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March 9, 2022

Elizabeth Winward
State Trauma System Coordinator
California EMS Authority
10901 Gold Center Drive, Suite 400
Rancho Cordova, CA 95670

Re: North Coast EMS Plan Update – Trauma System Status Report, including the Trauma Center Fee Utilization Report

Dear Ms. Winward:

The North Coast EMS (NCEMS) *Annual Trauma System Status Report Update* is attached. Because of the pandemic and subsequent EMSA direction, we did not submit an annual update last year, so this update covers the period from our last submission (2019) to the end of December, 2021. The Annual Trauma Center Fee Utilization Report is also attached. This report was also delayed by the pandemic.

Please note the following since our last revision was submitted:

- 1) Our commitment to the transfer of CEMSIS/Trauma Data submissions to the State EMS Authority on a quarterly basis continues. Three of four NCEMS trauma centers have exported data through September 2021. We continue to work closely with Trauma Center representatives to ensure uniform trauma patient data entry and timely submission to the State.
- 2) The Lake County Trauma Advisory Committee (TAC) has convened on a regular basis, now that there has been a renewed commitment at Sutter Lakeside Hospital for a Trauma Program. Permanent staff have been appointed to the key positions of Trauma Medical Director, Trauma Coordinator, Trauma Registrar, and ED Nurse Manager. The TAC gave input on refining the Trauma Catchment Area Boundaries in policy.

The Humboldt-Del Norte TAC has convened on regular basis since the last submission of this report. A Re-triage policy was introduced, and the Destination Determination policy was modified with input from this Committee. Both have been put into practice and data is being reviewed regularly for ongoing Performance Improvement (PI).

- 3) Adventist Health Clearlake formally requested to proceed with Level IV Trauma Center Designation in 2020. Due to the ongoing pandemic, this process was mutually put on hold due to other priorities. Adventist Health Clearlake and North Coast EMS have renewed discussions regarding Level IV Trauma Center Designation late in 2021. North

Coast EMS is awaiting a formal Letter of Intent from Adventist Health Clearlake to restart the process.

- 4) Annual Trauma Center Fees, approved by the NCEMS Joint Powers Governing (JPA) Board, have been paid by all four NCEMS Trauma Centers. Please see the attached Annual Trauma Center Fee Utilization Report. This six and one-half-year report indicates that Trauma Center Fee levels are consistently inadequate to cover North Coast EMS Trauma System related costs, which we may recover by statute. The Agency has therefore continued to utilize our decreasing fiscal reserve to subsidize the Trauma System and designated Trauma Centers so we can carry out statutory and regulatory LEMSA requirements. The Fees will be reviewed in 2022 and will be discussed with the JPA Board in a future meeting.

- 5) Sutter Coast Hospital completed a joint Oregon-California designation survey for Level IV Trauma Center on November 14, 2019 and was awarded continued Level IV Trauma Center designation in both states. They are due to be reevaluated November 2022 by both entities, date yet to be determined. Mad River Community, Providence St Joseph-Eureka, and Sutter Lakeside Hospitals all successfully completed redesignations of their respective Trauma Centers in 2021. Mad River Community and Sutter Lakeside Hospitals, both currently designated as a Level IV, were provisionally designated until 2022 with a final decision to designate through 2023. Providence St Joseph-Eureka, a Level III Trauma Center was fully redesignated through 2023 without conditions.

We look forward to your positive review of our Trauma Plan update.

