

Sabra Newby, Chair
City Manager
City of Reno

Neil Krutz
City Manager
City of Sparks

Kevin Dick
District Health Officer
Washoe County Health
District

Emergency Medical Services Advisory Board

**WASHOE COUNTY
HEALTH DISTRICT**
ENHANCING QUALITY OF LIFE

Eric Brown
County Manager
Washoe County

Dr. Andrew Michelson
Emergency Room Physician
St. Mary's Regional Medical Center

Joe Macaluso
Director of Risk Management
Renown

MEETING NOTICE AND AGENDA

Date and Time of Meeting: Thursday, February 6, 2020, 9:00 a.m.
Place of Meeting: Washoe County Health District
1001 E. Ninth Street, Building B, South Auditorium
Reno, Nevada 89512

- 1. *Roll Call and Determination of Quorum**
- 2. *Public Comment**
Limited to three (3) minutes per person. No action may be taken.
- 3. Consent Items (For Possible Action)**
Matters which the Emergency Medical Services Advisory Board may consider in one motion. Any exceptions to the Consent Agenda must be stated prior to approval.
 - A. Approval of Draft Minutes**
November 7, 2019
 - B. Approval of November 7, 2020 EMSAB Meeting Time Change from 9:00 a.m. to 2:00 p.m.**
- 4. Discussion and Possible Election of EMS Advisory Committee Vice Chair (For Possible Action)**
- 5. *Prehospital Medical Advisory Committee (PMAC) Update**
Dr. Andrew Michelson
- 6. *Program and Performance Data Updates**
Heather Kerwin
- 7. Presentation and possible approval of the 2018 Washoe County Trauma Data Report (For possible action)**
Heather Kerwin
- 8. Presentation and possible acceptance of an update of the Washoe County EMS Strategic Plan (2019-2023), a requirement of the Interlocal Agreement for Emergency Medical Services Oversight. (For possible action)**
Heather Kerwin
- 9. Board Requests:**
 - A. *City of Reno and REMSA CAD-to-CAD Implementation Project Update**
Rishma Khimji

10.*Board Comment

Limited to announcements or issues for future agendas. No action may be taken.

11.*Public Comment

Limited to three (3) minutes per person. No action may be taken.

Adjournment

Items on the agenda may be taken out of order, combined with other items, withdrawn from the agenda, moved to the agenda of a later meeting; or they may be voted on in a block. Items with a specific time designation will not be heard prior to the stated time, but may be heard later. An item listed with asterisk (*) next to it is an item for which no action will be taken.

The Emergency Medical Services Advisory Board meetings are accessible to the disabled. Disabled members of the public who require special accommodations or assistance at the meeting are requested to notify Administrative Health Services at the Washoe County Health District, PO Box 11130, Reno, NV 89520-0027, or by calling 775.326-6049, at least 24 hours prior to the meeting.

Time Limits: Public comments are welcome during the Public Comment periods for all matters whether listed on the agenda or not. All comments are limited to three (3) minutes per person. Additionally, public comment of three (3) minutes per person may be heard during individual action items on the agenda. Persons are invited to submit comments in writing on the agenda items and/or attend and make comment on that item at the Board meeting. Persons may not allocate unused time to other speakers.

Response to Public Comments: The Emergency Medical Services Advisory Board can deliberate or take action only if a matter has been listed on an agenda properly posted prior to the meeting. During the public comment period, speakers may address matters listed or not listed on the published agenda. The Open Meeting Law does not expressly prohibit responses to public comments by the Emergency Medical Services Advisory Board. However, responses from the Board members to unlisted public comment topics could become deliberation on a matter without notice to the public. On the advice of legal counsel and to ensure the public has notice of all matters the Emergency Medical Services Advisory Board will consider, Board members may choose not to respond to public comments, except to correct factual inaccuracies, ask for Health District Staff action or to ask that a matter be listed on a future agenda. The Emergency Medical Services Advisory Board may do this either during the public comment item or during the following item: "Board Comments – Limited to Announcements or Issues for future Agendas."

Pursuant to NRS 241.020, Notice of this meeting was posted at the following locations:

Washoe County Health District, 1001 E. 9th St., Reno, NV
Reno City Hall, 1 E. 1st St., Reno, NV
Sparks City Hall, 431 Prater Way, Sparks, NV
Downtown Reno Library, 301 S. Center St., Reno, NV
Washoe County Administration Building, 1001 E. 9th St, Reno, NV
Washoe County Health District Website www.washoecounty.us/health
State of Nevada Website: <https://notice.nv.gov>

Supporting materials are available to the public at the Washoe County Health District located at 1001 E. 9th Street, in Reno, Nevada. Ms. Dawn Spinola, Administrative Secretary to the Emergency Medical Services Advisory Board, is the person designated by the Emergency Medical Services Advisory Board to respond to requests for supporting materials. Ms. Spinola is located at the Washoe County Health District and may be reached by telephone at (775) 326-6049 or by email at dsinola@washoecounty.us. Supporting materials are also available at the Washoe County Health District Website www.washoecounty.us/health pursuant to the requirements of NRS 241.020.

Sabra Newby, Chair
City Manager
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Neil Krutz
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District

Emergency Medical Services Advisory Board



David Solaro
Interim County Manager
Washoe County

Dr. Andrew Michelson
Emergency Room Physician
St. Mary's Regional Medical Center

Joe Macaluso
Director of Risk Management
Renown

MEETING MINUTES

Date and Time of Meeting: Thursday, November 7, 2019, 2:00 p.m.
Place of Meeting: Washoe County Health District
1001 E. Ninth Street, Building B, South Auditorium
Reno, Nevada 89512

1. *Roll Call and Determination of Quorum

Chair Newby called the meeting to order at 2:00 p.m.

The following members and staff were present:

Members present: Sabra Newby, Chair
David Solaro
Kevin Dick
Dr. Andrew Michelson (arrived at 2:29 p.m.)
Joe Macaluso

Members absent: Neil Krutz

Ms. Spinola verified a quorum was present.

Staff present: Dania Reid, Deputy District Attorney
Christina Conti, Preparedness and EMS Program Manager
Brittany Dayton, EMS Coordinator
Heather Kerwin, EMS Statistician
Dawn Spinola, Administrative Secretary, Recording Secretary

2. *Public Comment

Limited to three (3) minutes per person. No action may be taken.

Chair Newby opened the public comment period. As there was no one wishing to speak, Chair Newby closed the public comment period.

Chair Newby announced the agenda items would be heard out of order to accommodate vendors who were attending via speakerphone and were prepared to speak regarding Item 10A.

10. Board Requests:

A. ***City of Reno and REMSA CAD-to-CAD Implementation Project**
Rishma Khimji

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Ms. Khimji thanked the Board for their time during the CAD-TO-CAD update. She noted there were representatives on the phone from Tiburon and TriTech, which are part of the same company, Central Square. Additionally, staff from the third-party appliance vendor was in the audience and on the phone.

Ms. Khimji went on to explain that CAD-TO-CAD is a sharing of call information between two agencies. REMSA and the EMS Oversight staff agreed on certain rules, and that is do not handle names, only basic or necessary information will pass through the interface and information should be standardized. Each agency will have separate case numbers. This is just a way to get CAD information from Dispatch 9-1-1 to REMSA if they are required to be on site, without the manual process of calling them on the phone and then transferring the information. It is just a way to automate the way we get information from one CAD system to another.

Ms. Khimji noted she would be displaying a PowerPoint presentation on the history of the project, because it was very long. Initial discussions started in 2014, and in 2015 Tiburon and TriTech proposals were signed by the respective agencies, to include City of Reno. She was unclear as to how much involvement Sparks and Washoe County had with the process at that time.

Ms. Khimji said that Washoe County Health initiated CAD-TO-CAD meetings with TriTech in 2016. TriTech had bought the Tiburon application, and so the company was TriTech at that time. She began working with the City of Reno and became involved in the project in 2016, which is when the City of Reno got the quote from Tiburon. From there it went to the E911 Advisory Board, as it was believed that since this was a Dispatch function it could fall under NRS for the E911 Advisory Board software solutioning purchasing. Funding for a multi-jurisdictional CAD-TO-CAD was denied. Reno then decided to move forward with the initiative as they understood how important it was. They were aware they would be the testers or the beta users of the system between City of Reno and REMSA dispatch systems.

Ms. Khimji said they started working with Tiburon to determine what the Reno's CAD environment was eligible for, and what they needed to do to make sure the technologies were available to do a CAD-TO-CAD. Reno's CAD version needed an upgrade, and that was built. From there they continued those conversations with REMSA and their dispatch personnel to be sure they understood the data points that needed to move between the two systems.

Ms. Khimji went on to say that in November of 2018, Reno finally got word from Tiburon and TriTech that they were going to work with a third-party agency, EDC, on the hardware. She pointed out a diagram that showed that what they want to do is transfer real-time data from the two CADs. She pointed out that the architecture of the CADs is so unique, because it is necessary to disperse information to all the CAD stations at the agencies in real time. In order to do that with two completely disparate systems in two different locations, there needs to be an appliance that can ingest the data and then push it out to the CAD that is necessary in real time without a lag. Otherwise, patients are being put in danger. That is where that interface comes from, and that hardware appliance is what is used to trigger the data to be pushed and pulled between the two systems in real time. She reiterated this was the third component to this CAD-TO-CAD system, which complicates things.

Ms. Khimji went on to explain that from there Reno started working with EDC. In April of 2018 REMSA was informed that they also had to upgrade their TriTech CAD system, so they

went through that process. In June, Reno and REMSA completed their workflow functionality. They talked about all of the data that needs to pass through back and forth between the two agencies, came up with an agreement and what that looks like, and provided that to Tiburon and TriTech. In September of 2018, Tiburon and TriTech and the appliance EDC provided a demonstration and it was not consistent with the requirements. Many assumptions and exceptions had been built into the functionality which were not agreed upon by REMSA or by City of Reno, so the process had to essentially start again from scratch.

Ms. Khimji said that at that point they started working on new and redefined workflows. Again, they had the issue of making sure their CAD systems were aligned on both sides to accept new functionality for this CAD-TO-CAD system. In January of 2019 a new scope of work with the new requirements was developed. Tiburon, TriTech and EDC signed off, and work began again to develop the CAD-TO-CAD system. In this year, four to five years after the initial conversations, and on the second try at getting it right, TriTech/Tiburon develop a new coded interface, but they determine that they would not meet the initial August 2019 release date, which was the third release date promised. As part of the scope of work, TriTech/Tiburon and EDC were required to provide a formalized project plan with a solidified end date.

Ms. Khimji said the call to determine those dates was held on July 31. In September the new schedule arrived, and the go-live date is January 21, 2020. TriTech, Tiburon and EDC are making sure that everything is functional on their end so that they can pull it over into Reno's testing environment. TriTech/Tiburon and EDC need to make sure they can handle all the exceptions and errors in a clean and seamless manner. They did come across some coding issues that need to be reworked, delaying the demo that was supposed to occur November 5th. Ms. Khimji said she has made it very clear to the vendors, who are on the call and here in person, and will make it clear again, the system must go live January 21, 2020. It is not optional; the project cannot continue to be delayed. She pointed out it was Year Five and opined that was just unacceptable.

Ms. Khimji stated that their user training, train-the-trainer session would be on November 5. REMSA and Reno would have separate trainings. The Administrator train-the-trainer training was scheduled for the 19th. Again, respective to Reno and to REMSA. The EDC train the trainer, which is understanding the interface and any configurations that need to be done in the interface, not the workflow between the two agencies, will be held on the 20th. November 5-18 is testing, testing, testing of Reno's environment. It was meant to test calls between City of Reno and REMSA to be sure that data is going back and forth. The training piece would help them ensure that they are getting all the different scenarios into play and testing for any errors. She reiterated that go-live is January 21st.

Ms. Khimji explained that she had asked that vendor staff be on site for support issue resolution and believed that EDC had committed. Tiburon and TriTech were both reviewing their schedules to ensure that they could also be on site. It was important to her that they have development staff that have been a part of this be on site if there were any go-live issues, because that happens all the time. In the test world everything will work perfectly, and when it is launched, new problems arise that need to be configured. She wanted the staff to be on site so that there was not a lag between seeing the problems and getting the developers back out to repair them. They could see the error in real time and address it timely.

Ms. Khimji went over the issues that had occurred throughout the project, which explained

why the history was so long. The initial scope of work did not include timeline and deliverables. She opined that since that initial scope of work, and as of a few months ago, they had resolved that issue, but it did cause a problem for the project planning and progression. It was necessary for Tiburon and TriTech to partner with a third-party appliance developer for the data delivery between the two CAD systems. It took some time on their part to solidify legal and scoping issues they had with EDC, and so it took a while to get to the point that someone was able to deliver an appliance. Reno and partner agencies were their first client to need a CAD-TO-CAD that is multi-jurisdictional. Many agencies may have a CAD-TO-CAD, but it is between one agency and another single agency. Washoe County requires a regional CAD with one ambulance service and has incompatible CAD environments. She reiterated that both Reno and REMSA had needed to update their CAD systems as part of the process.

Ms. Khimji said that Tiburon and TriTech did not conduct formal requirement reviews, which was a big issue that was uncovered during the first demo. Many assumptions and exceptions had been built into the system which did not meet the requirements that had been provided to the vendors earlier, causing deliverable delays. They were under the assumption that the various meetings held in 2016 supported their functional exceptions. As the demo occurred two years after the initial discussions, the assumptions and exceptions that they built in were based on initial conversations with the business experts, not always with IT or other specialists in the conversations. Because of that, it was necessary to develop new and more robust requirements to ensure that Reno and REMSA were getting what they needed.

Ms. Khimji noted that internal staffing server issues at Tiburon and TriTech again postponed deliverables in August of 2019. Now a final project plan is in place, the go-live date of January 21, 2020 is set, and the scope of work should be demoed shortly. What is next is the deliverables of the CAD-TO-CAD. In time, maybe as little as a year or less, other agencies that want to participate in this can participate and Reno and REMSA will work with those other agencies.

Ms. Khimji pointed out Vehicle Location Interface (AVL) was not part of the current project. If that is something that the Board or the agencies feel is required, they would work on building that in. It would require some additional coding, because that is a complex piece of information that also needs to go between two systems. It would be necessary to review the service workflows and to review mutual aids and any other contracts, especially if other agencies come into play. They would also need to make sure that the data going back and forth is accurate, that Reno is supplying the right data to REMSA and REMSA is supplying back to the City of Reno the data that they need to close out their CAD calls. And as always, they need to do continued improvements. She opined everything was a living system and they wanted to make sure that they were targeting what the Board would like to see, and what the agencies and REMSA would like to see in terms of progress and improvements.

Mr. Macaluso noted there was a demo that was to be scheduled and it had had to be delayed because of some technical issues. He asked if it had been rescheduled. Ms. Khimji deferred to the vendors to answer that question as Reno had not been provided any additional information.

Yako Viani from Central Square, attending the meeting via phone, stated Vidash was not available, and no they currently do not have a date. They were gathering all the information, had a dry run on Monday in preparation for the Tuesday demo, and ran into some issues. They were trying to gather all the information to see what failed, what it takes to fix it, and then they would provide approximately another date.

