Emergency Medical Services Advisory Board

WASHOE COUNTY HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

MEETING NOTICE AND AGENDA

Date and Time of Meeting: Thursday, May 5th, 2022, 9:00 a.m.

This meeting will be held virtually only.
Please attend this meeting via the link listed below or via phone.
(Please be sure to keep your devices on mute and do not place the meeting on hold)

https://us02web.zoom.us/j/83845321966

Meeting ID: 838 4532 1966 Phone: 1 669 900 6833 US

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**
      February 3rd, 2022
4. ***Prehospital Medical Advisory Committee (PMAC) Update**
   Dr. John Hardwick
5. ***EMS Oversight Program and Performance Data Updates** (For Possible Action) – Joint Advisory Committee Activities, EMS Planning, Data Performance Reports, Franchise Agreement Updates, REMSA Exemption Requests, Mass Gatherings and Special Events Reviews, Trauma Data Report and Boundary Drops
   Andrea Esp
6. **Presentation and Discussion of Possible Updates to the EMS Oversight Program Annual Report Outline, to Include Overdose Metrics** (For Possible Action)
   Andrea Esp
7. **Discussion and Possible Approval of EMSAB Revised Bylaws** (For Possible Action) – Recommendation to revise Article II, Section 1 of the Emergency Medical Services Advisory Board (EMSAB) bylaws to allow each representative of a City, County or Health District to

designate an alternate to replace the representative in the representative's absence from meetings of the EMSAB. The alternate must be a City or County Assistant Manager or Health District Division Director.
Andrea Esp

8. **Presentation, Discussion, and Request to the Board to Advise Staff Regarding Process for Further Updates to the EMS Catchment Zone Map** (For Possible Action) **–** Updated due to addition of new area hospital, Northern Nevada Sierra Medical Center.
Andrea Esp

9. ***City of Reno & REMSA CAD to CAD Implementation Project Update**
Cody Shadle

10. **Discussion and Possible Changes to the Agency Reports Format** (For Possible Action) **–** Created a universal Agency Report to provide for uniform presentation of useful and relevant EMS data to the EMSAB.
Sabrina Brasuell

11. **Presentation of the Washoe County Special Trauma Report 2018 – 2020, and Possible Permission to Disseminate** (For Possible Action)
Anastasia Gunawan

12. ***Agency Reports and Updates**

    A. ***REMSA EMSAB Report, May 5th, 2022, Adam Heinz**
    Data Performance Report, EMS Operations Report

    B. ***City of Sparks Fire Department EMSAB Report, May 5th, 2022, Chief Jim Reid**
    Data Performance Report, EMS Operations Report

    C. ***Truckee Meadows Fire and Rescue EMSAB Report, May 5th, 2022, Chief Joe Kammann**
    Data Performance Report, EMS Operations Report

    D. ***Reno Fire Department EMSAB Report, May 5th, 2022, Reno Fire Department Staff Representative**
    Data Performance Report, EMS Operations Report

13. ***Board Comment**
Limited to announcements or issues for future agendas. No action may be taken.

14. ***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, 1001 E. 9th St, Reno, NV 89512, 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 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."

Posting of Agenda; Location:
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
Washoe County Health District Website https://www.washoecounty.us/health
State of Nevada Website: https://notice.nv.gov

Supporting materials are available at the Washoe County Health District located at 1001 E. 9th St., Reno, NV and on the website www.washoecounty.gov/health pursuant to the requirements of NRS 241.020. 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 may be reached by telephone at (775) 326-6049, or by email at dspinola@washoecounty.us.

Emergency Medical Services Advisory Board

MEETING MINUTES

Date and Time of Meeting: Thursday, February 3, 2022, 9:00 a.m.

Held virtually.

1. ***Roll Call and Determination of Quorum**

Chair Krutz called the meeting to order at 9:05 a.m.

The following members and staff were present:

Members present: Neil Krutz, Chair
Kevin Dick
Eric Brown
Joe Macaluso
Dr. John Hardwick
Doug Thornley

Members absent: None

Ms. Spinola verified a quorum was present.

Staff present: Dania Reid, Deputy District Attorney
Nancy Diao, Epidemiology and Public Health Preparedness Division Director
Andrea Esp, Preparedness and EMS Program Manager
Anastasia Gunawan, EMS Statistician
Dawn Spinola, Administrative Secretary, Recording Secretary

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2. ***Public Comment**

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

Chair Krutz noted that a letter of public comment had been received and was available on the EMSAB website, along with the supporting materials. He asked Chief Moore if he intended to read the letter, since he was in attendance.

Charles Moore, Fire Chief for Truckee Meadows Fire, introduced himself for the record. He stated he did not want to read the letter but did want to make a brief statement. He noted he had written to the Board regarding a cardiac arrest that occurred on January 21st. The event

precluded Truckee Meadows Fire and Rescue (TMFR) from responding to a medical emergency when they were far closer to the incident than the agency that did. He felt it was unconscionable that the response agencies cannot agree to provide the citizens with the best chance of survival. He requested the Board take up the matter and offer possible solutions.

Chief Cochran, Reno Fire Department introduced himself for the record. He commented that the information was incomplete. By the time dispatch contacted their engine, advising them that TMFR was available to respond, the captain said they were close, there was no need. It was not a situation where anyone was denied or prevented from responding. His direction to the department is to ask for help if needed, at all times.

Chief Cochran went on to opine that much of this fell back on the dispatch processes, as there are two totally separate dispatch centers, dispatch platforms, and communication means contributing to a lack of information going both directions. He then noted that he, representing Reno Fire and the City of Reno, had offered to provide dispatch services to TMFR. This, in his opinion, would effectively create a regional department, where the closest and most appropriate apparatus would be dispatched. He ended by stating the offer still stands.

Chair Krutz closed the public comment period.

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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 5, 2021

   Chair Krutz noted that the minutes listed Dean Dow as the CEO of Renown, and that needed to be corrected to REMSA.

Mr. Thornley stated that with those changes so moved. Mr. Macaluso seconded the motion, which passed unanimously.

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4. ***Prehospital Medical Advisory Committee (PMAC) Update**
   Dr. John Hardwick

Dr. Hardwick explained changes had been made to protocols to increase patient safety. One was to consider placement of pads on any patient with a stemmy or malignant arrythmia. We added some language and another sedation score to help guide paramedics with a sedated patient. We added some language regarding the use of ketamine in trauma patients and patients with head trauma, to discourage its use in head trauma patients as there seem to be downstream effects on the trauma team and their ability to assess the patient and adequately determine neurosurgical outcomes. After the patients receive ketamine, it makes it more difficult. We added Toradol, which is a strong anti-inflammatory medication similar to ibuprofen, can be given IM or IV to the pain protocol so that we can hopefully limit the use of narcotics. We added Tranexamic Acid, which helps to stabilize clots in trauma patients such as hemorrhagic shock patients. It was by IV only and we changed that so they also can be given IM, which is standard of care. We recently also changed some language regarding unstable tachycardias.

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5. ***EMS Oversight Program and Performance Data Updates –** Joint Advisory Committee Activities, EMS Planning, Data Performance Reports, Franchise Agreement Updates, REMSA Exemption Requests, Mass Gatherings and Special Events Reviews.

Andrea Esp

Ms. Esp introduced herself for the record. She noted that the Joint Advisory Committee for EMS meets bi-weekly, and her report contained information covering that they continue to work on a variety of goals and objectives. She explained that the Committee is currently looking at new system outcomes to measure how the regional EMS system is doing, while focusing on patient outcomes, and have agreed to review numerous different categories. The Committee recently drafted a letter to request patient outcome data from the State that will be signed by all of the regional EMS agencies. We do not know what the data looks like, in what format we will get it, or how we will best be able to utilize it. But we do believe this is a tremendous step forward in looking at how we can improve our system, not just from a time perspective but really a patient outcome perspective, which supports the interlocal agreement. We do look forward to coming back to the Board with a presentation on what we initially find.

Dania Reid stated this is not an action item so there would not be a necessity for a motion or any sort of approval of any kind.

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6. **Presentation, Discussion, and Possible Approval of EMSAB Revised Bylaws -** Revision to Article II, Membership, Section 1, Board Composition, the authority to designate an alternate to replace the representative. (For possible action).
   Andrea Esp

Chair Krutz announced that Item 6 had been pulled from the agenda after having a conversation with staff and Counsel.

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7. **Presentation, Discussion, and Possible Approval of the Washoe County EMS Oversight Program FY20 and FY21 Annual Report -** Washoe County 9-1-1 EMS System Structure, EMS Response Agencies and Their Jurisdictional Boundaries, Performance Data, EMS Partner Highlights, and the EMS Oversight Program's Accomplishments and Goals for FY22. (For possible action)
   Andrea Esp

Ms. Esp noted the Annual Report template has been used since 2017. The current report outlines how numerous healthcare agencies in the community have been operating and any accomplishments they have had over the last two years. We will be coming back in May and proposing a new template that will better showcase what the region looks like as far as an EMS perspective and how we are doing things more collectively. This report template currently does not allow us to expand on a different outline, so we are looking at a different way to present that information to you, to help you make a more informed decision on other actionable items in the future.

Ms. Esp pointed out that the Board would find in the report that our partners across the region over the last two years have been working very hard on COVID-related items and how that has impacted them. But with that they have accomplished things such as different community outreach programs, hiring a number of staff, doing a lot of training, and overcoming the barriers which COVID has presented them. Everything that our EMS agencies have done in the region is actually very tremendous given what we've experienced in the last two years.

Mr. Dick stated that he did appreciate the time that the EMS agencies put into the reports that they provided for the annual report, and as Andrea said, really great efforts and much appreciated what each of our agencies has done for our community with assisting throughout the COVID response. He noted he just wanted to acknowledge that.

Mr. Dick moved to accept the presentation and approved distribution of the Washoe County EMS Oversight Program FY20 and FY21 Annual Report. Mr. Brown seconded the motion, which was approved unanimously.

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8. **Presentation, Discussion and Possible Approval of the 2020 Washoe County Trauma Data Report, and Possible Permission to Disseminate -** Provides characteristics and trends for specific trauma and injuries in periods prior and during Coronavirus Disease pandemic (2017 – 2020)**.** (For possible action)
   Anastasia Gunawan

Anastasia Gunawan introduced herself for the record. She noted this year marks the seventh consecutive year that the program has utilized the Nevada Trauma Registry for understanding trauma injury patterns in Washoe County. Echoing the impact of the COVID-19 outbreak on health systems across the nation, the number of trauma injury related hospital admissions in Washoe County declined by 16% in 2020, compared to 2019. Among the cases that were reported, pedestrian and motor vehicle injuries was among the top three mechanisms of unintentional injuries across all age groups. Also in 2020, one out of five pedestrian injuries due to collision with car, truck or van did result in death. We also explored other mechanism of injuries and case fatality data on common injuries impacting our senior population. The 2020 Washoe County Trauma Data Report will be posted and available on the Health District website for public and our regional partners to view.

Mr. Dick stated he had read the report and asked if he would be correct if he thought he had interpreted that the County had a lower number of suicides as intentional injuries during 2020.

Ms. Gunawan said he was correct, and that she believed that the numbers could be due to the voluntary reporting nature of the Nevada Trauma Registry.

Mr. Dick noted that he found that interesting in relation to the reports about the results of the lockdowns and all of the COVID trauma that people were experiencing. The data in the report also indicated to him that the traumatic injuries, when factoring in race and ethnicity, were well over 70% for white individuals, which was very high. The Hispanic population only accounted for about 9%, although they make up about 25% of our population is closer to 25%. He requested she share her views on that topic.

Ms. Gunawan shared that Table 3b outlines the rate of which each of the races/ethnicities are affected. Instead of looking at it from a percentage, we looked at it over the population based on each race/ethnicity. Based on the findings from the data, the American Indians were disproportionately affected based on our population of American Indians in Washoe County. She said she believed Hispanics were number two on the list based on the impact that the trauma injury had in that population.

Mr. Dick moved to approve and provide permission to disseminate. Mr. Macaluso seconded the motion, which was approved unanimously.

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9. ***Agency Reports and Updates**

   A. ***REMSA Quarterly EMS Advisory Report, Adam Heinz**
      Data Performance Report, EMS Operations, Community Relations, Employee Engagement and Celebrations, Clinical Standards and Practices Report

Adam Heinz, Executive Director, Integrated Health Services introduced himself for the record. He indicated he would be happy to answer any questions and had a presentation that

would complement the report by providing more information (Attachment A).

Chair Krutz invited him to proceed.

Mr. Heinz started out with an organizational COVID update. Like many organizations across the County and the nation we too were seeing staffing impacts as a result of COVID. As of this minute, we have 19 members of our team that are out with COVID illness. In addition, in our community we continue to screen individuals that are calling, and this is the last seven days in which our medically trained dispatchers provide ILI screening or COVID-like-illness screening in their transports. And the impact on the 911 system is apparent, which we are also seeing in our hospitals as well and in our community.

Mr. Heinz continued, explaining relative to that is hospital offload delays, and I think the last time I was here we discussed that impact and kind of the efforts. This graph shows the number of responses REMSA Health had in January, the number of transports and then corresponding hospital offload delays. The dip in the middle of the month reflects the activity taken on the 14th of January at 8:00, when we communicated to our hospital partners that we were going to have to enact Nevada Revised Statute 450b.790 due to the increase in the number of calls and ill employees. This Statute requires the hospital to accept the transfer of patients within 30 minutes. Since then, approximately 80% of offload delays are under 30 minutes. We are continuing to work on those that are above 30 minutes. We did see an increase in the number of delays so it is important for the Board to understand that we continue to experience delays, however the length of delays is limited to 30 minutes or less. In January we did see an increase of 3% of the offloads, likely attributable to the number of people that are ill in our community. The average offload time in January prior to the 14th was approximately 24 minutes, with a maximum of up to four hours.

Mr. Heinz noted they have worked hard, and he was very proud of the work that our hospital partners have done to support these efforts, which are going well. We understand the position they are in; they too are having staffing shortages, increased volume and throughput. However, REMSA needed to ensure that EMS units were available for the next emergency.

Mr. Heinz went on to discuss the number of diversion incidents. We were struggling, from just a system perspective, because all of the hospitals were going on round robin divert, creating a lot of confusion for our crews as well as patients as to who was open and where they were going to go. And so, again through collaboration with many of our co-response partners, each week we are meeting to discuss different ways to manage this. And one of the ways is allowing one hospital to go on diversion at a time or enacting something called Code Catchment which is taking the patient to the closest emergency department. In January we saw an increase in the number of incidents of diverts.

Mr. Heinz refreshed the Board regarding patient navigation, explaining that when somebody calls 911 and they have a medical emergency and they are transferred over to REMSA Health, our medically trained dispatchers will prioritize the call, and there are three different paths they can be sent down. Approximately 60-75 no acuity or very low acuity patients a month are transferred to a Nurse Health Line for further triage and then they can help them with whatever their most appropriate care path is. Patients that require an ambulance that are complaining of very minor, first aid level type complaints can be handled by our Intermediate Life Support (ILS) division. And then the third selection is our Advanced Life Support (ALS) division, which includes our paramedics.