Sincerely,



Larry Karsteadt, Executive Director
North Coast EMS

cc:

Tom McGinnis, EMS Systems Division Chief, California EMS Authority
JPA Board Members: Rex Bohn, Humboldt County; Darrin Short, Del Norte County
North Coast EMS Trauma Centers: St Joseph Hospital, Mad River Community Hospital,
Sutter Coast Hospital and Sutter Lakeside Hospital
CAO, Trauma Medical Directors, Trauma Program Managers
Lake County Trauma Advisory Committee Members
Humboldt/Del Norte Trauma Advisory Committee Members
Matthew Karp, M.D., North Coast EMS Medical Director
Rita Henderson, R.N., Regional Trauma and EMSC Nurse Contractor
Kayce Hurd, Regional EMS and Disaster Coordinator

NCEMS Plan: TRAUMA SYSTEM STATUS REPORT, March 3, 2022

Rita Henderson, RN, Regional Trauma and EMSC Nurse Contractor and North Coast EMS personnel, including: Larry Karsteadt, Executive Director, Kayce Hurd, Regional EMS and Disaster Coordinator, and Matthew Karp, MD, Regional Medical Director.

This **EMS Plan: Trauma System Status Report** is based upon the Emergency Medical Services Authority, *Trauma System Plan Revision & Annual Trauma System Status Report Guidelines*, approved by EMSA August 2016.

- I. **Trauma System Summary:** North Coast EMS (NCEMS) serves as the local EMS agency for Del Norte, Humboldt, and Lake Counties.
 - A. Del Norte County: Sutter Coast Hospital in Del Norte County provides trauma care as part of the California and Oregon Trauma System and is jointly designated as a Level IV Trauma Center by the State of Oregon and NCEMS. The last site survey was conducted on November 19, 2019 for continued designation and will be again jointly conducted in 2022, yet to be scheduled. Due to the large service area, and geographical isolation to neighboring facilities, Sutter Coast Hospital directly receives all trauma patients from Del Norte County and southwestern Oregon. Sutter Coast Hospital is the only hospital within an 80-mile radius, and the closest higher-level Trauma Center is many miles away. We coordinate ongoing monitoring and evaluation of the Trauma System with the Sutter Coast Hospital Trauma Coordinator, Pati Tucker-Hoover, RN and Sandy Saunders, MD, Trauma Medical Director, both of whom continue in these roles since the last report and site survey. The position of Trauma Registrar has been intermittently vacant, causing delays in entries to the trauma registry and exporting of data to CEMISIS. Evaluation is ongoing through updates received from participation with CEMISIS/Trauma data collection as available, periodic attendance at monthly Medical Advisory Committee (MAC), periodic Trauma Advisory Committee (TAC) meetings, and ongoing dialog with NCEMS staff. Del Norte County Trauma Center representatives also function as part of the Oregon Trauma System, ATAB #5, which convenes routinely with Trauma Coordinator attendance. Additionally, Sutter Coast Hospital representatives attend the Humboldt-Del Norte TAC and the North-Regional Trauma Coordinating Committee (N-RTCC) as time allows.
 - B. Humboldt County: North Coast EMS last conducted designation surveys in Humboldt County at Providence St. Joseph Hospital – Eureka (SJE) and Mad River Community Hospitals (MRCH) on November 18 and 19, 2020 respectively, using the ACS standards as criteria for designation. SJE sufficiently met the ACS standards for designation as a Level III Trauma Center with the next site survey due the end of 2023. Kari Vandiver, RN, and Adam Mulvey remain as the full-time Trauma Program Manager and Trauma Registrar. As of October 2021, Tuan Hoang, MD became the Trauma Medical Director, replacing Lisa Neuger, MD.

MRCH was probationally designated as a Level IV Trauma Center through January 2022, after a return focused survey on June 10, 2021. North Coast EMS reviewed additional documentation from MRCH in January 2022 to determine final designation status and has continued probational designation until the next site survey at the end of 2023. Through the site survey process, MRCH and North Coast EMS mutually agreed to proceed with a change in designation level to a basic Level IV designation, thereby eliminating the “Level IV with Level III Surgical Commitment” unique designation that was awarded in 2017. Tina Wood, RN, remains as the Trauma Program Manager and Lindsey Adams, serves as the Trauma Registrar. Bruce Barker, MD replaced Luther Cobb, MD, as the Trauma Medical Director in February 2021.