Mr. Macaluso pointed out they had set aside November 5th for user training, and it was now the 7th. He asked if the training schedule was dependent on the demo. Mr. Viani said the demo shows the full functionality of the CAD-TO-CAD interface. The users will observe the full functionality and not need to be trained separately.

Mr. Macaluso asked if he understood correctly that the demo was the training. Mr. Viani said that was correct. The demo is going to show the full functionality of the CAD-TO-CAD between the two systems, which is exactly what the users will need to know. It is a train-the-trainers session, so it will not be necessary to have 50 users, just a select group of users that will watch the demo, ask whatever questions they need, and then train the rest of the users for both agencies.

Mr. Macaluso recapped for clarity, asking if the demo is the train-the-trainer, then those persons on the demo are required then to be the trainers for the next or the rest of the staff who would be using it. Ms. Khimji said that was correct. Mr. Macaluso asked if that was sufficient to those that will be using the system. Ms. Khimji explained that the Reno train-the-trainers will be their SMEs who have been involved in this project from the beginning, which includes a number of supervisors at the City of Reno dispatch. Based on that, she opined that consolidating the two would be enough, because they have already been integrated with the project for so long. She pointed out she did not want to speak for REMSA.

Mr. Dick noted that he saw on the slide that the testing timeframe was to run from November 5th to November 18th. Ms. Khimji concurred. Mr. Dick noted that now they are behind schedule on that. He had been involved in other projects where a vendor was not able to meet the time frame and as a result the client was forced to accept that by shortening the testing time frame, that did not end well. He stated he was looking for an assurance from the vendor that they will allow us to have that testing time that was built into the schedule, and they will make up for the lagging schedule on their side of the project to achieve that January 21 go-live.

Ms. Khimji said that Reno built the project plan with the vendors, they built in December as the month to catch up on anything so that we have at least 2 to 3 weeks buffer on testing. They felt testing was going to be very important in this process, since it is brand new, and not just brand new to Reno as an agency, but brand new to the vendors as well.

Mr. Dick brought up the subject that the vehicle locator system was not included in the current scope for the CAD-TO-CAD connection. He opined that part of the discussion from the beginning when looking at CAD-TO-CAD was to have that information on the vehicle to be seen by everybody that is using the system. He asked why that was not a part of the current project and opined that is what they would like the system to do. He asked what it would entail to build that piece of it and being able to implement.

Ms. Khimji explained that one of the things they looked at is that there are two different agencies, being the City fire agency and REMSA. They have different legal responsibilities to each other as well. The functionality of AVL can be complicated, and they wanted to get the CAD-TO-CAD done, to be sure the data could transfer. She felt some AVL information will come through, but they did not want to focus on just the AVL since the product had been delayed for so long and so often by technical issues. They would start looking at that AVL in Phase 2, to include integration and comfort level between the agencies, not just for the workflows but also any legal issues that might come out of that. Mr. Dick asked if that was outside the scope of the existing contract and Ms. Khimji said that was correct.

Mr. Solaro noted he was new to this process, and seeing this timeline, asked what would happen on January 22nd when the program was not working, and if there something in the contract that talks about that. He pointed out that the services could still be provided, but that was not what they were looking for right now. Ms. Khimji said that was correct. She explained that at that time they could terminate the contract and pursue legal avenues towards the two vendors. The City of Reno and REMSA would not have a CAD-TO-CAD system if it is not up and running by then. Mr. Solaro stated he understood and asked if there was a fallback position that has been spoken about as far as Plan B if that occurred. He noted that the region still wanted CAD-TO-CAD, and asked if there had been any thoughts around what that looks like, perhaps other vendors, is it system issues, should there be discussion between Reno and REMSA and Truckee Meadows dispatch, what does that look like?

Ms. Khimji pointed out that at the last meeting there were discussions about additional vendors that can do the CAD-TO-CAD, but they also had to remember that some of those additional vendors are being bought out by Central Square. The issue is not that the functionality cannot be created, there is some functionality that is available at this point. The issue is really that the region is multi-jurisdictional. The CAD system is much larger, it has a lot of different workflows based on the agencies that are part of the system, which is not a bad thing. It is trying to streamline that data to get it to REMSA in the real time. Anything can be done especially when there is money involved. She opined the history on this is not necessarily the technical issues, it is also the personnel issues and the issues with the vendors trying to find the right third-party appliance vendor. There are a lot of different pieces that come into this, which she believed they would face no matter who they went to. That market is small. The CAD market is not very large either, and so any of the third-party type of appliances that need to go into a CAD system are going to be very small as well. If the contract were cancelled, they would be back to the drawing board and would have to deal with the entire situation all over again. That is why Reno continues telling Tiburon and TriTech and Central Square that go-live must be on January 21, 2020. They have no choice at this point.

3. Consent Items (For Possible Action)

Matters which the Emergency Medical Services Advisory Board may consider in one motion. Any exceptions to the Consent Agenda must be stated prior to approval.

A. Approval of Draft Minutes

August 1, 2019

Mr. Solaro moved to approve the draft minutes. Mr. Macaluso seconded the motion, which passed unanimously.

4. *Prehospital Medical Advisory Committee (PMAC) Update

Dr. Andrew Michelson

As Dr. Michelson had not yet arrived, Chair Newby stated the item would be skipped.

5. *Program and Performance Data Updates

Christina Conti

Ms. Conti noted there were just a few things to highlight. The citizen evacuations, in the event of an emergency topic, the region met on August 14 to look at that. They had focused in on the CASPER results. This was something that came from the Truckee Meadows Board of Fire Commissioners meeting. The regional representatives determined that really one of the first steps they needed to do is the education of the Code Red system, as well as education for the media. If citizens are not in the Code Red system, and that is what is used to evacuate, then that is Issue #1. The second thing was to make it clear that it is an evacuation, period. It is not a voluntary evacuation. They thought that there was the possibility that some of the confusion could be clarified. The statistics gathered in the survey indicate that people would leave, however, our fire first response partners are seeing something a little bit different than that.

Ms. Conti stated the EMS protocols task force has continued to meet. They meet again on the 21st, and their recommendations for changes would be effective in January of 2020, if the medical directors approve it. Another thing just to bring to your attention was that regional meeting discussing AVL dispatching. This was convened by Deputy Chief Alex Kukulis. It currently sits right now with the dispatch partners, putting together a list of considerations for the fire chiefs to have for their discussion points that would then push through the individual jurisdictions and is several months, maybe years away.

Ms. Conti stated that the last thing to bring to their attention is that Brittany Dayton, the EMS Coordinator, attended an earthquake summit, and it was sponsored by the NDEM and the Utah Seismic Safety Commission. There were a lot of presentations, with significant discussion concerning the reinforced masonry buildings in this state, and that is one of the biggest concerns within Nevada, as it is the third most seismically active state. There are some buildings with issues in the region. From the first response perspective, it is just something to be aware of.

Ms. Conti said the last thing to point out is the very back of the program report. As part of the annual franchise map review, the system, they look at all the calls for the year and then run, with the help of GIS, the top utilizers of the 9-1-1 system. The report lists them out by the street address and the location, and then those differences between the years of whether it was an increase or a decrease, and if they are new to the top 20. One of the things that has been brought up before is the homeless shelter. She pointed out that population is the largest user, as well as the bus station. So, when City of Sparks opens their doors, staff will be looking to see if another hot spot is created, or if there are some reductions there.

6. *Presentation to the EMS Advisory Board

A. Leave No Victim Behind Conference, Brittany Dayton

Ms. Dayton specified that she had attended the fourth year of the Leave No Victim Behind conference, which was in Vegas October 21st through the 23rd, and wanted to provide some highlights of that conference.

Chair Newby interjected to let the record show Dr. Michelson had arrived.

Ms. Dayton reiterated that she wanted to bring some highlights and lessons learned from this conference. There were over 400 attendees, the majority being victim service advocates from district attorneys' offices. There was also law enforcement, emergency managers and first responders. There were 14 different presentations on mass violence incidents that spanned quite a long duration of time, including one of the first mass violence incidents which was in December of 1988, the bombing of the PanAm flight over Lockerbie, Scotland. The

presentations spread through the most recent of incidents which was the Borderline Bar shooting that happened in Thousand Oaks very recently. It focused on best practices in responding to mass violence and how responders can better assist those victims of crime and violence.

Ms. Dayton pointed out she had highlighted some of the other sessions, including everything from the Boston Marathon bombing, survivors from the Columbine shooting and several more. Many of the presentations were from survivors or victims who were in attendance, so it was rather emotional, getting to experience and relive some of their trauma. They shared best practices, challenges and personal experiences, and she wanted to share a few of those for the Board for improved regional planning.

Ms. Dayton explained there was a big push for no notoriety. Therefore, during her highlight of some of these incidents she would not be mentioning the assailant's name, giving them any sort of notoriety, and this is really a push that they want to do nationwide so that the media is not covering the individual who commits these heinous crimes, but instead, actually the ones who are the victims and survivors of the incidents.

Ms. Dayton went on to say there were several common challenges and themes over the three days. There was a lot of complicating factors which include blame, media, which is one of the largest hurdles that we have to overcome when dealing with these types of incidents, difficulty of families obtaining information was highlighted in every single presentation and compensation for victims and survivors, specifically the PanAm incident. They looked at who was on that flight and decided to compensate the family members based on their impact to the community or the world. The CEOs on the flight actually got ten times more money than the students that were on that flight because their impact was not as great. So, we have made many strides in that aspect of compensating victims and survivors, but it is still a challenge of how to put a money value on a life.

Ms. Dayton explained her important takeaways from this conference were to share some information with family members about incident process, and this was actually from a father from the Borderline Bar shooting. His daughter was the hostess at that restaurant, and they took them all to a teen center, which was basically a big gymnasium, and everyone who was involved with was waiting and sitting in this gymnasium, and they would pull out one family at a time. And he was actually the last family to get notified. He sat there for upwards of eight hours wondering what happened to his daughter, and if she was still alive. The statement that was made was, for many, knowing the truth is a lot easier than living with what can be imagined. So he played out all of the very heinous things in his mind and it made it a whole lot worse for him in recovery in the long term of what actually happened to her. That was an important takeaway. They just want to know the process. Why does it take so long to provide information when these types of incidents happen? Why can we not talk about the patients involved for hours, if not days in certain incidents? Just providing basic information would go a long way for the family members.

Ms. Dayton said there was a few instances where the assailant survived and went to trial. A few deputy attorneys spoke on this process. When there is a trial related to an incident, there is a whole additional layer of planning, especially if that trial is going to occur where the crime occurred. The planning needs to go for years, if there is going to be some sort of trial, and most of the victims and survivors wanted to attend those proceedings. It is necessary to plan that out so that they have the appropriate care, when they are going to the trial and seeing evidence and hearing some of their testimony, that you have a plan for properly caring for those individuals. The two examples were Aurora Colorado and the South Carolina shooting at the church.

Ms. Dayton explained each victim and survivor copes with trauma differently. Some people like to push it down and not talk about it, while others feel better when speaking, so that is why so many survivors presented at this conference, because this is their way of coping. It is getting their story out. And a lot of them, the parents or family members who presented on behalf of those who were victims, said that they want to be able to control the stories that are told about their loved ones, and this is the way they do it.

Ms. Dayton said that recovery, both physical and mental, will take years. She displayed a graph that was shown in several of the presentations, and it is from a great resource, but it suggests that a person will recover from a traumatic incident within a year, which is not the case whatsoever. They go through ebbs and flows, ups and downs, as they have some healing periods then some disillusionment. It is not just going to happen, the one-year anniversary comes around, they are going to have some very strong feelings, it is not a linear process. The survivor of Columbine actually suggested that at a minimum, someone needs to follow up with survivors three months after the incident happens, six months, a year, three years, five years and every three to five years for the rest of eternity until there are no survivors from that incident. That is not something that the County has planned out here locally, and it is something that the region needs to definitely start considering.

Ms. Dayton proposed that the next steps for Washoe County would be to begin developing a long-term recovery victim assistance plan. There was a presenter from the Federal government who oversees the AEAP grants, which is how Vegas has their resiliency center after October 1, through Federal funds through this agency. They suggested that to start off with, in the room there needs to be, at minimum, emergency planners, your state and local government officials, victim of crimes administrators, prosecutors, and then the actual service providers that are going to be impacted by this several-year process. The region needed to start with something, all the agencies are really good at responding to incidents here and providing care for the short-term, but do not have any sort of long-term plan.

4. *Prehospital Medical Advisory Committee (PMAC) Update
Dr. Andrew Michelson

Chair Newby reopened Item 4.

Dr. Michelson said apparently PMAC is having a transition of Treasury leadership, and they are realizing that that there is probably at least a year or two that went by with potentially not the degree of donations, if you will, from its members that he felt they should have gotten, because they are suddenly running out of money. They also barely avoided an \$1,100 charge just for preparing the insurance liability documents but got that down to \$150. They are moving bank accounts because they literally cannot afford the monthly \$14 service fee. Bank of America would not work with them as a non-profit, so they went to Nevada State Bank. So December's topics will be mostly talking to all the members on how they are going to refocus on some revenue. He did not think it was going to be that hard to keep it alive.

Ms. Conti noted they had also talked about some training opportunities and the medical director giving symposiums. Dr. Michelson indicated he did not know where they would get money to send people on those trips other than just paying for them personally. Ms. Conti noted Dr. Hardwick had suggested training the medics locally.

Ms. Conti spoke for the record on behalf of Dr. Michelson, explaining that the medical

directors want to start being a little bit proactive with the training for their agencies, and so the idea is what are the things that they can do. Can they go out into the community? So one medical director was saying we have this capability to do Stop the Bleed training and start training our community, asking if it was something that there is an interest in, and another medical director was discussing doing kind of lecture series, where the health care industry, pre-hospital and hospital, can come and start learning about different interventions that might be there. That is something that they are looking at as well. They are not all financial. Dr. Michelson said it was actually a significant discussion in regard to the future direction of PMAC, and he felt it has been somewhat put on hold because of the cash fund. He stated she was correct, and it was actually interesting to change the focus maybe more towards community education for providers.

7. Presentation, discussion and possible approval for distribution the Washoe County EMS Oversight Program FY19 Annual Data Report. (For possible action)

Heather Kerwin

Ms. Kerwin thanked Kevin Dick for his careful eye, there should have been a correction distributed to the Board members. There was a cell shift in Table 7 on Page 26 while exporting the median travel times in that total column. The corrections were provided in red with track changes. She pointed out some slight adjustments in the performance metrics. Staff did reach out to all the partner agencies and ask if there were different analyses they would like to see, or different ways to display their information, and so there are some nuance changes from previous years which are reflected there.

Chair Newby asked if they needed to take action on this to accept the report.

Ms. Reid said it is an action item, if you would like to call a move to do that.

Mr. Dick moved to approve distribution of the Washoe County EMS Oversight program FY19 Annual Data report. Mr. Macaluso seconded the motion which was approved unanimously.