Mr. Heinz continued, explaining that in response to the Board's request for an update about our intermediate life support utilization in the community, during January, our ILS division responded to 603 calls, which is a little over eight percent of our total responses in the community. They transported 521 individuals, with the top five calls for service being almost half of our inter-facility transfers. The ILS division handles the majority of those. The next tier includes psychiatric behavioral emergencies, inter-facility or palliative care transfers, typically from urgent cares or doctor's offices transferring a patient to the hospital. And then falls.

Mr. Heinz went on to explain that on the 12th of January, in collaboration and communication with our co-response partners and the District Board of Health, we expanded ILS response outside the McCarran loop and have had no issues. For the month of January, we have had five ALS rendezvous requests which is less than one percent of the number of responses. All patient transport is reviewed by our clinical standards team, and none of those patients were in any kind of extremis, many times it was either for sedation for a behavioral patient or pain management.

Mr. Heinz noted that an alternative destination continues to be an option for patients when a paramedic ambulance gets on scene. If somebody can go to the urgent care, we want to try and navigate them that direction to reduce the load on our emergency departments. We would like to see more patients go this way and we are working on education for our community to understand that option. It is limited by the accepted payer, hours of operation, and patient consent. In January we took 14 patients to different alternative destinations for various things, with detox being the number one.

Mr. Heinz updated the Board of the status of a new innovation previously introduced, Assess and Refer. The intention of this is for those patients that have very low acuity, minor, first aid level type complaints, to allow the paramedics to assess them, provide a good understanding of what their complaint is, and for these clinical presentations, advise the patient that they do not necessarily need an ambulance. They can be seen at a clinic or they can be seen by a Telehealth responder. The patient is provided with some collateral that helps them navigate the suggestion, so we do not just leave them there. In addition, we know that transportation is a barrier and so for those patients that do not have transportation, REMSA Health will work to arrange that transportation for them to the clinic or pharmacy or wherever they need to go to seek this help. We just started on the 19th of January and since then we have done 10 assess and refers, two of which were for body aches or influenza-type illness or complaints, one urinary tract infection complaint, five limb pain issues or injuries to the limb, one vertigo complaint and one GI complaint. All of these fell within the approved protocol. We did respond to one patient five times and transported him twice. That patient has been referred over to our community health paramedics to try and work to help solve some of their medical complaints.

Mr. Heinz noted that one of the most important things is the need for us to continue to support and promote and make sure that our community is involved with this, so we are working very hard to educate the public. We are doing that through media and social media channels. Councilman Dahir shares some of the changes that are happening with the 911 call with his constituents, which we appreciate. A mailer goes out to frequent utilizers, we are educating our employees, and talking with policy makers and decision makers to help them better understand what we are doing, how they can help and what we can do to help them. We also work closely with our co-response partners in the JAC at our bi-weekly meetings.

Mr. Heinz closed with stating he was hopeful that in 2022 that the general public would learn to understand our efforts to try safely navigate them. And just because they may not get an ambulance or they may not go to the ER doesn't mean that they are receiving sub-optimal care. I'll leave you with this short video that we have begun to share on our social media and different outlets in both English and Spanish.

[Mr. Heinz presented the following video: https://www.remsahealth.com/choose-the-right-care/about/]

Dr. Hardwick stated he agreed with the program, and thinks it is fantastic. He noted vertigo had been triaged to this assess and refer, which is not necessarily explicitly on the Google presentations that were approved for this. Now obviously this is not necessarily my business, your agency can assess and refer what it wants, but I just worry about a little indication creep for the program. Because things like vertigo can obviously be pretty nuanced presentations. So I'm just wondering how that vertigo ended up in that assess and refer pathway.

Mr. Heinz replied that all of the cases in which do not meet protocol receive feedback. One hundred percent of these cases reviewed are paired to the current existing protocol. For that particular case, it was outside protocol. However, based on the documentation and notes, and you are correct, there can be some very severe and significant things in which that may be a clinical presentation that is not benign. For this particular patient there was a history of vertigo and they did not necessarily want to go to the hospital. But you are exactly correct and we have the mechanisms in place to ensure that we are providing that feedback as quickly as possible so we reduce the chance that we are navigating somebody inappropriately.

Dr. Hardwick agreed that made sense, and thanked Mr. Heinz.

B. ***City of Sparks Fire Department EMSAB Reports, November 2021 and February 2022, Chief Jim Reid**
Data Performance Report, EMS Operations Report

Chief Reid began by stating they stayed right around 1,000 calls per month. COVID wise, we are getting hit pretty good, but we are able to keep all of our engines staffed and have not needed to brown anything out. On the good news, we are going to be hiring at the end of the month and three of those personnel are already fully qualified as paramedics, so we should see them sitting on the fire engines hopefully by the beginning of May. We are knee deep in recertification for about half of our department right now, I think those are due in about March, so we will get there. And then I just want to say thanks to Adam and REMSA for those 911 emergency visits what is appropriate, and I think we need to keep the pressure there to keep our people available for the really important calls that need the 911 and the emergency room visit.

C. ***Truckee Meadows Fire and Rescue (TMFR) Advisory Board Updates, November 2021 and February 2022, Chief Joe Kammann**
Incident Response Data, COVID-19 News, EMS Operations Report

Good morning everyone, this is Alex Kukulis, Deputy Fire Chief filling in for Chief Kamman, as you mentioned he is unavailable this morning. He did update me that he sent in our report, so I will just let that speak for itself and if anyone needs to look at that please see that. A few other things though to mention, we just finished our academy, we have 15 new

firefighters and paramedics hitting the floor here in the next coming weeks, it will fill us to full strength, for now, as we continue to grow.

Mr. Kukulis went on to report they had added an additional ambulance, a medic unit, in Spanish Springs, Medic 46, the third ambulance that we now have in full-time service, which has been a great addition to our system, and I think helps the system as a whole, as it relieves REMSA of having to have primary responsibility out in those outlying areas, allowing them to concentrate their resources in the core more. Looking at the stats, it continues to be busier and busier, but I think our medic units, for the month of January ran 438 responses and 242 transports, so that has helped relieve the system a little bit during that busy month.

Mr. Kukulis finished with an update on our dispatch transition. As previously mentioned, we switched over to REMSA Dispatch on December 15, who is now also dispatching for Truckee Meadows. I believe it's going very well, still have some refinements to do. Our goal is to have those remaining projects 100% completed by the end of February. At that point in time we will be able to start leveraging some of our ability to know the location of REMSA ambulances as well as our own, as well as the instant priorities so that we can start reducing some of those unnecessary duplicate responses between our two agencies on those lower-acuity incidents. We are excited to start leveraging that technology and the ability to work together.

D. ***Reno Fire Department EMS Advisory Board Updates, November 2021 and February 2022, Reno Fire Department Staff Representative**
Data Performance Report, COVID-19 Update, EMS Operations Report

Chief Dave Cochran apologized for the delay, and that we too are adding people to our roster. We have an academy of 21 in play now, 24 more will be starting at the end of this month, and we are working with our regional partners to facilitate their staffing as well. There will be one Sparks person in our academy to get them trained up, as well as an individual from airport Fire.

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10. ***Board Comment**
Limited to announcements or issues for future agendas. No action may be taken.

Mr. Dick suggested that we have an item on a future agenda to talk about a specific amendment to the Interlocal Agreement that would allow for alternates for the EMSAB when the designated members are not available, similar to the item that we pulled. That change to the ILA would allow us to move forward with a Bylaws change, so I would recommend we look into that s a recommendation from the advisory board. Another item that would be useful for discussion would be our dispatch systems. I know there has been some work going on and anticipate an update in the future on CAD-to-CAD, but I believe it would be beneficial for the EMSAB to have a presentation and discussion of what other options might look like. I know that one that there have been some meetings on has been a dispatch platform that everybody could be on the same platform for dispatch and I think it would be useful for the EMSAB to have some discussion around that as well.

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11. ***Public Comment**

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

Chair Krutz opened the public comment period.

Charles Moore, Fire Chief of Truckee Meadows Fire, introduced himself for the record. I would urge the Board to agenda for a future meeting the discussion of boundary drops, which I think would also tie into Mr. Dick's request for dispatch. And I think it is important for the Board to understand what is and what is not working. The City of Sparks and TMFR have established boundary drops and closest-unit dispatching, even though we are on disparate CAD systems and disparate dispatch systems, and it is working very well. I want to bring certain facts to the Board's attention and under public comment is probably not the best venue for that, but I would look forward to some future agenda item if you so determine.

Dennis Nolan stated I'm sorry, I had sat through the entire meeting, and the signal disconnected just as we were getting into agency reports and all I was going to comment on, and I know Chief Cochran's on as well, but I was available to answer any questions regarding our quarterly report.

Adjournment

Chair Krutz adjourned the meeting at 9:44 a.m.

WASHOE COUNTY HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5th, 2022

TO: EMS Advisory Board Members

FROM: Andrea Esp, Public Health Preparedness and EMS Program Manager
775-326-6042, aesp@washoecounty.gov

SUBJECT: **EMS Oversight Program and Performance Data Updates –** Joint Advisory Committee Activities, EMS Planning, Data Performance Reports, Franchise Agreement Updates, REMSA Exemption Requests, Mass Gatherings and Special Events Reviews, Trauma Data Report and Boundary Drops

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EMS Partners – Joint Advisory Committee (JAC)
The EMS Oversight Program meets bi-weekly with the JAC (REMSA Health, Reno Fire Department, Sparks Fire Department, and Truckee Meadows Fire and Rescue), to develop processes and protocols to accomplish the goals of the Washoe County EMS Strategic Plan (2019-2023).

A summary of the current Goals and Objectives in the Strategic Plan that continue to be addressed include:

- Goal 1; Objective 1.1: Continued discussion on Priority 2 (P2) calls REMSA Health and Fire will respond to and the development of a strict cancelation policy on calls that Fire does not need to respond to.
- Goal 2; Objective 2.2: Research and review full and unrestricted automatic response arrangements between Fire EMS partners. Dispatching the closest unit to an EMS call regardless of jurisdiction.
- Goal 2; Objective 2.4: Develop and conduct joint training opportunities for REMSA Health and Fire to train together quarterly.
- Goal 4; Objective 4.1.5: Review and evaluate performance measures and standards across all agencies that meet the needs of patient care.
- Goal 7; Objective 7.1: Research legal protection for all agencies to ensure staff understand their legal protection.

Special Projects
The EMS Coordinator, Sabrina Brasuell, was hired and began her employment on February 14th, 2022. Her first projects of focus were the Regional Emergency Medical Services Authority (REMSA) Franchise Compliance Report and the Catchment Zone map, both mentioned below.

A new Catchment Zone map was created in partnership with Washoe County GIS based on drive time analysis. The new map was necessary due to the opening of a new UHS system hospital, Northern Nevada Sierra Medical Center (NNSMC). The Catchment Zone map was presented to the JAC on March 30th, 2022. It was considered an interim map due to lack of consensus and was placed into effect March 31st, 2022, to coincide with the opening of the new hospital. This will be an agenda item for EMSAB on May 5th, 2022, for process guidance in map development and review.

Boundary drops were an agenda item for the April 27th, 2022, JAC meeting. The information and maps created in partnership with Washoe County GIS were presented to the committee for discussion and suggestions. Drive time analysis was used for both the Boundary drop mapping and the Catchment Zone mapping. The program continues to work on both of these items.

EMS Planning

Review and planning meetings will continue to be held with all partners to discuss revisions of the Multi-Casualty Incident Plan (MCIP). These actions, to be completed by June 2022, are set to include the Burn Appendix as well as updated hospital capacity numbers which will include The ER at McCarran NW and NNSMC.

Data Performance:

The EMS Oversight Program conducts data analysis on response and jurisdictional performance. The Program received several data requests from fire agencies in the last quarter. The details and summary of those requests are outlined in the following table.

Data Performance Reports			
Requestor	**Summary of request**	**Date of request**	**Request completed**
Sparks Fire Department	Sparks Ambulance Operations and Planning: Mutual Aid Calls	12/22/2021	12/25/2021
Truckee Meadows Fire and Rescue (TMFR)	Mutual Aid Response Analysis	2/10/2022	3/17/2022

REMSA Franchise Agreement Updates

EMS Oversight Program staff completed the compilation and review of the compliance documentation for FY 20-21, per the revised REMSA Franchise Compliance Checklist. Presentation, discussion, and approval of Regional Emergency Medical Services Authority (REMSA) Franchise Compliance Report for the period of 7/1/2020 through 6/30/2021 was completed at the District Board of Health meeting on March 24th, 2022.

REMSA Exemption Requests

REMSA has seen a decline in System Overload and Status 99 delays. Table 1 summarizes REMSA Exemption Requests.

Table 1: REMSA Exemption Requests					
Exemption	**System Overload**	**Status 99**	**Weather**	**Other**	**Approved**
April 2021	52				52
May 2021	34				34
June 2021	135	47			182
July 2021	68	5			73
August 2021	121	111			232
September 2021	115	224			339
October 2021	71	120			191
November 2021	24	41			65
December 2021	36	0	64[a]	1[b]	101
January 2022	55	82			137
February 2022			15[c]		15
March 2022	8	0	0	0	8

[a] A total of 64 late calls resulted from 4 Blanket Weather Exemption incidences.
[b] Individual weather exemptions are approved by REMSA, not WCHD, per the Exemption Guidelines. These are short-lived incidences that do not greatly impact the community
[c] A total of 15 late calls resulted from 3 Blanket Weather Exemption incidences.

Community Services Department (CSD) – Memo Review

The EMS Oversight Program staff reviews and analyzes project applications received from the Planning and Building Division of the CSD and provides feedback. Program staff reviewed twenty-one (21) project applications for the first quarter of calendar year 2022 and had comments and/or concerns for five (5) that may affect EMS response.

Special Events/Mass Gatherings Applications

The EMS Oversight Program received two (2) Mass Gatherings applications for review in the first quarter of calendar year 2022 and the EMS Oversight Program had comments and/or concerns on both.

WASHOE COUNTY
HEALTH DISTRICT
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Item 6

STAFF REPORT
EMS ADVISORY BOARD MEETING DATE: May 5th, 2022

TO: EMS Advisory Board Members

FROM: Andrea Esp, Public Health Preparedness and EMS Program Manager
775-326-6042, aesp@washoecounty.gov

SUBJECT: **Presentation and Discussion of Possible Updates to the EMS Oversight Program Annual Report Outline, to Include Overdose Metrics**

SUMMARY

The EMS Oversight Program is recommending the report outline be expanded to include the metric of percent of patients experiencing suspected overdose in Washoe County.

PREVIOUS ACTION

No previous actions have been taken to revise the information presented in the EMS Oversight Program Annual Report.

BACKGROUND

The ESO, a data solutions provider for EMS and fire departments, publishes an annual and mid-year EMS Index. This index provides insights and best practices for EMS agencies. ESO uses a researched based, data driven, best practice model that is used for national benchmarking. These best practices by ESO are used to strive for improved patient outcomes. Several of the seven best practices outlined in the "2021 ESO EMS Index: Mid-Year Update" would be beneficial to evaluate in Washoe County, such as overdose, Ketamine administration, and stroke. Currently access to data necessary to measure outcomes related to Ketamine administration and stroke is limited. With available data, focus on overdose could begin immediately.

