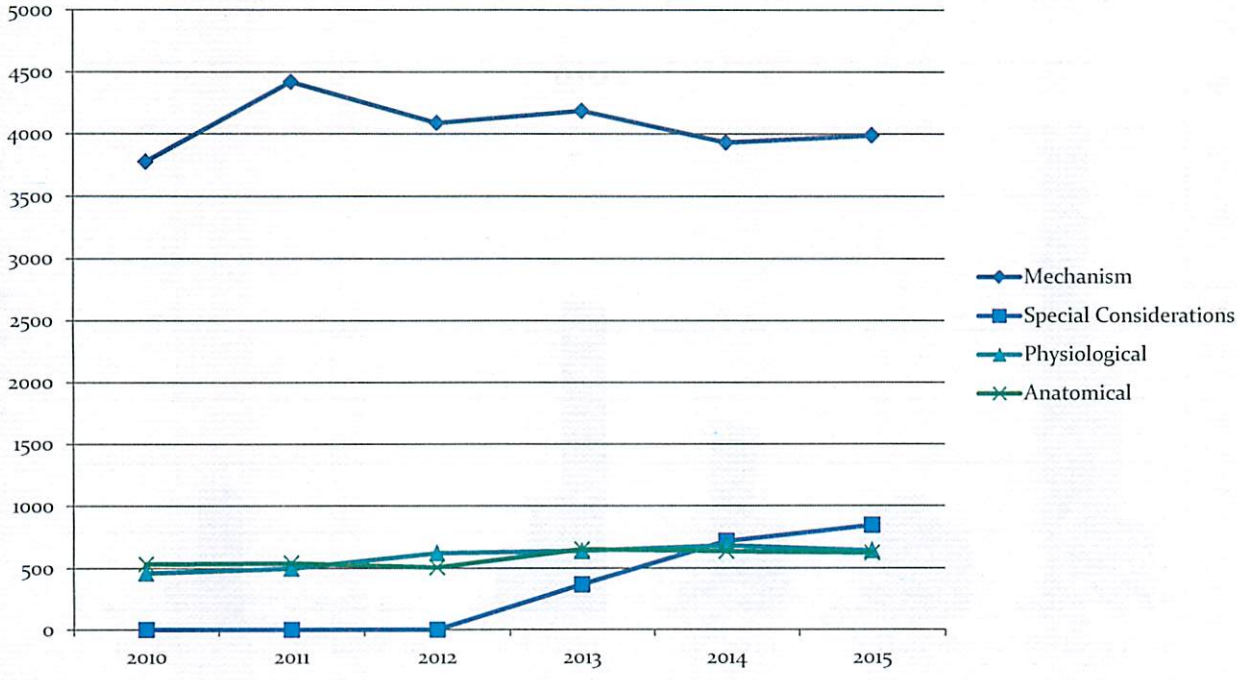
TFTC Patient Volume

- Annual volume of TFTC patients has increased by 260 patients since 2013



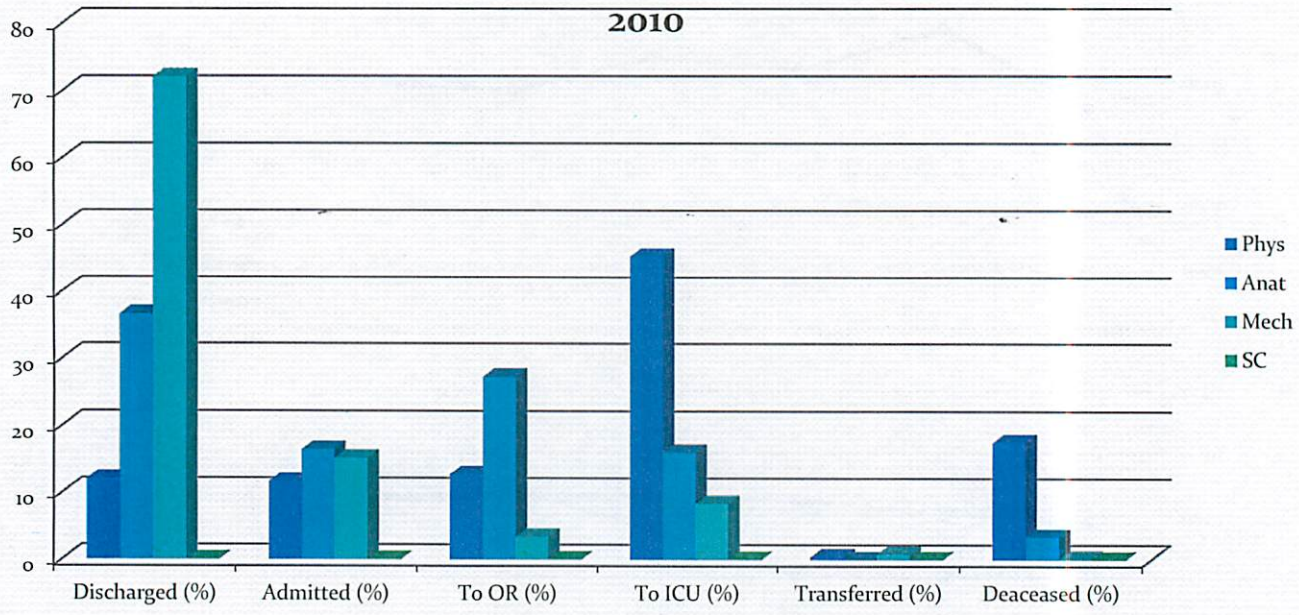
TFTC Patient Volume

- TFTC patient volume by step and year.

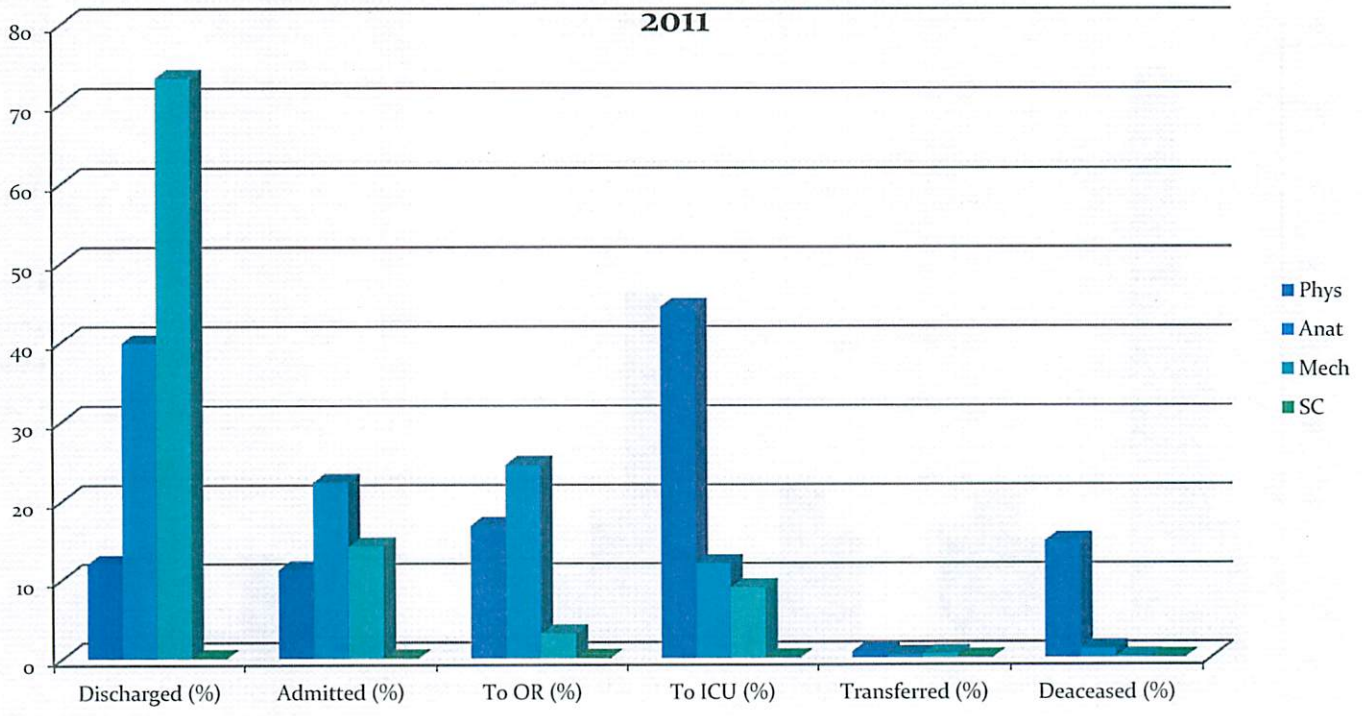


Patient Acuity and Disposition

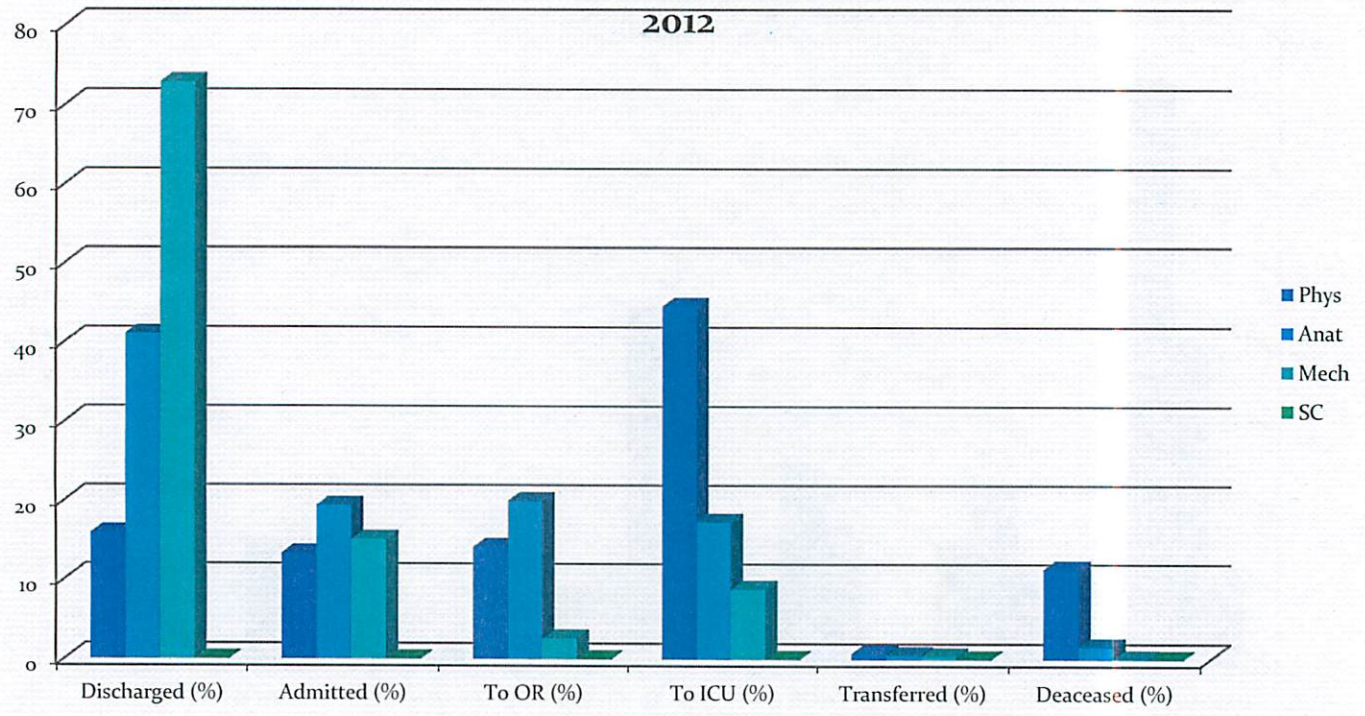
- Data show no significant percentile change in the acuity or disposition of patients since 2010.