8. Presentation and possible acceptance of an update of the Washoe County EMS Strategic Plan (2019-2023), a requirement of the Interlocal Agreement for Emergency Medical Services Oversight. (For possible action)

Christina Conti

Ms. Conti reminded the Board that although she provides this report to them as the program manager, under each project you will see which member of the team is affiliated with it, so they could answer any questions if she was not able. Regarding the first one listed, the appropriate protocols to determine the service level for low-acuity calls, the annual meeting was held yesterday. And so that was the Board report published, so the region got together, and they are going to be looking at some other low-acuity Priority 3 calls and see if they are eligible for an alternative response. They also asked if there were any concerns about the ones that had been previously approved and there was none stated at the meeting yesterday. So with that, anybody is able to answer questions, we even have our WRCS, Washoe County Regional Communications System representative here, so if you have any questions about the radio system, because that is now pushed off to May of 2022, then he would be able to answer those as well.

Chair Newby introduced Item 9.

Ms. Conti asked if they needed to approve Item 8. Chair Newby acknowledged that was correct and requested the motion.

Mr. Dick moved to approve the update. Mr. Solaro seconded the motion which was approved unanimously.

9. Discussion and possible approval and recommendation to present the updated map methodology and the draft map response zones within the Washoe County REMSA ambulance franchise service area to District Board of Health. (For possible action)

Christina Conti

Ms. Conti said she was presenting work done by the region for a recommended change to the REMSA franchise map and wanted to explain what they did, so the Board understood where they were going with their recommendation. She drew their attention to the map on the wall and also right in front of her, explaining that was the first step in the process. Heather Kerwin, Statistician, worked with Jay Johnson from GIS, and they plotted all the calls that have occurred in the year, which is what we have done before. But this year, because it was the mid-year review, they were asking for a change in the map methodology. They want to align with the census data. That would make this the mid-year review, which is how staff proceeded, and then in three years they would do the complete refresh as the 10-year mark, aligning them with census data.

Ms. Conti said they proceeded as though the Board would approve and got the dwelling unit data for Washoe County. The map being displayed, what drove the first part of the discussion, was really looking from the changes of the designations between rural, urban, suburban and metropolitan. If the classification changed by just one, say rural to suburban, then it was yellow. If it went up two, it was orange, if it went up three, it was red, and staff really wanted to take a look at those red and orange areas. When they looked at that, three areas popped out, Wingfield Springs in Sparks, the Damonte Ranch area in South Reno, and then Cold Springs. They looked very closely at those areas. Wingfield Springs at the top, you can see the little red dot at the very top right there, that is already a Zone A. Bringing this back to the regional partners was just an informational only. She opined that Sparks knows their growth is crazy, and this map provided some further evidence of it for planning purposes.

Ms. Conti noted the next one was Damonte Ranch, and pointed out all the orange and the yellow, right there, there is an E next to it. The very interesting thing about this was the 2010 census data showed nothing in those areas, why it is AB. And so now with the dwelling units, it was evident that it had quite the expansion between those two data sets. They brought this to the region, had discussions, and the region recommends changing this into a Zone A response. They felt like that was completely in line with what they had been doing before.

Ms. Conti pointed out the third area is Cold Springs. As an aside, they sent this data to NLTFPD even though they are not a part of the interlocal agreement, the annual franchise map reviews, because it was population, staff thought they might want to see that data as well, and they did. So up here in the B is a substantial amount of yellow, that indicates just the designation change from one category to the other. But it is indicative of what we all know, which is that there is a lot of growth happening in Cold Springs and in the North Valleys. There was quite a lively discussion with the regional partners, and the outcome that they are recommending is to

keep it as a B for right now. One of the things that remains the problem is the contiguous nature between the Zone A to a Zone B, and that was one of the things that had been recommended before, was to make sure everything was contiguous. The flip side of that is that they are not necessarily being responsive to the needs of the community if they keep indicating that area is an island and does not get the same type of response. What the region decided was to keep this as a subset and a special study area, which is something that, through the interlocal agreement, is an option, to identify sub-regions and analyze them separately for evaluation with the intention of a possible future recommendation. The region agreed to keep this as a B right now, look at it, and committed to get together next August, end of August beginning of October for the express purpose of looking at Cold Springs.

Ms. Conti summarized by saying that this is the regional recommendation, for you to approve the REMSA franchise map that has this change to it. The new map would look like this. She displayed both the old map and the new map, which is what the request was for their consideration. The Board would be approving the recommendation and pushing it to the DBOH for them to do the true approval of the map.

Mr. Dick asked, for clarification, in approving this, if they were also approving the special study area designation for the Cold Springs that she had discussed. Ms. Conti said they do not need their approval for that. If the Board had some specifics that they wanted to add to that special study, then staff can do that, but that is more informational.

Mr. Macaluso requested clarification, asking if Ms. Conti was requesting approval for the methodology by which you made the determinations to redraw the map. Ms. Conti stated they were asking for two things. First was the approval of the methodology, because it changes what had been approved before, and second, for the approval to push this proposed map forward for approval by DBOH.

Mr. Dick asked if the methodology change is in looking at this again in the future with the census data. Ms. Conti specified it was in 2022 with the census data. The reason is that 2020 is when the census is happening, but it looked like July of 2021 was when the population and housing unit estimates would be released. That was why they pushed it back. Mr. Dick asked if all the parties involved were supportive of that approach and Ms. Conti said yes.

Mr. Solaro moved to approve the updated map methodology and the draft map response zones within the Washoe County REMSA ambulance franchise service area, and direct staff to present the DBOH. Dr. Michelson seconded the motion which was approved unanimously.

10. Board Requests:

B. *Nurse Health Line Adam Heinz

Dean Dow, President of REMSA, stated that he and Mr. Heinz decided to split this up and he would do the introductions and Mr. Heinz will do the deep dive section of the presentation. They had been asked to give an update on the utilization and functionality of REMSA's Nurse Health Line (NHL). This process started roughly a little over eight years ago with REMSA applying for and being accepted into a CMS or Medicare CMMI, their innovation section of the CMS grant process. That was done federally across the country.

REMSA was one of many organizations that received grant money with the idea of trying to understand how to develop integrated health care community paramedicine, nurse health lines, etc. That grant money expired roughly two and half years ago. Since that time, the funding for the NHL has been built upon service contracts with healthcare systems and subsidization through REMSA itself.

Mr. Dow explained what they would like to go through was an overview of the NHL, the current Alpha and Omega initiative process, Alpha and Omega performance data, which Mr. Heinz would go over, and then the features of REMSA's NHL which they would both address. NHL as we know today is staffed 24 hours a day, seven days a week, with ECNS-taught and credentialed registered nurses, so they have five full-time RNs that staff the project and one quality assurance officer, and that is overseen by one of their medical directors. It is evidence-based protocol, so it is international-based protocols that they are guided by. They safely navigate patients to the right level of care through this process, not necessarily just automatically always going to the emergency department. They provide self-care instructions to the calling party and identify and assist with transportation barriers that they may have. Currently, the funding for the project is based on contracted services to some of the health systems in the area, and then also subsidization through REMSA. They have turned off their seven-digit public number, and they did that a few months ago because they noticed upticks in calls for service and were able to trace predominantly those back to entities that were using the NHL as an after-hours call center for their businesses, for their medical businesses. When they approached several of those with that issue and asked if they would like to help support, directing their patients to the NHL, they declined to participate.

Mr. Dow presented some NHL facts. The top five clinical protocols that they deal with in this organization are vaginal bleeding, cold and flu, abdominal pain, head injury and chest pain, and all that relates to a call volume into the NHL of approximately 28,000 calls a year, or roughly about 75 calls a day. The average length of time for a call is 14 minutes, resulting in about 15-16 hour a day utilization. In helping folks with transportation needs that they may not be able to pay for or facilitate on their own, REMSA does that, and this last year ran to approximately \$3,600.

Mr. Heinz said that one of the things that the Board had asked for a couple meetings ago, was a little bit more specific information, because REMSA saw about 40% of patients going back to 9-1-1, so he was hopeful that this will help answer that question. But first, so we understand the Alpha and Omega determinant process, there are 94 approved Alpha and Omega determinants for the region. There are many more, but these are the ones that the group, the regional committee, reviewed and said they were comfortable with. REMSA does not just rely on the numbers gathered, they actually look and see how many times they respond, how many times they AMA, how many times they transport the patient, how many times they transport emergently, and when they do transport, what type of care are they providing. They use this data to granulate the type of patients that they are looking for that are going to be moved out of the 9-1-1 system.

Mr. Heinz explained they also have an internal quality assurance review process that includes a quality assurance nurse and medical director oversight who really want to ensure this is safe for people. He displayed a graph showing the responses in the area to 9-1-1 calls. He explained an Alpha call is a subacute patient. They may be calling for something like a

sprained ankle. A Delta or Echo call would be for someone who is an acute patient, somebody complaining of chest pain, respiratory difficulty or cardiac arrest. The Omega is something that is internationally recognized. This is an approved low-acuity condition qualifying for non-EMS response referrals, to something like a NHL, to a poison control center. This is something that has been internationally accepted, and really, foreign to many, and that is where he felt change was going to have to come, with educating the public. He opined they were going to see that a lot of the reasons why people are getting an ambulance is not because they are serious, but it is because that is what they are comfortable with.

Mr. Heinz provided a quick rundown of the process. When the 9-1-1 call comes in, it gets transferred to REMSA from the primary PSAP. On average, at REMSA, within 18 seconds of getting the address they have an asset assigned to the call. They obtain an EMD determinant and that sometimes can take a while. They must make sure that they are ruling out some of those life-threatening conditions based on what the patient is telling them, which is all they can go off of. If they say they are not short of breath, if they are not bleeding, if they are not having chest pain, we can only go off that. From that, an EMD determinant is obtained. It could take up to 2-3 minutes, but an ambulance, and a lot of the times the fire service, are responding. That is a safety net, because they do not know if it is a subacute complaint.

Mr. Heinz said that once it is identified as Omega or Alpha, they can transfer it over to a nurse. The nurse must be available right away, so they do a warm handoff. It is not acceptable to put someone in a queue and put them on hold, or to suggest that REMSA will call them back later, it is handoff to handoff. If that nurse is not available, they continue. That is another thing that was part of that repatriation. Once the ECN gets on the phone with them and accepts care, they will go through their protocols. It takes them a while. It takes up to 14 minutes for them to really rule out a life threat, and they will provide a recommended level of care. They can provide self-care instructions, and then ultimately a lot of the times if transportation is a barrier, they will provide transportation solutions. At that point once the nurse gets that call, REMSA will call their regional response partners and we will cancel the ambulance.

Mr. Heinz presented some data. From October 2018 through September 2019, the total number of 9-1-1 calls coming into REMSA was 83,163. Of those, 4.2 percent, 3,520, were eligible, they fit into one of those 94 Omega or Alpha categories. If they were to approve all of the Alpha and Omega determinants, they would be looking at about 8 percent, but they are not there yet. Only 17 percent of the ones that were approved and eligible went over to a nurse, for the following reasons. 21 percent of the time, a nurse was not available, and again, they must be available. 21 percent, so just as equally, the patient insisted on an ambulance. Our script is such that they have the ability to opt out. So REMSA does not say, thanks for calling 9-1-1, you are going to a nurse. There is a script that allows for the patient to insist on an ambulance, and REMSA sends them.

Mr. Heinz went on to explain that 19 percent of the patients are unable to be interrogated. The nurse has to be able to speak to the patient, so if somebody is calling from a cell phone that is not with the patient or at a pay phone, they are not eligible. 18 percent of medical providers said the patient needed to go so we are not going to trump a physician, 9 percent were complete immobility, so maybe somebody that was upstairs and had paraplegia or MS,

and it really was going to be complicated for somebody to come and get them and take them to an alternative facility. The fire service and everybody has worked really well at communicating and decreasing that, so that is only 6 percent. And then 4 percent is categorized as public assist, where somebody would have to be out there. There are patients that call to turn up their air, or blow up their air mattress, or help them with food. And that cannot be done over the phone, so they must go out there. 1 percent is many other different things.

Mr. Heinz noted that is why they cannot even get to a nurse and went on to discuss those patients that do. 620 got over to a nurse, but only 380, so essentially one a day, were helped outside of the 9-1-1 system, which is actually 61 percent of those. The Delta are 240 patients that went to a nurse, the nurse assessed them, and then they went back to 9-1-1. 93 percent of those patients were non-emergent. They know because they look at every single one of them, conducting an actual review of the clinical care provided to those patients. 17 percent, 18 of them, were considered emergent by the nurse. The nurse talked about their history, they talked about their medicines, they get more in detail, they determine that something more serious is happening. Maybe it is not just dental pain, maybe it is cardiac pain. Of those, 222 were non-emergent. Those people either demanded an ambulance or declined our transportation offer, specialized transportation was not available, or they had some sort of non-acute medical complaint just not appropriate for transportation via POV. As an example, it might be a single person at home, elderly, vomiting, and it just was not going to be in the best interest of the patient. That is the majority.

Mr. Heinz went on to explain there were 18 emergent patients. Of those 18, paramedics responded and two AMA'd. They did not go to the hospital. The other 16, all of them were transported to the hospital non-emergent, non-lights and sirens. 11 had no interventions. We monitored them but did not do anything for them, based on their clinical complaint. One of those patients even went to triage. Four had routine workups, those patients may have received 12-lead or pain medicine, for whatever they were complaining of. And really, out of the data for that one year, there really was, in my clinical opinion and as our clinical team looked, only one patient that received a cardiac workup. And that patient initially was complaining of vomiting, we found out there was blood in the vomit, and then he was complaining of chest pain. So that person got a cardiac workup.

Mr. Heinz said he hoped that provided some comfort as far as the safety net, because sometimes it is like they are just leaving these people out. They are really trying to identify, and then being able to send the resources. CMS really is setting a lot of policy for the future. So what CMS does our other insurers will do. He opined the regional agencies were incredibly innovative at the way patients were managed, which needs to continue. Part of the future of EMS is not sending an ambulance Code 3 to every call, not sending a fire department Code 3 to every call, it is nurse health lines. It is treatment in place, getting a doctor on the line, being able to consult with them through telemedicine, and having them treated at home so the emergency rooms are not overcrowded. It is sending patients to alternative destinations, not emergency rooms, but urgent cares, mental health facilities, detox facilities. REMSA does that now. He was aware that the County and our other regional partners have worked very hard on public awareness, on when to call 9-1-1 and when not to call 9-1-1, and potentially putting our foot down and saying we are not going to send an ambulance. That is a big jump. EMS response will always be there, we will always

need to send an ambulance, but Alpha and Omega is part of that as well as telemedicine.

Mr. Dow noted that in February 14 of this year, CMS Medicare came out with a new program called ET3. The catalyst for ET3 was the work that this region did under the grant process, along with several other regions across the US, in developing integrated health care. When CMS looked at the results, they came to the understanding that developing a different methodology for payment mechanisms for ground ambulances and whether they are municipal-based, private-based, not-for-profit based, hospital-based, was key for the financial future of healthcare moving forward. ET3 was the emphasis for Medicare to look at funding nurse health lines, look at funding alternate destination transports, and then treating in place. The program was supposed to begin in January of 2020, with now rolling out first, reimbursement for alternate destinations. They have just announced that they are still working through some methodologies that went slower than they thought and so now it may be springtime before they roll the project out. One of the keys for it, and one of the keys relative to this presentation, is they have put out the application process for ET3 for organizations that have the ability to do it. A notice of funding for their NHL. The NHL must be considered a regional NHL, not just a single community NHL which we qualify for. In our application, we have put forward proposals for CMS for them to help fund the NHL in 2020 and moving forward. ET3 is a five-year project, so at the end of five years, theoretically if Medicare does not get the positive results that they believe they can get, they may take the program away completely. But hopefully with everybody's participation and efficiencies they will get the positive outcomes they are looking for and then they will move forward and just make it a permanent payment policy from that point.