Both trauma hospitals in Humboldt County continue to have established trauma transfer agreements between the two hospitals, shared imaging and real-time call schedule sharing/tracking. The Humboldt - Del Norte TAC meetings have been convened regularly on a quarterly basis. Case review has been a priority for the TAC meetings and continues ongoing. Data collection standardization and timely submission to CEMISIS have also been standing discussion items on the TAC agendas. The Destination Determination policy has been updated to reflect SJE as the only Level III Trauma Center in the county and therefore the most critical patients brought in by EMS go directly to that Trauma Center. A new Re-triage policy has been implemented, also directing the most critical patients to the Level III Trauma Center at SJE and allowing for life saving measures to be completed at other Emergency Departments as a “quick stop” and then onto definitive care. Both Trauma Centers continue to use Digital Innovations as their trauma registry, and this is working well for the hospitals and NCEMS. NCEMS continues to monitor the Humboldt County Trauma System and is working with both facilities to ensure review of Trauma Triage activations and ongoing PI. Both hospitals actively participate in the Humboldt – Del Norte TAC and attend the North-Regional Trauma Coordinating Committee as time allows.

C. Lake County: Sutter Lakeside Hospital (SLH) is designated as a Level IV Trauma Center. Trauma patients meeting Trauma Triage Criteria are most commonly flown out of Lake County to the Level II Trauma Center in Santa Rosa, the Level I in Sacramento, and to a Level III in the Napa region. NCEMS coordinates ongoing monitoring and evaluation of the Trauma System with the newly appointed Trauma Program Coordinator, Najia Sadiq, RN, and Matthew Karp, MD as Trauma Medical Director. Please note that Dr. Karp is also the North Coast EMS Medical Director and as such, has recused himself from all North Coast EMS Trauma Center designation functions regarding Sutter-Lakeside Hospital. Also, outside, non-affiliated EM MD surveyors were utilized for the initial and follow-up surveys. Debbie Arrington has become the Trauma Registrar, with all three being newly appointed to their roles in 2021. The consultation/educational site survey scheduled for November 12, 2019, was canceled due to turnover of staff and administration at SLH. With support of the Trauma Program from the new CAO, Scott Knight, the site survey was rescheduled and conducted on November 11, 2020, using the ACS standards as criteria for designation; Troy Falck, M.D., Medical Director of S-SV EMS was the lead surveyor. SLH was probationally designated as a Level IV Trauma Center through

January 2022, after a return focused survey was completed on June 8, 2021, with Zita Konik, M.D., Medical Director of Napa County EMS as the lead surveyor. North Coast EMS has reviewed additional documentation received from SLH in January 2022 to determine final designation status and has awarded full designation status until the next site survey at the end of 2023.

NCEMS has Agreements with Coastal Valley EMS, Napa County EMS and Sacramento County EMS regarding reciprocal quality review. Lake County TAC meetings were convened quarterly in 2021 and regular updates on Trauma System developments are also provided at the bi-monthly Lake County EMCC meetings. Coastal Valley's EMS agency representatives continue to invite NCEMS representatives, as well as Sutter Lakeside Hospital's Trauma Program Coordinator and Medical Director attend quarterly their TAC meetings. Sutter Lakeside Hospital's representatives also attend the N-RTCC meetings as time allows.

Sutter Lakeside Hospital updated their trauma registry, Trauma One, in early 2021 to reflect the same data fields as Sutter Coast Hospital's registry, thereby standardizing data collection throughout the region. SLH also plans to replace their current Trauma One product with a stand-alone server to decrease transmission complications and better manage the registry without having to remotely connect to North Coast EMS' server.