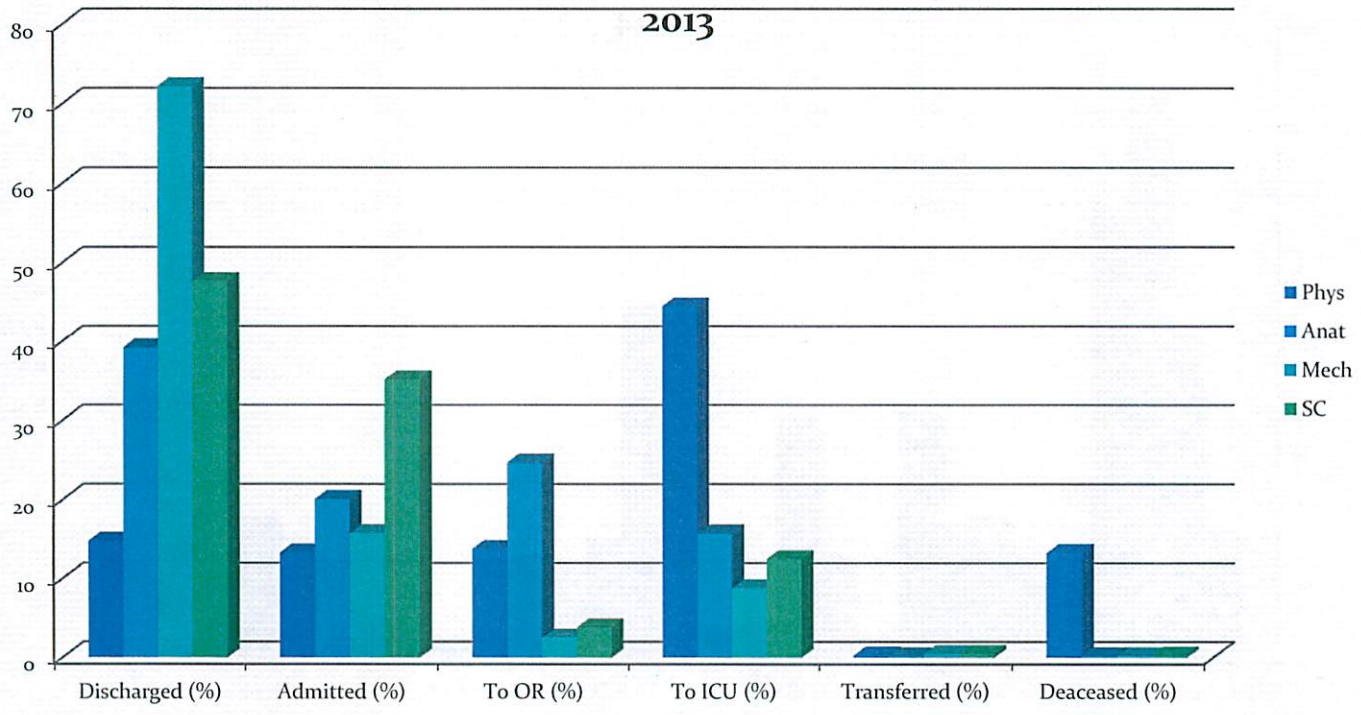
Patient Acuity and Disposition



Patient Acuity and Disposition



Patient Acuity and Disposition



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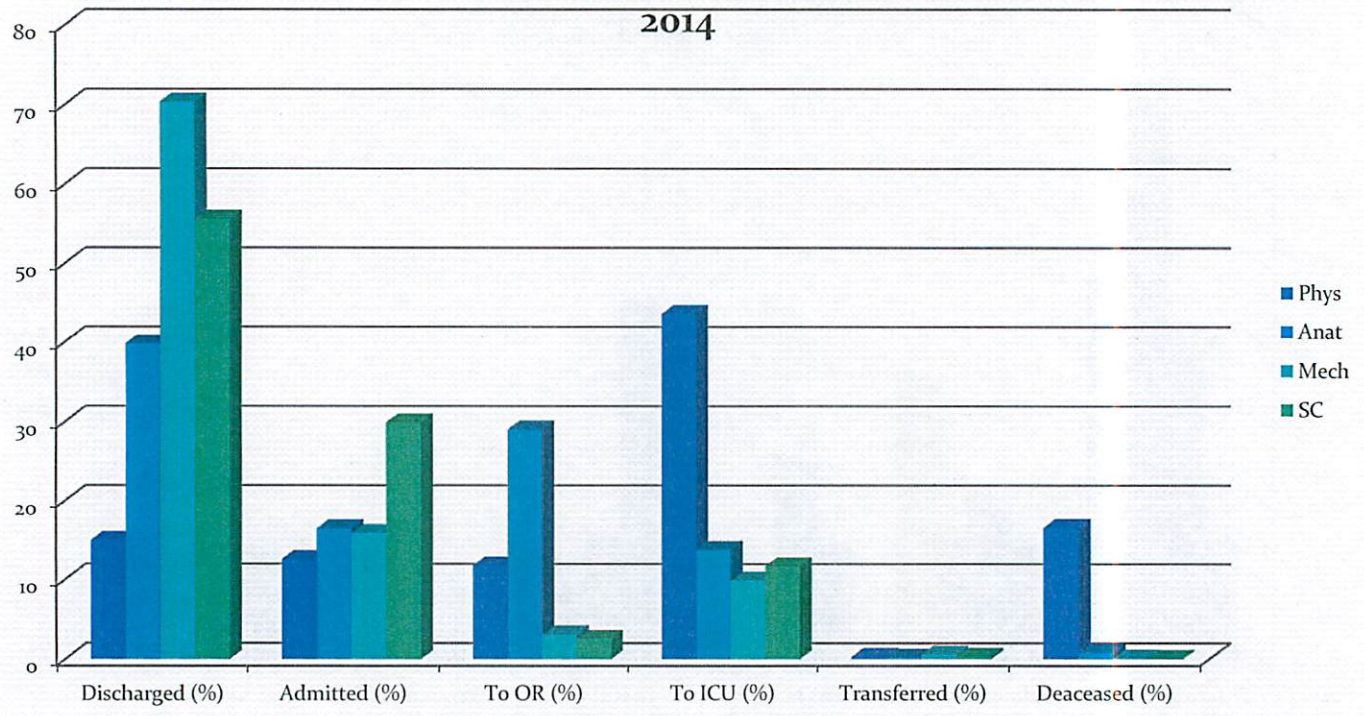

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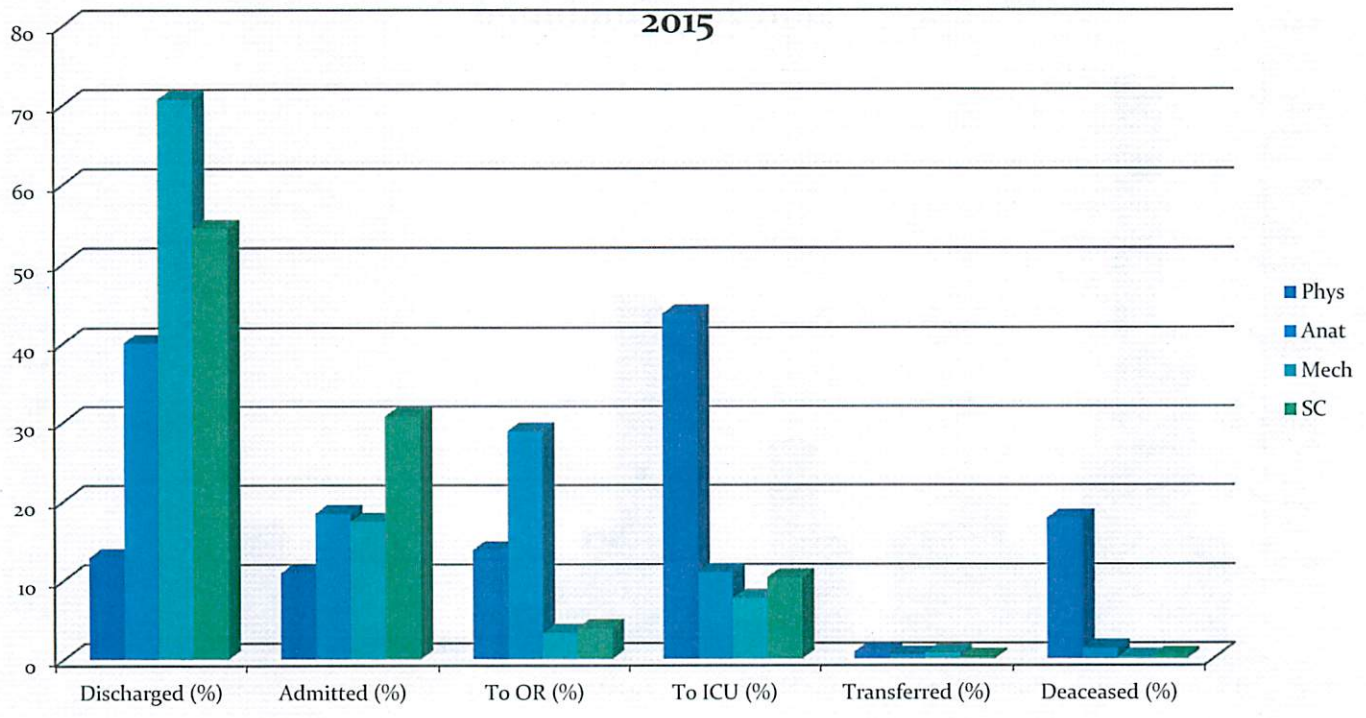
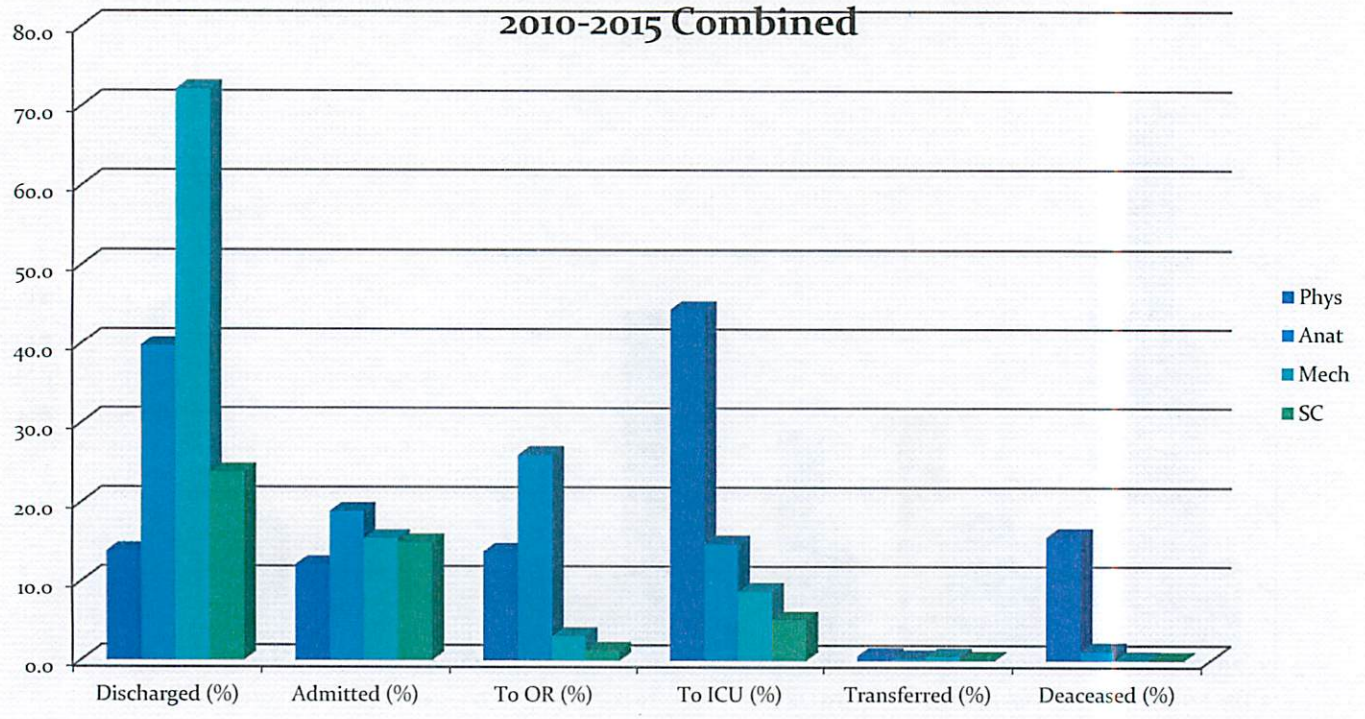


Patient Acuity and Disposition

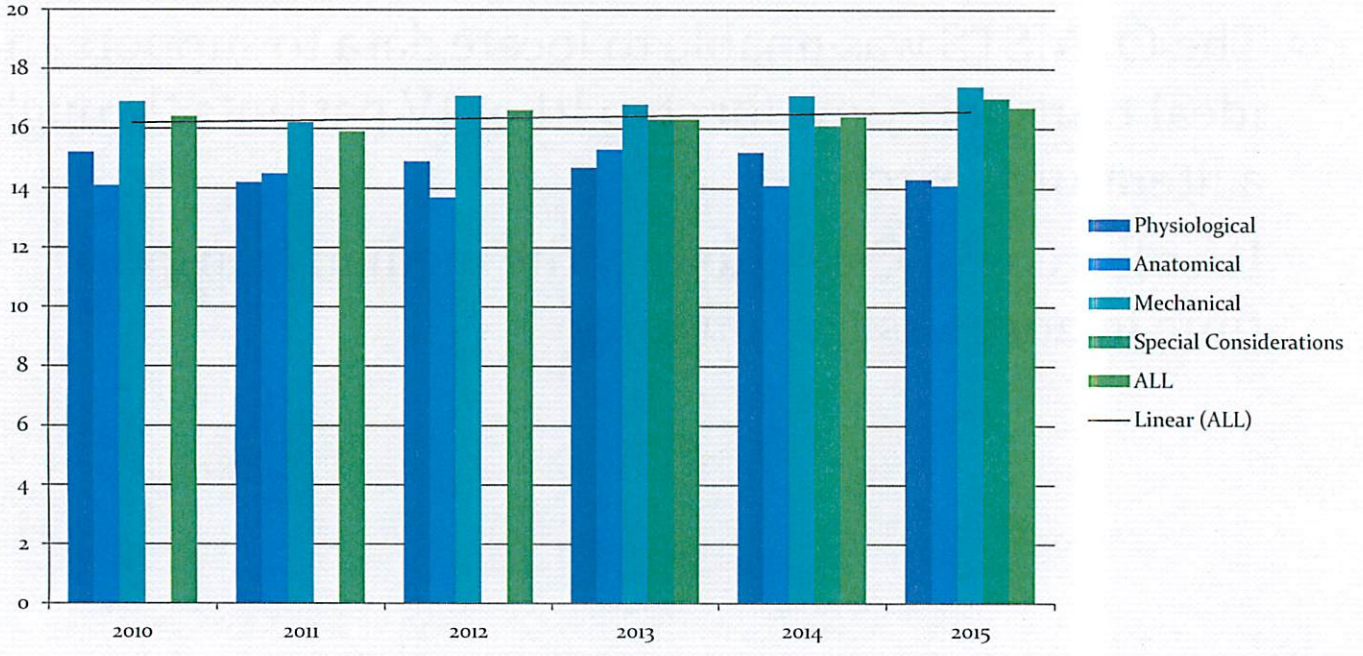


Applicant Assertions

- Applicants have stated that transport times are excessive in their areas of intended service.
- The OEMSTS was unable to locate data to support an ideal transport time for step III or IV patients through a literature search.
- For all steps in Clark County the median transport time in 2015 was 16.7 minutes

Median Transport Time

- Median transport times for all steps in Clark County 2010 to 2015



Applicant Assertions

- The applicants have suggested that trauma center designation would imply that patients would receive care in their communities.
  - The ACS states in "Resources for Optimal Care of the Injured Patient 2014 (pg 49)" that:
    - Rural hospitals should endeavor to treat trauma patients in their community as appropriate to the level of resources available.
    - In remote areas, the Level III trauma center may take on the responsibility for education and system leadership.
  - No similar statement is made regarding community, suburban or urban settings.