Mr. Macaluso said that was really great information. He noted that 21% of the time, the #1 category of the inability to intervene on the NHL is the availability of the nurse. He asked if that was because those nurses are on other calls, and did that not speak to increasing their capacity? Mr. Dow acknowledged it is because they are on other calls and it does speak to increasing capacity. Mr. Macaluso asked if 21% was quite a bit. Mr. Dow explained the pinch point was funding an additional five nurses, which is an additional roughly million dollars, so they struggle with trying to understand and go out and advocate for that additional million dollars. So again they go back to the federal government, and hopefully when ET3 does kick off, not all of that million, perhaps some of that million will be funded through CMS. Mr. Macaluso asked if there were financial metrics that REMSA was trying to tie to some of these data so that way they can show that cost benefit, they can say x number of dollars were saved by not sending these folks to the ED. Mr. Dow said yes, that was built into the performance of the grant program that we had to understand and document the results and then publish them nationally. He did not remember the exact total but of the \$10 million grant that they received, they spent \$9 million and returned a million to the federal government. The cost savings to this community was over \$20 million. Their argument has always been that their cost to respond an ambulance currently is roughly \$550. If they can take that patient population that clinically does not really truly need that ambulance and does not really truly need to be in the ED, then there is massive cost savings. Not only to the system, but also to the health systems and ultimately to the patient.

Mr. Macaluso asked if the 11 no interventions were also transported, and Mr. Dow replied that they had been.

11. *Board Comment

Limited to announcements or issues for future agendas. No action may be taken.

Chair Newby suggested, since the next meeting fell after January 21, that they have the discussion of CAD-TO-CAD on the next agenda.

12. *Public Comment

Limited to three (3) minutes per person. No action may be taken.

Chair Newby opened the public comment period.

Ms. Conti noted there was a full-scale, statewide FEMA-sponsored exercise next week, Tuesday through Thursday, and it occurred to her that she did not think there was a single agency in the room, including our Board members, who are not impacted by that. She wanted to put it on the record the appreciation and the work that was going to be done next week for the region. Many of those lessons learned are going to inform the updates of the Mass Casualty Incident plan and the Alpha plan. This is going to be the first time, hopefully if it works, that it will be truly exercised in the region.

Chair Newby closed the public comment period.

Adjournment

Chair Newby adjourned the meeting at 3:16 p.m.

STAFF REPORT
REGIONAL EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: February 6, 2020

TO: Regional EMS Advisory Board Members

FROM: Heather Kerwin, Epidemiology Program Manager on behalf of the EMS Oversight Program; 326-6048; hkerwin@washoecounty.us

SUBJECT: Program and Performance Data Updates

Meetings with Partner Agencies:

The ED Consortium met on November 7. The meeting included presentations from Asia Union Electronic Chemicals and the newly opened Well Care Center. The group also discussed finalizing the regional blood borne pathogens procedure, EMS hold times at hospitals and the statewide exercise. The next meeting is scheduled for mid-February 2020.

EMS staff participated in the Complex Coordinated Terrorist Attack exercise on November 13 and 14. Personnel performed duties affiliated with the exercise, including Controller/Evaluator, fictitious patients, and staffing the Medical Service Unit position at the Regional Emergency Operations Center. The entire multi-causality exercise component yielded approximately 190 patients surging the healthcare system. The second day, staff worked in the Family Assistance Center (FAC) in several capacities to include Controller, Command Staff and fictitious grieving family members. The purpose of the Family Assistance Center is to bring resolution to families of missing loved ones affiliated with the incident.

The quarterly EMS protocols task force meeting was held on November 21. The group discussed several minor changes. Some of the protocols revised include ACS, pediatric cardiac arrest and shock – hemorrhagic. The PMAC reviewed the protocols on December 11, 2019. The implementation of the revisions is anticipated for March 2020 after the joint task force/Medical Director meeting scheduled for February 19, 2020.

Regional partners met on December 2, 2019 to review the low acuity Priority 3 call determinants. The purpose of the meeting was to identify potential determinants to add to the existing policies. The partners thoroughly discussed fourteen determinant types and approved nine to receive a more in-depth review with data. The next meeting will include a review of the data and a recommendation regarding adding those to the policies.

Planning for the revision of the multi-casualty incident plan (MCIP) continues. A third workshop was held on December 5. The group reviewed revisions completed from the previous meeting in October and discussed lessons learned from the November Complex Coordinated Terrorist

Attack exercise. Healthcare partners met on January 10, 2020 to provide input into several items, to include hospital baseline numbers and the trigger number for an MCI declaration. The Alpha Plan, an annex to the MCIP, is now being reviewed. The plans will go before the District Board of Health in late Spring for a July 2020 implementation.

The REMSA Compliance report was given to the District Board of Health on January 26, 2020. REMSA was found to be in compliance with the conditions of the Franchise Agreement.

CAD Update: Agenda Item 9.a, update from City of Reno staff, Rishma Khimji.

Data Performance Reports:

Requestor	Summary of request	Date of request	Request completed
REMSA	Transports by Year	11/10/2019	Yes; 11/19/2019
EMS Program	Low acuity workgroup	12/5/2019	Partial

Mass Gathering Applications or Events:

Multiple county departments are working together to make the permitting process more effective for both staff members and the event organizers. Below is one of the upcoming events:

- Powabunga, Tahoe Biltmore Resort & Casino: March 20-22, 2020

Other Items of Note:

The EMS Oversight Program recently experienced a period of transition.

- Ms. Brittany Dayton, EMS Coordinator, accepted the position of the Emergency Manager for the Veterans Affairs Hospital in Reno, NV. Ms. Dayton will continue to be a valuable partner to the EMS Oversight Program, continuing with the Inter Hospital Coordinating Council in her new role. Recruitment for this position closed on January 6, 2020 with interviews to be scheduled around early to mid-February.
- Ms. Heather Kerwin, EMS Statistician, accepted the position of the Epidemiology Program Manager. Ms. Kerwin will remain in the EPHP division in her new capacity and the EMS Oversight Program is looking forward to future collaborations. An offer has been made to an applicant and their start date is estimated to be Monday, February 3, 2020. If available, this new staff member will be introduced during this meeting.
- Ms. Christina Conti, EMS Oversight Program Manager, accepted the position of Administrative Services Manager for the City of Reno Police Department. Ms. Conti's last day with the EMS Oversight Program was Friday, January 25, 2020. Recruitment for her position is underway.

STAFF REPORT

EMS ADVISORY BOARD MEETING DATE: February 6, 2020

TO: EMS Advisory Board
FROM: Heather Kerwin, Epidemiology Program Manager on behalf of the EMS Oversight Program 326-6048; hkerwin@washoecounty.us
SUBJECT: **Presentation and possible approval of the 2018 Washoe County Trauma Data Report.**

SUMMARY

The EMS Statistician was able to obtain the Nevada Trauma Registry data for hospitals in Washoe County for calendar year 2018. The EMS Statistician developed a Washoe County-specific trauma report which provides descriptive epidemiology of trauma and patients admitted for trauma to Washoe County hospitals during 2018.

PREVIOUS ACTION

The Nevada Trauma Registry data were reported to the EMS Program for Washoe County facilities for calendar years 2015 and 2016. The EMS Statistician has been cleaning and exploring the data available to determine how it might best be communicated to lay audiences. Initially the EMS Oversight Program thought there may be potential to utilize the data to explore trends in patient outcomes based on transport mode and pre-hospital care provided. There was also the thought the EMS Program could match the incident from time of call through discharge from hospital.

During the August 2017 EMSAB meeting, the Board approved the publication of the 2017 Trauma Data Report.

BACKGROUND

The Nevada Division of Public and Behavioral Health released the Nevada Trauma Registry data for Washoe County, the data are based on a national set of guidelines for reporting variables. After evaluating the data, the EMS Statistician produced a Washoe County-specific trauma report which allows for a big-picture overview of the descriptive characteristics of trauma and trauma patients in the county. The Washoe County-specific trauma report includes areas such as demographic characteristics, injury characteristics, mode of arrival, payment type, substance use, and patient outcomes. The analyses include were modeled from the 2016 National Trauma Data Bank Annual Report, which continues to be the most recent national report for this type of data.

Limitations of the Washoe County trauma data include incomplete reporting of variables, lack of necessary variables to conduct match to REMSA call data, and few pre-hospital variables being captured in the Nevada Trauma Registry which limits the ability to evaluate pre-hospital care.

FISCAL IMPACT

There is no fiscal impact to the Board on this agenda item.

RECOMMENDATION

Staff recommends the Board approve the presentation and distribution of the 2018 Washoe County Trauma Data Report.

POSSIBLE MOTION

Should the Board agree with staff's recommendation a possible motion would be:

“Move to accept the presentation and distribution of the 2018 Washoe County Trauma Data Report.”

Attachment

2018 Washoe County Trauma Data Report_FINAL DRAFT

WASHOE COUNTY HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

Washoe County 2018 Trauma Data Report

Published February 2020



Public Health
Prevent. Promote. Protect.

Traumatic Injury in the United States

According to the National Center for Health Statistics, injuries are the leading cause of death among persons 1 to 44 years of age, accounting for 59% of deaths in that age group in the United States. The majority of traumatic injuries do not result in death. However, some non-fatal injuries result in long-term impacts including mental, physical, and financial complications. For every fatality due to injury and violence, an estimated 13 people are hospitalized and another 135 people are treated in an emergency room. In 2013, injury and violence resulted in a \$671 billion cost due to medical expenditures and work-loss related costs.¹

Injuries are categorized into three major types, 1) unintentional; 2) intentional; and 3) undetermined injuries. Falls and motor vehicle crashes account for the largest proportion of traumatic unintentional injuries, while homicide/assault and suicides are the leading causes of intentional traumatic injuries nationally and in Washoe County.

10 Leading Causes of Death by Age Group, United States – 2017

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 4,580	Unintentional Injury 1,267	Unintentional Injury 718	Unintentional Injury 860	Unintentional Injury 13,441	Unintentional Injury 25,669	Unintentional Injury 22,828	Malignant Neoplasms 39,266	Malignant Neoplasms 114,810	Heart Disease 519,052	Heart Disease 647,457
2	Short Gestation 3,749	Congenital Anomalies 424	Malignant Neoplasms 418	Suicide 517	Suicide 6,252	Suicide 7,948	Malignant Neoplasms 10,900	Heart Disease 32,658	Heart Disease 80,102	Malignant Neoplasms 427,896	Malignant Neoplasms 599,108
3	Maternal Pregnancy Comp. 1,432	Malignant Neoplasms 325	Congenital Anomalies 188	Malignant Neoplasms 437	Homicide 4,905	Homicide 5,488	Heart Disease 10,401	Unintentional Injury 24,461	Unintentional Injury 23,408	Chronic Low. Respiratory Disease 136,139	Unintentional Injury 169,936
4	SIDS 1,363	Homicide 303	Homicide 154	Congenital Anomalies 191	Malignant Neoplasms 1,374	Heart Disease 3,681	Suicide 7,335	Suicide 8,561	Chronic Low. Respiratory Disease 18,667	Cerebro-vascular 125,653	Chronic Low. Respiratory Disease 160,201
5	Unintentional Injury 1,317	Heart Disease 127	Heart Disease 75	Homicide 178	Heart Disease 913	Malignant Neoplasms 3,616	Homicide 3,351	Liver Disease 8,312	Diabetes Mellitus 14,904	Alzheimer's Disease 120,107	Cerebro-vascular 146,383
6	Placenta Cord. Membranes 843	Influenza & Pneumonia 104	Influenza & Pneumonia 62	Heart Disease 104	Congenital Anomalies 355	Liver Disease 918	Liver Disease 3,000	Diabetes Mellitus 6,409	Liver Disease 13,737	Diabetes Mellitus 59,020	Alzheimer's Disease 121,404
7	Bacterial Sepsis 592	Cerebro-vascular 66	Chronic Low. Respiratory Disease 59	Chronic Low Respiratory Disease 75	Diabetes Mellitus 248	Diabetes Mellitus 823	Diabetes Mellitus 2,118	Cerebro-vascular 5,198	Cerebro-vascular 12,708	Unintentional Injury 55,951	Diabetes Mellitus 83,564
8	Circulatory System Disease 449	Septicemia 48	Cerebro-vascular 41	Cerebro-vascular 56	Influenza & Pneumonia 190	Cerebro-vascular 593	Cerebro-vascular 1,811	Chronic Low. Respiratory Disease 3,975	Suicide 7,982	Influenza & Pneumonia 46,862	Influenza & Pneumonia 55,672
9	Respiratory Distress 440	Benign Neoplasms 44	Septicemia 33	Influenza & Pneumonia 51	Chronic Low. Respiratory Disease 188	HIV 513	Septicemia 854	Septicemia 2,441	Septicemia 5,838	Nephritis 41,670	Nephritis 50,633
10	Neonatal Hemorrhage 379	Perinatal Period 42	Benign Neoplasms 31	Benign Neoplasms 31	Complicated Pregnancy 168	Complicated Pregnancy 512	HIV 831	Homicide 2,275	Nephritis 5,671	Parkinson's Disease 31,177	Suicide 47,173

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



¹ Centers for Disease Control and Prevention. Injury Prevention & Control. Key Injury and Violence Data. Accessed https://www.cdc.gov/injury/wisqars/overview/key_data.html

Reducing the risk of unintentional injury involves basic preventive mechanisms, such as following traffic safety laws and wearing seatbelts to reduce the likelihood and severity of injury due to motor vehicle accidents. Other methods of risk reduction include incorporating non-slip surfaces and hand railings into homes of elderly adults to reduce the likelihood of high impact falls.

Trauma Centers

There are two parts to identifying trauma centers in the United States, a designation process and a verification process. The designation of trauma centers is done at the state and local level and involves the jurisdictions identifying the criteria to categorize a facility as a trauma center. Trauma center verification is conducted by the American College of Surgeons (ACS), which confirms the resource capability of a facility in order to verify it as a Trauma Center.² Trauma Centers are classified into various Levels (Level I, II, III, IV, or V), based on the kinds of resources available in the facility and the number of patients admitted annually.³

Trauma Center Level	Capability
Level I	Total care for every aspect of injury from prevention through rehabilitation.
Level II	Initiate definitive care for all injured patients.
Level III	Prompt assessment, resuscitation, survey, intensive care, and stabilization of injured patients and emergency operations.
Level IV	Provide advanced trauma life support prior to transfer of patients to a higher-level trauma center. Provide evaluation, stabilization, and diagnostics for injured patients.
Level V	Provide initial evaluation, stabilization and diagnostic capabilities and prepares patients for transfer to higher levels of care.