II. Changes/Updates in the Trauma System:

Rita Henderson, MSN, RN, continues as an independent contractor with NCEMS as the Regional Trauma and EMSC Nurse Contractor. Rita coordinates Trauma System oversight activities and Trauma Advisory Committee meetings. She helps ensure implementation, standardization, and ongoing submission of the Trauma One and Digital Innovations trauma registry data. She routinely attends N-RTCC meetings, JPA meetings, and the State Trauma Summit and provides technical expertise relative to numerous other aspects of trauma care and the area Trauma System. She serves as a part-time, contractor, approximately 12-15 hours per week. Annual Trauma Center Fees continue to be approved by the JPA Governing Board, and all four NCEMS Trauma Centers have paid the annual fee, allowing limited, though ongoing oversight of the three-county Trauma System.

All key Trauma System personnel remain in place at NCEMS, unchanged from last reporting in 2019. Matthew Karp, MD, continues as the part-time Regional Medical Director for NCEMS and has added on the role at SLH as the Trauma Medical Director as addressed above.

As noted in the cover letter attached, Adventist Health Clearlake Hospital (AHCH) has resumed discussions with NCEMS regarding Level IV Trauma Center designation. NCEMS and AHCH have participated in virtual meetings to discuss the process and next steps to move forward towards Trauma Center designation and NCEMS is awaiting a renewed commitment Letter of Intent from AHCH to proceed.

III. Number and Designation Level of Trauma Centers:

The NCEMS region currently has four designated **Trauma Centers**.

- Level IV, Mad River Community Hospital, Arcata, CA (Humboldt County), on probation.
- Level III, with 24/7 Neurosurgery: St. Joseph Hospital, Eureka, CA (Humboldt County), fully designated.
- Level IV: Sutter Lakeside Hospital, Lakeport, CA (Lake County), fully designated.
- Level IV: Sutter-Coast Hospital, Crescent City, CA (Del Norte County), fully designated.

IV. Trauma System Goals and Objectives:

1	Ensure that <i>ESO Trauma One</i> trauma registry, utilized by Sutter Coast (the Oregon web-based version) and Sutter Lakeside Hospitals, and the <i>Digital Innovations</i> trauma registry utilized by Providence St Joseph- Eureka and Mad River Community Hospitals transmit required trauma registry data to the state registry, with review accessible by the NCEMS Regional Trauma Nurse Contractor.	
	Action Steps	
	Specific	Completion of successful trauma registry data transmission from each Trauma Center to ImageTrend/CEMSIS and the ability for NCEMS Regional Trauma Nurse Contractor to review.
	Measurable	NCEMS continues to coordinate with ESO/Lancet, Oregon Trauma Registry representatives, Digital Innovations and the four Trauma Centers to facilitate completion. Trauma Nurse Contractor identified opportunities for improvement specific to uniform data entry by all Trauma Centers. Focused discussions continue at TAC meetings to ensure standardization throughout the Trauma System.
	Attainable	Trauma registry data transmission to EMSA trauma registry and access to data for contractor and NCEMS.
	Relevant	Initiate, reinstate, and ensure timely and complete trauma registry data transmission to ImageTrend/CEMSIS from Sutter Coast Hospital, Sutter Lakeside Hospital, Providence St. Joseph- Eureka Hospital, and Mad River Community Hospital. Ensure ability to review by contractor and NCEMS.
	Time-specific	Ongoing progress reports from Trauma Centers to NCEMS at quarterly TACs and as needed. Data transmission from the Trauma Centers to ImageTrend/CEMSIS quarterly, under the following schedule: first quarter submitted by June 30, second quarter submitted by September 30, third quarter submitted by December 31, and fourth quarter submitted by March 31, the following year. Ongoing and unencumbered access for review by contractor and NCEMS.