Applicant Assertions

- The applicants have suggested that trauma center designation would imply that patients would receive care in their communities.
  - The ACS Resource document further states: Level III trauma centers are generally not appropriate in an urban or suburban area with adequate Level I and/or Level II resources.
- All applicant facilities are obligated under EMTALA to receive and stabilize patients within their respective capability.

Applicant Assertions

- The applicants have stated that they are already seeing trauma patients in their facilities.
  - This is a function of an inclusive trauma system.
  - All receiving facilities are capable of assessing trauma patients and transferring to a higher level of care as appropriate.
  - Per current SNHD EMS protocols, patients meeting TFTC criteria are transported to designated trauma centers.

Applicant Assertions

- Applicants have indicated that obtaining trauma center designation will increase system resilience in the event of a large scale disaster.
  - System resilience is a function of individual facility plans for accommodating a surge in patient volume during a large scale disaster. Additional treatment facilities may contribute to system resilience regardless of their designation as trauma centers.
  - In the event of a large scale disaster, TFTC protocol would be suspended and the incident command structure would determine transport destination based on multiple factors, including, but not limited to, open beds, plant status, traffic congestion and self-referred patients.

ACS Position Statement

- ACS has recently promulgated a position statement regarding the addition of trauma centers ("Statement on Trauma Center Designation Based upon System Need" Jan 1, 2015).
- The ACS paper:
  - Reinforces the importance of focusing on system need when expanding a trauma system.
  - Cautions against passivity in lead agencies.
  - Supports lead agency authority to designate trauma centers.

ACS Position Statement

- The ACS recommends utilizing the following measures when determining system need, including;
  - Number of Level I and II centers per 1 million population
  - Percentage of population within 60 minutes of a level I or II.
  - EMS transport times.
  - Percentage of severely injured patients seen at a trauma center.
  - Trauma related mortality.
  - Frequency and nature of inter-hospital transfers.
  - Percentage of time trauma hospitals are on diversion status (trauma bypass)
- Allocation of trauma centers should be reassessed at regular intervals. The RTAB and TMAC perform this function quarterly.

ACS Needs Based Assessment of Trauma System (NBATS) Tool

- The ACS has distributed the Needs Based Assessment of Trauma System (NBATS) Tool to assist lead agencies.
- The tool was developed by the Needs Based Trauma Center Designation Consensus Conference, convened by the ACS Committee on Trauma.
- The tool uses 6 questions to assess the need for trauma centers.
  - Question 1. Population of the trauma service area
  - Question 2, Median Transport Times
  - Question 3. Lead Agency/System Stakeholder/ Community Support
  - Question 4. Patients Discharged from Non-Trauma Centers with an ISS > 15

ACS Needs Based Assessment of Trauma System (NBATS) Tool

- Question 5. Number of existing trauma centers in the trauma service area (TSA)
- Question 6. Number of patients with an ISS >15 seen at existing level I and II centers

ACS Needs Based Assessment of Trauma System (NBATS) Tool

- Using the Lead Agency/System Stakeholder/Community Support NBATS guidelines points are assigned based upon trauma center support received, e.g., Lead Agency support for the trauma center and points based upon the percentage of city and county governing bodies providing support in the trauma service area.
- No letters were received that meet the NBATS standard.
- Until the RTAB votes on the application two different scores are possible.
  - Until the RTAB votes on the application two different scores are possible.
    - With RTAB support for an additional center(s)
      - 10.5
    - Without RTAB support for an additional center(s)
      - 5.5

ACS Needs Based Assessment of Trauma System (NBATS) Tool con't

- Scoring System Used to Allocate Trauma Centers within the TSA:
  - TSAs with scores of 5 points or less shall be allocated 1 trauma center
  - TSAs with scores of 6-10 points shall be allocated 2 trauma center
  - TSAs with scores of 11-15 points shall be allocated 3 trauma center
  - TSAs with scores of 16-20 shall be allocated 4 trauma center

OEMSTS Recommendation

- In 2011 the ACS visited Clark County to assess the trauma system and their recommendation was that "At the time of the TSC visit, there was general agreement by both stakeholders and the TSC that the current configuration of the trauma system should remain in place."

  ("American College of Surgeons Committee on Trauma Trauma System Consultation July 18th – 21st, 2011 pg. 86)

Conclusion

- Based on NRS 450B, NAC 450B, Trauma System Regulations, the "District Procedure for Authorization as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma", the American College of Surgeons' collected references and available EMS & Trauma System data the current system continues to meet the trauma needs of the trauma service area.
- The applicants have not demonstrated unmet need for additional trauma services.

OEMSTS Authority

- Based on NRS 450B, NAC 450B, Trauma System Regulations, the "District Procedure for Authorization as a Center for the Treatment of Trauma or Pediatric Center for the Treatment of Trauma", the American College of Surgeons' collected references and available EMS & Trauma System data the Office of Emergency Medical Services &Trauma System (OEMSTS) cannot recommend authorization to seek designation as a Center for the Treatment of Trauma.

Questions

American College of Surgeons Releases Position Statement Stressing Importance of Trauma Center Designation Based Upon Population–Based System Need

New statement developed to support state and local agencies in making designation decisions that advocate for optimal care of injured patients

NEWS FROM THE AMERICAN COLLEGE OF SURGEONS | FOR IMMEDIATE RELEASE

CHICAGO (February 6, 2015): The American College of Surgeons (ACS) recently released a statement emphasizing that the allocation of trauma centers should be based upon the needs of the population, rather than the needs of individual health care organizations or hospital groups. The position statement, developed by the ACS Committee on Trauma's (COT) Trauma Systems Evaluation and Planning Committee, was approved by the ACS Board of Regents last fall and recently published in the January issue of the *Bulletin of the American College of Surgeons.*

Trauma systems have long been of concern to the ACS and the COT. "Historically, the ACS has taken the lead in establishing standards and promoting quality in trauma care, and has long supported the principle that trauma centers should be allocated on the basis of need; ensuring that the welfare of injured patients remains the primary goal," said statement coauthor Robert J. Winchell, MD, FACS, Chair of the ACS Trauma Systems Evaluation and Planning Committee, and professor of surgery and chief of trauma at the University of Texas Health Science Center, Houston.

The statement notes, "The importance of controlling the allocation of trauma centers, as well as the need for a process to designate trauma centers based upon regional population need, has been recognized as an essential component of trauma system design since the 1980s. Nonetheless, few trauma systems are able to operationalize these concepts, especially when faced with real or potential challenges that stem from powerful health care institutions or providers."

At their core, trauma systems are developed to achieve care that is optimal for injured patients. Ronald M. Stewart, MD, FACS, Chair of the COT, and professor and chair of the department of surgery at the University of Texas (UT) Health Science Center, San Antonio, said that in the beginning of trauma system development, the problem was a lack of trauma centers. However, some areas are now seeing a perceived oversupply of trauma centers because the provision of trauma care can in some instances become highly profitable. "We believe it is very important to the injured patient to get this balance right, thus the need for this position statement," Dr. Stewart said. Further, Dr. Winchell said, "History has shown that market forces are insufficient to guarantee a stable system. Police, fire and EMS services are not provided based on market profitability; the same criterion must be held true for trauma services."

The statement lays out guidelines for optimal trauma system function. Among these is the principle that designation of trauma centers is the responsibility of the governmental lead agency with oversight of the regional trauma system. Furthermore, the lead agency should be guided by the local needs of the region(s) for which it provides oversight, and trauma center designation should be guided by the regional trauma plan based upon the needs of the population being served, rather than the needs of individual health care organizations or hospital groups.

The intent of developing this statement is to support state and local agencies in making designation decisions and to develop policy at the state and national level that ensures the focus on centers being allocated on the basis of need, according to Dr. Winchell. "At a high level, the intent is to reach leaders and policy makers at the regional, state, and national level, to raise awareness and to stimulate the comprehensive development of public health policy and supporting legislation that establishes trauma care securely as a basic public health component."

Trauma systems today are based upon the understanding that injury is a public health problem. As A. Brent Eastman, MD, FACS, past-President of the ACS, noted in the 2009 Scudder Oration on Trauma delivered before the Clinical Congress of the American College of Surgeons , the concept of injury as a public health problem was integral to the 2006 document "Model Trauma System Planning and Evaluation" from the U.S. Department of Health and Human Services. This 2006 document was in turn influenced by the 1992 document "The Model Trauma Care System Plan."

Dr. Eastman noted, "Do trauma systems make a difference?...they do and they must make a difference. If we are to decrease the unacceptably high death rates...we must establish trauma systems."*

The new trauma systems statement sets forth this premise, and goes on to note, "The problem arises when a lead agency passively allows health care organizations and hospital groups to establish new trauma centers in areas that yield an economic advantage, while ignoring areas of true need."

In looking to the future of trauma systems in the U.S., Dr. Stewart said, "My hopes are that we, all the elements of the trauma system, are committed to doing the right thing and doing things right for our patients and our fellow citizens—this includes all patients and all regions of the country."

The new trauma systems statement is available at http://bulletin.facs.org/2015/01/statement-on-trauma-center-designation-based-upon-system-need/.

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*Eastman AB. Wherever the Dart Lands: Toward the Ideal Trauma System. *Journal of the American College of Surgeons*. August 2010; 211(2): 153-168.

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About the American College of Surgeons

The American College of Surgeons is a scientific and educational organization of surgeons that was founded in 1913 to raise the standards of surgical practice and improve the quality of care for surgical patients. The College is dedicated to the ethical and competent practice of surgery. Its achievements have significantly influenced the course of scientific surgery in America and have established it as an important advocate for all surgical patients. The College has more than 80,000 members and is the largest organization of surgeons in the world. For more information, visit www.facs.org.

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The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

A National Evaluation of the Effect of Trauma-Center Care on Mortality

Ellen J. MacKenzie, Ph.D., Frederick P. Rivara, M.D., M.P.H., Gregory J. Jurkovich, M.D., Avery B. Nathens, M.D., Ph.D., Katherine P. Frey, M.P.H., Brian L. Egleston, M.P.P., David S. Salkever, Ph.D., and Daniel O. Scharfstein, Sc.D.

ABSTRACT

BACKGROUND

Hospitals have difficulty justifying the expense of maintaining trauma centers without strong evidence of their effectiveness. To address this gap, we examined differences in mortality between level 1 trauma centers and hospitals without a trauma center (non–trauma centers).

METHODS

Mortality outcomes were compared among patients treated in 18 hospitals with a level 1 trauma center and 51 hospitals non–trauma centers located in 14 states. Patients 18 to 84 years old with a moderate-to-severe injury were eligible. Complete data were obtained for 1104 patients who died in the hospital and 4087 patients who were discharged alive. We used propensity-score weighting to adjust for observable differences between patients treated at trauma centers and those treated at non–trauma centers.

RESULTS

After adjustment for differences in the case mix, the in-hospital mortality rate was significantly lower at trauma centers than at non–trauma centers (7.6 percent vs. 9.5 percent; relative risk, 0.80; 95 percent confidence interval, 0.66 to 0.98), as was the one-year mortality rate (10.4 percent vs. 13.8 percent; relative risk, 0.75; 95 percent confidence interval, 0.60 to 0.95). The effects of treatment at a trauma center varied according to the severity of injury, with evidence to suggest that differences in mortality rates were primarily confined to patients with more severe injuries.

CONCLUSIONS

Our findings show that the risk of death is significantly lower when care is provided in a trauma center than in a non–trauma center and argue for continued efforts at regionalization.