Nevada has one Level I Trauma Center, located in Las Vegas, an 8-hour drive south of Washoe County. Renown Regional Medical Center, located near downtown Reno, is designated as a Level II Trauma Center and is Northern Nevada’s only designated and verified Trauma Center. Renown Regional Medical Center receives trauma patients from across the northern part of Nevada, Northeastern California, and Southern Idaho. Patients that experience traumatic injury may arrive at a facility which is not a designated Trauma Center. Medical personnel make an informed decision as to whether a patient should be transferred to a designated Trauma Center in the region.

² American College of Surgeons. Searching for Verified Trauma Centers. Accessed <https://www.facs.org/search/trauma-centers>

³ American Trauma Society. Trauma Center levels Explained, Designation vs Verification. Accessed <http://www.amtrauma.org>

Trauma Data Registry

Hospital-based trauma registries provide the foundation for research and evaluation that is conducted to better assist clinicians and policy makers to positively impact patient outcomes. Having a well-defined and standardized set of variables is necessary to better understand and evaluate trauma patients.

The National Trauma Data Bank (NTDB) is the largest combined trauma registry in the United States with over 7 million records. Healthcare facilities across the nation submit data related to trauma patients to the NTDB including basic demographic information and other factors which categorize and help to describe traumatic injuries. The National Trauma Data Standard (formerly known as the National Trauma Registry) defines a core set of variables to be captured and reported to the NTDB.⁴

The flow chart on page 5 illustrates the criteria a patient must meet in order to be reported to the Nevada Trauma Registry. A facility does not have to be a designated or verified Trauma Center to have the ability to report data on a patient experiencing traumatic injury. Trauma data are currently reported to the Nevada Trauma Registry by five healthcare facilities in Washoe County; Incline Village Community Hospital, Northern Nevada Medical Center, Renown Regional Medical Center, Renown South Meadows Medical Center, and Saint Mary's Regional Medical Center.

Washoe County Trauma Data Analysis

The American College of Surgeons produces annual adult and pediatric trauma reports, which contain descriptive information about trauma patients, demographics and injury characteristics, and outcomes. The Washoe County Trauma Data Report contains analyses modeled from the most recent national report, the 2016 National Trauma Data Bank Annual Report. These analyses are descriptive in nature and define Washoe County trauma patients in terms of age, sex, and race/ethnicity. The tables and figures provide an overview of traumatic injuries, including where and how injuries occur, as well as the severity of the injuries. These analyses are intended to explore the mechanisms of traumatic injury and help identify subgroups which might benefit from preventive educational messages aimed to reduce the risk of experiencing traumatic injury.

Limitations

- **Patients represented:** Any trauma patient admitted to an emergency room or hospital which reported patient data to the Nevada Trauma Registry is counted. This includes out of state and

⁴ American College of Surgeons. What is the NTDS?. Accessed <https://www.facs.org/quality-programs/trauma/ntdb/ntds/about-ntds>

international visitors who may have experienced a traumatic injury and was admitted into a Washoe County facility that reports data to the Nevada Trauma Registry.

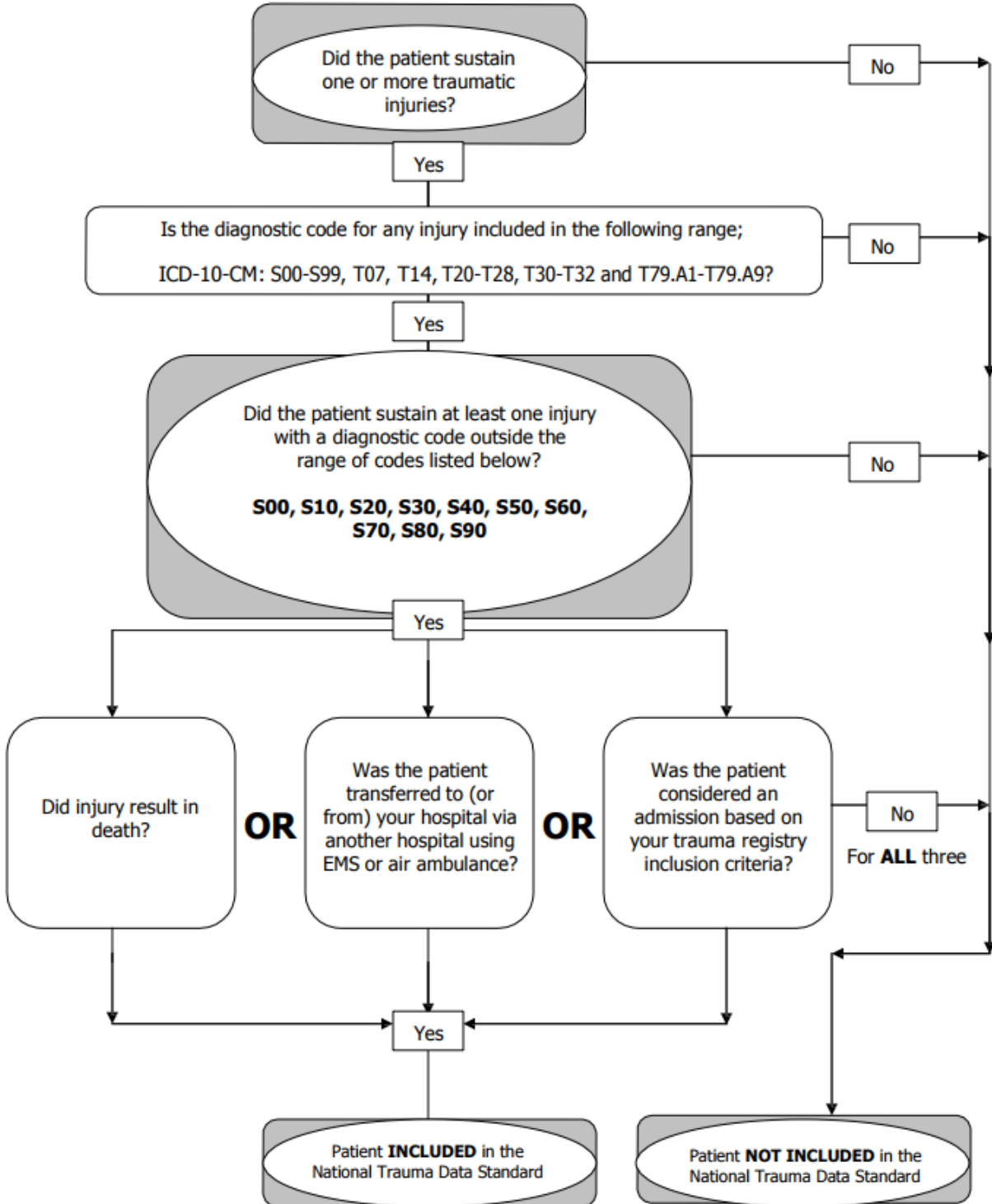
- **Duplicates:** When a patient with traumatic injury arrives at a facility that is unable to provide the level of care warranted, the patient may be transferred to a facility which can provide an appropriate level of care. All of the standardized patient variables are entered into the Nevada Trauma registry by each facility that has seen the patient. Each patient is assigned a number by each facility and this number does not follow the patient from one facility to the next. The reported data are stripped of patient identifiers such as name. Therefore, duplicates are identified when a record contains the same date of birth, sex, and injury date.
- **Small numbers:** It was not feasible to replicate every analysis in the 2016 National Trauma Data Bank Annual Report. This was due to the relatively low number of traumatic injuries reported by Washoe County facilities each year. Some tables may have suppressed data due to small numbers.
- **Totals used for each table:** The numbers presented in each table may not add up to the complete number of trauma patients reported each year. This is due to missing or incomplete data and varies from table to table depending on the variables utilized for each analysis.

Transition from ICD-9-CM to ICD-10-CM: October 1, 2015 signaled the transition from the ninth revision of the International Classification of Diseases and Clinical Modification (ICD-9-CM) to the tenth revision (ICD-10-CM); however, Trauma Registry data did not transition until calendar year 2017. Due to the change from ICD-9-CM to ICD-10-CM, not all tables and figures were able to be compared for trend analysis. See Table 2 for the detailed differences.

Table 2: Differences Between ICD-9-CM & ICD-10-CM Codes	
ICD-9-CM	ICD-10-CM
3 to 5 characters in length	3 to 7 characters in length
Approximately 13,000 codes	Approximately 68,000 current codes
First character may be alpha (E or V) or numeric; characters 2–5 are numeric	Character 1 is alpha; characters 2 and 3 are numeric; characters 4–7 are alpha or numeric
Limited space for new codes	New codes can be added
Limited code detail	Specific code detail
No laterality	Includes laterality

Source: Fantus, R.J. (2018). Bulletin: Annual Report 2017: ICD-10. The American College of Surgeons. Accessed <http://bulletin.facs.org/2018/01/annual-report-2017-icd-10>

National Trauma Data Standard Inclusion Criteria



Adapted from American College of Surgeons. (2017). National Trauma Data Standard Data Dictionary 2018 Admissions. Available at: <https://www.facs.org/quality-programs/trauma/ntdb/ntds/data-dictionary>

Number & Rate of Traumatic Injuries

The number of patients with an injury classified as traumatic that were reported by Washoe County facilities increased from 2015 (n=1,765) to 2016 (n=2,154), decreased in 2017 (n=1,841), and increased again in 2018 (n=2,130). Similar fluctuations are observed in the rate per 100,000 population [Table 3].

Table 3: Number & Rate of Trauma Incidents by Year, Washoe County, 2015-2018

Year	Number of Incidents	Rate per 100,000 population
2015	1,765	400.44
2016	2,154	481.73
2017	1,841	407.14
2018	2,130	463.99

Note: Population totals used to calculate rates per 100,000 population are based on Nevada Department of Taxation, Nevada State Demographer (2018).

Source: Nevada County Age, Sex, Race, and Hispanic Origin Estimates and Projections 2017 to 2036 (<https://tax.nv.gov>).

Demographic Characteristics

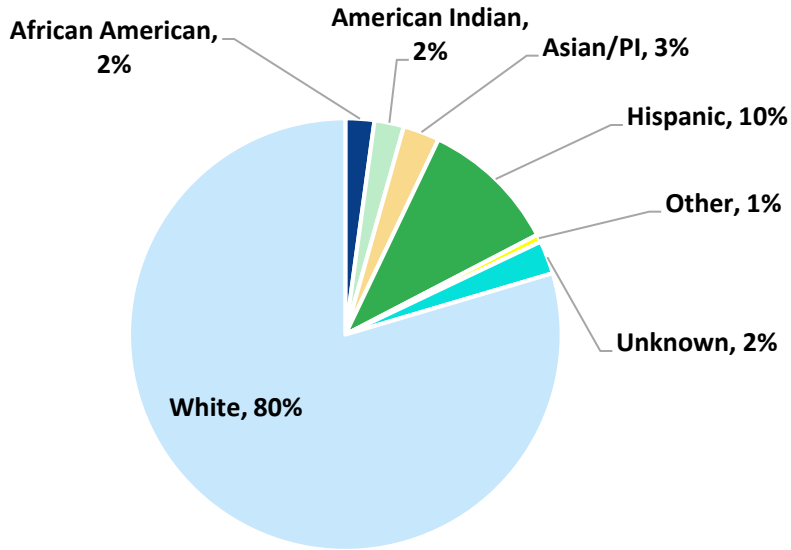
Males accounted for the majority (62.3%) of trauma patients in Washoe County during 2018, which was similar to the proportion of males during 2017, as well as 2015-2016 (combined). In 2018, eight out of ten (80%) trauma patients were white, non-Hispanic. Hispanics of any race accounted for 10%, while 3% were Asian/Pacific Islander, non-Hispanic, 2% were African American, non-Hispanic, 2% were American Indian, non-Hispanic, 2% were of an unknown race/ethnicity, and 1% were an “other” race. Those aged 45 years and older accounted for 60% of trauma patients during 2018.

Table 4: Number & Percent of Patients by Sex & Age Group, Washoe County, 2018

Age Group	All Incidents		Male		Female		Unknown	
	#	%	#	%	#	%	#	%
0-4 years	29	1%	23	2%	6	1%	0	-
5-9 years	26	1%	15	1%	11	1%	0	-
10-14 years	49	2%	33	2%	16	2%	0	-
15-19 years	112	5%	81	6%	31	4%	0	-
20-24 years	128	6%	95	7%	33	4%	0	-
25-34 years	297	14%	233	18%	64	8%	0	-
35-44 years	217	10%	173	13%	44	6%	0	-
45-54 years	234	11%	163	12%	71	9%	0	-
55-64 years	301	14%	182	14%	118	15%	1	50%
65-74 years	272	13%	156	12%	116	15%	0	-
75-84 years	246	12%	102	8%	144	18%	0	-
85+ years	219	10%	73	5%	145	18%	1	50%
Total	2,130	100%	1,329	100%	799	100%	2	100%

- The majority of trauma patients in Washoe County were male (62.3%).
- Nearly one in five (18%) of male trauma patients were between the ages of 25 to 34 years of age.
- The age groups 55 years and older represented the largest proportion of female patients.

Fig. 1: Percent of Trauma Patients by Race/Ethnicity, Washoe County, 2018



- The majority of trauma patients in Washoe County during 2018 were white, non-Hispanic (80%), followed by those identified as Hispanic of any race (10%).

Fig. 2: Percent of Trauma Patients by Age Group, Washoe County, 2015-2018

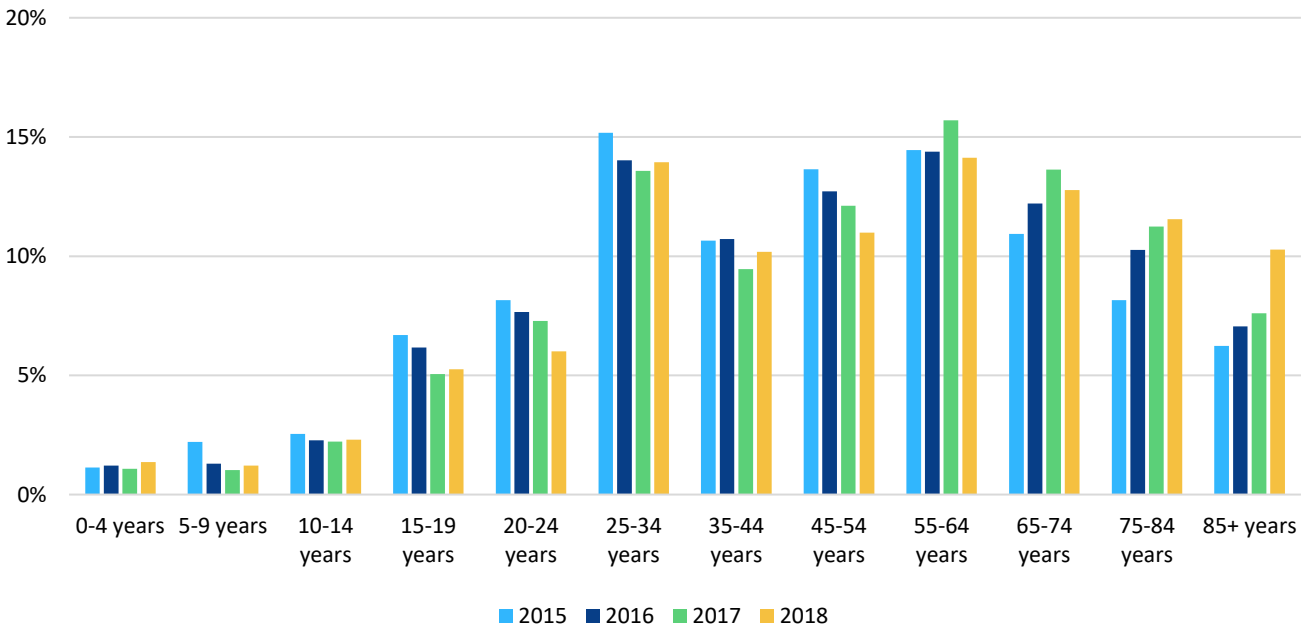


Table 5: Rate of Fatality Among Trauma Patients by Age Group, Washoe County, 2018

Age Group	Number of Incidents	Percent of Incidents	Number of Deaths	Case Fatality Rate*
0-4 years	29	1%	1	3.4
5-9 years	26	1%	0	0.0
10-14 years	49	2%	1	2.0
15-19 years	112	5%	4	3.6
20-24 years	128	6%	2	1.6
25-34 years	297	14%	5	1.7
35-44 years	217	10%	6	2.8
45-54 years	234	11%	9	3.8
55-64 years	301	14%	16	5.3
65-74 years	272	13%	17	6.3
75-84 years	246	12%	16	6.5
85+ years	219	10%	15	6.8
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

- In 2018, the highest case fatality rate occurred among those aged 85 years and older (6.8 per 100).