2	NCEMS utilization of CEMSIS- Trauma One Data and Digital Innovations registry data, and/or other data as determined, to assess quality of care and ensure Trauma System oversight pursuant to state regulations.	
Action Steps		
	Specific	Ongoing learning and development of customized queries and reports to support evaluation of trauma care and trends in the NCEMS region. This currently involves review of Trauma Registry data from the designated Trauma Centers by Regional Trauma Nurse Contractor and NCEMS and disclosure protected case reviews at TAC meetings. This also requires uniform data entry into the registry to allow “apples to apples” comparison of trauma patient volumes, etc.
	Measurable	<p>At a minimum, track and trend the following data points region-wide and Trauma Center specific:</p> <ul style="list-style-type: none"> • Trauma patient volumes and activations • Population demographics • Injury type • Injury Severity Scores • Patient outcomes/disposition • Opportunities for Provider, Trauma Center, LEMSA and Trauma System enhancement <p>Evaluate appropriateness and need of specific data points through direct discussion with Trauma Program Managers and PI review at TAC meetings. Communicate with ESO/Lancet Technology and Digital Innovations as well as Trauma Center informatics representatives to facilitate review, of all four Trauma Center’s registry data, by contractor and NCEMS. Work with Trauma Center representatives to establish and enhance PI and case review processes. Communicate as needed with ImageTrend contact for EMSA regarding error reports as they occur.</p>
	Attainable	Regional Trauma Nurse Contractor to attend ESO/Lancet Technology Trauma One and Digital Innovations training when available. Additionally, seek out web-ex educational offerings for continued opportunities to improve utilization of registry. Conduct, at minimum, quarterly data review and sharing with Trauma Program Managers to increase familiarity with report development and facilitate accuracy of data. Review reports from EMSA utilizing regional data transferred to the state’s system. Continue to work collaboratively with Trauma Center and other EMS representatives to enhance the Trauma PI, data utilization and case review processes.
	Relevant	Reporting will be shared with Trauma Centers to assist identification of internal and Trauma System performance improvement goals. On-going review to facilitate accuracy of data targeted for transmission to state and national levels.
	Time-specific	<ul style="list-style-type: none"> • ESO/Lancet Technology Trauma One training as needed to continue with any identified transmission issues and Sutter-Lakeside Hospital to implement stand-alone server by beginning of 1Q22.

		<ul style="list-style-type: none"> Quarterly data export, facilitated by ESO/Lancet Technology between Oregon Trauma One & Sutter Coast Hospital, to ensure successful transmission of data to CEMISIS. Quarterly data export, facilitated by ESO/Lancet Technology from Sutter Lakeside Hospital, and the same for Mad River Community and Providence St Joseph- Eureka Hospitals with Digital Innovations. Trauma Program Managers/Nurse Coordinators to submit data and case reports to NCEMS as requested for quarterly TAC meetings.
3	Ongoing development of the Trauma Advisory Committee (TAC) combined for Humboldt - Del Norte Counties and Lake County with attendance, leadership, and coordination of meetings by the Trauma Centers and NCEMS.	
	Action Steps	
	Specific	Improve communication and ensure oversight of EMS and trauma related activities throughout the region. Develop formal, constructive and collaborative case and data review processes.
	Measurable	Trauma Nurse Contractor and NCEMS representatives will coordinate, lead and attend quarterly TAC meetings. Humboldt, Del Norte, and Lake representatives to regularly attend monthly Humboldt-Del Norte MAC, Lake EMCC, and quarterly TAC meetings.
	Attainable	Quarterly meetings scheduled were an original goal and have been attainable for all three counties this past year through a virtual “Zoom” platform. A standardized case review process has been established and is attainable using existing models. It is the responsibility of the Trauma Managers/Trauma Nurse Coordinators to complete ongoing PI/QA internally and work together within the region on shared patients to ensure that this is successful. NCEMS will ensure that internal PI/QA is happening at each Trauma Center and will convene the TAC for oversight of educational cases and opportunities for improvement. PI/QA is an important process for NCEMS, and we are working diligently throughout the region to prioritize this in a way that is meaningful, relevant and productive.
	Relevant	TAC meetings are exclusively related to the evaluation and input of Trauma Centers and Trauma System related processes. TAC meetings allow for data and disclosure protected case review, state, regional and county Trauma Systems updates, provides a forum to gain insight on Trauma Center functions and creates opportunities for Regional Trauma System improvement. Attendees have been able to attend meetings virtually through the Zoom platform in 2020/2021 and ongoing.
	Time-specific	Convene quarterly TAC meeting in Lake and Humboldt-Del Norte Counties , continuing use of the virtual Zoom platform. The next scheduled Humboldt-Del Norte TAC meeting will be February 9, 2022, and for Lake County, February 17, 2022, both by Zoom.