From the Johns Hopkins Bloomberg School of Public Health, Center for Injury Research and Policy, Baltimore (E.J.M., K.P.F., B.L.E., D.S.S., D.O.S.); and the University of Washington School of Medicine, Harborview Injury Prevention and Research Center, Seattle (F.P.R., G.J.J., A.B.N.). Address reprint requests to Dr. MacKenzie at Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Rm. 554, Baltimore, MD 21205-1996, or at emackenz@jhsph.edu.

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In 1976, the American College of Surgeons Committee on Trauma published criteria for categorizing hospitals according to the resources required to provide various levels of care for traumatic injuries.[1] Increasingly, states are using these criteria as a basis for designating trauma centers as part of a regionalized approach to trauma care.[2] However, this process has not been uniform. There is substantial variation across states in the number and geographic distribution of trauma centers,[2-4] owing in part to the lack of strong evidence of the effectiveness of trauma centers coupled with high costs of verifying their capabilities.[5] The existing evidence is based on studies of preventable deaths involving subjective reviews and restricted inclusion criteria,[6] registry-based studies that rely on comparisons of the number of observed deaths in trauma centers with the number expected on the basis of national normative data,[7] or population studies limited by their use of administrative data and historical controls.[8,9] Furthermore, studies have focused on in-hospital mortality, yet a substantial proportion of patients with traumatic injuries die of their injuries in the year after discharge.[10,11] The National Study on the Costs and Outcomes of Trauma (NSCOT) was designed to address these limitations and identify differences in outcomes and costs associated with treatment at hospitals with a level 1 trauma center and hospitals without a trauma center (non–trauma centers). In this report, we examine the effect of care in a trauma center on the risk of death. We hypothesized that the risk of death would be lower at a trauma center as compared with a non–trauma center and that the effect would be largest for younger patients with more severe injuries.

METHODS

SETTING

The NSCOT was conducted in 15 regions defined according to contiguous Metropolitan Statistical Areas in 14 states (Table 1). The Metropolitan Statistical Areas were selected from among the 25 largest such areas in 19 states (Arizona, California, Colorado, Florida, Illinois, Indiana, Iowa, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Virginia, Washington, and Wisconsin) for which routinely collected hospital-discharge data were available in 1999. We excluded Metropolitan Statistical Areas in which large non–trauma centers collectively treated fewer than 75 patients with major trauma annually, as defined according to an Injury Severity Score of more than 15, on the basis of the diagnostic codes of the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM).[12,13]

Within each Metropolitan Statistical Area, we identified all level 1 trauma centers and large non–trauma centers (Table 1). Hospitals were identified as level 1 trauma centers if designated by a state or regional authority or verified by the American College of Surgeons Committee on Trauma. Large non–trauma centers were neither designated nor verified as trauma centers at any level and treated at least 25 patients with major trauma annually. Although virtually all non–trauma centers that met the study criteria were asked to participate (124 of 131), only a sample of trauma centers (27 of 68) was selected. This sample was devised to achieve approximately equal numbers of small, medium, and large centers on the basis of the annual volume of patients with major trauma. Eighteen (66.7 percent) of the trauma centers and 51 (40.8 percent) of the non–trauma centers agreed to participate and received approval from their institutional review board. The principal reason for nonparticipation among trauma centers was lack of approval by the institutional review board (7 of 9), whereas the majority of nonparticipating non–trauma centers (48 of 73) declined to participate because of a lack of administrative support to facilitate the study.

Non–trauma centers were, on average, smaller than trauma centers, were less likely to be members of the Council of Teaching Hospitals, and treated fewer patients with major trauma (Table 2). However, 17 such centers had a designated trauma team, and 8 of these had a trauma director. As compared with the universe of level 1 trauma centers and non–trauma centers located in Metropolitan Statistical Areas, the NSCOT sample consisted of larger hospitals that were more likely to be members of the Council of Teaching Hospitals.[2] During the study, one of the non–trauma centers was designated a level 1 trauma center and one level 1 trauma center lost its verification. For the analysis, these hospitals were categorized according to their status at enrollment.

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Table 1. Number of Participating Trauma Centers and Non–Trauma Centers, According to Metropolitan Statistical Area.

Metropolitan Statistical Area	Level 1 Trauma Centers			Non–Trauma Centers		
	Met Criteria	Selected for Study	Enrolled in Study	Met Criteria	Selected for Study	Enrolled in Study
Boston; Providence, R.I., Fall River, Mass., and Warwick, R.I.	5	3	1	8	8	4
New York City	18	3	1	9	9	4
Philadelphia and N.J.; Allentown, Bethlehem, and Easton, Pa.; Reading, Pa.	8	3	2	12	12	2
Williamsport, Pa.; Scranton and Wilkes-Barre, Pa.; Pittsburgh	3	2	1	7	0	0
Baltimore; Washington, D.C., Maryland and Virginia, and West Virginia	3	2	2	5	5	5
Charlotte, N.C.; Gastonia, N.C., and Rock Hill, S.C.; Greensboro, Winston Salem, and High Point, N.C.; Fayetteville, N.C.	2	2	2	7	7	4
Miami; Ft. Lauderdale, Fla.	3	1	1	10	10	1
Chicago; Gary, Ind.	13	2	2	15	15	2
Detroit; Saginaw, Mich.	3	2	1	18	18	8
Evansville and Henderson, Ind.	0	0	0	3	3	2
Milwaukee and Waukesha, Wis.; Madison, Wis.; Racine, Wis.	2	1	1	6	6	4
San Diego, Calif.	1	1	1	3	3	3
San Francisco; Oakland, Calif.; Modesto, Calif.; Stockton, Calif.	1	1	1	10	10	3
Los Angeles and Long Beach, Calif.	5	3	1	15	15	6
Seattle, Bellevue, and Everett, Wash.	1	1	1	3	3	3
All regions	68	27	18	131	124	51

Table 2. Characteristics of Participating and Nonparticipating Hospitals According to Trauma Center Status.*

Characteristic	Trauma Centers		Non–Trauma Centers	
	Participating Trauma Centers (N=18)	All U.S. Level 1 Trauma Centers† (N=177)	Participating Hospitals (N=51)	All U.S. Hospitals† (N=1836)
Publicly owned (%)	44.4	34.4	3.9	11.3
Member of the Council of Teaching Hospitals (%)	100.0	75.7	15.7	5.4
Average no. of acute care beds	303.0	270.6	207.2	114.3
Average no. of ICU beds	41.9	33.9	19.1	12.2
Average no. of admissions/yr (all conditions)	23,018	14,339	16,672	8638
Average no. of admissions for major trauma/yr‡	319.2	NA	39.9	NA
Designated trauma team (%)	100.0	NA	34.0	NA
Trauma director (%)	100.0	NA	16.0	NA
Continuous in-house call for general surgery (%)	84.2	NA	30.0	NA
Continuous in-house call for neurosurgery (%)	42.1	NA	16.0	NA
Continuous in-house call for orthopedic surgery (%)	42.1	NA	16.0	NA

* ICU denotes intensive care unit, and NA not applicable.
† Only hospitals located in a Metropolitan Statistical Area were included.
‡ Major trauma was defined by an Injury Severity Score of more than 15.

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PATIENT POPULATION AND SELECTION

Patients were eligible for the study if they were 18 to 84 years of age, arrived alive at a participating hospital, and were treated for a moderate-to-severe injury (defined by at least one injury with a score of at least 3 on the Abbreviated Injury Scale) between July 2001 and November 2002.[14] Patients who presented with no vital signs and were pronounced dead within 30 minutes after arrival were excluded, as were patients who delayed seeking treatment for more than 24 hours, patients 65 years of age or older with a first listed diagnosis of hip fracture, patients with major burns, patients who spoke neither English nor Spanish, non–U.S. residents, and patients who were incarcerated or homeless at the time of injury. The patients were selected and eligibility was determined in two stages (Fig. 1). First, administrative discharge records and emergency department logs were prospectively reviewed to identify patients with a principal ICD-9-CM diagnosis code of 800 to 959 (excluding those due to late effects, foreign bodies, complications, burns, and [among patients 65 years of age or older] hip fractures). We then used a computer program to map ICD-9-CM diagnoses to Abbreviated Injury Scale scores[13] to select patients with at least one diagnosis involving a score of at least 3 on the Abbreviated Injury Scale. A total of 18,198 patients met these initial eligibility criteria.

In the second stage, we selected all 1438 patients who had died in the hospital and a sample of 8021 patients who were discharged alive, stratified within hospitals according to age (18 to 64 years vs. 65 to 84 years), ICD-9-CM–derived Injury Severity Scores (15 or less vs. more than 15); and principal body region injured, hierarchically classified beginning with the head, arms and legs, and other regions. A quota sampling strategy was used with the goal of enrolling approximately 3000 patients who were 18 to 64 years of age and 1200 patients who were 65 to

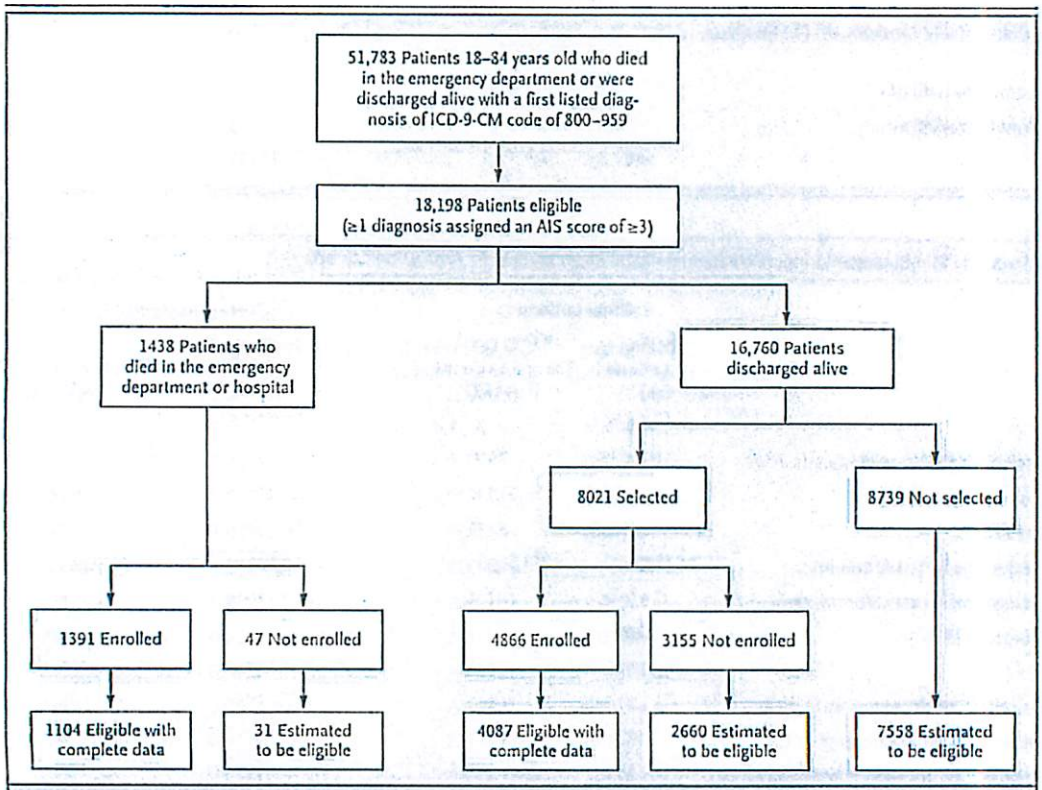

Figure 1. Approach to Enrollment.

The patients who were estimated to be eligible were determined according to sampling cell within hospitals, and the values were applied to the corresponding numbers of patients who were not enrolled or not selected. ICD-9-CM denotes *International Classification of Diseases, Ninth Revision, Clinical Modification*, and AIS Abbreviated Injury Scale.

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84 years of age, evenly distributed across trauma centers and non–trauma centers and across categories of injury severity and principal region injured.

In stage 2, we reviewed patients' complete medical records to determine their final eligibility. Medical records were obtained for 1391 (96.7 percent) of the patients who died in the hospital. Of these, 287 were excluded, leaving 1104 eligible patients for whom medical-record data were abstracted. The most common reasons for exclusion in the second stage were death within 30 minutes after arrival and no vital signs (50.8 percent), lack of evidence of trauma (19.6 percent), and treatment sought more than 24 hours after injury (21.5 percent).

Patients discharged alive and selected for the study were contacted at 3 months by mail and then by telephone, and consent was obtained to access their medical records and interview them at 3 and 12 months. Of the 8021 such patients who were selected for the study, 4866 (60.7 percent) were enrolled, 1635 could not be located, 1177 declined to participate, and 343 completed the interview but never provided written permission for a review of their medical records. Of the 4866 who were enrolled, 779 (16.0 percent) were determined to be ineligible on review of their medical records, leaving 4087 eligible live patients for whom complete medical-record data were abstracted. The most common reasons for exclusion in stage 2 were treatment sought more than 24 hours after injury (70.8 percent) and a lack of evidence of trauma (25.4 percent).