Injury Characteristics

Intent of Injury

In 2018, unintentional injuries accounted for 88% of all traumatic injuries reported by Washoe County hospitals [Table 6]. Intentional injury due to homicide/assault (9%), self-inflicted injury/suicide (2%), and legal interventions (<1%) combined accounted for 12% of traumatic injury, while 1% of traumatic injuries were classified as undetermined intent [Table 6].

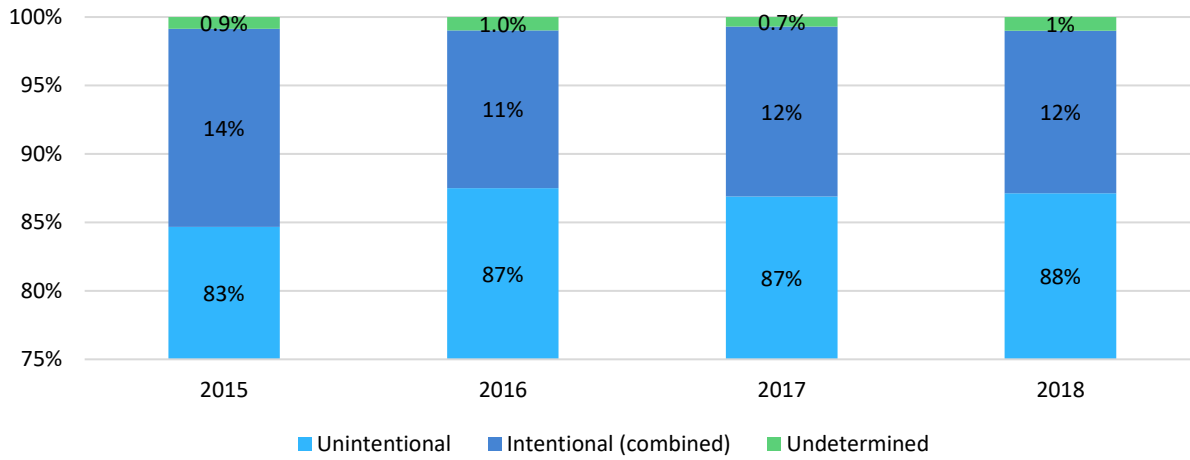
Table 6: Rate of Fatality by Intent, Washoe County, 2018

Intent of Injury	Number	Percent of Total	Deaths	Case Fatality Rate*
Unintentional	1,873	88%	72	3.8
Intentional (combined)	245	12%	18	7.3
<i>Homicide/Assault</i>	196	9%	8	4.1
<i>Legal Intervention</i>	7	<1%	1	14.3
<i>Self-inflicted/Suicide</i>	42	2%	9	21.4
Undetermined	12	1%	2	16.7
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

- The case fatality rate in 2018 was highest among injuries due to self-inflicted injuries (suicide) (21.4 per 100), followed by injuries of undetermined intent (16.7 per 100).

Fig. 3: Percent of Traumatic Injuries by Intent, Washoe County, 2015-2018



- The intent of injury has remained relatively similar from 2015 to 2018, with unintentional injuries representing the majority of injuries across all four years.
- Intentional injuries accounted for more than one in ten traumatic injuries from 2015 through 2018.

Place of Injury

As of 2017, the Nevada Trauma Registry database captures place of injury through ICD-10-CM codes, which allows for detailed classification of the place of injury. Previous reports documented the place of injury into categories such as the street, in a home, during recreation, or in public buildings, farms, mines, or industrial locations. In 2018, more than one in four (28.5%) injuries occurred in the street or highway, while another 28.0% of injuries occurred in a private residence [Table 7].

Place of Injury	Number	Percent
Airplane	1	0.05%
Ambulatory health service	1	0.05%
Athletic Court/Field	19	0.9%
Farm	11	0.5%
Industrial/Construction	23	1.1%
Institutional residence - Hospital	2	0.1%
Institutional residence - Nursing home	70	3.3%
Institutional residence - Other	17	0.8%
Institutional residence - Prison	53	2.5%
Other non-institutional residence	19	0.9%
Other paved roadway	15	0.7%
Other specified place	29	1.4%
Parking lot	47	2.2%
Private commercial establishment	28	1.3%
Private residence	596	28.0%
Public building	4	0.2%
Recreation area	181	8.5%
School	7	0.3%
Service area	49	2.3%
Sidewalk	57	2.7%
Street/Highway	608	28.5%
Unspecified place/NA	162	7.6%
Wilderness area	131	6.2%
Total	2,130	100%

Table 8: Rate of Fatality by Place of Injury, Washoe County, 2018

Place of Injury (collapsed)	Number of Incidents	Percent of Incidents	Number of Deaths	Case Fatality Rate*
Roads/Sidewalk/Parking Lot	727	34%	40	5.5
Private/Non-Institutional Residence	648	30%	33	5.1
Recreation/Wilderness	331	16%	5	1.5
Institutional Residence	142	7%	4	2.8
Farm/Industrial	34	2%	1	2.9
School/Service Area	56	3%	3	5.4
Other	30	1%	1	3.3
Unknown	162	8%	5	3.1
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

- In 2018, the highest case fatality rates were among incidents on roads, sidewalks, or parking lots (5.5 per 100), followed by school/service areas (5.4 per 100).

Mechanism of Injury

Mechanism of injury was determined by the ICD-10-CM primary external cause code (e-code) reported as the factor that caused the injury event. Over four in ten traumatic injuries in Washoe County (43%) were due to falls, the majority of which occurred in private residences. The second highest contributing factor to traumatic injury in Washoe County involved motor vehicles (23%). In 2018, the highest case fatality rate was due to asphyxiation, followed by injury due to firearms [Table 9]. Those 20 to 64 years of age accounted for over half of the injuries due to motor vehicle accidents, while those 55 years of age and older represented more than half of the injuries due to falls.

Table 9: Rate of Fatality by Mechanism of Injury, Washoe County, 2018

Mechanism of Injury	Number of Incidents	Percent of Incidents	Number of Deaths	Case Fatality Rate*
Abuse/Neglect/Other Maltreatment	1	0.05%	0	0.0
Asphyxiation	1	0.05%	1	100.0
Bite/Sting	9	0.42%	0	0.0
Cut/Pierce	94	4%	2	2.1
Drowning/Submersion	1	0.05%	0	0.0
Electrocution	1	0.05%	0	0.0
Fall	914	43%	36	3.9
Fire/Burn	8	0.38%	0	0.0
Firearm	73	3%	12	16.4
Hot Object/Substance	4	0.19%	0	0.0
Machinery	3	0.14%	0	0.0
Motor Vehicle	489	23%	27	5.5
Natural/Environmental	27	1%	1	3.7
Other Land Transport	200	9%	5	2.5
Other Specified, Classifiable	42	2%	1	2.4
Other Transport	8	0.38%	1	12.5
Other Specified, Not Elsewhere Classified	10	0%	0	0.0
Pedal Cyclist, Other	53	2%	0	0.0
Pedestrian, Other	23	1%	3	13.0
Poisoning	2	0.09%	0	0.0
Struck by/Against	167	8%	3	1.8
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

- The highest case fatality occurred among incidents involving asphyxiation (100.0 per 100), while incidents involving firearms had the second highest fatality rate (16.4 per 100).

Mechanism of Injury by Age Group

The following tables [Table 10, Table 11, Table 12] indicate the top three mechanisms of traumatic injury for each age group. Falls and motor vehicles were among the top two mechanisms of injury across all age groups, with the exception of those aged 10 to 14 years, where fall was not among the top mechanism of injury.

Rank	0-4 years	5-9 years	10-14 years	15-19 years
1	Fall	Fall	Motor Vehicle	Motor Vehicle
2	Motor Vehicle	Motor Vehicle & Pedal cyclist, other (tied)	Struck by /Against	Fall
3	Struck by/Against	Struck by/Against & Other Land Transport (tied)	Other Land Transport	Other Land Transport

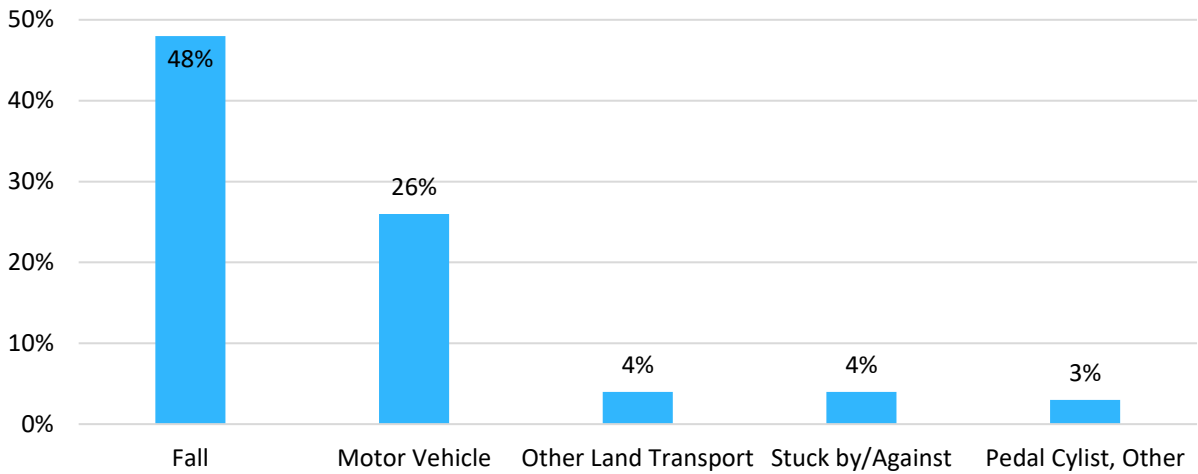
Rank	20-24 years	25-34 years	35-44 years	45-54 years
1	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle
2	Fall	Fall	Fall	Fall
3	Struck by/Against	Cut/Pierce	Other Land Transport	Other Land Transport

Rank	55-64 years	65-74 years	75-84 years	85+ years
1	Fall	Fall	Fall	Fall
2	Motor Vehicle	Motor Vehicle	Motor Vehicle	Motor Vehicle
3	Other Land Transport	Other Land Transport	Other Land Transport & Struck by/Against (tied)	Other Land Transport

Mechanism of Injury by Intent

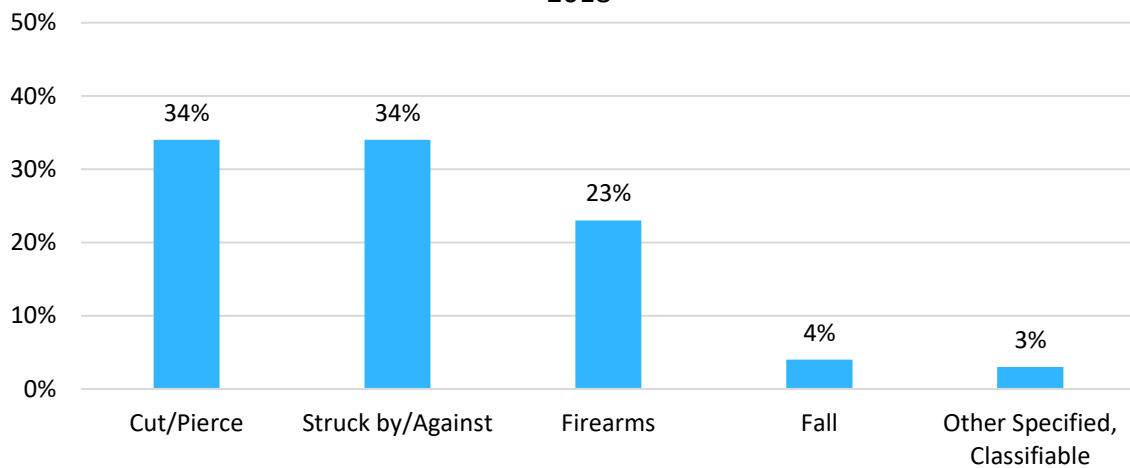
Approximately seven out of ten unintentional (accidental) traumatic injuries were caused by falls or motor vehicles in 2018 [Fig. 4]. Combining all types of intentional injuries, the top three mechanisms of injury were due to cut/pierce (34%) and struck by/against (34%), followed by injury due to firearms (23%) [Fig. 5]. Collectively, cut/pierce and firearms contributed to more than half of suicide injuries as well as injuries resulting from homicide/assault [Fig. 6].

Fig. 4: Top Five Mechanisms of Unintentional Trauma, Washoe County, 2018



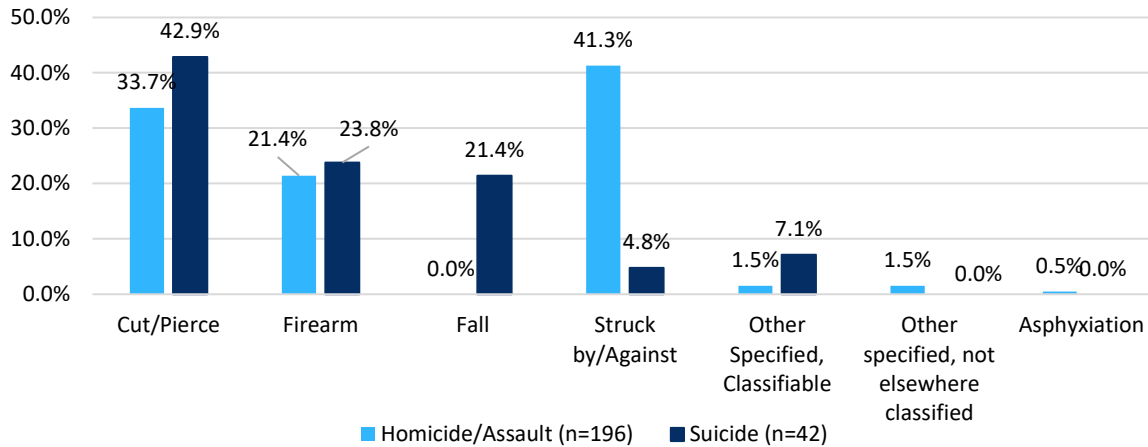
- In 2018, falls were the primary mechanism of injury (48%), followed by motor vehicle incidents (26%).