The EMS Oversight Program responsibilities, as set forth by the Interlocal Agreement (ILA), require the program, in 1.2 d., to "measure performance, analysis of system characteristics, data and outcomes of the Emergency Medical Services and provide performance measurement and recommendations to RENO, SPARKS, WASHOE, FIRE and REMSA." Also in the ILA, in 1.2 f., the Oversight Program is required to "identify sub-regions as may be requested by RENO, SPARKS, WASHOE, FIRE or the DISTRICT to be analyzed and evaluated for potential recommendations regarding EMS response or services in order to optimize the performance of system resources." The suggestion of the ESO, regarding overdose, is to "look for geographic hotspots in your community…" which supports both ILA requirements. It also demonstrates the EMS Oversight Program commitment to due diligence regarding their responsibilities as outlined in the ILA.

The EMS JAC would discuss future metric additions or modifications, and if approved, bring those back to EMSAB for final inclusion approval.

The agencies providing information and data will be limited to those listed in the ILA. Other regional partners will not be included in this report.

FISCAL IMPACT

There will be no fiscal impact.

RECOMMENDATION

Recommend the Board approve updates to the EMS Oversight Program Annual Report Outline, to include overdose metrics.

POSSIBLE MOTION

Should the Board agree with staff recommendation, a possible motion would be: "Move to approve updates to the EMS Oversight Program Annual Report Outline, to include overdose metrics."

ATTACHMENTS

ESO_WhitePaper_EMS_2021MidYearUpdate

2021 ESO EMS INDEX:

MID-YEAR UPDATE

AUTHORS

BRENT MYERS, MD CHIEF MEDICAL OFFICER, ESO
ALLEN JOHNSON CHIEF PRODUCT OFFICER, ESO
REMLE CROWE PHD, NREMT RESEARCH SCIENTIST AND SENIOR MANAGER OF CLINICAL AND OPERATIONAL RESEARCH, ESO
ANTONIO FERNANDEZ, PHD, NRP RESEARCH SCIENTIST, ESO

eso

OVERVIEW

At the beginning of the year, we released our **2021 ESO EMS Index.** We looked at data across six metrics from January 1, 2020 – December 31, 2020:

STROKE ASSESSMENT PERFORMANCE

KETAMINE ADMINISTRATION WITH WEIGHT RECORDED

NON-TRANSPORT DISPOSITIONS

TRANSPORTS WITHOUT LIGHTS AND SIREN

PERCENT OF PATIENTS WITH SUSPECTED OVERDOSE

COVID-19 AND INFLUENZA-LIKE ILLNESS IMPRESSIONS

INTENT

For the Mid-Year Index, we look at the same six metrics for the first half of 2021 (January 1, 2021 – June 30, 2021) to see how they compare to the 2020 numbers. We've also added one more metric—bystander CPR.

Why do we produce the Index? The intent is threefold:

- **TO SHARE UPDATED, NATIONAL, AGGREGATE DATA ACROSS SEVEN METRICS THAT ARE INFORMATIVE AND DIRECTIONAL.**
- **TO SHOWCASE THE POWER OF DATA AND ANALYTICS AS A MEANS TO PROVIDE ACTIONABLE INSIGHTS.**
- **TO HELP EMS LEADERS ACROSS THE COUNTRY ANSWER THE FOLLOWING QUESTIONS, AMONG OTHERS:**

Is my organization aligned with other organizations when it comes to responding to certain events, such as stroke identification and assessment?

Are we above or below the national average when it comes to overdose events?

How do we compare to other agencies when it comes to documentation surrounding ketamine administration?

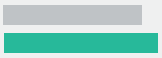
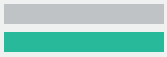
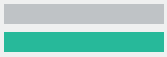
We continue to hear from many of you about the value of the Index and how you are using the report to drive internal process and procedure change, including when and how you perform stroke assessment, how you document ketamine administration, how you conduct and update training, and how you are preparing for this next round of COVID-19. We love the feedback. Please provide us your thoughts and ideas so we can continue to refine and improve the Index each year.

For this mid-year update, the data are based on more than 4.6 million 911 records from January 1, 2021 – June 30, 2021.

MID-YEAR UPDATE

The table below shows the comparison between the **Index** released earlier this year based on 2020 numbers and the mid-year update based on numbers from the first half of 2021. Overall, we've seen performance holding steady or even a slight improvement across the board. However, one metric that requires ongoing attention and conversation is overdose rate. In 2020, patients with suspected overdose were at 2.7% (the highest we've seen since creating the Index). The first half of 2021 sees that number jump even higher to 2.8%. This is greater than the percentage of calls for COVID-19/ILI in the second quarter of this year.

CHART 1

METRIC	2020 / 2021 MID-YEAR UPDATE	NARRATIVE
DOCUMENTED STROKE ASSESSMENT COMPLETION RATE	 72% 80%	We continue to see a positive upward trend around stroke assessment and documentation, rising eight percentage points from 2020 through the middle of 2021.
KETAMINE ADMINISTRATION WITH WEIGHT RECORDED	 83% 83%	Ketamine continues to be a hot-button issue. It's encouraging to see patient weight is being recorded 80%+ of the time, but it would be ideal to see this number higher.
NON-TRANSPORT DISPOSITIONS	 22% 22%	This number is remaining steady from 2020 through the first half of 2021. We don't anticipate a spike in non-transports going forward.
TRANSPORT WITHOUT LIGHTS AND SIREN	 83% 83%	The National Highway Traffic Safety Administration (NHTSA) have suggested a target of less than 5% lights and siren use during transport for a safer experience for patients, clinicians and communities.
OVERDOSE RATE	2.7% 2.8%	Overdoses continue to trend upward, highlighting the need for treatment resources for opioid use disorder. **Identifying and documenting** opioid encounters is an essential element to combat the epidemic.
COVID-19 AND ILI IMPRESSIONS	 6.8% 6.9%	We've seen COVID-19/ILI impressions drop from 6.9% in January to 2.0% in June (the lowest in the last 17 months). However, with new variants of COVID-19, we are currently in a surge.
BYSTANDER CPR	 N/A 46%	It takes a system to save a life. We look specifically at the number of cardiac arrest encounters and how often CPR was initiated prior to EMS arrival.

SEVEN BEST PRACTICES TO IMPROVE OUTCOMES

STROKE

A complete and appropriately documented stroke assessment has never been more important. Given extended treatment windows and the introduction of emergent thrombectomy, the EMS evaluation can literally be the difference between a successful or unsuccessful patient outcome.

OVERDOSE

Monitor incidents involving suspected overdose in your community and anticipate trends. Look for geographic hotspots in your community (based on data from your ePCR) to create preventative and harm reduction programs in areas with particularly dense activity.

KETAMINE

Ensure accurate weight estimates are recorded to guide dosing and serve as supportive documentation after the EMS encounter.

COVID-19/ILI

Use EMS data to help inform local surveillance as part of an overall public health effort.

NON-TRANSPORT

Use objective criteria to risk stratify patients when making transport/ non-transport decisions.

BYSTANDER CPR

Make sure to document any CPR activity that occurred before you arrived at the scene. Conduct CPR community outreach events in areas with low bystander CPR rates.

TRANSPORT

Create policies and guidelines around judicious L&S use during response and patient transport.

METHODOLOGY

The dataset for the ESO EMS Index is real-world data from the ESO Data Collaborative, comprised of more than 2,000 agencies across the United States. The data for the mid-year update are based on 4.6 million anonymized 911 patient encounters between January 1, 2021 and June 30, 2021.

4.6 MILLION RECORDS

LIMITATIONS

This Index is retrospective and looks at aggregate data from the first half of 2021. There are no universal rules around these measures. The purpose of the Index is to be informative and directional, but it is not intended to be a scientific study. Nor is it intended to be comprehensive in nature. We hope it serves as a body of literature that adds to the discussion and conversation around best practices for each of the measures identified in this Index to improve positive patient outcomes.

WHAT'S NEXT?

So, where do we go from here? Similar to what we recommend earlier this year, organizations should continue to use this information to understand why metrics are important and which metrics and drivers have the biggest effect on your organization and the patients you serve. With the rich data from the Index as a foundation, you can run your own analysis to serve as the basis for other modeling and outcomes.

The metrics shown in this study are by no means exhaustive. Every organization is unique and has its own strengths, structure, and goals. Because of these attributes, results achieved by one organization may not be attainable by another for a variety of reasons. However, these metrics should provide a foundation to compare your measurements and outcomes to what we are seeing nationally.

About the ESO Data Collaborative

ESO's mission is to improve community health and safety through the power of data. One of the ways that ESO puts its mission into practice is through the ESO Data Collaborative.

The ESO Data Collaborative is comprised of data from more than 2,000 EMS agencies, fire departments and hospitals across the United States that have voluntarily agreed to allow use of their de-identified records for research and benchmarking purposes. It represents one of the largest prehospital databases in the world. ESO's world-class research team constantly analyzes this data to provide insights on the most up-to-date trends, research, and studies to help the industry adapt and advance.

THE ESO DATA COLLABORATIVE RESEARCH DATASET MAY BE REQUESTED FOR USE IN RESEARCH PAPERS OR PRESENTATIONS AT NO COST. FOR MORE INFORMATION ABOUT REQUESTING THE DATASET, OR TO JOIN THE ESO DATA COLLABORATIVE, VISIT:

WWW.ESO.COM/DATA-AND-RESEARCH

ABOUT US

ESO (ESO Solutions, Inc.) is dedicated to improving community health and safety through the power of data. Since its founding in 2004, the company continues to pioneer innovative, user-friendly software to meet the changing needs of today's EMS agencies, fire departments, hospitals, and state EMS offices. ESO currently serves thousands of customers throughout North America with a broad software portfolio, including the industry-leading **ESO Electronic Health Record (EHR)**, the next generation ePCR; **ESO Health Data Exchange (HDE)**, the first-of-its-kind healthcare interoperability platform; **ESO Fire** RMS, the modern fire Record Management System; **ESO Patient Registry** (trauma, burn and stroke registry software); and **ESO State Repository**. ESO is headquartered in Austin, Texas. For more information, visit **www.eso.com**.

WASHOE COUNTY HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5th, 2022

TO: EMS Advisory Board Members

FROM: Andrea Esp, Public Health Preparedness and EMS Program Manager
aesp@washoecounty.gov

SUBJECT: **Discussion and Possible Approval of EMSAB Revised Bylaws** (For Possible Action) – Recommendation to revise Article II, Section 1 of the Emergency Medical Services Advisory Board (EMSAB) bylaws to allow each representative of a City, County or Health District to designate an alternate to replace the representative in the representative's absence from meetings of the EMSAB. The alternate must be a City or County Assistant Manager or Health District Division Director.

SUMMARY

The EMS Oversight Program recommends a revision to Article II, Section 1 of the Emergency Medical Services Advisory Board (EMSAB) bylaws to allow each representative of a City, County or Health District to designate an alternate to replace the representative in the representative's absence from meetings of the EMSAB. The alternate must be a City or County Assistant Manager or Health District Division Director.

PREVIOUS ACTION

- March 2015 the EMS Advisory Board approved and adopted the EMSAB bylaws.
- October 2016 the EMS Advisory Board approved and adopted the revised EMSAB bylaws.
- April 2018 Addendum #1, allowing each representative of a City, County or Health District to designate an alternate, was approved for the Interlocal Agreement (ILA).
- October 2018 the EMS Advisory Board approved and adopted the revised EMSAB bylaws, allowing each representative of a City, County or Health District to designate an alternate.
- May 2021 the EMS Advisory Board approved and adopted the revised bylaws.

BACKGROUND

The Advisory Board is established to provide for concurrent review of present topics within the Washoe County EMS system by the City of Reno, a municipal corporation in the State of Nevada, and the City of Sparks, a municipal corporation in the State of Nevada and Washoe County, a political subdivision of the State of Nevada.

The Advisory Board is established by the Interlocal Agreement for Emergency Medical Services Oversight, executed on August 26, 2014. The purpose of the Advisory Board is to review reports, evaluations, and recommendations of the Regional Emergency Medical Services Oversight Program, discuss issues related to regional emergency medical services and make recommendations to the respective jurisdictional Boards and/or the District Board of Health.

The suggested revision to the EMS Advisory Board bylaws is the insertion of the following language into Article II, Section 1:

"Each representative of a City, County, or Health District shall have authority to designate an alternate to replace the representative in the representative's absence from meetings of the Advisory Board. The alternate must be a City or County Assistant Manager or Health District Division Director."

FISCAL IMPACT

There is no fiscal impact.

RECOMMENDATION

The EMS Oversight Program recommends the Board approve a revision to Article II, Section 1 of the EMSAB bylaws to allow each representative of a City, County or Health District to designate an alternate to replace the representative in the representative's absence from meetings of the EMSAB. The alternate must be a City or County Assistant Manager or Health District Division Director.

POSSIBLE MOTION

Should the Board agree with staff's recommendation a possible motion would be: "Move to approve a revision to Article II, Section 1 of the EMSAB bylaws to allow each representative of a City, County or Health District to designate an alternate to replace the representative in the representative's absence from meetings of the EMSAB. The alternate must be a City or County Assistant Manager or Health District Division Director."

ATTACHMENT

EMSAB Bylaws_05052022

EMSAB Bylaws_redline_05052022

EMSAB Bylaws Revised 2021

EMSAB Bylaws Revised Signed 100418

040518_emsab_minutes_approved

050621_emsab_minutes

100418_emsab_minutes_approved

EMERGENCY MEDICAL SERVICES ADVISORY BOARD

BYLAWS

Approved
March 2015

Approved
October 2016

Approved
May 2021

Dates of Revision/Review
May 2022

WASHOE COUNTY HEALTH DISTRICT
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Public Health
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ARTICLE I – NAME AND PURPOSE

Section 1 - Name

The name of this body is the Regional Emergency Medical Services (EMS) Advisory Board (hereinafter referred to as "Advisory Board").

Section 2 - Purpose

The Advisory Board is established to provide for concurrent review of present topics within the Washoe County EMS system by the City of Reno, a municipal corporation in the State of Nevada ("RENO"), and the City of Sparks, a municipal corporation in the State of Nevada ("SPARKS") and Washoe County, a political subdivision of the State of Nevada ("WASHOE").

The Advisory Board is established by the Inter-Local Agreement (ILA) for Emergency Medical Services Oversight, executed on August 26, 2014. The purpose of the Advisory Board is to review reports, evaluations and recommendations of the Regional Emergency Medical Services Oversight Program (the "Program"), discuss issues related to regional emergency medical services and make recommendations to the respective jurisdictional Boards and/or the District Board of Health ("DBOH").

Section 3 - Duties

Duties of the Advisory Board shall include:

a. Make recommendations to the District Health Officer and/or the DBOH related to performance standards and attainment of those standards, medical protocols, communication, coordination, and other items of importance to a high-performing Regional Emergency Medical Services system.
b. Strive to implement recommendations of the Program, or submit those recommendations to their governing bodies for consideration and possible action if determined necessary and appropriate by the respective managers.
c. Make recommendations to the respective Boards regarding participating in working groups established by the Program for coordination, review, evaluation, and continuous improvement of Emergency Medical Services.
d. Work cooperatively with the Program to provide input to the development of the Five-Year Strategic Plan, as it relates to the continuous improvement of Emergency Medical Services.
e. Support and work cooperatively with the Program to achieve the Program duties as outlined in the ILA.