For two reasons it was necessary to weight data on the 5191 eligible participants with complete medical-record data (1104 of whom died in the hospital and 4087 of whom were discharged alive) to the population of eligible patients. First, the sampling protocol selected all patients who died in the hospital but only a proportion of patients discharged alive. Second, not all patients selected for inclusion in the study were enrolled. The resulting "sampling" weights consist of the reciprocal product of two probabilities: the conditional probability of being selected and the probability of being enrolled and having data abstracted from the medical record, given that the patient was selected. The reference population to which inferences are made for the NSCOT consists of 15,440 patients who met or were projected to meet the inclusion criteria.

DEFINITION OF OUTCOMES AND DATA COLLECTION

Outcomes of interest included death in the hospital and death within 30, 90, and 365 days after injury. We identified deaths that occurred after discharge either by interviewing a proxy or through a match with the National Death Index.[15] To maximize the ascertainment of patients who died after being discharged, we searched the National Death Index 24 months after the last patient had been enrolled.

Characteristics of the patients and their injuries that were related to the risk of death were obtained from medical records and used in the analysis to adjust for differences between those treated at trauma centers and those treated at non–trauma centers. Nurses, trained specifically for the NSCOT and certified in scoring of the Abbreviated Injury Scale by the Association for the Advancement of Automotive Medicine, abstracted data from the patients' medical records.

Patients were characterized on the basis of their sociodemographic characteristics and preexisting medical conditions. Preexisting conditions were identified from a patient's medical record, and a score for the Charlson comorbidity index was derived.[16] The index is based on 17 indicators of coexisting conditions, which are weighted and then totaled to give a single value. A value of 0 indicates that there are no serious coexisting conditions. Since the Charlson comorbidity index does not include either obesity or coagulopathy, both of which correlate with the risk of death after trauma,[17,18] these conditions were included in the analysis as individual covariates. The use of alternative models in which the Charlson score was replaced with individual indicators of preexisting conditions yielded similar results.

Injuries were characterized on the basis of their mechanism, anatomical severity, and physiological effect. The anatomical severity of individual injuries was assessed with the use of the Abbreviated Injury Scale.[14] Scores derived manually from a review of the medical record were used in all analyses. A total of 381 patients (7.3 percent) who were selected on the basis of having a maximal score of at least 3 were reclassified as having a maximal score of less than 3 after a review of their medical records. These patients were kept in the analysis. Several summary measures of the overall severity of injury were derived from injury-specific Abbreviated Injury

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Scales, including the Injury Severity Score,[12] the New Injury Severity Score,[19] the Anatomic Profile Score,[20] and the worst survival risk ratio, as defined by Meredith and colleagues.[21]

We used the first assessment of blood pressure and pupillary response in the emergency department and the first assessments of the motor score of the Glasgow Coma Scale[22] in the field and the emergency department to measure the degree of physiological derangement. In categorizing patients according to the motor score of the Glasgow Coma Scale, we separated patients who were pharmacologically paralyzed from those with a score of 1 who were not pharmacologically paralyzed.

STATISTICAL ANALYSIS

Excluded from the present analysis were 137 patients who were transferred to a participating hospital 24 hours or more after injury as well as 11 patients whose length of stay before transfer from a participating center was less than 24 hours. We included 1107 patients who were transferred to a participating hospital from another hospital within 24 hours after injury (880 within 6 hours). When the analysis was repeated excluding these 1107 patients, similar results were obtained.

We used multiple imputation techniques[23] to account for missing covariates. Data were missing for fewer than 5 percent of patients except for the categories of prehospital intubation (6.9 percent had data missing), the first score for the Glasgow Coma Scale (13.4 percent), and the score for the Glasgow Coma Scale obtained before hospitalization (30.9 percent). Ten imputed data sets were created. For each data set, robust standard errors were computed to account for clustering within hospitals. Across data sets, estimates and standard errors were computed with the use of Rubin's combining rules.[24]

All analyses were performed with the use of data weighted to the population of eligible patients. To adjust for observable differences between patients treated at trauma centers and those treated at non–trauma centers, we used the inverse probability of treatment weighting approach described by Robins and colleagues.[25] In this approach, data on each patient are further weighted according to the reciprocal of the conditional probability of receiving care at a trauma center given all demographic and injury characteristics listed in Table 3 together with relevant interaction terms. These "adjustment" weights, often referred to as propensity scores, serve to create an "adjusted population," which has two important characteristics: the receipt of care at a trauma center is not confounded by covariates, and the effect of care at a trauma center is the same in the adjusted population as it is in the original reference population. This method hinges on the correct specification of a model for the propensity score. To check the adequacy of this model, we evaluated the balance on covariates in the adjusted population.[26] We also trimmed the adjustment weights to reduce the effect of influential observations on the overall results. The degree of trimming was chosen to minimize mean squared error.[27]

RESULTS

As compared with patients treated in trauma centers, those treated in non–trauma centers were older; had more coexisting conditions; were more likely to be female, non-Hispanic white, and insured; and tended to have less severe injuries (Table 3). After further weighting according to propensity scores, the two groups of patients were similar (Table 3).

The observed (unadjusted) case fatality rate in the hospital was higher among patients treated at trauma centers than among patients treated at non–trauma centers (8.0 percent vs. 5.9 percent). An additional 3.1 percent of patients died after discharge, with a smaller percentage dying after discharge from a trauma center than after discharge from a non–trauma center (1.9 percent vs. 6.3 percent).

After adjustment for differences in the case mix, the risk of death within one year after injury was significantly lower when care was provided in a trauma center than when care was provided in a non–trauma center (10.4 percent vs. 13.8 percent; relative risk, 0.75; 95 percent confidence interval, 0.60 to 0.95) (Table 4). The relative reduction in risk was similar for in-hospital, 30-day, and 90-day mortality (Table 4). We assessed whether the relative risk of death in a trauma center as compared with a non–trauma center varied according to the overall severity of injury. We observed a significant interaction between the score for the Abbreviated Injury Scale and treatment at a trauma center with regard to in-hospital mortality (two-sided $P=0.02$ by a glob-

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Table 3. Characteristics of the Patients and Their Injuries before and after Propensity-Score Adjustment.*

Characteristic	Unweighted No. of Patients	Death within 365 Days	Before Adjustment		After Adjustment	
			Trauma Centers	Non–Trauma Centers	Trauma Centers	Non–Trauma Centers
		weighted %	*percent distribution*			
Patients						
Age†						
<55 yr	3096	6.9	78.6	53.0	71.9	72.5
55–64 yr	559	10.8	9.6	16.1	11.0	11.1
65–74 yr	607	17.3	6.3	11.3	8.0	7.4
75–84 yr	781	32.2	5.5	20.6	9.0	9.0
Sex						
Male	3363	10.2	73.1	57.4	68.9	67.0
Female	1680	11.4	26.9	42.6	31.1	33.0
Race or ethnic group						
Non-Hispanic white	3245	11.4	55.7	71.6	59.7	58.1
Non-Hispanic nonwhite	1054	9.3	25.9	15.8	23.9	24.9
Hispanic	744	9.1	18.4	12.6	16.4	17.0
Health insurance before injury						
Medicare only	609	29.5	6.7	12.2	7.9	6.5
Medicare plus private insurance	958	21.6	8.4	23.9	12.8	12.7
Private insurance	1703	5.9	39.0	36.0	38.4	37.1
Medicaid	437	17.5	8.9	6.3	8.4	10.9
Other	206	3.4	4.2	5.2	4.2	5.9
None	1130	5.6	32.8	16.4	28.3	26.8
Charlson comorbidity index score‡						
0	3306	7.7	76.5	57.8	71.5	72.8
1	758	9.8	13.8	16.7	14.4	12.7
2	409	19.8	5.0	9.8	6.2	6.4
≥3	570	31.1	4.8	15.6	7.8	8.2
Obesity						
Yes	77	17.3	1.3	1.6	1.3	1.6
No	4966	10.5	98.7	98.4	98.7	98.4
Coagulopathy						
Yes	76	20.1	0.8	1.7	1.2	1.3
No	4967	10.4	99.2	98.3	98.8	98.7

al test for two-way interactions between the type of hospital and maximal scores), 30-day mortality (P=0.03), and 90-day mortality (P=0.02) but not 365-day mortality (P=0.61). As shown in Table 4, the relative risks of death among patients with a maximal score for the Abbreviated Injury Scale of 4 or a maximal score of 5 or 6 were lower than the risks among those with a maximal score of only 3. On the other hand, there were minimal differences in risk between patients with a maximal score of 4 and those with a maximal score of 5 or 6.

Although a formal test for an interaction between the type of hospital and age was not sig-

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Table 3. (Continued.)

Characteristic	Unweighted No. of Patients	Death within 365 Days	Before Adjustment		After Adjustment	
			Trauma Centers	Non–Trauma Centers	Trauma Centers	Non–Trauma Centers
		weighted %	*percent distribution*			
Injuries						
Mechanism						
Blunt, motor vehicle	2190	8.0	53.2	31.9	48.2	49.9
Blunt, fall	1714	14.6	20.3	52.5	27.9	27.3
Blunt, other	512	9.8	9.5	9.5	9.9	8.5
Penetrating, firearm	475	14.3	11.9	4.2	9.7	10.3
Penetrating, other	152	5.1	5.0	1.9	4.3	3.9
First ED measurement of SBP <90 mm Hg						
Yes	304	32.2	4.3	3.2	4.1	5.3
No	4739	9.7	95.7	96.8	95.9	94.7
First ED assessment of pupils abnormal						
Yes	678	49.0	9.0	4.7	7.7	9.1
No	4365	7.4	91.0	95.3	92.3	90.9
First ED assessment of GCS motor score§						
6	3669	5.7	74.0	89.5	78.0	77.2
4–5	379	20.2	7.6	4.3	6.7	6.4
2–3	97	32.7	1.4	1.2	1.3	1.1
1, not chemically paralyzed	401	52.5	5.0	3.0	4.4	4.4
Chemically paralyzed	497	21.2	11.9	2.0	9.6	10.9
Field GCS motor score§						
6	3753	6.6	75.3	88.4	78.3	76.8
4–5	410	19.5	7.9	5.4	7.2	6.9
2–3	89	27.8	1.5	1.1	1.3	1.8
1, not chemically paralyzed	444	43.1	6.2	3.3	5.7	5.9
Chemically paralyzed	347	18.0	9.2	1.8	7.6	8.5
New Injury Severity Score¶						
<16	1460	5.9	22.5	52.3	30.0	30.2
16–24	1265	5.5	30.0	24.2	28.6	27.7
25–34	1270	10.6	29.0	15.0	25.6	23.6
>34	1048	28.6	18.5	8.5	15.8	18.5

nificant except with respect to the risk of death at 365 days (two-sided P=0.04, as compared with P=0.22 for in-hospital mortality, P=0.34 for 30-day mortality, and P=0.29 for 90-day mortality), the results suggest a larger effect of treatment at a trauma center among patients younger than 55 years of age (relative risks ranged from 0.61 to 0.68) than among those 55 years of age or older (relative risks ranged from 0.88 to 0.94).

DISCUSSION

Previous studies of the effectiveness of trauma centers have been inconclusive and hampered by

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Table 3. (Continued.)

Characteristic	Unweighted No. of Patients	Death within 365 Days	Before Adjustment		After Adjustment	
			Trauma Centers	Non–Trauma Centers	Trauma Centers	Non–Trauma Centers
		weighted %	*percent distribution*			
Injury Severity Score†						
<16	2121	4.8	40.7	66.1	47.0	46.4
16–24	1397	10.2	28.6	21.7	26.9	26.5
25–34	1110	20.9	21.8	9.7	18.8	18.1
>34	415	22.8	8.9	2.5	7.2	9.0
Anatomic Profile Score**						
<4.0	2495	4.9	50.2	69.0	54.8	54.8
4.0–4.9	505	6.2	12.2	7.3	11.1	10.3
5.0–5.9	804	13.8	14.9	12.9	14.4	13.2
6.0–6.9	550	21.6	10.0	6.0	8.8	10.2
≥7.0	689	30.7	12.7	4.8	10.9	11.5
Worst survival risk ratio††						
<0.25	194	71.0	2.0	0.9	1.8	2.3
0.25–0.49	568	35.4	8.6	4.8	7.6	8.0
0.50–0.74	590	15.1	13.5	5.8	11.5	10.7
0.75–0.89	2168	7.2	46.9	35.8	38.5	40.0
≥0.90	1523	5.1	29.0	52.7	40.6	39.0
Maximal AIS score, overall‡‡						
≤3	2744	4.9	57.5	73.0	60.9	60.4
4	1368	12.7	27.2	19.6	25.9	25.7
5–6	931	32.5	15.3	7.4	13.3	13.9
Maximal AIS score, head‡‡						
≤2	2988	5.8	63.2	72.0	65.2	63.5
3	526	7.3	11.0	9.2	11.0	12.3
4–6	1529	25.2	25.8	18.8	23.8	24.2
Midline shift						
Yes	505	52.1	6.1	4.6	5.7	5.6
No	4538	8.2	93.9	95.4	94.3	94.4
Open skull fracture						
Yes	160	27.8	2.8	1.3	2.4	2.0
No	4883	10.1	97.2	98.7	97.6	98.0

limitations in study design and reliance on in-hospital mortality as a measure. Most problematic has been the difficulty in adequately adjusting for referral bias — that is, the reality that trauma centers treat a higher proportion of young, severely injured patients, whereas non–trauma centers treat a higher proportion of elderly patients with coexisting conditions. We addressed this issue by stratifying the patients according to the type and severity of injury and age, collecting detailed information on important covariates known to influence the risk of death, and by us-

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Table 3. (Continued.)