4	Continue Trauma System and Trauma Center oversight in all three-counties and ensure ongoing funding the Regional Trauma Nurse Contractor position with Annual Trauma Center Fees.	
	Action Steps	
	Specific	Annual Trauma Center fees from the four Trauma Centers have helped ensure the oversight of the Regional Trauma Nurse Contractor for the 2020-2021 fiscal year at 30% time (0.3 FTE). However, as stated previously, combined Annual Trauma Center Fees are currently inadequate to cover North Coast EMS Trauma System related costs (see Section VIII and the attached Annual Trauma Center Fee Utilization Report) and increased fees will have to be considered in the future unless other new revenue is forthcoming. NCEMS will continue to develop, coordinate, and expand the process to oversee, evaluate and enhance the three-county Trauma System. This includes TAC meeting coordination, data collection and review, PI and case review, Trauma Center compliance processes, site surveys as needed, and state required Trauma System oversight responsibilities.
	Measurable	Monthly Medical Advisory Committee (MAC), bi-monthly Lake County EMCC and quarterly TAC meetings, attended by representatives of key stakeholders, remains an ongoing opportunity for dissemination of information and enhancement of the Regional Trauma System.
	Attainable	NCEMS remains available to accomplish Trauma Center site visits within Humboldt, Del Norte and Lake Counties. Quarterly TAC meetings will be scheduled to review/share data and implement PI. Governing Board approved Annual Trauma Center Fees, though currently inadequate to cover associated Trauma System costs, helps NCEMS to continue to oversee the regional Trauma System with the availability of a qualified and independent Trauma Nurse Contractor.
	Relevant	The Joint Powers Governing Board approved an Annual Trauma Center fee for each of the four Trauma Centers in both 2020/2021. The statutorily required fees are inadequate to cover associated costs of mandated Trauma System and Trauma Center oversight. Annual Trauma Centers Fees will be periodically reassessed as we collaboratively work to ensure uniform data entry to accurately assess trauma patient volume, trauma activations, etc.
	Time-specific	Attendance at Medical Advisory Committee meetings, monthly, and Trauma Advisory Committee meetings, quarterly. Trauma Center contract modification by July 2022 if needed to reflect any changes and review of the Annual Trauma Center Fees by June 30, 2022.
5	North RTCC and State Trauma Regulation Workgroup participation.	
	Action Steps	
	Specific	The development of a standardized regional approach to trauma care remains a priority mission. Participation by NCEMS Executive Director, Medical Director and Regional Trauma Nurse Contractor has been limited by time, budget, and travel. However, with the ability to virtually attend these meetings, Rita Henderson, RN, and Larry Karsteadt have attended