ARTICLE II – MEMBERSHIP

Section 1 - Board Composition

The Advisory Board shall be composed of the following members:

a. City Manager, Reno
b. City Manager, Sparks
c. County Manager, Washoe County
d. District Health Officer
e. Emergency Room Physician (DBOH Appointment)
f. Hospital Continuous Quality Improvement (CQI) Representative (DBOH Appointment)

Each representative of a City, County, Health District shall have authority to designate an alternate to replace the representative in the representative's absence from meetings of the Advisory Board. The alternate must be a City or County Assistant Manager or Health District Division Director."

Section 2 - DBOH Appointments

Two positions within the Advisory Board are appointed by the District Board of Health and will serve staggered terms to ensure stability of the Advisory Board. The Emergency Room Physician appointment, a representative of the Prehospital Medical Advisory Committee, will be for three (3) years while the Hospital Continuous Quality Improvement (CQI) representative will serve a four (4) year term. Both appointees are eligible for reappointment for up to two additional two (2) year terms.

Section 3 - Resignation and Termination of DBOH Appointees

Advisory Board membership may be resigned at any time to the DBOH in writing.

Upon the resignation or expiration of the DBOH appointee's term, the member shall continue to serve until his/her successor qualifies and is appointed.

Section 4 - Terms/Board Administration

The Advisory Board shall elect a chair and a vice-chair from among its membership to manage the meetings. The chair and vice-chair shall serve for one (1) year. Both positions are eligible for reappointment for up to one subsequent one (1) year term, limited to two consecutive years.

ARTICLE III – MEETINGS

Section 1 - Meetings

The Advisory Board shall hold a minimum of one meeting per fiscal year. Additional meetings may be held at the discretion of the chair or as frequently as needed to perform the duties of the Advisory Board.

The Advisory Board shall be subject to the requirements of Nevada Revised Statutes Chapter 241, Open Meeting Laws. A majority of the Advisory Board constitutes a quorum for the conduct of business and a majority of the quorum is necessary to act on any matter.

A quorum of the Advisory Board members must be present to transact business legally – a quorum consists of four (4) Advisory Board members. A majority vote is required for any official action of the Advisory Board unless otherwise specified in the rules of order, which are defined below.

The chair presides over the meetings:

a. The chair opens the meetings.
b. The chair determines that a quorum is present by a roll call vote.
c. The chair calls the meeting to order.
d. Approval of minutes of the prior meeting.
    i. Unanimous consent can be used instead of motions to expedite the proceedings.
e. Every meeting of the Advisory Board shall be conducted in accordance with the adopted agenda.
    i. The written agenda will be approved by the chair prior to distribution and will be distributed to all Advisory Board members at least three (3) working days prior to the meeting.
f. The vice-chair shall preside over meetings when the chair is absent.

Section 2 - Voting

Each Advisory Board member will have one (1) vote. Proxy votes are not permitted.

Section 3 - Attendance

Consistent meeting attendance and participation is critical to the success of the Advisory Board. Members who are unable to attend an Advisory Board meeting will notify the Chair of the Advisory Board and Program staff. Program staff will record attendance of all members at each Advisory Board meeting.

Section 4 - Minutes

Minutes shall be kept and recorded of all meetings and forwarded to all members of the Advisory Board as promptly as possible following the adjournment of each meeting.

Section 5 - Conflict of Interest

A member of the Advisory Board may not vote on a matter with respect to which the member has a conflict of interest.

ARTICLE IV – AMENDMENTS

Section 1 - Amendments

The bylaws may be amended as necessary at any Advisory Board meeting, but will be reviewed at minimum every two (2) years. All amendments requests must be indicated at the Advisory Board meeting as a future agenda item and require an approval of a two-thirds vote for adoption. Amendments take effect immediately upon approval of the Advisory Board.

Approved and adopted this the 5th day of May 2022, by the Emergency Medical Services Advisory Board.

_____

Neil Krutz, Chair

EMERGENCY MEDICAL SERVICES ADVISORY BOARD

BYLAWS

Approved
March 2015

Approved
October 2016

Approved
May 2021

Dates of Revision/Review
May 2022

WASHOE COUNTY HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

Public Health
Prevent. Promote. Protect.

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Approved and adopted this the 5th day of May, 2022, by the Emergency Medical Services Advisory Board.

_____

Neil Krutz, Chair

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

STAFF REPORT
EMS ADVISORY BOARD MEETING DATE: May 5th, 2022

TO: EMS Advisory Board Members

FROM: Andrea Esp, Public Health Preparedness and EMS Program Manager
775-326-6042, aesp@washoecounty.gov

SUBJECT: **Presentation, Discussion and Request to the Board to Advise Staff Regarding Process for Further Updates to the EMS Catchment Zone Map –** Updated due to addition of new area hospital, Northern Nevada Sierra Medical Center.

SUMMARY

The catchment zone map is utilized by REMSA in circumstance where the patient has no preference regarding the treating facility or when the hospital systems are on "Code Catchment." "Code Catchment" is utilized when the hospital system is overloaded. When this is in effect, all patients are taken to their catchment facility unless otherwise dictated by their medical condition. The map required an update due to the addition of the Northern Nevada Sierra Medical Center hospital which opened March 31st, 2022.

PREVIOUS ACTION

No previous actions have been taken to update the existing catchment zone map or document the known methodology behind its creation.

BACKGROUND

The catchment zone map is utilized by REMSA, as needed, during patient transports. It is thought that the previous version of the map was updated when the Renown South Meadows hospital opened in the early 2000's. At the time of the last revision, there was no record keeping regarding the methodology used to create the zones and map.

In February of 2022, at the request of the EMS Oversight program, Washoe County GIS department used a drive-time analysis for travel to the area hospitals. Using this methodology, which considers distance traveled along the road network and speed limits, the updated Catchment Zone map was developed. This analysis, while scientific and accurate mathematically, is of course not able to include real time considerations like accidents or physical conditions like topography.

The rationale, and maps themselves, were presented to EMS and Hospital partners several times. Consensus was met on the addition of the Northern Nevada Sierra Medical Center, but not on the entire proposed map. The interim map (Attachment EMSCatchments_11x17_20220325) went into effect on March 31st, 2022, to coincide with the opening of the new hospital.

Since consensus was not achieved among all partners through the initial map revision process, staff is requesting that the Board discuss and recommend a process for further updates to the catchment zones map.

FISCAL IMPACT

There will be no fiscal impact.

RECOMMENDATION

Recommend approval of the board-recommended process regarding the development of the EMS Catchment Zone map as discussed.

POSSIBLE MOTION

Should the Board agree with staff recommendation, a possible motion would be: "Move to approve the board-recommended process regarding the development of the EMS Catchment Zone map as discussed."

ATTACHMENTS

Catchment Zone Map Letter_03252022
EMSCatchmenst_11x17_20220325_Final
EMSCatchments_36x24_20220325_Final
ExistingCatchments_11x17_202220304
Original REMSA Catchment Zone Map

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

March 25, 2022

To Whom It May Concern,

In 2022, Universal Health Services, Inc. (UHS) expanded their hospital system with another Northern Nevada hospital. The addition of this hospital, Northern Nevada Sierra Medical Center on 625 Innovation Drive in Reno, Nevada, necessitated a change to the EMS Catchment Zone Map that had not been revised for years. The Catchment Zone map is utilized by REMSA in circumstances where the patient has no preference regarding treating facility or when the hospital systems are on "Code Catchment."

The Washoe County GIS department used a drive-time analysis for travel to the area hospitals. Using this drive-time analysis, which takes in to account the distance traveled along the road network and speed limits, an updated Catchment Zone map was developed.

This Catchment Zone map was presented to EMS and Hospital partners through several meetings. These meetings allowed for discussion, clarification, and suggestion. After these meetings, the proposed Catchment Zone map was presented via email for voting by all meeting invitees. This process did not result in consensus on the entire proposed map.

There was consensus, however, regarding adding a new catchment area for Northern Nevada Sierra Medical Center. This interim map will go into effect upon the opening of Northern Nevada Sierra Medical Center hospital on March 31, 2022. A copy of this map has been attached to this letter for reference.

We are thankful to all the partners for their involvement in this process. Since consensus was not achieved through the initial map revision process, we will discuss a process for further updates to the catchment zones map with the EMS Advisory Board (EMSAB) on May 5, 2022. This will allow them to be engaged in the map development and review and to make a recommendation on a catchment zone map to the District Board of Health for approval.

Sincerely,

Kevin Dick

District Health Officer

OFFICE OF THE DISTRICT HEALTH OFFICER
1001 East Ninth Street, Building B, Reno, Nevada 89512
ODHO Office: 775-328-2416 I Fax: 775-328-3752 I washoecounty.gov/health

Item 8B

EMS Catchment Map
Effective March 31st, 2022

- Hospitals

Closest Facility

- NNMC
- NNSMC
- RRMC
- RSMMC
- SMRMC

This map is intended for planning purposes only and should not be used for engineering or legal purposes.

WASHOE COUNTY, NEVADA 1861 TECHNOLOGY SERVICES

0 1 2 3 Miles

N

SR 445
SR 446
Pyramid Wy
395
395N
N Virginia St
Vista Bl
N McCarran Bl
Northern Nevada
Saint Mary's
Renown
80
I80
US 40W
S Virginia St
S McCarran Bl
580
NN Sierra
Renown South
Storey
Floriston
Mt Rose Hy
431
341
Geiger Grade Rd
395S
Virginia City
I580
SR 28
Lakeshore Bl
Kings Beach
Carson-Tahoe
Carson Hot
Dayton
US Highway 50 E

3/25/2022 M:\HealthDept\REMSACatchments\REMSACatchments_20220321.aprx

EMS Catchment Map
Effective March 31st, 2022

- Hospitals

Closest Facility

- NNMC
- NNSMC
- RRMC
- RSMMC
- SMRMC

This map is intended for planning purposes only and should not be used for engineering or legal purposes.

N

TECHNOLOGY SERVICES

0 2,000 4,000 Feet

Existing Catchments

Hospitals

Existing Catchment

- FED
- NNM
- RMCM
- RSMC
- SMH
- WASHOE

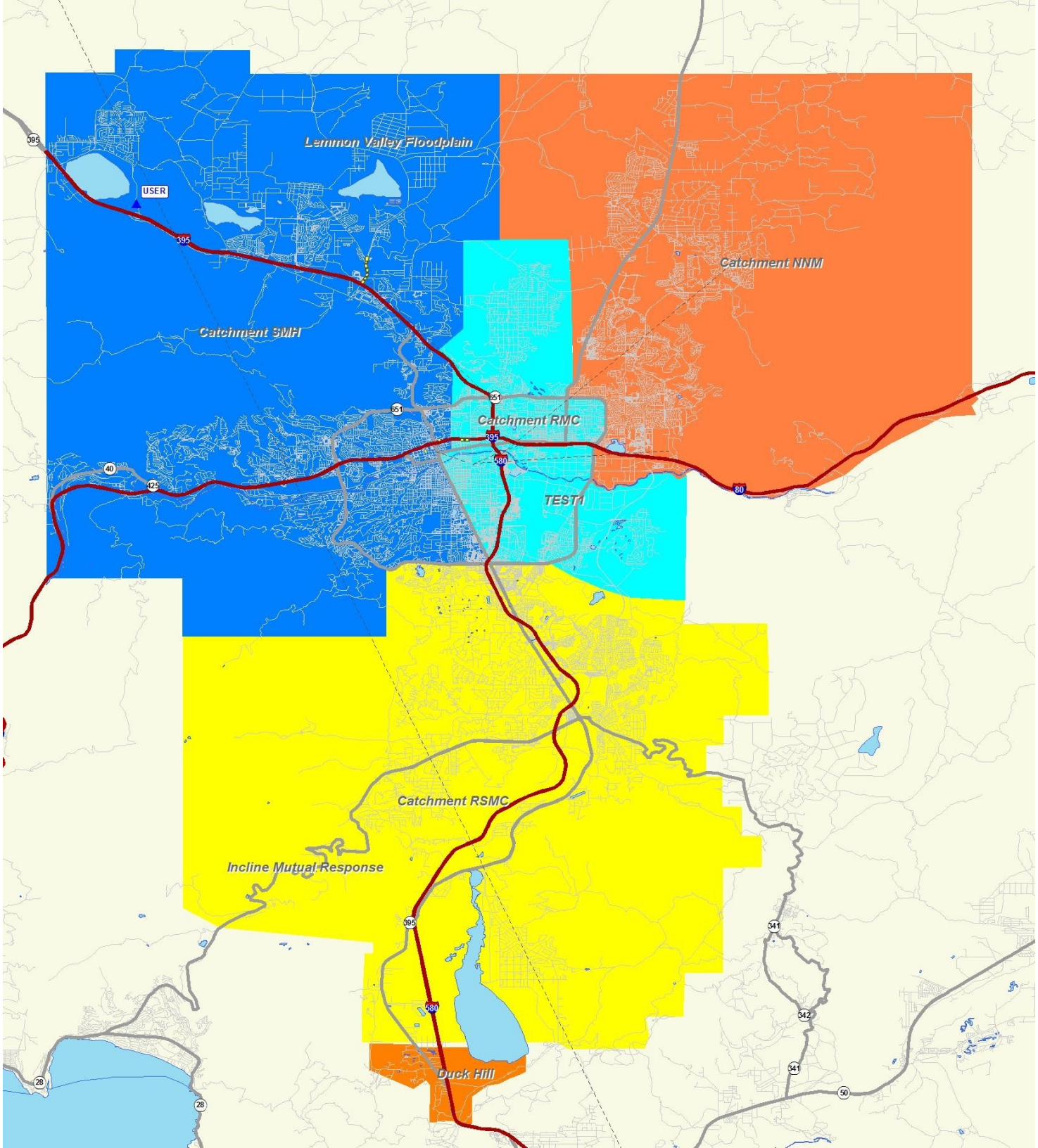
TECHNOLOGY SERVICES

N

0 1 2 3 Miles

SR 445
SR 446
Pyramid Wy
395
395N
N Virginia St
Vista Bl
N McCarran Bl
Northern Nevada
Saint Mary's
Renown
I80
US 40W
S Virginia St
S McCarran Bl
NN Sierra
Renown South
Mt Rose Hy
Geiger Grade Rd
395S
I580
SR 28
Lakeshore Bl
Carson-Tahoe

3/4/2022 M:\HealthDept\REMSACatchments\REMSACatchments.aprx


Lennon Valley Floodplain
USER
Catchment NNM
Catchment SMH
Catchment RMC
TEST1
Catchment RSMC
Incline Mutual Response
Duck Hill
395
80
580
341
342
50
28
40
425
651

City of Reno Public Safety Dispatch

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5, 2022

TO: EMS Advisory Board Members

FROM: Cody Shadle, Dispatch Manager
775-334-2212, shadlec@reno.gov

SUBJECT: City of Reno and REMSA CAD-to-CAD Implementation Project Update

---

SUMMARY

The purpose of this item is to provide an update on the City of Reno and REMSA CAD-to-CAD implementation project.

PREVIOUS ACTION

During the EMS Advisory Board on February 3, 2022 the board was provided an update, via memo, indicating that there were significant obstacles preventing the CAD-to-CAD project from moving forward and resulting in the postponement of product implementation and setting an official Go-live date.

UPDATE

The City of Reno staff has evaluated the original statement of work and supplemental revisions. It has been identified that the original and subsequent statements of work were not detailed enough to address the complexities of connecting and sharing data between the disparate CAD systems in a meaningful way. While the basic task of information sharing has proven successful through testing, product implementation would require significant changes to current business practices and would still rely on manual notification and incident type exclusions from the CAD-to-CAD interface.