Characteristic	Unweighted No. of Patients	Death within 365 Days	Before Adjustment		After Adjustment	
			Trauma Centers	Non–Trauma Centers	Trauma Centers	Non–Trauma Centers
		weighted %	*percent distribution*			
Maximal AIS score, arms and legs‡‡						
0–1	2454	14.9	44.7	39.8	44.1	44.9
2	891	8.6	17.7	17.1	17.7	18.4
3–5	1698	6.7	37.6	43.1	38.1	36.7
≥2 Long-bone fractures or amputation						
Yes	347	8.4	8.7	5.0	7.7	8.0
No	4696	10.7	91.3	95.0	92.3	92.0
Maximal AIS score, abdomen‡						
≤2	4441	10.6	86.3	95.5	87.9	87.5
3	307	9.1	7.4	2.2	6.3	6.5
4–6	295	12.4	6.3	2.2	5.8	6.0
Maximal AIS score, thorax‡						
≤2	3375	11.4	62.3	78.2	65.6	64.6
3	1106	7.5	25.5	15.5	23.5	22.6
4–6	562	12.2	12.1	6.4	10.9	12.8
Flail chest						
Yes	85	15.3	1.9	0.9	1.6	1.8
No	4958	10.5	98.1	99.1	98.4	98.2
Any spinal cord injury						
Yes	191	10.8	4.8	1.6	4.0	5.0
No	4852	10.6	95.2	98.4	96.0	95.0
EMS level and intubation						
ALS, intubated	574	29.1	11.6	2.8	9.5	10.3
ALS, not intubated	2767	8.1	69.1	40.6	61.4	61.2
BLS	1024	11.0	11.3	34.6	16.8	16.7
Not transported by EMS	678	8.1	8.0	22.1	12.2	11.9

* ED denotes emergency department, SBP systolic blood pressure, EMS emergency medical services, ALS advanced life support, and BLS basic life support.
† The mean age of patients treated at trauma centers and patients treated at non–trauma centers was 45.4 years and 52.0 years, respectively, before adjustment and 43.2 years and 42.8 years, respectively, after adjustment.
‡ Scores for the Charlson comorbidity index can range from 0 (no serious coexisting conditions) to 17, with higher scores indicating a greater number of coexisting conditions.
§ Motor scores for the Glasgow Coma Scale (GCS) can range from 1 to 6, with higher numbers indicating better function.
¶ New Injury Severity Scores can range from 1 to 75, with higher scores indicating more severe injury.
‖ Injury Severity Scores can range from 1 to 75, with higher scores indicating more severe injury.
** An Anatomic Profile Score of more than 4 generally indicates more severe injury.
†† Worst Survival Risk Ratios range from 0 to 1, with higher scores indicating less severe injury.
‡‡ Scores for the Abbreviated Injury Scale (AIS) can range from 1 to 6, with higher scores indicating more severe injury.

ing propensity-score weighting to adjust for potential biases in the analysis.

After adjustment for differences in the case mix, the overall risk of death was 25 percent lower when care was provided at a trauma center than when it was provided at a non–trauma center. Relative differences in risk, however, varied according to the severity of injury, with evidence to suggest that differences in the risk of death according to the type of hospital were primarily

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Table 4. Adjusted Case Fatality Rates and Relative Risks of Death after Treatment in a Trauma Center as Compared with Treatment in a Non–Trauma Center.*

Variable	Weighted No. of Patients	Death in Hospital	Death within 30 Days after Injury	Death within 90 Days after Injury	Death within 365 Days after Injury
Overall population	15,009				
Trauma center (%)		7.6	7.6	8.7	10.4
Non–trauma center (%)		9.5	10.0	11.4	13.8
Relative risk (95% CI)		0.80 (0.66–0.98)	0.76 (0.58–1.00)	0.77 (0.60–0.98)	0.75 (0.60–0.95)
Age <55 yr	10,678				
Trauma center (%)		5.9	5.9	6.3	6.6
Non–trauma center (%)		9.0	8.7	9.2	10.8
Relative risk (95% CI)		0.66 (0.48–0.89)	0.68 (0.48–0.95)	0.68 (0.50–0.94)	0.61 (0.46–0.81)
Age ≥55 yr	4,331				
Trauma center (%)		12.3	12.4	15.6	20.7
Non–trauma center (%)		13.1	13.8	17.8	22.5
Relative risk (95% CI)		0.94 (0.56–1.61)	0.90 (0.56–1.44)	0.88 (0.60–1.27)	0.92 (0.67–1.28)
Maximal AIS score, ≤3	9,193				
Trauma center (%)		2.3	2.6	2.7	4.8
Non–trauma center (%)		1.6	1.9	3.3	5.5
Relative risk (95% CI)		1.44 (0.86–2.73)	1.36 (0.81–2.27)	1.24 (0.83–1.85)	0.89 (0.61–1.29)
Maximal AIS score, 4	3,847				
Trauma center (%)		8.3	8.4	9.9	12.3
Non–trauma center (%)		11.8	10.9	14.2	16.9
Relative risk (95% CI)		0.70 (0.49–1.02)	0.78 (0.56–1.08)	0.70 (0.52–0.93)	0.73 (0.55–0.97)
Maximal AIS score, 5–6	1,969				
Trauma center (%)		30.2	29.4	31.4	31.8
Non–trauma center (%)		43.2	43.9	44.4	44.4
Relative risk (95% CI)		0.70 (0.51–0.96)	0.67 (0.48–0.92)	0.71 (0.52–0.97)	0.72 (0.52–0.98)

* CI denotes confidence interval, and AIS Abbreviated Injury Scale.

among patients with Abbreviated Injury Scale scores of 4 or higher. Although there is insufficient evidence to establish a hospital-based effect among patients with scores of less than 4, the risk of death in this group of patients, especially among the young, is low. It is possible, however, that treatment at a trauma center could benefit these patients by reducing complications and overall treatment costs or improving functional outcomes and increasing the likelihood that they will return to productivity.

Differences in the risk of death according to the type of hospital also appeared to be greater among younger patients than older patients. Although the risk of death was lower among older patients treated at trauma centers than among those treated at non–trauma centers, the differences were not as large as those between younger patients and the relative risks of death were not significantly different from 1.0. An important limitation of our study, however, was the small number of older patients with severe injuries, resulting in wide confidence intervals for this cohort. This limitation may have contributed to our inability to detect a significant interaction between the type of hospital and age. Elderly patients with trauma represent a serious challenge, because they are at high risk for complications and death from injuries that would not necessarily prove fatal to their younger counterparts.[28-30] Paying more aggressive attention to coexisting medical conditions during the acute and post-acute phases may improve the outcome among such patients and is worthy of further study.[10,31-34]

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Our estimates may be conservative for two reasons. First, we included only non–trauma centers that treated at least 25 patients with major trauma per year. Most non–trauma centers are small and may have a lower quality of trauma care than larger facilities. More important, 17 of the non–trauma centers in our study had a designated trauma team, and 8 of the 17 had a trauma director. Including these hospitals as non–trauma centers may have biased the results toward a more conservative estimate of the effect.

Caution is needed in generalizing our results. Because the NSCOT is a study of the effectiveness of trauma centers in urban and suburban America, our results cannot readily be extrapolated to rural areas of the country. In addition, we did not address the relative effectiveness of intermediate levels (2, 3, or 4) of trauma care. Finally, we excluded children and adolescents; the effect of care in a trauma center in this population must be addressed in a separate study.

Our results show that the overall risk of death is significantly lower when care is provided in a trauma center than when it is provided in a non–trauma center, and they argue for continued efforts at regionalization. At the same time, they highlight the difficulty in decreasing the risk of death among elderly patients with trauma.

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No potential conflict of interest relevant to this article was reported.

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CLARK COUNTY TRAUMA SYSTEM ASSESSMENT

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Senior Vice President
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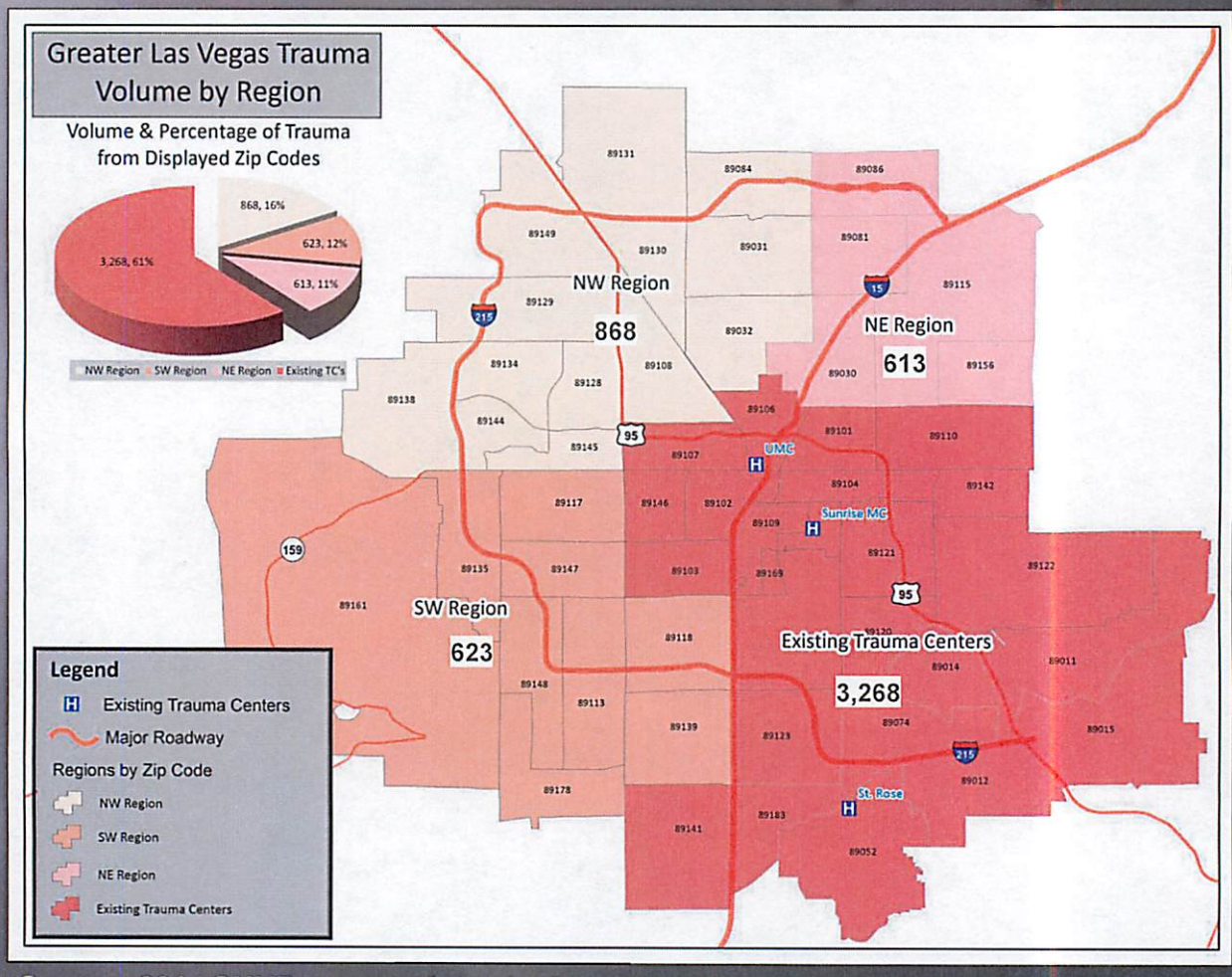
October 21, 2015