Fig. 5: Top Five Mechanisms of Intentional Trauma, Washoe County, 2018



- Among all types of intentional injury (suicide, homicide/assault, and injury resulting from legal intervention), cut/pierce was the most frequently occurring mechanism of injury (34%), tied with struck by/against (34%), followed by injuries due to firearms (23%).

Fig. 6: Mechanism of Injury by Interntional Trauma Type, Washoe County, 2018



- Suicide (n=42) and homicide/assault (n=196) accounted for all but seven of the 245 intentional injuries [Table 6].
- Four in ten (41.3%) homicide/assault injuries were a result of being struck by or against another object. One in three (33.7%) homicide/assault injuries were a result of being cut or pierced. One in five (21.4%) homicide/assault injuries were a result of firearms.
- Four in ten (42.9%) suicide injuries were a result of being cut or pierced, while one in five (23.8%) were a result of firearms and another one in five (21.4%) suicide injuries were due to (intentional) falls.

Detailed Types of Falls

Due to the large number of fall injuries, a detailed table categorizing the type of fall and proportion of deaths due to each type are provided in Table 13. Slips, trips and stumbles were responsible for the largest proportion of falls (48.6%), while falls with an undetermined intent lead to the highest proportion of deaths (50.0%), although there were few cases (n=2) categorized in this area.

Table 13: Detailed Falls by Type & Mortality, Washoe County, 2018

Detailed Type of Fall	# of Falls	% of Falls	# of Deaths	Percent Fatal
Bed/Chair/Toilet/Shower/Other Furniture	78	8.5%	4	5.1%
Fall on Same Level/Unspecified Fall	137	15.0%	10	7.3%
Intentional Fall/Suicide	9	1.0%	0	0.0%
Ladder/Balcony/Roof/Window/Other Structure	65	7.1%	3	4.6%
Off of Moving Object	74	8.1%	0	0.0%
One Level to Another	32	3.5%	1	3.1%
Slip, trip, or stumble/Ice or Snow	444	48.6%	12	2.7%
Stairs/Steps	58	6.3%	5	8.6%
Tree/Cliff/Into Water	15	1.6%	0	0.0%
Undetermined Fall	2	0.2%	1	50.0%
Total	914	100.0%	36	3.9%

Injury Severity

The injury severity score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. The score may range from 1-75. The category of the injury severity (minor, moderate, severe, or very severe) was based on the 2016 National Trauma Data Bank Annual Report which assigns ISS into the groups identified in Table 14.

Table 14: Injury Severity Score & Crosswalk	
Injury Severity Score (ISS)	ISS Category
1 to 8	Minor
9 to 15	Moderate
16 to 24	Severe
25 or higher	Very Severe

Approximately four in ten traumatic injuries in Washoe County were categorized as minor or moderate injuries each year from 2015 through 2018, while nearly one in five incidents were categorized as severe or very severe [Fig. 7]. The case fatality rate increased dramatically with each increase in ISS category [Table 15], as those with very severe injuries accounted for more than half of deaths resulting from traumatic injury during 2018.

Fig. 7: Percent of Injuries by Injury Severity Score Category, Washoe County, 2015-2018

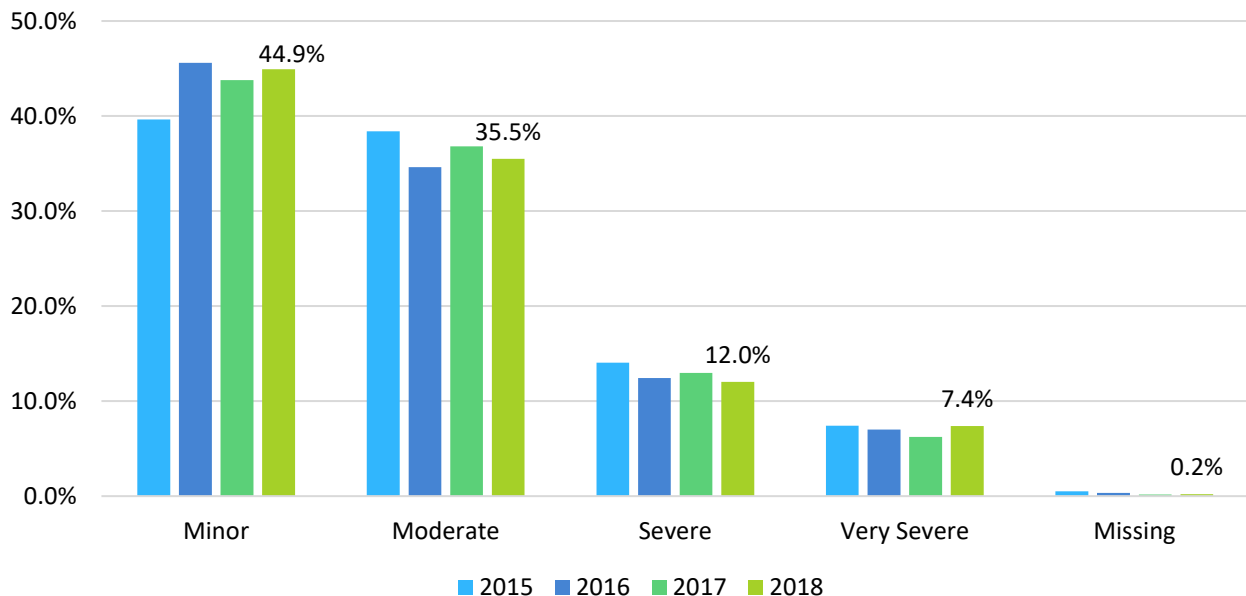


Table 15: Rate of Fatality by Injury Severity Score Category, Washoe County, 2018

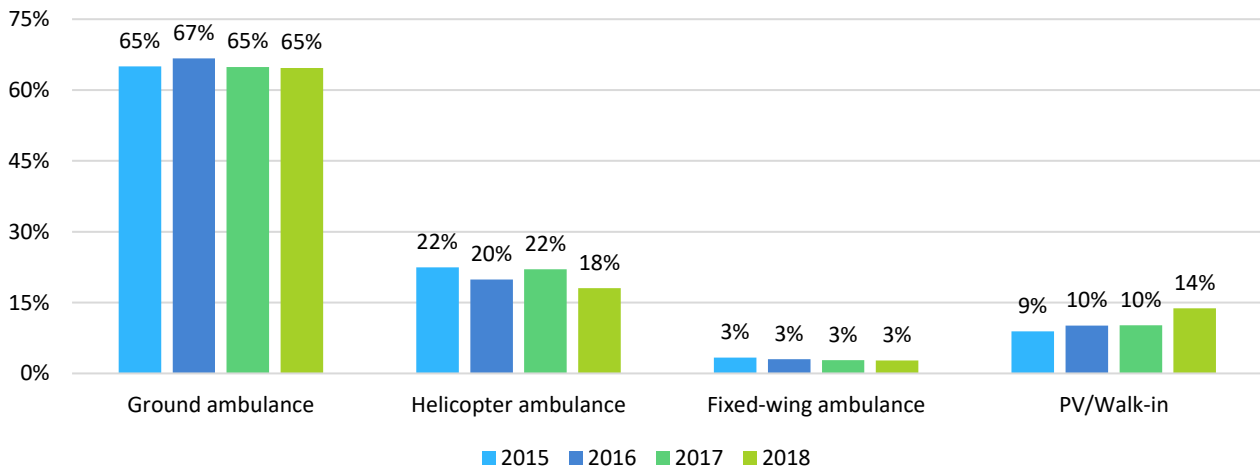
Injury Severity Score Category	Number of Injuries	Percent of Injuries	Number of Deaths	Case Fatality Rate*
Minor	957	45%	10	1.0
Moderate	756	35%	14	1.9
Severe	256	12%	16	6.3
Very Severe	157	7%	52	33.1
Missing	4	0%	0	0.0
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

Prehospital Characteristics

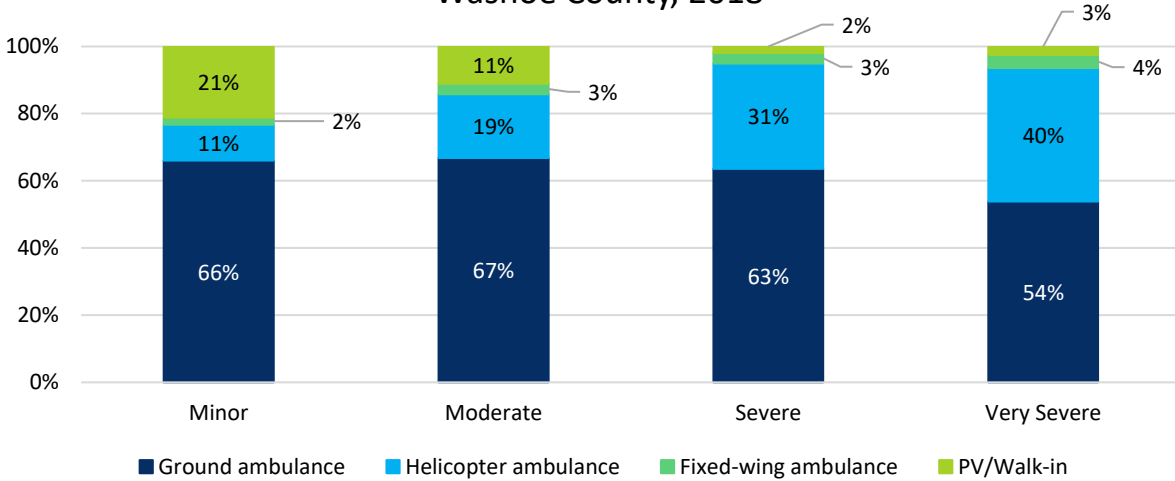
The majority of trauma patients were transported via ground ambulance [Fig. 8]. However, as injury severity increased the proportion of patients transported via helicopter ambulance also increased [Fig. 9].

Fig. 8: Percent of Arrivals by Mode of Arrival, Washoe County, 2018



- The primary mode of arrival among traumatic incidents from 2015 through 2018 has been by ground ambulance, followed by helicopter ambulance.
- From 2015 to 2018, about one in ten patients with traumatic injury have arrived to the hospital by personal vehicle or walk-in.

Fig. 9: Mode of Arrival by Injury Severity Score Category, Washoe County, 2018



- In 2018, the majority of patients were transported by ground ambulance across all four categories of injury severity.
- About one in three patients with injuries classified as severe (31%) or very severe (40%) were transported by helicopter ambulance.

Table 16: Rate of Fatality by Mode of Arrival, Washoe County, 2018

Mode of Arrival	Number of Incidents	Percent of Incidents	Number of Deaths	Case Fatality Rate*
Ground ambulance	1,378	65%	60	4.4
Helicopter ambulance	385	18%	29	7.5
Fixed-wing ambulance	58	3%	0	0.0
PV/Walk-in	293	14%	2	0.7
Police	7	0%	0	0.0
Other	1	0%	0	0.0
Missing	8	0%	1	12.5
Total	2,130	100%	92	4.3

*Rate per 100 trauma patients

- During 2018, two out of three (65%) patients arrived via ground ambulance.
- Aside from the fatality where mode of transport was missing, the case fatality rate was highest among those patients that arrived via helicopter ambulance (7.5 per 100).

Primary Payment

The form of primary payment data were provided each year, 2015 through 2018 for Washoe County trauma patients, as well as the United States overall for 2016 [Table 17]. Of note, 42.6% of traumatic incidents in 2017 reported by Washoe County facilities did not have a primary payment source identified.

Table 17: Primary Payment Source by Type, Washoe County 2015-2018 & the United States 2016

Primary Payment Source	Washoe County				U.S.
	2015	2016	2017	2018	2016
Self-pay	4.7%	2.8%	2.0%	4.0%	11.3%
Private	33.1%	28.6%	19.3%	27.3%	3515.0%
Medicare	14.1%	16.5%	16.2%	21.2%	27.0%
Medicaid	15.2%	11.3%	7.2%	10.3%	16.3%
Medicare & Medicaid	-	-	-	<1%	NA
Military	0.3%	0.1%	0.0%	-	NA
Other Government	4.1%	3.4%	2.1%	2.7%	2.5%
Workers Compensation	2.2%	1.6%	1.9%	1.5%	NA
Car Insurance	19.7%	12.9%	8.6%	12.1%	NA
Other/Unknown	6.7%	22.8%	42.6%	20.8%	NA

United States source: American College of Surgeons. (2016). National Trauma Data Bank Annual Report 2016. Chicago, IL.

NA = data for specified category not available

Substance Use

During 2015 and 2016 (combined) half of patients (51.7%) with traumatic injury in Washoe County were not tested for alcohol use, which had decreased to 39.2% in 2018. There has been an increase in proportion of patients who had no alcohol use, as confirmed by test [Table 18]. Additionally, the vast majority of patients with traumatic injury were not tested for drug use from 2015 through 2018 [Table 19].