The CAD-to-CAD product implementation and Go-live remain postponed at this time until a permanent and comprehensive solution can be identified.

CAD-to-CAD Project Analysis

Updated 04/28/2022

CAD-to-CAD

Critical Points:

- The CAD-to-CAD project was intended to connect two different computer aided dispatch platforms (Reno and REMSA) together in an attempt to share critical information between centers.
- The differences between the systems and the way each system is used made it impossible to connect and share data in a meaningful way.
- The attempt to connect the systems identified major points of failure including an inability to protect criminal justice data, disparate maps.

RENO DISPATCH

CAD-to-CAD

Situation:

Purpose of Project

- To develop a process for relaying information related to shared calls across multiple computer aided dispatch (CAD) systems and dispatch centers.

Overview

- Project initiated by the District Board of Health following the Tri Data report in 2013.
- Two different Computer Aided Dispatch (CAD) systems are utilized in the Region.
  - Tiburon – City of Reno (hosts Reno, Sparks, and Washoe County).
  - Tritech – REMSA.
- These systems lack the ability to communicate information between platforms.
- Initial scope of the project did not account for complexities of connecting two different systems together.
- Multiple attempts to connect and share data have been made with limited success.

RENO DISPATCH

CAD-to-CAD

Background: The scope identified the following functions as critical in the development and use of a CAD-to-CAD interface to share information across CAD platforms.

Share Unit Status Dispatch, Enroute, On scene, Clear	NO	No functional option between CAD's Testing Outcome: Skews call times, impacts accuracy of call data
Share Unit Location Automatic Vehicle Location (AVL)	NO	No functional option between CAD's Testing Outcome: Different maps used, cannot show location
Share Resource Availability On duty, off duty, station assignment, etc.	NO	No functional option between CAD's Testing Outcome: Impacts fire times and reporting
Auto Share Geo-Verified Location Based on addresses and known locations	YES/NO	Functional with significant business impact Testing Outcome: Requires manual verification, limited by mapping systems
Auto Trigger Response Requests Automatically send medical calls to REMSA	YES	Functional with significant business impact Testing Outcome: Functional for medical calls with no police/fire co-response
Share Basic Incident Information Shared in narrative format	YES	Functional with significant business impact Testing Outcome: Functional for medical calls with no police/fire co-response
Broadcast CAD to CAD Status Share offline status	YES	Functional Testing Outcome: Works as described and expected without modifications

RENO DISPATCH

CAD-to-CAD

Assessment:

Category	Roadblock	IDEAL Fixed with the Same CAD	ACCEPTABLE Included in New CAD Scope
Mapping	Agencies utilize different mapping information ● Unable to geo-verify address automatically ● Mapping systems use different naming conventions ● Location information transfers as text only ● Requires assumption of intended location ● Additional time to verify and confirm location	YES	YES
Protected Information	NCIC/CJIS included in CAD fields from Reno ● Criminal justice information cannot be shared ● Sharing violates NCIC/CJIS security policies ● Protected information cannot be parsed out ● Limits calls that can be shared ○ No calls with any law enforcement involvement ▪ Accidents ▪ Shootings ▪ Active Assailants	YES	YES
CAD Functions	All REMSA information will drop into call notes ● No reporting capabilities ● No response priority shared ● Will not provide enough info to change fire response Unable to determine if data is crucial or relative ● Different dispatcher training and certification ● Different priorities and call types	YES	YES

RENO DISPATCH

CAD-to-CAD

RECOMMENDATIONS:

The CAD-to-CAD project highlights the critical need to mend a fractured system. The challenge of multiple CAD systems leads to a degradation in information sharing and inherently creates delays in response as dispatchers are forced to make multiple calls to share or gather information and to manually verify it while managing a 911 response. The intent of CAD-to-CAD was to minimize these issues and to improve information sharing. Testing the abilities of the link between the region's two CAD systems has identified major gaps in the ability to link maps, share critical information, and remain compliant with criminal justice database security rules that would jeopardize future access if violated.

Based on the current roadblocks identified through testing and the effort underway to replace the regional CAD system in the next 18 to 24 months, it is recommended that we pause the CAD-to-CAD project and pursue a permanent solution that addresses all necessary functionality.

- Two paths to a final solution
  - Ideal – All agencies select and utilize the same CAD and develop internal processes for sharing data.
  - Acceptable – Reno to include CAD to CAD data sharing as part of the scope in the new CAD selection process and identify process and operational solutions to connect CAD platforms and share data.
- Department recommendations
  - Recommend incorporating the full scope of the project into the new CAD selection process and implementing as part of the new system being selected in summer 2022 and implemented in winter of 2023.

RENO DISPATCH

QUESTIONS?

Cody Shadle
Dispatch Manager
775-334-2370
shadlec@reno.gov

RENO DISPATCH

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

STAFF REPORT
EMS ADVISORY BOARD MEETING DATE: May 5th, 2022

TO: EMS Advisory Board Members

FROM: Sabrina Brasuell, EMS Coordinator
775-326-6043, sbrasuell@washoecounty.gov

SUBJECT: **Discussion and Possible Changes to the Agency Reports Format –** Created a universal Agency Report to provide for uniform presentation of useful and relevant EMS data to the EMSAB.

SUMMARY

The intent of creating a universal Agency Report is to provide a venue for uniform presentation of useful and relevant EMS data to the EMSAB and the community.

PREVIOUS ACTION

No previous actions have been taken to request uniform data presentation from reporting agencies.

BACKGROUND

Agency reports submitted for review by EMSAB have presented a variety of data sets throughout the past years. The uniformity of the new format will simplify the review of each agency's data.

FISCAL IMPACT

There is no fiscal impact.

RECOMMENDATION

Staff recommends the Board approve the new format as discussed.

POSSIBLE MOTION

Should the Board agree with staff recommendation, a possible motion would be: "Move to approve the new format as discussed."

ATTACHMENTS

Outside Agency Staff Report Template_Fillable_PDF

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: December 31 , 2026

Item 10A

TO: EMS Advisory Board Members

FROM:

SUBJECT: Truckee Meadows Fire & Rescue EMSAB Report

SUMMARY

Update of the emergency medical services (EMS) operations for the second quarter of 2026 .

DATA PERFORMANCE REPORTS

	December	December	December	TOTAL
TOTAL EMS RESPONSES				
TOTAL EMS TRANSPORTS				
TOTAL EMS RESPONSES CANCELLED				
MUTUAL AID RESPONSES				
MUTUAL AID TRANSPORTS				
MUTUAL AID RESPONSES CANCELLED				

EMS OPERATIONS UPDATES

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5, 2022

TO: EMS Advisory Board Members

FROM: Anastasia Gunawan, EMS Statistician
agunawan@washoecounty.us

SUBJECT: Presentation of the Washoe County Special Trauma Report 2018 – 2020, and Possible Permission to Disseminate

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SUMMARY

The EMS Oversight Program Statistician is providing a summary of purpose for the special trauma report, a descriptive analysis of trauma and injury from 2018 to 2020 in Washoe County.

District Health Strategic Priorities supported by this item:

4. **Impactful Partnerships:** Extend our impact by leveraging partnerships to make meaningful progress on health issues.

PREVIOUS ACTION

No previous action.

BACKGROUND

The Washoe County EMS Oversight Program released the Washoe County Trauma and Injury Prevention Engagement Survey 2021 to regional hospitals and EMS partners on December 17, 2021. Based on the selected injury topics provided in the survey, survey respondents indicated that motor vehicle accidents, homicide/suicide, fall injuries and poisoning are very relevant health topics for their organization's projects and initiatives. The program will release a similar survey and a special trauma report every three years.

Due to varying sample sizes of de-identified patient records submitted to the Nevada Trauma Registry, our report highlighted statistical analysis for demographic trend and patient outcome due to homicide, suicide and fall injuries aggregated from year 2018, 2019 and 2020. As communities needs and healthcare systems in the region continues to evolve, this project provide evidence-based injury research to engage health systems adapt towards sustainable emergency medical response and patient care in Washoe County.

FISCAL IMPACT

There is no additional fiscal impact should the EMS Advisory Board move to approve the motion.

RECOMMENDATION

Staff recommends the Board to confirm vote in favor of the possible dissemination of the Washoe County Special Trauma Report 2018 – 2020.

POSSIBLE MOTION

Should the Board agree with staff's recommendation, a possible motion would be: "Approve to disseminate the Washoe County Special Trauma Report 2018 – 2020"

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

Washoe County Special Trauma Report

2018 – 2020

April 2022

Public Health
Prevent. Promote. Protect.

WASHOE COUNTY HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

Public Health
Prevent. Promote. Protect.

VISION

A healthy community

MISSION

To protect and enhance the well-being and quality of life for all in Washoe County

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Background

On December 17, 2021, the EMS Oversight Program received feedback from hospital and pre-hospitalization partners via the Washoe County Community Trauma and Injury Prevention Engagement Survey 2021. The survey finding is meant to highlight selected health topics that are relevant to organizations engaging in this survey. Led by the Washoe County EMS Oversight Program, this project complements the Washoe County Health District of strategic objective of impactful partnership to make meaningful progress on health issues.

From the 22 individuals solicited for the survey, 10 respondents completed the Washoe County Trauma and Injury Prevention Engagement Survey. Survey response rate is 50% with participation from respondents affiliated with organization listed below:

- Renown South Meadows Emergency Department
- North Lake Tahoe Fire Protection District
- Truckee Meadows Fire and Rescue
- Washoe County Health District
- Reno Fire Department
- Safe Kids Coalition

Based on the selected injury topics provided in the survey, survey respondents agree that motor vehicle accident, homicide /suicide, poisoning, and fall injuries are very relevant health topics for their organization's projects and initiatives. Below are descriptive statistics describing the selected injury topics based on the question, "How relevant is this health topic to your organization?".

How relevant is this health topic to your organization?

Injury Topics	Respondents Rating on Relevancy (Cumulative)
Homicide/Suicide	87.5%
Falls	87.5%
Poisoning	87.5%
Motor Vehicle Crash	66.6%

Over 3/4 of survey respondents state that injury topics related to homicide/suicide, and falls are very relevant to their organization. For each of the injury topics, respondents were asked to select variables of interests associated with the injury ranging from demographics to prehospitalization characteristics. Respondents rating on relevancy is summarized in table shown above.

Methodology

Sample sizes for each injury topics was taken into consideration prior to conducting analyses. From the top three relevant injury topics, homicide/suicide and fall injuries are the injury topics with the best prospects for analysis due to large sample of observations aggregated from State of Nevada Trauma Registry database from 2018, 2019 and 2020 calendar year. Pearson Chi Square and Fisher Exact Test analysis was performed to quantify the significance of categorical variables such as age, gender, race/ethnicity, alcohol/drug use, and patient residence to each corresponding injury topic. Paired t-test analysis was executed on vital signs to characterize patient outcomes quantitatively before and after receiving 911 intervention. Vital signs are important component of monitoring adult or child prehospitalization and hospitalization care. Monitoring vital signs allow prompt detection of delayed recovery or adverse events of patient's conditions. Vital signs are categorized under clinical measures in this report.

Falls

I. Background

Preventing older adult falls is a public health priority. Each year, 3 million older adults are treated in emergency departments for a fall injury[1]. In Washoe County, fall injury among older adults is associated with longer hospital stay[2]. In 2020, patients with fall injuries in Washoe County spend 10% of a single calendar year in trauma center. Among adults aged 65 years and older, falls are the leading cause of emergency department visits and account for 12% of all 911 medical calls in Washoe County[3]. In this special trauma report, we seek to understand patient characteristics among patients with fall injury, clinical characteristics, and survivorship (alive or dead) to inform prehospitalization triage, medical intervention and provide evidence-based resource for injury prevention program planning and design in Washoe County.

II. Patient Characteristics

Among 1,970 patients with fall injuries reported from January 1, 2018 to December 31, 2020 more than three-fourth, 1,888 (95.7%) patients survived from fall injuries whereas 84 patients (4.3%) did not (Table 1). Death to case ratio for all fall injury over the span of reported year is 4 deaths per 100 new cases. From the demographics results of the sample study, patients with fall injuries are likely female (56.0%), White (87.3%), non-Hispanic 1,849 (94.2%), and 65 years old and older (71.9%), with no indication of cardiac arrest at the scene of injury (99.7%). With every categorical increase in injury severity score, and Glasgow Coma Scale, death to case ratio also increases (Table 2).

$$\textbf{Death-to-case ratio (per 100 new cases)} = \frac{\#\ of\ deaths\ due\ to\ falls}{\#\ of\ new\ cases\ reported\ due\ to\ falls}\ x\ 100$$

Emergency department sedation is associated with higher death-to-case ratio compared to patients who did not receive sedation. Based on the nature of prehospitalization care as a lifesaving medical intervention, we calculate the death-to-case ratio among all cases as a measure of severity of injury. The death-to-case ratio is calculated by dividing the number of deaths attributed to falls during the reported period divided by number of new cases of fall injury identified during the same period for each measure.

Falls

Table 1. Demographic and Prehospitalization Characteristics Associated with Outcomes of Fall Injuries in Washoe County, January 1, 2018 to December 31, 2020.

Patient Demographic & Characteristics		Frequency N (%)	Outcomes of Fall Injuries		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
Age[c]	0-14	44 (2.2%)	44 (2.2%)	0 (0.0%)	0.0	<0.0001[a]
	15-44	174 (8.8%)	173 (8.7%)	1 (0.1%)	0.6	
	45-64	335 (16.7%)	326 (16.5%)	9 (0.5%)	2.7	
	≥65	1419 (71.9%)	1345 (68.2%)	74 (3.7%)	5.2	
Sex	Male	867 (44.0%)	813 (41.3%)	54 (2.7%)	6.2	0.0001[a]
	Female	1103 (56.0%)	1073 (54.5%)	30 (1.5%)	2.7	
Race[c]	African American	22 (1.1%)	22 (1.1%)	0 (0.0%)	0.0	0.0004[a]
	American Indian	21 (1.1%)	20 (1.0%)	1 (0.1%)	5.0	
	Asian Pacific Islander	45 (2.3%)	45 (2.3%)	0 (0.0%)	0.0	
	Hispanic	109 (5.8%)	109 (5.5%)	5 (0.3%)	4.6	
	White	1721 (87.3%)	1643 (83.3%)	78 (4.0%)	4.5	
	Other	26 (1.3%)	23 (1.3%)	0 (0.0%)	0.0	
	Unknown	22 (1.1%)	22 (1.1%)	0 (0.0%)	0.0	
Ethnicity	Hispanic or Latino	114 (5.8%)	109 (5.6%)	5 (0.2%)	4.4	0.9537
	Not Hispanic or Latino	1849 (94.2%)	1770 (90.2%)	79 (4.0%)	4.3	
State Residence	Nevada	1703 (86.4%)	1638 (83.1%)	65 (3.3%)	3.8	0.0143[a]
	California	269 (13.6%)	250 (12.7%)	19 (0.9%)	7.1	
Prehospitalization Measures (first recorded measurements at the scene of injury)		**Frequency N (%)**	**Outcomes of Fall Injuries**		**Death to Case Ratio[b]**	***p*-value**
			Alive N (%)	**Death N (%)**		
Prehospitalization Glasgow Coma Scale	Mild	983 (94.4%)	944 (90.1%)	39 (3.8%)	4.0	<0.0001[a]
	Moderate	30 (5.4%)	25 (2.4%)	5 (0.5%)	16.7	
	Severe	28 (2.7%)	16 (1.5%)	12 (1.2%)	42.9	
Prehospitalization Cardiac Arrest[c]	No	1963 (99.7%)	1882 (95.6%)	81 (4.1%)	4.1	<0.0001[a]
	Yes	6 (0.4%)	3 (0.2%)	3 (0.2%	50.0	
Transport Mode[c]	Ground	1296 (67.6%)	1229 (64.1%)	67 (3.5%)	5.2	<0.0001[a]
	Helicopter	14 (0.7%)	13 (0.6%)	1 (0.7%)	7.1	
	Fixed-Wing	3 (0.1%)	3 (0.1%)	0 (0.0%)	0.0	
	Private Vehicle or Walk In	598 (31.1%)	589 (30.1%)	9 (0.5%)	1.5	
	Police	4 (0.2%)	4 (0.2%)	0 (0.0%)	0.0	
	Public Safety	1 (0.1%)	1 (0.1%)	0 (0.0%)	0.0	

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

Falls

Table 2. Emergency Department Clinical Characteristics Associated with Outcomes of Fall Injuries in Washoe County, January 1, 2018 to December 31, 2020.