ATTACHMENT B

Trauma Volume by Region



Source: 2014 SNHD trauma zip code data

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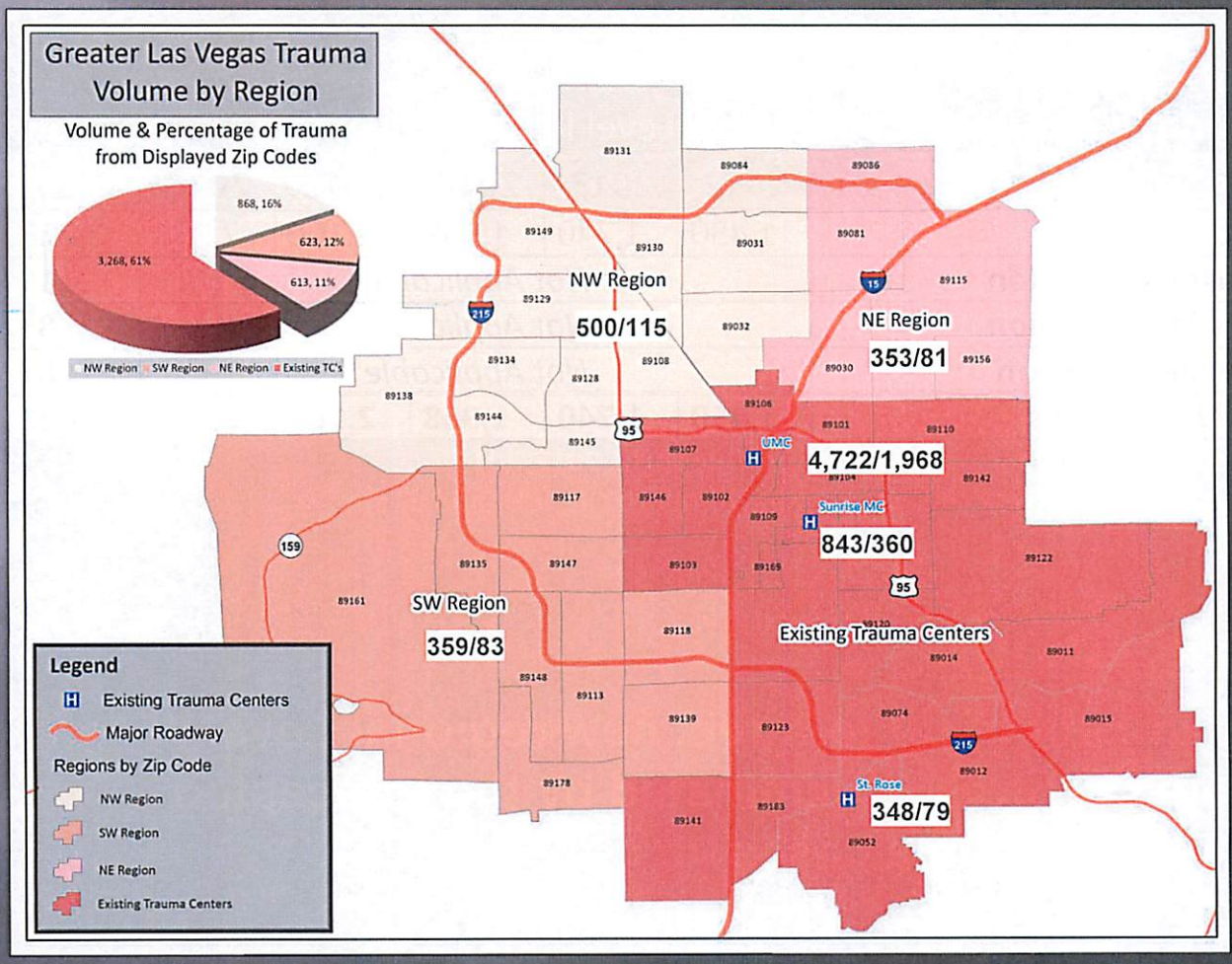
ATTACHMENT B

Level III Trauma Volume/Admits



Notes: Reduced by pediatric and high acuity rates; utilizes St. Rose admission's rate

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ATTACHMENT B

New Trauma Centers Impact

Trauma System Impact of Regional Level III Trauma Centers on Adult Admissions							
Year	2012	2013	2014	2015	2016	2017	2018
UMC	1,450	1,740	1,968	2,106	2,253	2,213	2,368
Northwest Region	*Not Applicable*					115	123
Southwest Region	*Not Applicable*					83	89
Northeast Region	*Not Applicable*					81	87
Total Admissions	1,450	1,740	1,968	2,106	2,253	2,411	2,580

Source: SNHD Annual Trauma Transport Reports, 2012-2014
Note: admissions data includes admits, direct to OR, ICU, and deaths

CONCLUSION

The impact of up to three, new regional Level III trauma centers is eliminated by the forecasted growth in trauma cases

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ATTACHMENT B

Regional Trauma Center Benefits

1. Provide shorter transport times to definitive care – especially during commute traffic periods;
2. Enable ambulance crews to return to service faster;
3. Develop greater depth of resources during disasters;
4. Allow for lower acuity trauma cases to be handled locally – maintaining system resources for high acuity and specialty cases; and
5. Permit trauma patients to recover within their local communities.

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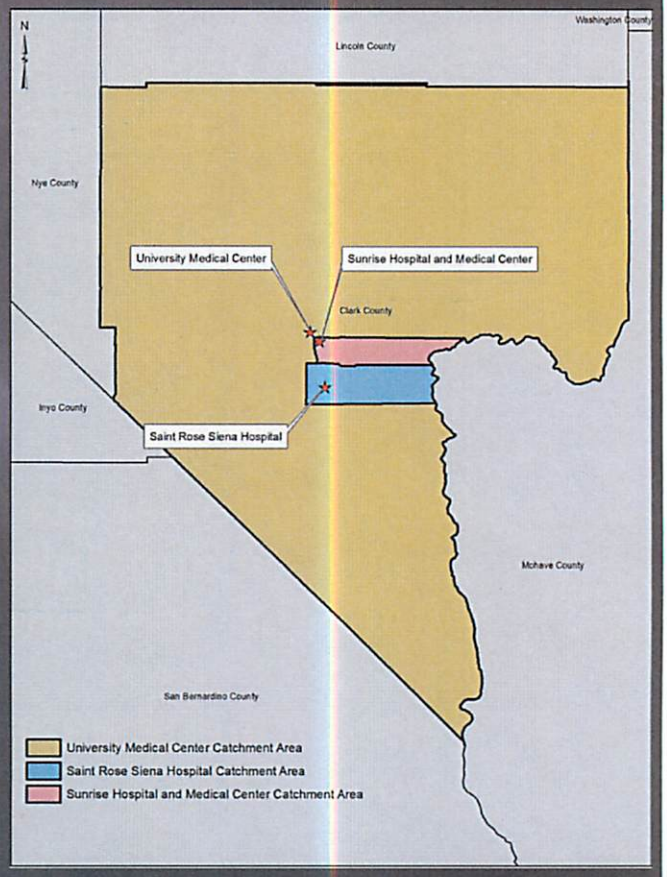
ATTACHMENT B

Trauma Catchment Areas

- Regularly Reassessed to Ensure Appropriateness
- Current Process – Good Opportunity to Review

ACS/Industry Standards

- Closest, Most Appropriate Facility
- Level I/II Offer Same Service
- Paramedic Discretion
  - Traffic, Construction, Specialty Care, etc.



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ATTACHMENT I

Trauma System Care

ATTACHMENT A

Centennial Hills Hospital Medical Center Application for Level III Trauma

Centennial Hills Hospital
MEDICAL CENTER
A Member of The Valley Health System

Regional Needs

ATTACHMENT A

- Coordinated system of Acute Care Facilities, EMS and Trauma Sites
- Cooperative Relationships between Acute Care Facilities and Trauma Centers
- Maintain and keep under 30 minute access to Trauma Care
  - Increased population growth and road traffic
- Adequate volumes at Trauma Designated facilities to maintain physician and staff trauma skills
- Clinically appropriate protocols to assure proper placement of patients

Centennial Hills Hospital MEDICAL CENTER
A Member of The Valley Health System

Why the North/Northwest Region?

ATTACHMENT A

- Population Growth and Development
  - The area includes North/Northwest Las Vegas, and Kyle Canyon, Indian Springs, Mercury, Beatty, and Pahrump
  - Population Growth in Area – current population of this area exceeds 160,000 and will grow by an additional 15,000 in the next 5 years
  - Housing Development
    - Two large master planned communities developing that will bring over 20,000 homes to the area over the next 5-10 years
  - Committed Infrastructure
    - $47 million investment by city to improve interchange between US95 and I 215 roadways which is located in the Centennial Hills area. Currently roadways support over 100,000 vehicles, with an expectation of 160,000
- Geographic Location
  - Centennial Hills Hospital is 15 miles from the Level I, 20 miles from the Level II and 30 miles from the Level III facility.

Centennial Hills Hospital
MEDICAL CENTER
A Member of The Valley Health System

Centennial Hills Hospital Medical Center

ATTACHMENT A

- Opened facility in January 2008
  - Part of the Valley Health System
  - 190 bed facility with closest proximity to growing communities of Northwest and North Las Vegas areas

- Facility has key components including:
  - Large Emergency Department w/ Trauma Rooms
  - Operating room, Critical Care, Hospital, and Helipad capacity
  - Key physician coverage in place including:
    - Trauma Medical Director
    - Board Certified General Surgeons
    - Desert Radiology
    - 24/7 ER physicians with ATLS
    - 24/7 Laborist Program
    - 24/7 Anesthesiology Program

Centennial Hills Hospital MEDICAL CENTER
A Member of The Valley Health System

Reasons for Centennial Hills Hospital Trauma Program

ATTACHMENT A

- Improved access for Trauma services based on geographic location
- Reduced time out of service for EMS and Fire agencies
- Emergency/Disaster Response
- Negligible Volume Impact to current trauma system
- Letters of Support
  - Centennial Hills Hospital Medical Executive Committee
  - Valley Health System Board of Governors
  - EMS providers
  - North Las Vegas and Nevada Test Site Fire
  - Councilman Ross
- Future Growth
- Valley Health System

Centennial Hills Hospital MEDICAL CENTER
A Member of The Valley Health System

Current Trauma System in Las Vegas

ATTACHMENT A

Centennial Hills Hospital
MEDICAL CENTER
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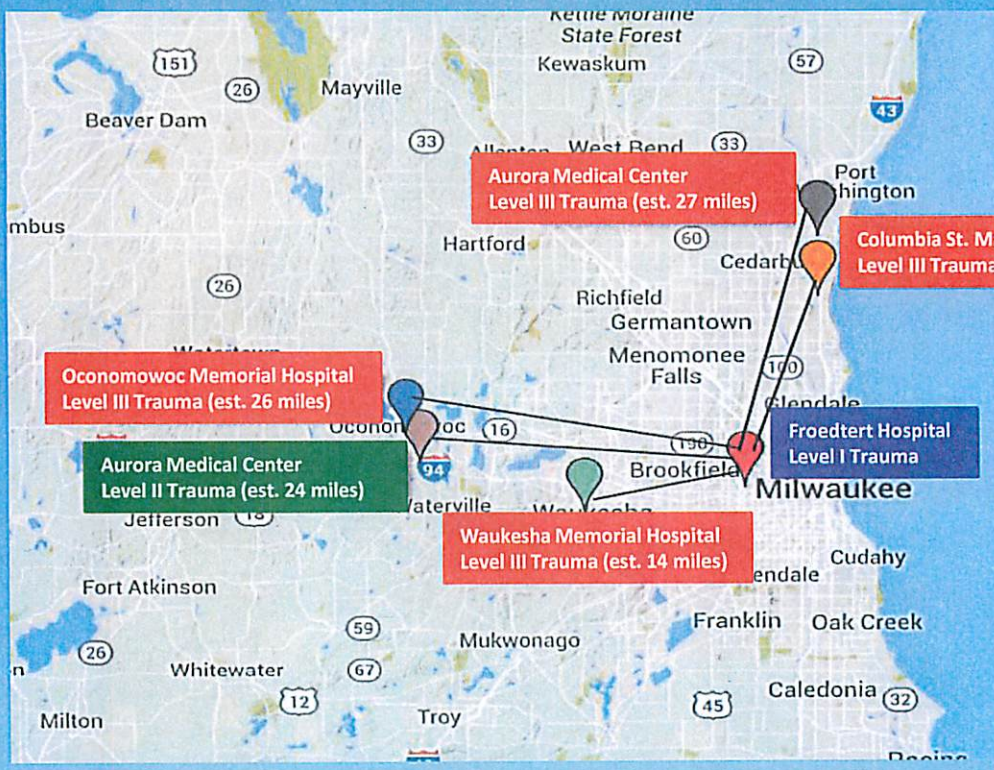
Other Cities of Similar Population Size

ATTACHMENT A



Milwaukee, Wisconsin area – Population of 2,037,542

Centennial Hills Hospital MEDICAL CENTER
A Member of The Valley Health System

Other Cities of Similar Population Size

ATTACHMENT A

Cincinnati, Ohio area – Population of 2,188,001

Centennial Hills Hospital MEDICAL CENTER

A Member of The Valley Health System

Other Cities of Similar Population Size

ATTACHMENT A

Salt Lake City area – Population of 2,350,274

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Final Conclusion

ATTACHMENT A

- The addition of Centennial Hills Hospital to the local trauma system would :
  - Keep us in line with trauma systems in cities that have a similar population
  - Reduce Fire/EMS Transport Times thereby improving availability for emergency services across the valley
  - Provide additional capacity for emergency response issues when needed
  - Enhance current trauma system with Level III trauma services to serve the expanding patient needs in the Northwest Las Vegas Valley

Centennial Hills Hospital
MEDICAL CENTER
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MOUNTAIN VIEW HOSPITAL

MOUNTAIN VIEW HOSPITAL

Level III
Trauma Center Application

Chris Mowan
Chief Executive Officer

HCA
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ATTACHMENT B1

Population to be Served

- Northern L.V. Population Increased 71% in last 12 years
  - 135,000 (2002) to 231,000 (2014)
- Population Underserved
  - Traffic Congestion
  - Longer Transport Times to Trauma Centers
  - Removes Ambulances from Service Area
  - Patients receive care away from their community
- Southeastern Las Vegas already receives Better Trauma Care through a Level III and it has Fewer Trauma Cases