		the meeting by teleconference and Zoom in 2020/2021. Regional Medical Director, Matthew Karp, M.D., and representatives of designated Trauma Centers are also encouraged to attend. Executive Director Larry Karsteadt was appointed to the State Trauma Regulation Workgroup as the rural EMSAAC representative and continues in this important role.
	Measurable	North- RTCC subcommittee activities and attendance remain relevant to the NCEMS region. Direct representation of the North Coast and rural trauma system needs as a member of the Trauma Workgroup is essential to the development of effective and feasible Trauma System standards within California.
	Attainable	North RTCC membership has established a meeting schedule rotation between Sacramento, Chico, and Redding. With the ongoing pandemic, these meetings have been held virtually on Zoom with an anticipated hybrid model of in-person/virtual meetings continuing in 2022. Rita Henderson, RN has attended all the quarterly meetings in 2020/2021 by teleconference/Zoom, with Larry Karsteadt and Matthew Karp, MD attending routinely. Larry collaborates with other LEMSA rural advocates prior to and after each Workgroup meetings to ensure statewide representation and will continue such.
	Relevant	Ability to participate is balanced by current LEMSA workload, ongoing approval of Annual Trauma Center Fees and use of the North Coast EMS limited and decreasing fiscal reserve. He also plans to continue to keep regional TAC and key EMSAAC members informed of critical changes to the existing regulation.
	Time-specific	NCEMS Regional Trauma Nurse Contractor and Executive Director have provided recent representation via teleconferencing/Zoom into the meetings. North RTCC Chair provides annual meeting schedule with 30-day reminders, supportive of allowing schedule adjustments for our region's attendees. Several Trauma Workgroup meetings are pre-scheduled for 2022. <ul style="list-style-type: none"> • Target – Continue N-RTCC and Trauma Workgroup meetings via teleconference/Zoom for priority accessibility and ongoing attendance.
6	University of California Medical Center – Davis and HRSA EMS for Children Grant participation	
	Action Steps	
	Specific	FY 2019-20 was the last year of an eight year federally (HRSA) funded EMS for Children grant that was scheduled to terminate the end of May 30, 2020. The termination date was extended to November 2020 by request of NCEMS. NCEMS concluded the grant funding to help conduct 2020 Trauma Center site surveys at Mad River Community, Providence St Joseph-Eureka, and Sutter Lakeside Hospitals, as well as Emergency Department Approved for Pediatrics (EDAP) surveys in all three counties, at Sutter Coast, Mad River Community, Jerold Phelps, Adventist Health Clearlake, and Sutter Lakeside Hospitals. All four Trauma Centers are also NCEMS designated EDAPs.

	Measurable	Invite UCDMC EMSC experts to participate in site-surveys.
	Attainable	UCDMC EMSC representatives participated in site surveys.
	Relevant	Ability to participate is balanced by other grant priorities.
	Time-specific	<ul style="list-style-type: none"> • Three Trauma Center and five EDAP site surveys were completed prior to the end of the grant.

V. Changes to Implementation Schedule:

Last Submission: November 6, 2019, with State approval on November 16, 2019. Due to the ongoing COVID pandemic, the schedule for submission of this report has been delayed by the State; however, we decided to proceed with the update at this time.

VI. System Performance Improvement:

A. Sutter Coast Hospital:

Performance Improvement processes begin with analysis of data collected on all patients meeting trauma criteria. Data sources are from PCRs, electronic health records, receiving facilities, medical examiner reports and the trauma registry. Processes are monitored for compliance with hospital specific indicators including ED length of stay > 6 hours with admission, delays in transfers, documentation specific to policy, all trauma related transfers. Levels of review begin with the Trauma Coordinator. Opportunities for improvement are further reviewed by the Trauma Program Medical Director and when appropriate by a multi-disciplinary physician review committee. Systems issues are addressed by the Quality and Patient Safety Committee. Action plans are developed with loop closures identified and maintained by the Trauma Coordinator.

B. Sutter Lakeside Hospital:

The performance improvement process is coordinated by the Trauma Program Coordinator and Trauma Medical Director. This process is well defined in the newly created hospital Trauma PIP plan (Performance Improvement Plan) and begins with the identification of patients utilizing trauma triage criteria along with trauma related ICD-10 codes. Review is conducted on all traumatic deaths, delayed transfers, trauma admission with subsequent transfer, ED discharge with readmission within 72 hours, errors in assessment or treatment, complications, field transport issues, and any system issues. Results of findings are provided to the Trauma Medical Director for review, comments and involvement of appropriate Medical Staff Committees including a Trauma Multi-Disciplinary Review Committee. Additionally, there is a Quality Improvement Program Trauma Committee established in the Performance Improvement Plan. Educational opportunities may be provided at staff meetings and field care audits.