Emergency Department Measures (first recorded measurements in the ED/Hospital within 30 minutes or less of ED/Hospital arrival)		Frequency N (%)	Outcomes of Fall Injuries		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
ED Glasgow Coma	Mild	1862 (94.8%)	1814 (92.4%)	48 (2.4%)	2.6	<0.0001[a]
	Moderate	38 (1.9%)	32 (1.6%)	6 (0.3%)	15.8	
	Severe	64 (1.7%)	34 (1.7%)	30 (1.5%)	46.9	
ED Alcohol Use	No/Not Tested	1322 (67.1%)	1297 (65.8%)	25 (1.3%)	1.9	<0.0001[a]
	No/Confirmed by Test	396 (20.1%)	358 (18.2%)	38 (1.9%)	9.6	
	Yes/Confirmed by Test Legal Limit	97 (4.9%)	87 (4.4%)	10 (0.5%)	10.3	
	Yes/Confirmed by Test Illegal Limit	154 (7.8%)	143 (7.3%)	11 (0.6%)	7.1	
ED Drug Use[c]	No/Not Tested	1901 (97.0%)	1822 (93.0%)	79 (4.0%)	4.2	0.0075[a]
	No/Confirmed by Test	23 (1.2%)	20 (1.0%)	3 (0.2%)	13.0	
	Yes/Confirmed by Test Prescription Drugs	15 (0.7%)	14 (0.7%)	1 (0.1%)	6.7	
	Yes/Confirmed by Test Illegal Use	20 (1.0%)	19 (0.9%)	1 (0.1%)	5.0	
ED Injury Severity	Minor	1089 (55.2%)	1073 (54.4%)	16 (0.8%)	1.5	<0.0001[a]
	Moderate	668 (33.9%)	650 (32.9%)	18 (0.9%)	2.7	
	Severe	121 (6.1%)	104 (5.3%)	17 (0.8%)	14.0	
	Very Severe	91 (4.6%)	58 (2.9%)	33 (1.7%)	36.3	
	Missing	3 (0.2%)	3 (0.2%)	0 (0.0%)	0.0	
ED Sedation	No	1748 (89.5%)	1688 (86.5%)	60 (3.0%)	3.4	<0.0001[a]
	Yes	204 (10.5%)	183 (9.4%)	21 (1.1%)	10.3	

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

Falls

Table 3. Clinical Measures Associated with Fall Cases and Statistical Evaluation of Patient Outcome Before and After Prehospitalization Care.

Clinical Measure(s)	Alive (N=956)		Dead (N=52)		Paired t-test (N=1,012)	
	Mean	Average Standard Deviation (Mean 95%CI)	Mean	Average Standard Deviation (Mean 95%CI)	Mean[a]	*p*-value
Prehospitalization Oxygen Saturation (%)	94.8%	4.8% (94.5%-95.1%)	93.0%	9.5% (90.3%-95.6%)	-0.5%	0.0081[b]
ED Oxygen Saturation (%)	95.3%	3.9% (95.0%-95.5%)	94.2%	5.7% (90.9%-96.1%)		
Prehospital Systolic Blood Pressure (mm Hg)	144.4	28.8 (142.6-146.2)	136.0	32.0 (127.6-146.9)	0.88	0.2593[b]
ED Systolic Blood Pressure (mm Hg)	143.0	26.4 (141.9-145.3)	133.0	33.1 (123.7-142.2)		
Prehospital Pulse Rate (number per minute)	84.7	17.8 (83.7-85.8)	88.0	21.2 (82.2-94.4)	3.01	<0.0001[b]
ED Pulse Rate (number per minute)	81.7	17.0 (80.6-82.8)	85.0	21.2 (79.2-91.0)		

[a] Negative mean (difference) represents a smaller prehospitalization value(s) compared to emergency department value(s). Positive mean (difference) represents a larger prehospitalization value(s) compared to emergency department value(s).
[b] *p*-value ≤ 0.05 infer significant statistical difference between prehospitalization and emergency department measures.

- Based on the analysis of 1,012 patient sample with fall injuries, increase in average oxygen saturation observed at the time of emergency department arrival compared to oxygen saturation at the scene of injury.
- Based on the analysis of 1,012 patient sample with fall injuries no statistical difference observed between average blood pressure observed at the time of emergency department arrival compared to blood pressure recorded at the scene of injury.
- Based on the analysis of 1,012 patient sample with fall injuries, there is a statistical difference in average pulse rate observed at the time of emergency department arrival compared to pulse rate recorded at the scene of injury.

III. Clinical Significance

We deployed a statistical technique called paired sample t-test to determine whether there was a statistically significant average difference in clinical measurements first recorded at the scene of injury (prehospitalization), and within 30 minutes of emergency department arrival from all patients (n=1,012) with fall injuries regardless of survivorship (alive or dead). The mean paired t-test is calculated by subtracting emergency department measures from prehospitalization measures.

Mean paired t-test (difference) calculated as: prehospitalization measures – emergency department measures.

Oxygen saturation measure results indicates that the average prehospitalization oxygen saturation is 94.7%, and for Emergency Department Oxygen Saturation 95.2%. The average difference between oxygen saturation before and after 911 medical intervention is -0.52. Since the *p*-value for oxygen saturation is 0.0081 and is less than the standard significance level of 0.05, the ED oxygen saturation average is greater than the prehospitalization oxygen saturation average.

Blood pressure measure results indicates that the average Prehospitalization Systolic BP is 144.4 mm Hg, and for Emergency Department Systolic BP is 143.4 mm Hg. The average difference between blood pressure before and after 911 medical intervention is 0.88. Since the *p*-value for blood pressure is 0.2593 and is greater than the standard significance level of 0.05, the ED blood pressure average is equivalent to prehospitalization blood pressure average.

Pulse rate measure results indicates that the average prehospital pulse rate is 84.9 beats per minute, and for emergency department recorded pulse Rate is 82 beats per minute. The average difference between pulse rate before and after 911 medical intervention is 3 beats per minute. Since the *p*-value for pulse rate is less than 0.0001 and is less than the standard significance level of 0.05, the emergency department average pulse rate is lower than the prehospitalization average pulse rate.

IV. Conclusion

During the study period between January 1, 2018 to December 31, 2020, in Washoe County:

- Falls are more common among older senior female adults than older senior male adults.
- Despite cases more likely among female, death to case ratio for fall injuries are higher among male patients.
- More than 95% of patients with fall injuries who utilized prehospitalization resources sustain mild Glasgow Coma Score (GCS).
- Oxygen saturation and pulse rate are significantly different at the scene of injury and within 30 minutes of emergency department arrival.
- Results and implication of findings can only be generalizable to a sample population with similar demographic diversity described in Table 1.
- Evidence based resource[4] for fall prevention including algorithm for risk, screening, assessment, and intervention is available through CDC program STEADI - Stopping Elderly Accidents, Death and Injuries.

V. Limitations

In this report, prehospitalization measures tested for statistical significance did not consider confounding factors such as age, and gender. For example, blood pressure measurement differs across age groups, sex, and patients with co-morbidities. Pre-existing high blood pressure conditions among patients were not assessed in the analysis. Blood pressure readings among patients with pre-existing high blood pressure does influence normal baselines for pre and post 911 interventions reading. Further statistical analysis such as stratification of blood pressure across different age groups can address this limitation.

Vital signs comparison presented in this report was not reviewed case-by-case based on any medical review standards. Clinical measures are entered by hospital nurses into the Nevada Trauma Registry. In any event that a prehospitalization measure is not captured, the case is excluded from the analyses. A case-by-case review may lead to more robust conclusions but reconciliation for de-identified health records is time laborious, and not possible through the registry.

Homicide

I. Background

Violence is a serious public health issue that affects communities and the people who live in it. Homicide and assault are top preventable types of violence that cause harm in communities across the country. Both homicide and assault rates are especially higher in racially segregated and high-poverty neighborhoods and the data shows significant increases in many areas across the nation[5]. In 2020, the U.S reported the highest homicide rates ever recorded since 1995[6]. Common types of violent crimes in Washoe County consists of murder, rape, aggravated assaults, and robbery. In 2021, over 2/3 of violent offense committed in Washoe County was due to aggravated assault[7].

II. Patient Characteristics

Among 316 patients with injuries sustained from homicide incidents reported from January 1, 2018 to December 31,2020, 5% or 16 cases did not survive (Table 4). From the demographics results of the sample study, homicide events are more common among White (57.5%), non-Hispanic 1,849 (65.8%), males (86.7%) between the age of 15 and 44 years old (Table 4). Based on the nature of prehospitalization care as a life-saving medical intervention, we calculate the death-to-case ratio among all cases as a measure of severity of injury. The death-to-case ratio is calculated by dividing the number of deaths attributed to homicide during the reported period divided by number of new cases of homicide events identified during the same period for each measure.

$$\textbf{Death-to-case ratio (per 100 new cases)} = \frac{\#\ of\ deaths\ due\ to\ homicide}{\#\ of\ new\ cases\ reported\ due\ to\ homicide}\ x\ 100$$

With every categorical increase in injury severity score, and Glasgow coma scale (GCS), death to case ratio also increases (Table 4). Patients with severe prehospitalization GCS score (3 to 8) have higher death to case ratio. From the sample of patients involved in injury sustained due to homicide, large percentage of cases did not have indication of alcohol use (41.5%) and no indication of drug test performed by the ED (94.6%). About 2/3 homicide cases utilize ground ambulatory transport and 31% arrive in the ED by private vehicle or walk in (Table 4).

Homicide

Table 4. Demographic and Prehospitalization Characteristics Associated with Outcomes of Homicide in Washoe County, January 1, 2018 to December 31, 2020.

Patient Demographic & Characteristics		Frequency N (%)	Outcomes of Homicide		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
Age[c]	0-14	5 (1.5%)	4 (1.3%)	1 (0.2%)	20.0	0.0184[a]
	15-44	212 (67.1%)	202 (64.0%)	10 (3.2%)	4.7	
	45-64	84 (26.6%)	80 (25.3%)	4 (1.3%)	4.8	
	≥65	15 (4.8%)	14 (4.4%)	1 (0.4%)	6.7	
Sex	Male	273 (86.7%)	259 (82.2%)	14 (4.4%)	5.1	0.2948
	Female	42 (13.3%)	40 (12.7%)	2 (0.6%)	4.8	
Race[c]	African American	27 (8.5%)	26 (8.2%)	1 (0.3%)	3.7	0.0006[a]
	American Indian	22 (6.9%)	21 (6.6%)	1 (0.3%)	4.5	
	Asian Pacific Islander	4 (1.3%)	4 (1.3%)	0 (1.3%)	0.0	
	Hispanic	71 (22.5%)	64 (20.2%)	7 (2.3%)	9.9	
	White	182 (57.5%)	176 (55.7%)	6 (1.8%)	3.3	
	Other	5 (1.5%)	5 (1.5%)	0 (0.0%)	0.0	
	Unknown	71 (22.6%)	64 (20.4%)	7 (2.2%)	9.9	
Ethnicity	Hispanic or Latino	243 (74.4%)	234 (74.5%)	9 (2.8%)	2.5	0.0380[a]
	Not Hispanic or Latino	208 (65.8%)	194 (61.4%)	14 (87.5%)	6.7	
State Residence	Nevada	108 (34.2%)	106 (33.5%)	2 (12.5%)	1.9	0.0606[a]
	California	5 (1.5%)	4 (1.3%)	1 (0.2%)	20.0	
Prehospitalization Measures (first recorded measurements at the scene of injury)		**Frequency N (%)**	**Outcomes of Homicide**		**Death to Case Ratio[b]**	***p*-value**
			Alive N (%)	**Death N (%)**		
Prehospitalization Glasgow Coma Scale	Mild	134 (87.0%)	132 (85.7%)	2 (1.3%)	1.5	<0.0001[a]
	Moderate	7 (4.5%)	7 (4.5%)	0 (0.0%)	0	
	Severe	13 (8.4%)	2 (1.3%)	11 (7.1%)	84.6	
Prehospitalization Cardiac Arrest[c]	No	312 (98.7%)	299 (94.6%)	13 (4.1%)	4.2	<0.0001[a]
	Yes	4 (1.3%)	1 (0.3%)	3 (1.0%)	75.0	
Transport Mode[c]	Ground	174 (61.5%)	161 (56.9%)	13 (4.6%)	7.5	0.0068[a]
	Helicopter	12 (4.2%)	12 (4.2%)	0 (0.0%)	0.0	
	Fixed-Wing	1 (0.5%)	1 (0.4%)	0 (0.0%)	0.0	
	Private Vehicle or Walk In	87 (30.7%)	86 (30.4%)	1 (0.3%)	1.1	
	Police	9 (3.2%)	9 (3.2%)	0 (0.0%)	0	

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

Homicide

Table 5. Emergency Department Clinical Characteristics Associated with Outcomes of Homicide in Washoe County, January 1, 2018 to December 31, 2020.