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ATTACHMENT B1

Service Area, Distance to Existing Centers, & Impact on Trauma System

- Geographic Service Area
  - 13 Zip Codes in the Northwest Las Vegas Region
- Distance to Existing Trauma Centers
  - Normal Traffic = up to 14 Minutes Closer
  - Commute Traffic = over 30 Minutes Closer
- Impact on Existing Trauma System
  - No Negative Impact to Existing Centers as Current Trauma Volume Growth will Exceed Loss of Admitted Patients
  - 868 Total Cases - 38 Pediatric - 330 High Acuity = 500 Cases
  - 500 Cases * 23% Admit Rate = 115 Admissions
  - UMC Admission Growth = Ranges Between 228-290 Annually

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ATTACHMENT B1

MountainView Trauma Capacity

ACS Standards Comparison Completed by The Abaris Group

- Helicopter Landing Pad
- ED Resuscitation Rooms
- Two (soon to be Three) CT Scanners
- Operating Suites
- Inpatient Beds with 12-bed Neuro-ICU
- Inpatient Rehabilitation

ATTACHMENT B1

MountainView Trauma Capabilities

- Personnel
  - Trauma Medical Director - Level II Trauma Center Experience
  - Trauma Program Manager - Level II Trauma Center Experience
  - ED Physicians - BC/BE in Emergency Medicine, ATLS Trained, Trauma Experience
  - Surgical Coverage - General, Orthopedics, Neurosurgery, Anesthesia
- Facility
  - OR Teams 24/7 - Multiple In-house or On-call Teams
  - ICU Intensivists
  - Interventional Radiology with Biplane
- Experience
  - With 80,000+ Emergency Visits, currently seeing Trauma

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ATTACHMENT B1

MountainView Trauma Commitment

Planned Improvements that will Benefit Trauma

- Phase I, 12-18 Months
  - 60 Inpatient Beds with 23 M/S Beds
  - Dedicated CT Scanner for ED
  - 10% ED Capacity Increase through New Vertical Treatment Space
  - Second Helicopter Landing Pad
  - Surgical Residency Program

- Phase 2, 48-60 Months
  - 100 Inpatient Beds, possibly add Dedicated Trauma ICU Beds
  - 12 Operating Suites
  - Surgical Fellowship Opportunities

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ATTACHMENT B1

MountainView-Level III Trauma Center

- Seeing Trauma Currently
- Hired Independent Trauma Consulting Firm
- Fully Researched Local Need
- Identified Internal Capabilities to Meet the Need

Objective

- Raise Level of Trauma Care to Match that Available Elsewhere in Las Vegas and Clark County

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SOUTHERN HILLS HOSPITAL & MEDICAL CENTER

SOUTHERN HILLS
HOSPITAL & MEDICAL CENTER

Level III
Trauma Center Application

Adam Rudd
Chief Executive Officer

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Population to be Served

- Clark County Population Increase 40% in last 12 years
  - 1.5M (2002) to 2.1M (2014), not including Visitors
- Population Underserved
  - Traffic Congestion
  - Longer Transport Times to Trauma Centers
  - Removes Ambulances from Service Area
- Patients receive the care needed in their community

ATTACHMENT B2

Service Area, Distance to Existing Centers, & Impact on Trauma System

- Geographic Service Area
  - 9 Zip Codes in the Southwest Las Vegas Region
- Distance to Existing Trauma Centers
  - Normal Traffic = up to 28 Minutes Closer
  - Commute Traffic = over 60 Minutes Closer
- Impact on Existing Trauma System
  - No Negative Impact to Existing Centers as Current Trauma Volume Growth will Exceed Loss of Admitted Patients
  - 623 Total Cases - 27 Pediatric - 237 High Acuity = 359 Cases
  - 359 Cases * 23% Admit Rate = 83 Admissions
  - UMC Admission Growth = Ranges Between 228-290 Annually

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ATTACHMENT B2

Southern Hills Trauma Capacity

ACS Standards Comparison Completed by The Abaris Group

- Helicopter Landing Pads
- ED Resuscitation Rooms
- Two CT Scanners, one Dedicated in the ED
- Operating Suites
- Inpatient Beds

ATTACHMENT B2

Southern Hills Trauma Capabilities

- Personnel
  - ED Physicians - BC/BE in Emergency Medicine, ATLS Trained, Trauma Experience
  - Surgical Coverage - General, Orthopedics, Neurosurgery, Anesthesia
- Facility
  - OR Teams 24/7 - In-house or On-call Teams
  - ICU Intensivists
  - Interventional Radiology
- Experience
  - With 30,000+ Emergency Visits, currently seeing trauma

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Southern Hills Trauma Commitment

Planned Improvements that will Benefit Trauma

- Phase I, 6-12 Months
  - 46 M/S Inpatient Beds
  - Freestanding ED Off-site to Increase Hospital ED Capacity
- Phase 2, 48-60 Months
  - 48 M/S Inpatient Beds
  - Additional OB/GYN Services due to Local Population Needs

ATTACHMENT B2

Southern Hills-Level III Trauma Center

- Seeing Trauma Currently
- Fully Researched Local Need
- Identified Internal Capabilities to Meet the Need

Objective

- Raise Level of Trauma Care to Match that Available Elsewhere in Las Vegas and Clark County

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HCA
Far West Division

February 19, 2016

Via U.S. Mail
and
Email: Hammond@snhdmail.org

John Hammond
EMS & Trauma System Manager

Southern Nevada Health District
280 South Decatur Boulevard
Las Vegas, Nevada 89107

Re: Applications for Initial Authorization as Centers for the Treatment of Trauma

Dear Mr. Hammond:

As I know you will agree, the health and safety of Clark County's citizens are issues far too important and serious to be driven by politics and self-interest. Three Southern Nevada Hospitals have submitted applications to the Southern Nevada Health District for initial authorization as Centers for the Treatment of Trauma—MountainView Hospital ("MountainView"), Southern Hills Hospital & Medical Center ("Southern Hills"), and Centennial Hills Hospital Medical Center ("Centennial Hills"). Presently, all three applications are pending before the Regional Trauma Advisory Board ("RTAB"), which will make a recommendation to the Southern Nevada District Board of Health. However, two recent events call the RTAB's objectivity into question.

First, a recent comment in the *Las Vegas Review-Journal* by RTAB Member and the Trauma Medical Director for University Medical Center (John Fildes, M.D.) suggests that he has already pre-judged the applications. Without waiting for the Office of Emergency Medical Services & Trauma System to present its research and recommendation to the RTAB, Dr. Fildes argues against what he has deemed an "oversupply of Level 3 trauma centers." Furthermore, Dr. Fildes implies that offering the Valley additional trauma care will "dismantle" University Medical Center's trauma center. As a member of the RTAB, Dr. Fildes' statement suggests a bias in favor of the trauma center with which he is affiliated—UMC—regardless of the community's need for additional trauma care.

Second, Centennial Hills' application was presented at the last RTAB meeting by one of its Board Members, Sajit Pullarkat, in his capacity as an RTAB member. Permitting an RTAB Member to present Centennial Hills' application may be construed as showing tacit approval or bias in favor of Centennial Hills' application.

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Far West Division

Finally, the RTAB's composition is likely to undermine its credibility, and potentially lead to a challenge of its recommendation. Specifically, the RTAB is comprised primarily of stakeholders—administrators from the existing trauma centers and other persons involved in providing emergency medical services. Thus, each of its members has a personal interest at stake and arguably a bias in favor of or against a particular applicant.

Southern Hills and MountainView provide local access to life saving trauma care to a growing suburban population in areas like Spring Valley and Sun City Summerlin respectively. These suburban regions have grown at a faster rate than the county's major cities collectively and deserve an independent evaluation of need.

Due to the potential for RTAB members to have a conflict of interest or be biased, MountainView and Southern Hills urge the RTAB to bring in an independent third party to: (1) determine whether Southern Nevada needs additional trauma centers; and (2) conduct an independent evaluation of the applications for the recommended areas. By securing the integrity of the application process, the RTAB can ensure the highest quality of care for Clark County's citizens – anything less is unacceptable.

Sincerely,

Adam Rudd, CEO
Southern Hills Hospital & Medical Center

Christopher Mowan, CEO
MountainView Hospital

cc: Laura Palmer (via e-mail palmer@snhdmail.org)
Heather Anderson-Fintak, Esq. (via e-mail fintak@snhdmail.org)
Annette Bradley, Esq. (via e-mail bradley@snhdmail.org)

Attachment M

UNLV School of MEDICINE

Office of EMS & Trauma System, Regional Trauma Board
Testimony Regarding the Designation of Additional Trauma Centers
Wednesday, February 24, 2016
Submitted by UNLV School of Medicine

As a representative of the UNLV School of Medicine this letter will serve as public comment against the expansion of additional trauma centers. Though we can understand the opportunity to expand trauma resources to outlying parts of our community, the UNLV School of Medicine has concerns about opening additional trauma centers in the service area of University Medical Center's trauma center.

In order to have an effective trauma care system, the system must interrelate with the many other components of the region's health care system. When considering the expansion of the current trauma care system it is critically important to consider the capabilities of our current EMS system. We believe duplication must be avoided and existing resources integrated so the region has the best emergency care for its resident.

An integrated EMS and trauma system should, through a coordinated effort, provide a continuum of care while addressing specialized patient needs such as pediatrics, burns, and spinal cord injuries. The system must also continue to coordinate trauma care within regions, especially in rural and frontier regions. In Nevada we are facing a serious shortage of specialty physicians and this includes a shortage of trauma and orthopedic physicians. Currently, we have a strong centralized level-1 trauma center that is able to recruit and retain specialty physicians to maintain the highest level of trauma care. In this level 1 trauma center there is a sufficient number of cases to support quality training and diversity in conditions.

It is critical for the current and new residency programs to have a training opportunity with high patient volume to provide the optimal basis for education and allow for training in all aspects of trauma care.

To ensure residents receive a robust training we need to assure hands-on training in all trauma levels from 1 to 3. It is absolutely critical we don't reduce patient caseloads and dilute the resident training experience.

The valley is just now gaining momentum to increase residency slots. For instance, UMC was approved recently to add four new orthopedic residents based on the volume seen at their trauma center. The last thing we want to do is to jeopardize their accreditation at this sensitive time as they launch their program. Reduced patients loads will also lower the quality of experience, which eventually leads to lower quality applicants.

Nellis Air Force base surgeons and Clark County surgical subspecialists, such as Orthopedics and Trauma surgeons also rely on receiving trauma and skills training in an efficient manner that provides enough experience to adequately train our state for disaster preparedness and preparation for overseas military engagement.

It is important to maintain a highly trained workforce, which depends upon enough volume and acuity. This level of care and training will be lost if the trauma system of care is spread out in multiple, small low-level trauma facilities across the region.

The UNLV School of Medicine is very concerned about the expansion of these trauma centers and the effect it may have on residents and faculty in Clark County.

Attachment N

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February 24, 2016

Via Hand Delivery

Heather Anderson-Fintak, Esq.
Associate General Counsel
Legal Department
Southern Nevada Health District
280 South Decatur Blvd.
Las Vegas, Nevada 89107

Re: Objection to RTAB Involvement in Authorizing Trauma Centers

Dear Ms. Anderson-Fintak:

As you are aware, this firm represents MountainView Hospital ("MountainView"), Southern Hills Hospital & Medical Center ("Southern Hills"), and their parent company, Hospital Corporation of America ("HCA") with respect to their respective Applications for Authorization as Centers for the Treatment of Trauma ("Trauma Centers").

By regulation, the SNHD has specifically charged the OEMSTS with the responsibility of making the recommendation to the Southern Nevada District Board of Health ("District Board of Health"). However, the Regional Trauma Advisory Board is not part of the OEMSTS. Rather, the RTAB and the OEMSTS are separate and distinct entities that each report directly to the Chief Health Officer.[1]

Moreover, neither the Southern Nevada Health District's ("SNHD") Trauma Regulations nor the Southern Nevada Trauma Plan make any reference to the RTAB playing any role in the authorization process. Presumably, this is due to the RTAB's membership (which consists of stakeholders in the trauma system) and each member's personal interests.[2]

Consequently, MountainView and Southern Hills each object to the RTAB's involvement in the authorization process. Due to the potential for bias as a result of the RTAB's involvement,

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[1] "The OEMSTS is a part of the Division of Community Health and is overseen by the EMSTS Manager who reports to the Division Director. The Community Health Director reports to the Chief Health Officer." S. Nev. Trauma Plan 15 (Feb. 26, 2015) The RTAB is not part of the Division of Community Health; it was created by SNHD regulation to "support the Chief Health Officer's role to ensure a high quality system of patient care within the Clark County EMS and Trauma System." *See Id.* at 14-15 (diagram illustrating the organization of the SNHD).

[2] *See* Letter from Adam Rudd, CEO, Southern Hills Hospital & Medical Center and Christopher Mowan, CEO, MountainView Hospital to John Hammond, EMS & Trauma System Manager, SNHD, Feb. 19, 2016.

MountainView and Southern Hills respectfully reiterate their request that the SNHD retain an independent third party to: (1) determine whether Southern Nevada needs additional trauma resources; and (2) conduct an independent evaluation of the applications for the recommended areas. The health and safety of Clark County's citizens warrant nothing less.

Sincerely,

Joshua M. Dickey

JMD\kbs
Enclosure