C. St. Joseph Hospital:

Trauma Services has a formal performance improvement process. This allows for a multidisciplinary approach for rapid problem identification, data-driven analysis, and resolution of issues. The hospital Performance Improvement Quality Indicators include Readmission Rate, Partial Activation status with a disposition within 4 hours of registration, full activation status has a disposition within 120 minutes and 1-hour door-to-antibiotic time for all open fractures. Department specific core measures include mortality review, Trauma and Orthopedic Surgeon response time, appropriate neurosurgical care, etc. The process includes three levels of review starting with the Trauma Program Manager, escalating to the Trauma Medical Director and then to Trauma Peer Review Committee, as needed. Trauma Peer Review Committee meets quarterly and is multidisciplinary. Action plans are created by the Trauma Medical Director or Trauma Program Manager. The Trauma Program Manager is responsible for monitoring that the action plan is implemented, results are followed, and documented in the trauma registry.

D. Mad River Community Hospital:

The PI (Performance Improvement) for the Trauma Program follows the guidelines of Mad River Community Hospital QA/PI. 100% review of all Trauma admits to the ED/in-patient is completed by the Trauma Program Manager. All trauma deaths, ED or in-patient, are reviewed by the Trauma Medical Director. Data points as defined by ACS that do not meet benchmark are reviewed by the Trauma Program Manager and Trauma Medical Director and the following items are identified:

- System failures: EMS radio failure, EMS fails to follow NCEMS protocol, delay in admitting patient to the ED bed, inadequate monitoring, delay in initiating standard interventions (as defined by ACS and TNCC)
- Medical decision making delayed
- Transfer, if indicated, delayed
- Admission delayed
- Failure to follow MRCH Trauma Protocol

Any of the above items that are identified are documented along with a plan of correction which is approved by the Trauma Program Manager and the Trauma Medical Director and then presented to the Surgery Committee. The plan of correction will be put in place and monitored by the Trauma Program Manager. When the plan of correction is complete, the data points will be measured as scheduled and the determination of how effective the plan of correction was will be evaluated. The results of the plan of correction and any other follow-up will be presented to the Surgery Committee. Routine quarterly monitoring of all data points will continue, even when a plan of correction is being carried out. The Trauma Registry is used as a measuring tool for additional data points identified by the Trauma Medical Director and/or the Surgery Committee as having validity for reporting, to improve any step in the MRCH Trauma Program. Any additional data collection/action identified by the NCEMS TAC will also be included in the PI Plan.

VII. Progress on Addressing EMS Authority Trauma System Plan Comments:

No required actions/recommendations/comments were received in the North Coast EMS Agency's 2019 Trauma System Status Report approval letter.

VIII. Trauma System Fiscal Status Update: Annual Trauma Center Fee Utilization

Report: Statute requires a LEMSA to annually report Trauma System Fiscal Status and submit this report to the EMSA as part of the Annual Trauma System Update. We previously submitted our first report to the EMSA, Trauma Centers and our Governing Board separately from this report and the next report was delayed by the pandemic. The attached, expanded, and updated Trauma Center Fee Utilization Report indicates that after the initial two-year period supported by Governing Board approved Initial Trauma Center Fees and Site Survey Fees, we have continued to support the Regional Trauma System at an increasing loss. The Report verifies that collective Costs since 2016 have conservatively totaled \$225,117 and combined Trauma Center Revenue has totaled \$115,000. We have therefore had to absorb \$99,359 out of the General Fund budget net positive position. This is unsustainable and if no new revenue is secured annually, NCEMS must discontinue the Trauma System or face critical fiscal shortfall or collapse.

IX. Other Issues: As an appointed member of EMSAAC, Executive Director will continue to participate in the process to update Trauma Regulations and provide opportunities for rural and regional participation in the review process. NCEMS Executive Director Larry Karsteadt served as the rural EMSAAC representative on the last Trauma Regulation revision.