Emergency Department Measures (first recorded measurements in the ED/Hospital within 30 minutes or less of ED/Hospital arrival)		Frequency N (%)	Outcomes of Homicide		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
ED Glasgow Coma	Mild	273 (86.6%)	271 (86.0%)	2 (0.6%)	0.7	<0.0001[a]
	Moderate	5 (1.6%)	5 (1.6%)	0 (0.0%)	0.0	
	Severe	37 (11.7%)	23 (7.3%)	14 (4.4%)	37.8	
ED Alcohol Use	No/Not Tested	68 (21.5%)	61 (19.3%)	7 (2.2%)	18.9	0.0640[a]
	No/Confirmed by Test	131 (41.5%)	127 (40.2%)	4 (1.3%)	3.1	
	Yes/Confirmed by Test Legal Limit	38 (12.0%)	38 (12.0%)	0 (0.0%)	0.0	
	Yes/Confirmed by Test Illegal Limit	79 (25.0%)	74 (23.4%)	5 (1.6%)	6.3	
ED Drug Use[c]	No/Not Tested	297 (94.6%)	281 (89.5%)	16 (5.1%)	5.4	0.4012
	No/Confirmed by Test	8 (2.5%)	8 (2.5%)	0 (0.0%)	0.0	
	Yes/Confirmed by Test Prescription Drugs	3 (1.0%)	3 (1.0%)	0 (0.0%)	0.0	
	Yes/Confirmed by Test Illegal Use	6 (2.0%)	6 (2.0%)	0 (0.0%)	0.0	
ED Injury Severity	Minor	167 (52.8%)	166 (52.5%)	1 (0.32%)	0.6	<0.0001[a]
	Moderate	94 (29.8%)	93 (29.4%)	1 (0.32%)	1.1	
	Severe	34 (10.7%)	32 (10.1%)	2 (0.63%)	5.9	
	Very Severe	21 (6.7%)	9 (2.9%)	12 (3.8%)	57.1	
	Missing	236 (74.7%)	225 (71.2%)	11 (3.5%)	4.7	0.5753
ED Sedation	No	80 (25.3%)	75 (23.7%)	5 (1.6%)	6.3	
	Yes	273 (86.6%)	271 (86.0%)	2 (0.6%)	0.7	<0.0001[a]

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

Homicide

Table 6. Clinical Measures Associated with Homicide Cases and Statistical Evaluation of Patient Outcome Before and After Prehospitalization Care.

Clinical Measure(s)	Alive (N=132)		Dead (N=8)		Paired t-test (N=140)	
	Mean	Average Standard Deviation (Mean 95%CI)	Mean	Average Standard Deviation (Mean 95%CI)	Mean[a]	*p*-value
Prehospitalization Oxygen Saturation (%)	95.4%	5% (94.5%-96.3%)	50.6%	43.5% (14.2%-87.0%)	-1.5%	0.0058[b]
ED Oxygen Saturation (%)	96.5%	3.2% (95.9%-97.1%)	58.3%	48.9% (17.5%-99.3%)		
Prehospital Systolic Blood Pressure (mm Hg)	127.1	27.4 (122.3-131.7)	48.2	47.2 (8.7-87.7)	1.03	0.6208
ED Systolic Blood Pressure (mm Hg)	125.2	22.9 (121.2-129.1)	60.6	75.8 (2.7-124.0)		
Prehospital Pulse Rate (number per minute)	96.1	22 (92.3-99.9)	56.3	56 (9.4-103.1)	0.82	0.5863
ED Pulse Rate (number per minute)	95.3	20 (91.9-98.8)	54.6	62.2 (91.9-98.8)		

[a]Negative mean (difference) represents a smaller prehospitalization value(s) compared to emergency department value(s). Positive mean (difference) represents a larger prehospitalization value(s) compared to emergency department value(s).
[b] *p*-value ≤ 0.05 infer significant statistical difference between prehospitalization and emergency department measures.

- Based on the analysis of 140 patient sample involve in homicide event, increase in average oxygen saturation observed at the time of emergency department arrival compared to oxygen saturation recorded at the scene of injury.
- Based on the analysis of 140 patient sample involve in homicide event, no statistically significant difference in average blood pressure observed at the time of emergency department arrival compared to blood pressure recorded at the scene of injury.
- Based on the analysis of 140 patient sample involve in homicide event, no statistically significant difference in average pulse rate observed at the time of emergency department arrival compared to average pulse rate recorded at the scene of injury.

III. Clinical Significance

We deployed a statistical technique called paired sample t-test to determine whether there was a statistically significant average difference in clinical measurements first recorded at the scene of injury (prehospitalization), and within 30 minutes of emergency department arrival from all patients (n=140) with homicide injury regardless of survivorship (alive or dead). The mean paired t-test is calculated by subtracting emergency department measures from prehospitalization measures.

Mean paired t-test (difference) calculated as: prehospitalization measures – emergency department measures.

Oxygen saturation measure results indicates that the average prehospitalization oxygen saturation is 92.8%, and for Emergency Department Oxygen Saturation 94.4%. The average difference between oxygen saturation before and after 911 medical intervention is 1.5%. Since the *p*-value for oxygen saturation is 0.0058 and is less than the standard significance level of 0.05, the ED oxygen saturation average is greater than the prehospitalization oxygen saturation average.

Blood pressure measure results indicates that the average prehospitalization systolic blood pressure is 122.5 mm Hg, and for Emergency Department Systolic BP is 121.5 mm Hg. The average difference between blood pressure before and after 911 medical intervention is 1.03. Since the *p*-value for blood pressure is 0.6208 and is greater than the standard significance level of 0.05, the ED blood pressure average is equivalent to prehospitalization blood pressure average.

Pulse rate measure results indicates that the average prehospital pulse rate is 93.8 beats per minute, and for emergency department recorded pulse Rate is 93.0 beats per minute. The average difference between pulse rate before and after 911 medical intervention is 1 beat per minute. Since the *p*-value for pulse rate is 0.5863 and is greater than the standard significance level of 0.05, the emergency department average pulse rate is equivalent to prehospitalization average pulse rate.

IV. Conclusion

During the study period between January 1, 2018 to December 31, 2020, in Washoe County :

- Homicide cases are more likely among male between the age of 15-44 years old.
- Approximately 2/3 of homicide cases utilized ground ambulance as primary means for emergency care transport.
- 87% of homicide patient sustain mild Prehospitalization Glasgow Coma Scale survive. However, high death to case ratio is likely among patients with severe Prehospitalization Glasgow Coma Scale.
- Oxygen saturation is statistically higher by 1.5% within 30 minutes of emergency department arrival compared to reported oxygen saturation at the scene of injury among reported homicide cases admitted to ED.
- Results and implication of findings can only be generalizable to a sample population with similar demographic diversity described in Table 4.

V. Limitations

In this report, prehospitalization measures tested for statistical significance did not consider confounding factors such as age, and gender. For example, blood pressure measurement differs across age groups, sex, and patients with co-morbidities. Pre-existing high blood pressure conditions among patients were not assessed in the analysis. Blood pressure readings among patients with pre-existing high blood pressure does influence normal baselines for pre and post 911 interventions reading. Further statistical analysis such as stratification of blood pressure across different age groups can address this limitation.

Vital signs comparison presented in this report was not reviewed case-by-case based on any medical review standards. Clinical measures are entered by hospital nurses into the Nevada Trauma Registry. In any event that a prehospitalization measure is not captured, the case is excluded from the analyses. A case-by-case review may lead to more robust conclusions but reconciliation for de-identified health records is time laborious not possible through the registry.

Suicide

I. Background

Suicide and suicide attempts are preventable. The National Suicide Prevention Lifeline (NSPL)) defines suicide as the act of injuring oneself with the intent to die[1]. In the U.S., middle-aged adults accounted for 47.2% of all suicides, and the 9th leading cause of the death in age group 35-64 years old[8]. Suicide and suicide attempt rates differ across communities, race/ethnicities, among persons who identify as sexual minority (LGBTQ+) and varies depending on occupation such as veterans[9]. The CDC released a technical package for preventing suicide to inform local, state, and territorial public health ecosystem on the latest evidence- based strategies to prevent suicides and identify at-risk-population[10]. A systematic review concluded suicide risk among self-harm patients to be 100 times higher than in the general population. The review identified high risk groups associated with suicide among patients with history of fatal and non-fatal repetition of self-harm[4].

II. Patient Characteristics

Among 53 patients admitted to the Emergency Department from January 1, 2018 to December 31, 2020 due to suicide attempts, more than three-fourth (79%) survived (Table 7). Death to case ratio for suicide over the span of reported year is 21 deaths per 100 new suicide cases. From the demographic results of the sample study, patients admitted due to suicide attempts are likely male (67.9%), White (79.3%), Hispanic (88.5%), and likely to be in the 15-64 years age group (88.7%), with no history of cardiac arrest (96.2%). Historical trends indicate suicide increase during economic recessions following economic and financial strain among working age individuals (25 to 64 years old). The demographic profile among suicide patients in Washoe County mimics findings at the national level. Economic stress exacerbates symptoms of declining physical and mental health. With every categorical increase in injury severity score, and Glasgow Coma Scale, death to case ratio also increases (Table 8).

Emergency department sedation is associated with lower death to case ratio compared to patients who did not receive sedation. Based on the nature of prehospitalization care as a life-saving medical intervention, we calculate the death-to-case ratio among all cases as a measure of injury severity for suicide attempts. The death-to-case ratio is calculated by dividing the number of deaths attributed to suicide during the reported period divided by number of new cases of suicide identified during the same period for each measure.

$$\textbf{Death-to-case ratio (per 100 new cases)} = \frac{\#\ of\ deaths\ due\ to\ suicide}{\#\ of\ new\ cases\ reported\ due\ to\ suicide}\ x\ 100$$

Suicide

Table 7. Demographic and Prehospitalization Characteristics Associated with Survivorship Outcome for Suicide in Washoe County, January 1, 2018 to December 31, 2020.

Patient Demographic & Characteristics		Frequency N (%)	Outcomes of Suicide		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
Age[c]	0-14	.	.	.	.	0.3454
	15-44	34 (64.2%)	29 (54.7%)	5 (9.4%)	14.7	
	45-64	13 (24.5%)	9 (17.0%)	4 (7.5%)	30.8	
	≥65	6 (11.3%)	4 (7.6%)	2 (3.7%)	33.3	
Sex	Male	36 (67.9%)	27 (50.9%)	9 (17.0%)	25.0	0.1680
	Female	17 (32.1%)	15 (28.3%)	2 (3.8%)	11.8	
Race[c]	African American	.	.	.	.	0.0351[a]
	American Indian	.	.	.	.	
	Asian Pacific Islander	1 (1.9%)	1 (1.9%)	0 (0.0%)	0.0	
	Hispanic	6 (11.3%)	6 (11.3%)	0 (0.0%)	0.0	
	White	42 (79.3%)	33 (62.3%)	9 (16.9%)	22.0	
	Other	4 (7.4%)	2 (3.7%)	2 (3.7%)	100.0	
	Unknown	6 (11.5%)	6 (11.5%)	0 (0.0%)	0.0	
Ethnicity	Hispanic or Latino	6 (11.5%)	6 (11.5%)	0 (0.0%)		0.2209
	Not Hispanic or Latino	46 (88.5%)	35 (67.3%)	11 (22.5%)	23.9	
State Residence	Nevada	41 (77.4%)	32 (60.4%)	9 (16.9%)	21.9	0.3034
	California	12 (22.6%)	10 (18.9%)	2 (3.7%)	16.7	
Prehospitalization Measures (first recorded measurements at the scene of injury)		**Frequency N (%)**	**Outcomes of Suicide**		**Death to Case Ratio[b]**	***p*-value**
			Alive N (%)	**Death N (%)**		
Prehospitalization Glasgow Coma Scale	Mild	26 (70.3%)	26 (70.3%)	0 (0.0%)	0.0	<0.0001[a]
	Moderate	2 (5.4%)	2 (5.4%)	0 (0.0%)	0.0	
	Severe	9 (24.3%)	0 (0.0%)	9 (24.3%)	100.0	
Prehospitalization Cardiac Arrest[c]	No	51 (96.2%)	41 (77.4%)	10 (18.9)	19.6	
	Yes	2 (3.8%)	1 (1.9%)	1 (1.9%)	50.0	
Transport Mode[c]	Ground	40 (75.5%)	31 (58.5%)	9 (17.0%)	22.5	<0.0359[a]
	Helicopter	.	.	.	.	
	Fixed-Wing	.	.	.	.	
	Private Vehicle or Walk In	8 (15.1%)	8 (15.1%)	0 (0.0%)	0.0	
	Police	.	.	.	.	
	Public Safety	.	.	.	.	

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

Suicide

Table 8. Emergency Department Clinical Characteristics Associated with Survivorship Outcomes of Suicide in Washoe County, January 1, 2018 to December 31, 2020.

Emergency Department Measures (first recorded measurements in the ED/Hospital within 30 minutes or less of ED/Hospital arrival)		Frequency N (%)	Outcomes of Suicide		Death to Case Ratio[b]	*p*-value
			Alive N (%)	Death N (%)		
ED Glasgow Coma	Mild	35 (66.0%)	34 (64.2%)	1 (1.9%)	2.9	<0.0001[a]
	Moderate	3 (5.7%)	3 (5.7%)	0 (0.0%)	0.0	
	Severe	15 (28.3%)	5 (9.4%)	10 (18.9%)	66.7	
ED Alcohol Use	No/Not Tested	12 (22.6%)	8 (15.1%)	4 (7.6%)	33.3	0.0160[a]
	No/Confirmed by Test	26 (49.1%)	22 (41.5%)	4 (7.6%)	15.4	
	Yes/Confirmed by Test Legal Limit	4 (7.6%)	4 (7.6%)	0 (0.0%)	0.0	
	Yes/Confirmed by Test Illegal Limit	11 (20.8%)	8 (15.1%)	3 (5.7%)	27.3	
ED Drug Use[c]	No/Not Tested	34 (68.0%)	24 (48.0%)	10 (20.0%)	29.4	0.0246[a]
	No/Confirmed by Test	7 (14.0%)	6 (12.0%)	1 (2.0%)	14.3	
	Yes/Confirmed by Test Prescription Drugs	2 (4.0%)	2 (4.0%)	0 (0.0%)	0.0	
	Yes/Confirmed by Test Illegal Use	7 (14.0%)	7 (14.0%)	0 (0.0%)	0.0	
ED Injury Severity	Minor	28 (52.8%)	28 (52.8%)	0 (0.0%)	0.0	<0.0001[a]
	Moderate	8 (15.1%)	7 (13.2%)	1 (1.9%)	12.5	
	Severe	4 (7.6%)	3 (5.7%)	1 (1.9%)	25.0	
	Very Severe	13 (24.5%)	4 (7.5%)	9 (17.0%)	69.2	
ED Sedation	No	43 (82.7%)	35 (67.3%)	8 (15.4%)	18.6	0.3300
	Yes	9 (17.3%)	7 (13.5%)	2 (3.9%)	22.2	

[a] *p*-value ≤ 0.05 infer statistically significant association between selected measure(s) and survivorship outcome (alive or dead).
[b] Death to case ratio represents number deaths attributed to every 100 injuries during a specified period.
[c] Calculated using Fisher's Exact test due to cells counts less than 5.

NOTE: We did not perform paired sample t-test for patient outcome due to suicide because of small sample size. Statistical implications without large sample size *may not* be reliable.

III. Conclusion

During the study period between January 1, 2018 to December 31, 2020, in Washoe County :

- Suicide cases reported are higher among non-Hispanic male compared to non-Hispanic female, and in working age population.
- Approximately 2/3 of suicide cases utilized ground ambulance as primary means for emergency care transport.
- 53% of suicide patients reported having minor severity injury upon admission to the ED and 2/3 sustain mild ED Glasgow Coma Scale.
- One out of four patients admitted to Emergency Department due to suicide attempts sustain very severe injury severity score (ISS) die at the hospital.
- Evidence based resource[11] for suicide prevention including framework, toolkit, and courses for preventing suicide in Emergency Department designed for emergency personnel is available through Zero Suicide Initiative.

IV. Limitations

In this report, cases with ICD-10 T and X code specific to intentional self-harm yielded a relatively low sample of suicide cases (N=53) over the three-year period. Due to voluntary nature of reporting to the Nevada Trauma Registry by participating hospitals, the number of cases in this report does not provide evidence for a growing public health problem in the community.