Table 18: Alcohol Test Results, Washoe County, 2015-2016 Combined, 2017, & 2018

Alcohol Use	2015 & 2016 Combined		2017		2018	
	#	%	#	%	#	%
No (not tested)	2,023	51.7%	700	38.0%	834	39.2%
No (confirmed by test)	960	24.5%	656	35.6%	841	39.5%
Yes (confirmed by test, trace levels)	303	7.7%	249	13.5%	196	9.2%
Yes (confirmed by test, beyond legal limit)	478	12.2%	226	12.3%	256	12.0%
Unknown	0	3.9%	10	0.5%	3	<1%

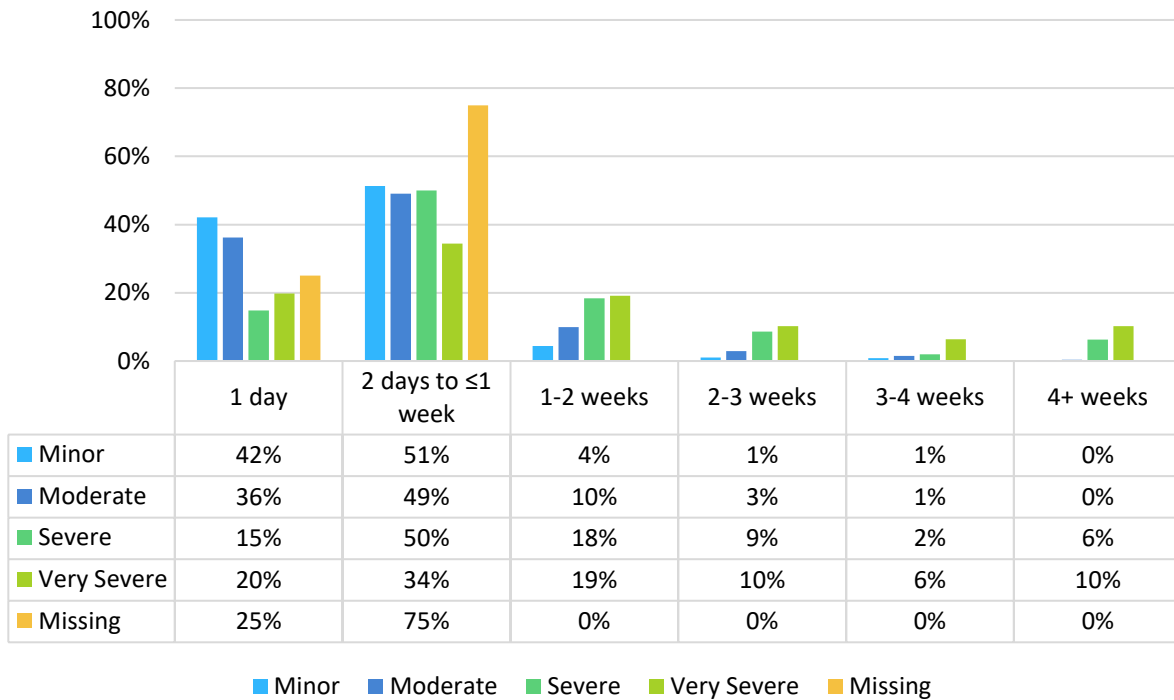
Table 19: Drug Test Results, Washoe County, 2015-2016 Combined, 2017, & 2018

Drug Use	2015 & 2016 Combined		2017		2018	
	#	%	#	%	#	%
No (not tested)	3,582	91.4%	1,745	94.8%	201	94.7%
No (confirmed by test)	65	1.7%	25	1.4%	27	1.3%
Yes (confirmed by test, prescription drug)	22	0.6%	9	0.5%	18	0.8%
Yes (confirmed by test, illegal drug)	98	2.5%	49	2.7%	57	2.7%
Yes (confirmed by test, both prescription and illegal drugs)	4	0.1%	0	0.0%	0	0.0%
Unknown	146	3.7%	13	0.7%	10	0.5%

Patient Outcomes

Patient outcomes highlighted in this section include overall length of stay and days spent in an intensive care unit. Discharge status (dead or alive) was provided for many of the tables presented throughout the report.

Fig. 10: Incidents by Length of Stay & Injury Severity Score Category, Washoe County, 2018



- Four in ten (42%) of patients with traumatic injury classified as minor were discharged within one day.
- While over half of patients with trauma classified as moderate (51%) were discharged between day two to one week.
- The length of stay increased as the severity of the injury increased, as demonstrated by nearly half of patients with a very severe traumatic injury being hospitalized for longer than one week.

Intensive Care Unit

The median number of days spent in an intensive care unit (ICU) increased as the severity of injury increased for all years 2015 through 2018 [Table 20]. In 2018, incidents involving drowning or submersion had the longest median length of stay in an ICU, followed by incidents involving some other form of transport [Table 21].

Table 20: Incidents by Injury Severity Score & Median ICU Days, Washoe County, 2015 - 2018

ISS Category	Median Number of ICU Days			
	2015	2016	2017	2018
Minor	2	0	0	0
Moderate	2	3	2	2
Severe	4	4	3	4
Very Severe	7	5	5	6
Missing	0	2	1	-
Overall Median Days	3	2	2	2

Table 21: Incidents by Mechanism of Injury & Median Days in ICU, Washoe County, 2015-2018

Mechanism of Injury	2015	2016	2017	2018
Abuse, neglect, and other maltreatment	-	-	-	0
Asphyxiation/Suffocation	9	3	8	2
Bite/Sting	-	-	3	0
Cut/Pierce	2	2	3	3
Drowning/Submersion	-	-	3	16
Electrocution	-	-	-	3
Fall	2	0	1	0
Fire/Burn	3	0	0	3
Firearm	3	3	3	4
Hot Object/Substance	-	-	3	0
Machinery	3	0	0	-
Motor Vehicle	3.5	3	3	3
No E-code Listed	2	2	3	-
Natural/Environmental Factors	2	2	2.5	2
Other Land Transport	-	-	2.5	3
Other specified, classifiable	2	0.5	3	3
Other Transport	3	3	2	8
Other specified, not elsewhere classifiable	0	0	-	3
Overexertion	0	0	0	-
Pedal Cyclist, other	3	3	3	2
Pedestrian, other	-	6	3.5	3
Poisoning	0	0	-	4.5
Struck by/Against	2	2	2	2
Unspecified	3	4	-	-
Overall ICU Days	3	2	2	2

Note: Due to changes from ICD-9 to ICD-10 coding, not all mechanisms of injury are represented across all years.

Total Length of Stay

Across all four years (2015 through 2018), the total median number of days spent in the emergency room and hospital combined, increased as the severity of injury increased [Table X].

Table 22: Incidents by Injury Severity Score & Median Length of Stay (days), Washoe County, 2015-2018

ISS Category	2015	2016	2017	2018
Minor	2	2	2	1
Moderate	3	3	3	1
Severe	7	5	6	5
Very Severe	8	6	7	6
Missing	1	0	1	1
Median Length of Stay (days)	3	3	3	2

Table 23: Incidents by Mechanism of Injury & Median Length of Stay (days), Washoe County, 2015-2018

Mechanism of Injury	2015	2016	2017	2018
Abuse, neglect, and other maltreatment	-	-	-	2
Asphyxiation/Suffocation	2	3	7	0
Bite/Sting	-	-	2	0
Cut/Pierce	3	2	3	2
Drowning/Submersion	-	-	3	12
Electrocution	-	-	-	3.9
Fall	3	3	3	2
Fire/Burn	0.5	1	0	3.5
Firearm	3	3	2	2
Hot Object/Substance	-	-	2	1
Machinery	2	0.5	1	0
Motor Vehicle	4	4	4	2
No E-code Listed	2.5	4	3	-
Natural/Environmental Factors	2	1	2	0
Other Land Transport	-	-	2	1
Other specified, classifiable	1	0	2	1
Other Transport	2	2	3	3.5
Other specified, not elsewhere classifiable	0	1.5	-	1.5
Overexertion	2	0	15	-
Pedal Cyclist, other	2	3	2	0
Pedestrian, other	4.5	4	4.5	1
Poisoning	3	2	-	5
Struck by/Against	2	2	3	1
Unspecified	3	2.5	-	-
Total	3	3	3	2

Note: Due to changes from ICD-9 to ICD-10 coding, not all mechanisms of injury are represented across all four years.

Conclusion

More than two in three traumatic injuries in Washoe County were due to falls and motor vehicles combined, this trend remains stable across all four years of available Trauma Registry data from 2015 through 2018. There are several evidence-based approaches and policies that have been proven effective in reducing the number of injuries and fatalities resulting from injury.

The number and severity of traumatic injuries can be largely prevented by following safety guidelines, rules of the road, and taking additional measures to prevent risk of injury, or reduce injury severity when accidents occur. Adoption of best-practice policy, as recommended in this report, would also greatly reduce contributing risk factors for traumatic injuries, specifically those involving motor vehicles, the second most frequent mechanism of injury in Washoe County.

This report is designed to inform readers about the nature of traumatic injuries sustained in 2017 and how they occurred. The findings can be used by various agencies concerned with minimizing the likelihood and effects of traumatic injury and contributing to safety and injury prevention efforts.

For further reading, the American College of Surgeon's National Trauma Reports can be accessed at <https://www.facs.org/quality-programs/trauma/ntdb/docpub>

Suggested Citation

Washoe County Health District, Division of Epidemiology and Public Health Preparedness. (February 2020). Washoe County 2018 Trauma Data Report. Reno, NV.

Additional Information

For additional information regarding the Washoe County Trauma Report contact

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STAFF REPORT

EMS ADVISORY BOARD MEETING DATE: February 6, 2020

TO: EMS Advisory Board

FROM: Heather Kerwin, Epidemiology Program Manager on behalf of the EMS Oversight Program; 326-6048; hkerwin@washoecounty.us

SUBJECT: **Presentation and possible acceptance of an update on the Washoe County EMS Strategic Plan (2019-2023), a requirement of the Interlocal Agreement for Emergency Medical Services Oversight.**

SUMMARY

The purpose of this item is to discuss the implementation of projects within the Washoe County EMS Strategic Plan (2019-2023), as required in the Inter Local Agreement for Emergency Medical Services Oversight.

PREVIOUS ACTION

During the EMS Advisory Board on October 6, 2016, the Board approved the presentation and recommended staff present the five-year strategic plan to the District Board of Health.

During the District Board of Health meeting on October 27, 2016, the Board moved to accept the presentation and the five-year Strategic Plan to the District Board of Health.

During the EMS Advisory Board on May 2, 2019, the Board approved the presentation and recommended staff present the 2019-2023 five-year strategic plan to the District Board of Health.

During the District Board of Health meeting on May 23, 2019, the Board moved to accept 2019-2023 five-year Strategic Plan.

BACKGROUND

The EMS Oversight Program was created through an Interlocal Agreement (ILA) signed by the City of Reno (RENO), City of Sparks (SPARKS), Washoe County (WASHOE), Truckee Meadows Fire Protection District (FIRE), and the Washoe County Health District. Within the ILA there are eight duties outlined for the EMS Oversight Program.

The ILA tasks the EMS Oversight Program to “maintain a Five-Year Strategic Plan to ensure the continuous improvement of Emergency Medical Services in the area of standardized equipment, procedures, technology training, and capital investments to ensure that proper future operations continue to perform including Dispatching Systems, Automated Vehicle Locations Systems, Records Management Systems, Statistical Analysis, Regional Medical Supply and Equipment, and other matters related to strategic and ongoing Emergency Medical Services and approved by RENO, SPARKS, WASHOE and FIRE.”

Beginning in August 2018, the EMS Coordinator worked with regional partners to revise the existing EMS strategic plan. The review process began with an assessment of the remaining objectives and strategies and discussions on future ideas for improving the EMS system. The stakeholders met monthly to revise the plan and develop new strategic plan elements.

The final draft plan was presented to the EMS Advisory Board on May 2 and it was recommended to present the draft plan to the District Board of Health for approval.

Below is a list of objectives and strategies to be completed during year 1, with an update on status, if applicable, and the EMS Program staff person leading or tracking the project.

- **Develop appropriate protocols to determine service level for low acuity EMS calls that receive an alternative response.** (Objective 1.1, Strategy 1.1.1-Strategy 1.1.4) *EMS Program Manager*
 - Workgroup met on December 2, 2019 and reviewed fourteen possible determinants to receive an alternative response. Nine determinants were approved for further discussion and a data review.

- **Verify and revise the regional assessment to update existing AVL capabilities equipment and recognize other potential factors for dispatching closest EMS responder.** (Objective 2.1, Strategy 2.1.1) *EMS Coordinator*
 - Deputy Chief Kukulus led a regional meeting on October 3. City of Reno Dispatch personnel agreed to update the regional assessment as part of the information gathering Chief Kukulus requested.

- **Monitor national trends and plan for response, specifically active assailant.** (Objective 2.3) *Regional Partners/Jacqueline Lawson*
 - Multi Casualty Incident Plan workgroup met and has updated the plan. The next step is for review of the Alpha Plan Annex, which will occur after the hiring of the new EMS Coordinator.
 - There has been no further action at this time regarding active assailant.

- **Develop a comprehensive migration interoperability plan for WCRCS that outlines the enhancement of the radio communication system to include completion of upgrades, maintenance of REMSA gateway connection and identified equipment needs.** (Objective 3.1, Strategy 3.1.2) *Regional Partners/EMS Coordinator*
 - Washoe County Regional Communications provided EMS Oversight with the migration plan for Region 0, which will be followed. Washoe County is part of the region 2 cutover.
 - Washoe County has dedicated itself to allocating CIP funding for new equipment purchases for the next 3 fiscal years.
 - The Contract signed by Washoe County, September 28, 2018, allows for long term fixed pricing with significant discounting, to members of the Washoe County Regional Communications System (WCRCS) through 2025.

- It is the responsibility of all users of the system, both Participating and Sponsored Members, to upgrade their radio equipment (e.g. portables, mobiles, and control stations and consoles) through this contract before the Region 2 cutover, currently scheduled for May 10, 2022.
- **As technology allows, City of Reno to implement configuration process regarding data exchange for CAD-to-CAD.** (Objective 3.2, Strategy 3.2.2) *Regional Partners/EMS Program Manager*
 - City of Reno and REMSA implementation timelines were:
 - Internal testing within the Central Square VM environment start Oct 1, 2019
 - Deployment of the interface to the REMSA and Reno environments Dec 2, 2019
 - Transaction testing start Dec 8, 2019
 - Acceptance testing Jan 13, 2020
 - Training review, EDC hub administration overview Jan 13, 2020
 - Go Live Jan 27, 2020
- **In accordance with the Pre-hospital Medical Advisory Committee (PMAC) approved CQI processes create a regional team, which would work to improve the system through examination of system performance by June 30, 2019.** (Objective 4.1, Strategy 4.1.1) *EMS Program Manager*
 - Staff met with Chief Mike Brown and reviewed the PMAC CQI process. He began speaking with agency Chief's on a possible path forward for the project.
- **Collaborate with hospital partners on data available for submission to the EMS Oversight Program for cardiac, stroke and STEMI patients.** (Objective 4.2, Strategy 4.2.1) *EMS Statistician*
- **Develop a process to identify and report the recurrent callers in the community.** (Objective 5.1) *Regional Partners/EMS Statistician*

Completed "One Time" Objectives:

- **Obtain information regarding social, health and other community services that are available for recurrent callers.** (Objective 5.1, Strategy 5.2.1) *Brittany Dayton*
 - Completed and a community resources section has been added to the EMS Protocols.
- **Create a Gantt chart for the regional partners with the details of the goals.** (Objective 6.1, Strategy 6.1.2) *Brittany Dayton*
 - Completed and distributed to the EMS team, available to regional partners.

Quarterly/Annual Items Include:

- **Increase depth of resources able to respond to EMS calls for service in Washoe County.** (Objective 2.2) *EMS Coordinator*
 - Mutual Aid Agreements were requested, as was information regarding how often MA was requested and received. Almost all partner agencies have submitted the information. This will be presented at the May EMS Advisory Board meeting.
- **Coordinate and report on strategic planning objectives quarterly.** (Objective 6.1)
 - EMS Oversight Program will continue to provide updates at each EMS Advisory Board meeting.
- **Promote the EMS Oversight Program through regional education of the EMS Strategic Plan goals and initiative.** (Objective 6.2, Strategy 6.2.1) *EMS Program Coordinator*

FISCAL IMPACT

There is no fiscal impact to the Board on this agenda item.

RECOMMENDATION

Staff recommends the Board approve the update on the EMS Strategic Plan, a requirement of the Interlocal Agreement for Emergency Medical Services Oversight.

POSSIBLE MOTION

Should the Board agree with staff's recommendation a possible motion would be:

“Move to approve the update on the EMS Strategic Plan, a requirement of the Interlocal Agreement for Emergency Medical Services Oversight.”