Vital signs comparison presented in this report was not reviewed case-by-case based on any medical review standards. Clinical measures are entered by hospital nurses into the Nevada Trauma Registry. In any event that a prehospitalization or emergency department measure is not captured, the case is excluded from the analyses. A case-by-case review may lead to more robust conclusions but reconciliation for de-identified health records is time laborious and is not possible through the registry.

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Acknowledgements

Acknowledgements

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Suggested Citation

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Additional Information

For additional information regarding the Washoe County Special Trauma Report contact

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STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5th , 2022

TO: EMS Advisory Board Members

FROM: Adam Heinz, Executive Director

SUBJECT: REMSA Health EMSAB Report

SUMMARY

Update of the emergency medical services (EMS) operations for the 1st quarter of 2022 .

DATA PERFORMANCE REPORTS

	January	February	March	TOTAL
TOTAL EMS RESPONSES	7216	6732	7334	21,2882
TOTAL EMS TRANSPORTS	3740	3376	4547	11,663
TOTAL EMS RESPONSES CANCELLED	3476	3362	2789	9,627
MUTUAL AID RESPONSES	0	2	0	2
MUTUAL AID TRANSPORTS	0	2	0	2
MUTUAL AID RESPONSES CANCELLED	0	0	0	0

EMS OPERATIONS UPDATES

January 2022

NEW PARTNERSHIP ANNOUNCED

At the beginning of January, REMSA Health and Truckee Meadows Fire Protection District (TMFPD) announced a new partnership aimed at enhancing emergency services for the Northern Nevada region. The partnership comes as a response to Washoe County's rapid expansion and growth and the need to provide innovative solutions to emergency medical response.

News Weather Sports KOLO Cares Livestream

REMSA and TMFPD partner up to expedite emergency response

REMSA Health and Truckee Meadows Fire Protection District Announce Public – Private Partnership Integral to Community Care

January 6, 2022

News Weather Sports KOLO Cares Livestream

Published: Jan. 3, 2022 at 4:34 PM PST

RENO, Nev. (KOLO) - In the past we've shown you "Point of Impact" events about town. These are monthly events where experts in child seats from REMSA check the restraint systems inside of cars to make sure they are properly installed.

"Biggest mistake is the car seat is not installed tight enough," says Nellie Martinez, REMSA Child Passenger Safety Instructor. "And the harness straps are either too lose or the clip is not across the armpit level," she says.

Last year's legislature tightened child restraint systems laws to make sure children in car seats are safer while traveling about.

Children less than or equal to 57 inches and under 6 years of age must ride in a child seat. Prior to this new law, children had to be less than six years of age or up to 57 inches tall to be restrained in a child restraint. Now it's both.

CAR SEAT SAFETY

REMSA Health's Nellie Martinez shared information and tips on car seat safety and spoke on the new car seat laws that are now in effect. She also promoted REMSA Health's Point of Impact events that take place each month to inspect car seat installs to be sure they are properly in place.

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Home > News > Health > REMSA: Save 911 for emergencies

HEALTH

REMSA: Save 911 for emergencies

By Kristen Hackbarth | January 12, 2022

ADAM HEINZ ASKS COMMUNITY TO SAVE 911 FOR EMERGENCIES ONLY

Executive Director of Integrated Health, Adam Heinz, asked the community to call 911 for emergencies only. REMSA Health received a record breaking 299 calls on January 11, 2022 – Not all of these were emergencies. Saving 911 for emergencies helps keep paramedics available for life threatening situations.

REMSA Health's Executive Director of Integrated Healthcare Appointed to National Registry of Emergency Medical Technicians' Board of Directors

By **Chrisie Yabu**

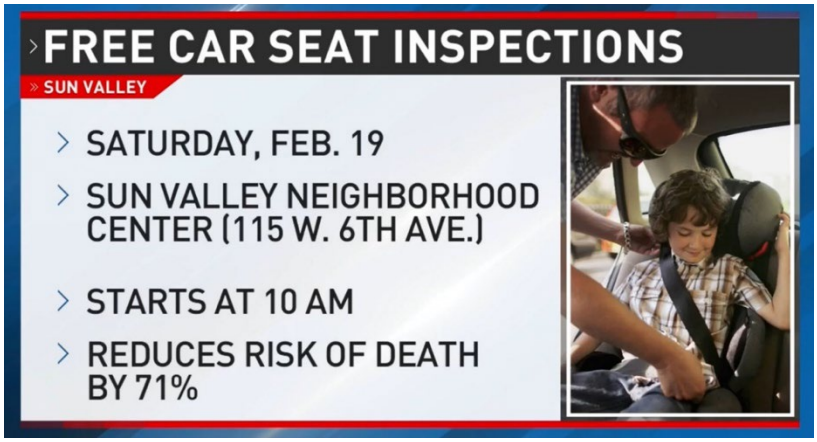
nevadabusiness.com 26 days ago

(Reno, NV) — The Regional Emergency Medical Service Authority (REMSA Health), northern Nevada's nationally-recognized ground ambulance service is proud to announce, Adam Heinz, REMSA Health's Executive Director of Integrated Healthcare, has been appointed to the board of the National Registry of Emergency Medical Technicians (NREMT). As the NREMT board member serving...

February 2022

KRNV & KOLO HELPS PROMOTE REMSA HEALTH'S CAR SEAT INSPECTION

KRNV & KOLO promoted REMSA Health's free February Car Seat Inspection that was held in Sun Valley. The purpose of these monthly events is to ensure community member's car seats are properly and safely installed for their children.



ADAM HEINZ SHARES ASSESS AND REFER CHANGES

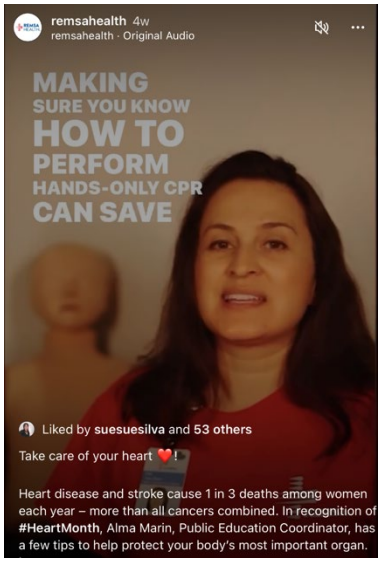
Executive Director of Integrated Health, Adam Heinz shared what to expect when community members call 911 for a medical call – REMSA Health dispatchers will determine if an ambulance is required. If an ambulance is not necessary, the patient can be referred to a registered nurse in REMSA Health's Nurse Healthline, recommend to urgent care or to telehealth. Assess and Refer is an in person option where patients will be directed to the proper level of care after they are assessed. This change will help keep ambulances and paramedics available for life-threatening emergencies.

March 2022

FEBRUARY SOCIAL MEDIA HIGHLIGHT

REMSA Health's Alma Marin shared how our community can help keep their hearts healthy.

Karla and Daniel shared a day in the life of a Logistics team member. They ensure REMSA Health's ambulances are always stocked and ready to go!

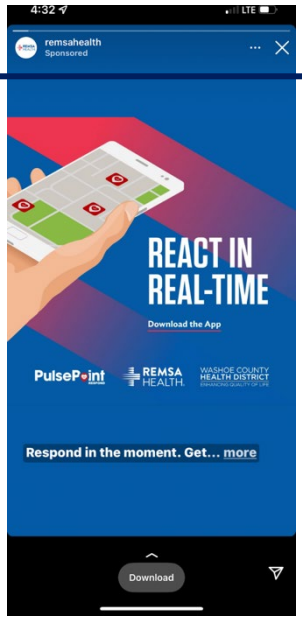


REMSA HEALTH WELCOMES SENATOR ROSEN'S STAFF

REMSA Health hosted staff members from U
United States Senator Jackie Rosen's office. Organizational leaders and subject matter experts discussed with them how federal legislation related to out-of-hospital healthcare impacts our organization and employees on a day-to-day basis. We focused on topics that matter to our employees every day including recruitment, retention, and reimbursement.

PULSEPOINT APP

REMSA Health and the Washoe County Health District are partners on encouraging citizens to download the PulsePoint app which notifies app users if someone in proximity to them is experiencing a cardiac arrest. A 30-day social media campaign launched at the beginning of the month; it encourages people to download the app and become a registered user - allowing them to react in real time and become a citizen superhero. If you haven't downloaded the app yet, you can get more information at remsa health dot com slash pulsepoint dash respond.



JENNY WALTERS HIGHLIGHTS NOELLE

Jenny Walters, a Senior Education Coordinator at REMSA Health and Noelle, a high-fidelity birthing simulator in our Center for Integrated Health and Community Education were featured on all three local television stations. The stories focused on how leading-edge technology such as Noelle - who can bleed, talk, and birth a baby - create realistic scenarios. These scenarios are just one component of many things that set apart our paramedic program from others across the country.

ASSESS & REFER AWARENESS CAMPAIGN

The awareness campaign for our Assess and Refer protocol has launched across the community. Highlights from this include: an article on This Is Reno, sponsored credit lines on KUNR, email communication to stakeholders and community members, and flier distribution to social service agencies, physician offices, healthcare related community resources and frequent ambulance transport users. In addition, Adam Heinz participated in a long-form interview on KTVN's Face the State about the importance of the public understanding and being open to how the 911 call is changing.

ASSESS & REFER PROTOCOL

REMSA Heath responds to approximately 80,000 requests for service per year in Washoe County. Every call is important to us and we follow international protocols to determine the right level of care for callers. But not every call needs an emergency response and transport. In this extended interview with Arianna Bennett at KTVN 2 News, Adam Heinz, Executive Director of Integrated Healthcare talks about the importance of REMSA Health's Assess and Refer protocol. They discuss that by using 911 only for true emergencies and following care guidance from our medical dispatchers, registered nurses, paramedics and EMTs, citizens across Washoe County can help save lives by using 911 appropriately.

STAFF REPORT Item 12B
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May 5, 2022

TO: EMS Advisory Board Members

FROM: Fire Chief Jim Reid

SUBJECT: City of Sparks Fire Department EMSAB Report

SUMMARY

Update of the emergency medical services (EMS) operations for the first quarter of 2022 .

DATA PERFORMANCE REPORTS

	January	February	March	TOTAL
TOTAL EMS RESPONSES	1,085	969	1,056	3,110
TOTAL EMS TRANSPORTS	N/A	N/A	N/A	N/A
TOTAL EMS RESPONSES CANCELLED	257	223	243	723
MUTUAL AID RESPONSES	15	10	4	29
MUTUAL AID TRANSPORTS	N/A	N/A	N/A	N/A
MUTUAL AID RESPONSES CANCELLED	3	7	2	12

EMS OPERATIONS UPDATES

Three new-hire personnel (firefighter/paramedics) completed a 6 week fire and EMS academy. These three personnel have been given battalion assignments and are currently being evaluated by a senior firefighter/paramedic.

Two new-hire firefighters are continuing their training through the Reno Fire Academy.

Four candidates have accepted job offers and are awaiting training assignments based on their certification and skill levels.

Truckee Meadows Fire & Rescue

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD
MEETING DATE: May, 5th 2022

TO: EMS Advisory Board Members

FROM: Joseph Kammann, *EMS Division Chief*
Jkammann@tmfpd.us

SUBJECT: TMFR EMSAB Report

SUMMARY

Update of the emergency medical services (EMS) operations for the 1st *quarter of 2022*..

DATA PERFORMANCE REPORTS

	Jan	Feb	Mar	Total
TOTAL EMS RESPONSES	759	607	672	1431
TOTAL EMS TRANSPORTS	259	211	224	483
TOTAL EMS RESPONSES CANCELLED	81	18	57	138
MUTUAL AID CALLS	20	22	15	35
MUTUAL AID TRANSPORTS	1	0	0	1
MUTUAL AID CALLS CANCELLED	1	0	0	1

EMS OPERATIONS UPDATES

COVID Response:
Positive COVID-19 cases within TMFR have continued to drop significantly. TMFR personnel have not had a need to conduct any POD operations this quarter, and testing requirements for personnel came to an all-time low during March, 2022. We remain vigilant and prepared to ramp up operations as necessary in the future due to a resurgence or any new variants.

Recruitment:
8 Lateral Firefighter/Paramedic and Firefighter/AEMT personnel are currently starting their 12 month probationary period. 10 probationary Firefighter/Paramedics are now in their fourth quarter probationary evaluations. 15 new Firefighter/Paramedic and Firefighter/AEMTs just finished the fire academy and are now on the line working.

Ambulance Operations:
TMFR is currently responding 3 Advanced Life Support ambulances out of the current stations which are Station 30 in Washoe Valley, Station 45 in Sun Valley, and Station 46 in Spanish Springs. These additions have allowed for a more rapid response time to TMFR incidents, as well as provide a valuable mutual aid resource to our surrounding partners when no other ambulances are available.

The ambulance program has allowed for increased training opportunities for both TMFR personnel and local Paramedic and EMT students from regional training programs.

Training:
The EMS Division had a robust schedule last quarter of multi-company EMS scenario training which included advanced airway training, sedation medication administration, recognition of hemorrhagic strokes, and other continuing education opportunities. TMFR will be conducting the first TMCC/TMFR collaboration for a Fire Department based Paramedic program to begin in August, 2022. This class will be opened to all regional departments, and will allow for the training of current employees to the Advanced Life Support capacity. This will help with the regional paramedic recruitment difficulties we are all experiencing during the COVID-19 pandemic.

STAFF REPORT
EMERGENCY MEDICAL SERVICES ADVISORY BOARD Item 12D
MEETING DATE: May 5, 2022

TO: EMS Advisory Board Members

FROM: Dennis Nolan, EMS Division Chief, Reno Fire Department
Phone: (775) 657 4690 Email: noland@reno.gov

SUBJECT: City of Reno Fire Department EMSAB Report

SUMMARY

Update of the emergency medical services (EMS) operations for the first quarter of 2022.

DATA PERFORMANCE REPORTS

	January	February	March	TOTAL
TOTAL EMS RESPONSES	3623	3723	3895	11241
TOTAL EMS TRANSPORTS	7	6	4	17
TOTAL EMS RESPONSES CANCELLED	460	915	965	2340
MUTUAL AID RESPONSES	2	19	23	44
MUTUAL AID TRANSPORTS	7	6	4	17
MUTUAL AID RESPONSES CANCELLED	2	6	2	10

EMS OPERATIONS UPDATES

1). Currently RFD maintains 69-Paramedic, 101 AEMT and 69 EMT certified personnel
2). Re-Certified 168 line personnel in Paramedic, AEMT and EMT levels
3) Purchased new ALS Rescue (Ambulance) Received delivery 4/21
4). Participated in DEM/WCHD regional CBRNE/MCI exercise 3/21-23. With; 2 Div. Chiefs, 2 Bat. Chiefs, 2 EMS Coors., 2 Engine Co.s, 1 Truck Co., HAZMAT
5) Approved single resource paramedic rescue, to hire 6 non supression paramedics to staff
6) Provided training/observation ride alongs to 51 TMCC & WNC EMS Students

*RFD regularly attends and participates in the following meetings: WCHD ' s; DBOH, PMAC, EMSAB, EMS Protocol Task Force, Joint Advisory Committee (JAC), Strategic Plan Committee, E.D. Consortium and the Inter-hospital Coordinating Council (IHCC).